

EDITORIAL

Environmental degradation and biodiversity

The Zoologist celebrates 20 years of publishing in this volume, keeping the dream of creating a glorious future of the founding fathers of the journal alive. The journal has grown and become stabilized into an annual journal that continues to publish, and so fosters dissemination of research findings of various fields in Zoology and related disciplines including Agriculture, Medicine, Veterinary Medicine, Natural and Environmental Sciences and Science Education.

The theme for this special issue, Environmental Degradation and Biodiversity is to reflect on the damage in the environment particularly by man, its effects on biodiversity and proffer solutions through the many research carried out by various scientists and published in the various articles of this volume.

The environment, a gift by nature to the living has been undergoing gradual deterioration through the activities of man (directly and indirectly) in his quest for survival. Degradation of the environment by man's activities such as deforestation, land reclamation, dredging of water and most devastatingly, pollution of all types of environment has resulted in destruction of the habitats and homes of many plants and animals, killing many and causing many species to become endangered and/or extinct and also rendering the environment unsuitable for many existing species.

Increasing human population has put so much pressure on the environment and its resources, generating so much wastes daily from various activities. Destructive deforestation for wood in the timber industry, overgrazing and over-cropping of arable lands, mining, dredging to create and expand seaports for navigation, sand filling of the oceans, lagoons and inland waters to build and expand cities for habitation by man, disposal of untreated wastes, harmful emissions from industrial activities such as gas flaring and oil spillage in the Niger Delta, bush burning for arable farming have introduced pollutants into the air, water and land to extreme hazardous levels. Environmental degradation is responsible for killing many organisms to the point of endangering their existence and contribute to the extinction of many species. Pollutants have also caused various diseases in man and lower animals as well as plants, and have adversely affected biodiversity (depleting resources), clean water supply, food security (causing food shortages) and air quality in many areas. Sadly, emerging pollutants such as those from cosmetic

and pharmaceutical industries as well as plastics are further compounding the problems from pollution.

Biodiversity has economic, ecological and aesthetic benefits. The economic benefits can be seen in many ways such as commercial, medicinal, industrial and agricultural values; for example, more than 60 wild species have been used to improve the world's 13 major crops by providing genes for pest resistance, improved yield and enhanced nutrition (International Union for Conservation of Nature, IUCN 2012). Biodiversity plays an important role in the way ecosystems function and in the services they provide; for example, a key ecological role of biodiversity is in mitigating climate change by contributing to long term sequestration of carbon in a number of biomes (Hisano *et al* 2018). Biodiversity is of great aesthetic value to humans because whether in protected areas or not, variety of species enhance our appreciation and enjoyment of the environment through leisure activities such as nature trailing and bird watching, safaris and sporting activities. Biodiversity is a great asset to the Tourism Industry, which is the mainstay of a number of economies all over the world.

Biodiversity is known to experience a continued decline at an alarming pace despite its benefits especially over the past four decades (Singh *et al* 2021). This has been attributed to factors like land use and habitat loss, over-exploitation, misguided policies, pollution, diseases, invasive species, climate change and natural disasters (Conceicao *et al* 2022, Singh *et al* 2021, Bedenham *et al* 2022, Groh *et al* 2022 and Simkin *et al* 2022). About a decade ago, World Resource Institute (WRI) reported that about 26,000 plants and 5,400 animals that have been described are threatened with extinction (WRI 1995). More recently, the United Nations reported even higher rates of extinction of species; up to 1 million species of plants and animals are threatened with extinction (UN 2019). The implication of biodiversity loss is that many plants and animals, including many potentially valuable species are on the fast track toward extinction. Biodiversity underpins ecosystem function and services; therefore, biodiversity loss threatens the provision of goods and services provided by ecosystems. It is therefore very imperative to protect the environment and conserve biodiversity to ensure food security, healthy living, adequate habitats and safe environment for existence and protection of species from extinction.



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Biological diversity, ecological integrity and health of ecosystems are three key aspects of life on Earth that are conserved for continuous existence of species (Callicott *et al* 1999). Despite the high professionalism involved in biodiversity and environmental conservation, if the appropriate awareness is created and a commensurate commitment is obtained from humans who are the major drivers of environmental degradation and loss in biodiversity, the trend can be halted and/or reversed.

It is hoped that the many articles published in this Special Volume will address issues and provide vital information that will guide users, policy makers and other stakeholders in the rational utilization of the environment and eventually protect and conserve biodiversity.

We thank all our various authors, reviewers and members of the Editorial and Advisory Boards for their contributions, kind support and untiring efforts to uphold our high standards over the years.

The Zoologist will continue to flourish through the enthusiasm of all stakeholders, as we continue to march forward and uphold the vision of the journal, disseminating original contributions that advance knowledge in Biological, Biomedical, Environmental and related fields and provide solutions to protect and conserve the environment and its resources

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