

# *Chapter - 10*

# CONCLUSION

As the man is the only species on earth who is always modifying the nature to ensure his comfort and never realizing that his activities will finally destroy the entire biosphere. However, very recently, at least some people have realized the basic mistakes of man's so called 'development' oriented programs. And, the continuous efforts of different scientific and news media now at least a part [though very small!] of the society is thinking for the remedial measures.

The establishment of IUCN is a big step towards this philosophy. Now, the IUCN is teaching and guiding the world why and how we need to minimize the anthropogenic impact on environment. Almost uncontrolled logarithmic increase of human population and their lust for limitless comfort and happiness has made it almost impossible to reduce this effect.

However, man is now forced to take some measures, keeping strong bitterness in mind as it will work against his most of the commercial and political programs, to take some steps to maintain the health of the environment.

Natural vegetations, water bodies, covering atmosphere, etc. in their normal conditions are the basic requirements for survival. But, in the disguise of 'development' all these natural factors are modifying very fast and becoming inhospitable for the survival of the biosphere. So, after realization of this dangerous impact of civilization, man is now trying to practice the word 'conservation'! Through different methods of conservation, it is expected that the drastic and sudden changes in the environment could be arrested.

All these ideas led IUCN to take necessary steps to recognize some Biodiversity Hotspot areas and asking government in different countries to establish National Parks, Wildlife Sanctuaries, Ramsar Sites, etc. to protect the biodiversity rich regions of the world. This is one welcome activity. As much as 35 Biodiversity Hotspots from 17 Megadiversity countries against the recognition of only five 'wilderness' regions in the world.

## 10.1. Exploring the Complete Flora:

India is a Megadiversity country and as much as four Biodiversity Hotspots are covering the territory of this country. The District of Darjeeling is a part of the Eastern Himalaya and is located within the IUCN recognized Himalaya Hotspot. At the same time, the richness of the flora of Darjiling Hills is well known but a detailed flora for the district was not available. Earlier works of K.P. Biswas (1966), A.P. Das (1986), and R.B. Bhujel (1996) and the present work are filling this gap. The remaining parts of Darjeeling flora (Algae, Bryophyte, Pteridophyte, Gymnosperms from Plant Kingdom and Fungi] also desire proper attention to work out as early as possible.

The presently enumerated Monocot flora of Darjiling Hills recorded the presence of as much as 768 species which may be considered as a big number as in numerous districts of India hosts even lesser number species considering all groups of plant kingdom.

But, recent works also revealed that the destruction and/or modification of natural habitat in all corners of the district is rampant and uncontrolled. Even the declared biodiversity Protected Areas are not spared.

Looking towards the future, all possible steps are to be taken immediately to conserve the vegetation and flora *in situ* and for the rare elements in *ex situ* facilities.

### 10.2. Changes in Ecosystem Functions:

The changes taking place in land use pattern is very fast. This is forcing the modification of the functioning of the ecosystem.

### 10.3. Requires More Protected Areas:

It is difficult to establish more *in situ* Protected Areas within the periphery of the district. However, immediate steps to be taken to conserve every inch of natural vegetation in the district so that the important biological diversity of this region can be saved.

It is also important to establish many scientifically designed and maintained *ex situ* conservatories in different climatic tiers and in recognized special ecological niches.

### 10.4. Scope of Further Research

'The horizon broadens as more as the higher one is flying' (Anonymous). Finding of pearls in the ocean never ends. The window is just opened for the discovery of the natural wealth of the district. Starting from J. D. Hooker (1849) many sporadic and fractional works has been done on the flora of Darjeeling area. Hooker was followed by Gamble (1875) in the 19<sup>th</sup> century. In the 20<sup>th</sup> century Cowan & Cowan's (1929) account of trees, shrubs and woody climbers of North Bengal was one important contribution which is used even today with appropriate weightage. The incomplete publication of K.P. Biswas (1966) was probably one determined effort to record a complete flora of Darjeeling and Sikkim region, which remained incomplete due to his sudden death. Most of the floras on different parts of Eastern Himalaya (Hara 1966, 1971; Ohashi 1975; Hara *et al* 1978, 1979, 1982; Grierson & Long 1983 – 2001; Noltie 1994, 2000; Pearce & Cribb 2002) also covered the Darjeeling-Sikkim areas. Matthew's (1969, 1981) works on the flora of Kurseong subdivision was also a good floristic enumeration of a small area. In the mean time a number Ph.D. dissertations (Yonzone 1976; Das 1986; Bhujel 1996; Lama 2004; P.C. Rai 2001; U. Rai 2006; Ghosh 2006) have also enumerated the flora of Darjeeling looking from different angles. In the direction of comprehensive documentation of the flora of the entire Darjeeling district, Bhujel (1996) started the work and has compiled the dicotyledonous flora. The present work is complementary to Bhujel's work to complete the Angiospermic flora of Darjeeling.

But, in the flora of Darjeeling other major plant groups (algae, bryophytes, pteridophytes and gymnosperms), fungi and lichens are also equally important and no complete account on these taxa are available. These are to be considered as extremely important and urgent areas of exploratory works.

The researches on NTFPs, biochemical evaluation of edible and fodder plants, changing pattern of vegetation against the climatic amelioration, impact of the establishment of large projects in the hill areas, etc. are some hot problems of the moment those need immediate attention for which whole time involvement of taxonomists is unavoidable.

Documentation of faunal wealth of Darjeeling is also waiting to be explored. There is almost no such concise account on any major taxon of animal kingdom is available.

#### **10.5. Final Note:**

If we fail to conserve the natural habitat of Darjeeling as well as other regions of the entire Himalayan belt, the sustenance of the life on the entire continent will be impossible. With the abrupt change of land-use pattern the climate as well as other ecological factors are changing very fast. This is leading to a very fast climatic amelioration, including fast loss of snow-cover, drying up of glacier-fed rivers, death of present form of vegetation, and, finally the entire area will become unfit for the survival of life.

So, the conservation of natural habitat is to be given topmost priority even accepting the superficial loss of the man. The man need to be little intelligent at least for his own survival.