

Editorial

Animal Migration : Fingerprint of Climate Change in Eastern Himalaya

Hirendra Nath Sarma

Editor-in-Chief

Email: hirendra.sarma@rgu.ac.in

Animal migration from one place to another is a continuous phenomenon in search of food and shelter. The phenomenon recorded starting from human migration from one place to other crossing even thousands of miles across the earth surface. Scientific observations on organism brought into focus the existence of migration not only among human civilization but also various animal species. It has been observed ranging from tiny invertebrates to higher vertebrates both in aquatic and terrestrial habitat. In recent decades, the animal migration has been studied with new insight of scientific thought tracing its origin and causes. The concept of global warming has been changed to Climate Change in 21st Century. Increased temperature, environmental pollution including aerial, terrestrial and aquatic habitat, changed pattern of rainfall and snowfall, forest pattern and ecosystems, natural feeding and breeding ground of animals have been covered under the umbrella of climate change. Scientists are trying to study sensitivity of non human organisms' sense to climate change over a range of period. Thus, climate change and its relation with animals' migratory, breeding and feeding behaviour has been linked as yard stick to determine the over all pattern of "Climate Change" in particular region and as a whole at global level. During last few decades observation on animals' migratory behaviour in different terrestrial and aquatic zone has been recognised and considered as one of the best foot prints and/ or indicator of local as well as global climate change.

Arunachal Pradesh located in Eastern Himalayan region is one of the Biodiversity Hot Spots of the world. It is rich not only in endemic species both flora and fauna, but also of rich diversity of ecosystems and landscape. Ecosystem ranges from high altitude snow covered alpine zone with number of snow covered lakes; coming down to the humid

tropical evergreen forest zone with lakes, rivers, springs, waterfalls, plateaus and narrow valleys. Various eco regions, endemic bird regions enrich this Biodiversity Hot Spot of eastern Himalayan zone. The state experiences extreme cold during which, aquatic ecosystems like lakes and river of high altitude remain ice covered. In these zones, animal migration especially birds and mammals have been recorded in recent years among the scientific community. Some of these species change their feeding and breeding ground within the eastern Himalayan range while some are intercontinental migratory species. The Black Necked Crane visits the western part of the state during winter. Sangti Valley, Chug valley, Zemithang and Shergaon located at high altitude zone above 4,500 feet of mean sea level are the feeding ground of this continental migratory species. The species possesses good sense of temperature, climate, feeding and breeding ground of winter home in Arunachal Pradesh. Similarly, the Talle Valley Wild Life Sanctuary of Subansiri valley is known for its endemic bird area harbouring hundreds of avian species in different altitudinal gradient. There is sharp change of altitude within a narrow mountain range. Seasonal migration of certain avian species from lower to higher altitude and vice versa has been recorded by the scientific community in recent years in Talle Valley Wild Life Sanctuary. These are some examples only. A number of avian species show regional migration in parts of the state in search of nesting and breeding ground.

The Yak is a high altitude mammal domesticated by certain tribal communities of Arunachal Pradesh. Yak is a highly temperature sensitive mammal which prefers high altitude snow covered zone. In eastern Himalayan zone, snow line changes during summer and winter. During summer with increase in temperature, the snow line shifted to higher altitude;

in turn during winter, low altitude zones experience snow fall with low temperature and short day length. According to the local tribal community of Arunachal Pradesh, the Yak possesses good sense of temperature, day length as well as orientation of north-south and east-west direction. The eastern Himalayan Biodiversity Hot Spot harbours more number of

organism ranging from invertebrates to non human primates which behaviour against change of climate need to be studied. Attention shall have to be given to these sensitive organisms, its behaviour and requirements for life in the environment. Conservation of these lives in their own ecosystem is the only roadmap for coexist with changed climate on mother earth.

Hirendra Nath Sarma

Professor of Zoology, Rajiv Gandhi University

Arunachal Pradesh - 791 112, India

Phone : +91 94360 59038