Seminar 2021-22

Departmental seminar on আগামী প্রজন্মের জন্য জীববৈচিত্রের রেখ চিত্র on The occasion of **Bhasha Dibash** by Prof. Anilava Kaviraj organized by Dept. of Zoology" **on 21.02.2022**

Total participants=40

A short report on biodiversity graph for the next generation

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Prof. Edward Osborne Wilson, who died on 26th December, 2021 at the age of 92, is considered as the 'Darwin of the 21st Century' for his contribution in biodiversity research and involvement in biodiversity awareness campaign. No talk on biodiversity is complete without a reference to Prof. Wilson. He presented the 'Island Biogeography Theory' in 1967, which is now taught in Post Graduate course in Zoology throughout the world. Besides writing many books on biodiversity, he edited the first book on 'Biodiversity' in 1988, which played a pivotal role in the 'Earth Summit'- the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992 to start the "Convention on Biodiversity", the first and the only forum at government level to control biodiversity issues.

Biodiversity can be revealed in several ways such as (1) richness of species, (2) genetic diversity of each species, (3) diversity of the habitats of species and (4) the function of each species in the ecosystem. As per IUCN, 18 to 19 lakhs of species have so far been identified, of which approximately 10 lakhs species are only insects, while other invertebrates, vertebrates and plants approximately constitute 3 lakhs, 66 thousands and 3 lakhs species respectively. We do not know how many species remain unidentified. Using a method known as "taxonomic scaling" Mora et al. (2011) predicted a total number of about 87 lakhs of species on this earth including 22 lakhs marine animals.

All animal and plant species undergo a background rate of extinction, which range from 0.1 to 1 extinction per million species per year (**0.1-1 E/MSY**). For mammals this rate is considered as **2 E/MSY**. Due to expansion of human civilization and subsequent destruction of natural habitats of plants and animals by man, the extinction rate has increased to 100 to 2000 times of the background rate. Even under most conservative measure, approximately 900 species of animals became extinct during the last 500 years. As per Intergovermental Science Policy Platform on Biodiversity and Ecosystem (IPBES), a non-govt. organization sponsored by UNEP and IUCN, about 10 lakhs of species are facing the risk of extinction. This prediction is based on species number calculated by Mora et al. (2011) and IUCN calculated rate of extinction for a taxon. The most vulnerable species are *Cycas* among plants and corals and amphibians

among animals. The last two species are victims of global warming. The large bodied animals and specialized species (restricted to specific niche) are more vulnerable than small bodied animals and generalized species.

Are we heading for 6th Mass Extinction?

So far this planet has seen five mass extinctions, when 50-95% of species had been extinct. The last one occurred 65 million years ago. Every time new species evolved and the planet again had become full of species. But due to rapid expansion of cities, industries, roads and agricultural lands since last 500 years, large areas of habitats for plants and animals have been irreparably lost, thereby making evolution of new species extremely difficult. Many authors including Prof. Wilson predicted that unless strong conservation measures are taken we may soon achieve sixth mass extinction. Let us hope for better awareness and conservation programme so that we can slower the extinction rate and save this planet from sixth mass extinction.

References:

Mora et. al (2011). **How Many Species Are There on Earth and in the Ocean?**

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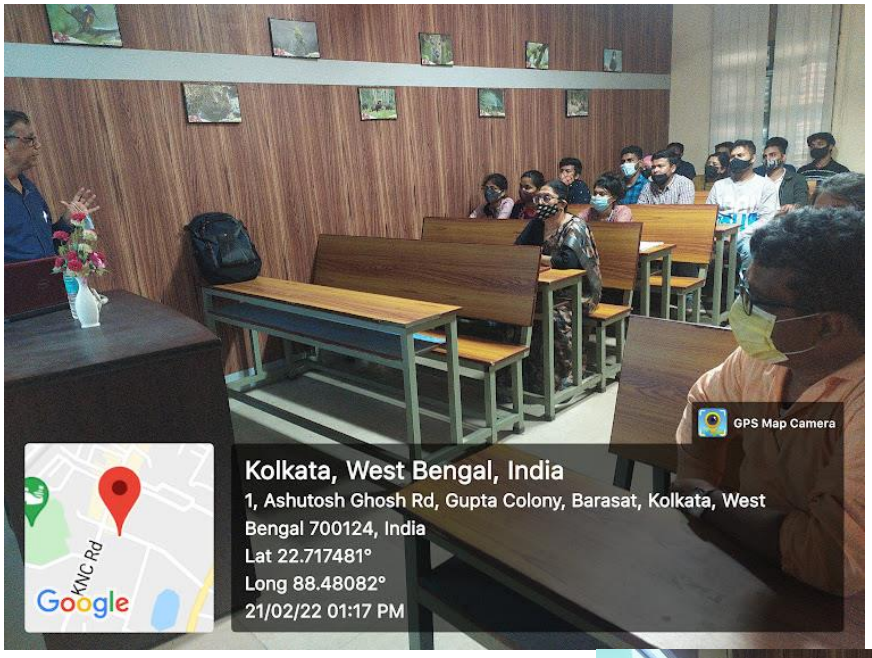
IPBES (2019). The global assessment report on Biodiversity and Ecosystem Services - Summary for Policymakers.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