Protect the endangered species

DR M A BASHAR

ABOUT 200 crores years ago life has originated in the earth, and since then species' creation and species' extinction have been occurring without stoppage. Primack (1997) showed a pyramidal long structure of species' abundance, creation and extinction. In this structure it is found that, the global diversity of species reached an all-time high in the present geological period. The most advanced groups of organisms -- insects, vertebrates, and flowering plants -- reached their greatest diversity about 30,000 years ago. Since that time, however, species' richness has decreased as human populations have grown. Humans have increasingly altered terrestrial and aquatic environments at the expense of other species in their quest to acquire natural resources.

According to Leakey and Lewin (1966), we are presently in the midst of a sixth extinction episode. The first extinction episode was during the Cambrian period and before 500 million years ago. In this episode, 50 percent of animal families, including many trilobites got extinct. The second extinction episode continued during the Ordovician and Devonian period, and it was before 345 million years from now. In that episode, 30 percent of animal families, including agnathan and placoderm fishes and many trilobites were in extinction. The third extinction episode was before 250 million years ago and it was during the Permian period when 50 percent of animal families, including over 95 percent of marine species; many trees, amphibians, most bryozoans and brachiopods, all trilobites were in extinction. In the Triassic period the duration of fourth extinction episode was noticed, when 35 percent of animal families, including many reptiles and marine mollusks got extinct. This episode was 180 million years ago. Before 65 million years, during the Cretaceous period, the fifth extinction episode was evidenced. In this episode, reptiles (dinosaurs); many marine species including many forminiferans and mollusks were found extinct. The sixth extinction episode existed before 01 million years ago and it was during the Tertiary period. In this episode, large mammals and birds were in extinction.

Now, before going to declare a species as "extinct", it requires to be considered in passing through some other stages of threat in nature either by artificial or natural constraints. The constraints bring a species in the "*endangered*" stage. In nature, when species' abundance in an area becomes optimum, and carrying capacity fails to maintain the population pressure then the competition, disease and other factors cause destruction of the population of that species. On the other hand, when reduction in speciespopulation of an area come to the level below the minimum then natural imbalance appears and persists. In this case protection of biodiversity and then saving of the endangered stand essential.

As defined by law, endangered species are those likely to become extinct as a result of human activities and natural causes in all or a major portion of their range, while threatened species are those likely to become endangered in the near future (East - Pilcher, 1996). The term *endangered species* is compared always with threatened species and rare species. The endangered species is a term that legally means any species determined to be reduced to a global population close to or beneath the sustainable level for that species (the level is determined by the scientists, who make the best they can based on the information they have about the species).

Importance of protection of endangered species is the assemblage of many questions on value judgement for the endangered species in nature. These questions are: why we save the endangered species, why we need to rescue endangered species, why we protect endangered species, why we keep away the endangered species from danger, why we preserve endangered species for future

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generation. The questions could be taken under the umbrella of justification of environmental values based on different categories. These categories of justification would be *utilitarian, ecological, aesthetic* and *moral*. Among the categories, utilitarian and ecological justifications are concerned with practical reasons that have to do with human's survival and economic benefit. Of the two categories, utilitarian justification covers some aspects of the environment as valuable because it (environment) provides individuals with economic benefit or is directly necessary to their survival.

Example could be taken from Mawallis (honey collectors in the deep forest) of Sunderbans. Mawallis obtain their livelihood (collection of honey produced by bees in natural colonies in the jungles of the deep forests) from the Sunderban forests to earn a living. Another category of justification is ecological which is based on the value of some factor that is essential to larger life-support functions, even though it may not benefit an individual directly. Botkin and Keller (1995) explain the category with an example in the way that, there is ecological value in dealing with the problem of burning lignite and poor quality coal in Eastern Europe. Thompson (1991) points out that the polluted air that has resulted in parts of Poland, eastern Germany, and the former Czechoslovakia may have shortened human life spans. Botkin and Keller again put an example in the way that, burning coal and oil adds greenhouse gases to the atmosphere which may lead to change in climate that could affect the entire Earth. These ecological reasons form a basis for the conservation of nature that is essentially enlightened self-interest.

Aesthetic category of justification deals with the human appreciation of the beauty of nature. Example could be made in the way that, many people find wilderness scenery beautiful and would rather live in a world with wilderness than without it. The aesthetic justification is gaining a legal basis in the present time. The category of moral justification deals with the belief that aspects of the environment have a right to exist and that is humans moral obligation to allow them to continue or help them to persist. Rolston (1992) gave an example of the category in the way that, Nine Mile Prairie, located near Lincoln, Nebraska -- one of the few remaining prairie preserves -- has a right to exist. Moral arguments have been extended to many non-human organisms, to entire ecosystems, and even to inanimate objects. Nash (1988) discusses moral justification in an article entitled "Do Rocks Have Rights?"

The United Nations General Assembly World Charter for Nature, signed in 1982, states that species have a moral right to exist. The assemblage of the questions introduces the concept of justification which could be divided as given below. This will produce awareness for saving endangered species in the field of nature conservation for future generations.

Utilitarian value
= Utilitarian value with genetic characteristics
= Utilitarian value with chemical and medical uses
= Utilitarian value with crops and products
= Utilitarian value with indigenous people
= Utilitarian value with ecotourism.
= Utilitarian value with medical research.

Aesthetic value
= Aesthetic value with quality of landscape beauty.
= Aesthetic value of nature and its diversity in human existence.
= Aesthetic value with cultural significance.

Ethical value
= Ethical value deals with "Species have moral right to exist".
= Ethical value with human culture religion, and society.
= Ethical value and important economic effect

Ecological value
= Ecological value with global effects.
= Ecological value with conserving forests.
= Ethical value with ecosystem sustenance.
= Ethical value with

Dr M A Bashar is Prof, Department of Zoology, Dhaka University and Pro-Vice Chancellor, Bangladesh Open University.