

MANAGEMENT (FOR BIODIVERSITY) OF SAVANNAHS AND OTHER OPEN HABITATS

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1. Introduction to the Problems

Natural terrestrial ecosystems of the world, whether they are high forests or low vegetation areas, such as grasslands, shrublands, or deserts, are known to present characteristic communities of plants and animals. In the course of evolution, these biota have acquired considerable adaptations that enable them to survive their respective and peculiar physical environments, particularly the climatic and edaphic factors. There is a consensus of opinion among foresters and ecologists that the height of vegetation in each of these biomes is a function of rainfall and soil type, thus there is little doubt that detailed knowledge of macroclimatic characteristics of a given area is a good predictor of the type of vegetation to be found there. The vegetation in turn provides food, shelter (cover), nesting sites, etc., for the animals. Because of the strict interdependencies in the ecosystem, any drastic change in the physical environment or structure of the vegetation would normally culminate in destabilization of the ecosystem, leading to loss of biodiversity. Thus, in general terms, the macro factors affecting Earth's ecosystems (e.g., forests, mountains, and coral reefs) would likely also affect the dynamics and evolution of ecological communities in savannahs and open habitats.

Environmentalists recognize these biological resources as an endowment that should be conserved, because they are of both direct functional value to human beings and wider indirect importance to the maintenance of ecological processes on which human life ultimately depends. To name but a few applications, biological materials have often been useful in the production of medicine or drugs, as food or fodder, or raw material base in some industries. The term that found its root amongst ecologists and conservationists has, in recent times, become a buzzword used by a wide spectrum of environmentalists and policy makers. "Biodiversity" was defined in 1992 in Article 2 of the Earth Summit Biodiversity Convention as "the variability among living organisms from all sources, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems." Analysis of the Earth Summit definition unravels

the fact that the abstract concept of biodiversity aptly encompasses some distinct elements: (a) variety of organisms (i.e., types of taxa); (b) species richness (i.e., the number of species per unit area); (c) species diversity, which in addition to species richness includes the numerical abundance of each species available; (d) ecosystem diversity (i.e., the variety of ecosystems and the complexity and interdependence of interactions within them); (e) genetic diversity (i.e., the biological variation or capacity for variation with each species). Among the various megahabitats, the savannas represent certainly one of the most important, at least on the African continent, because of their notorious and almost unrivaled abundance of charismatic species, including ungulates, elephants, lions, and many others. And, in fact, it is not surprising that the first game reserves and national parks established at the beginning of the last centuries encompassed savanna areas where the density of such game animals was especially relevant. Thus, either historically or scientifically, the protection and management of savannas (and other ecologically equivalent ecosystems) assume a very strong relevance in the contemporary global conservation perspective. Here, I present a short synthesis of the main points related to effective conservation of this prominent environmental type of the African continent.

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Biographical Sketch

Godfrey C. Akani has been a senior lecturer and then professor in Environmental Biology (Ecology) at the Rivers State University of Science and Technology, Port Harcourt, Nigeria. He obtained his first degree in Zoology, at University of Ibadan, Nigeria, and later proceeded to the Rivers State University of Science & Technology where he obtained masters and doctorate degrees. He was appointed Curator, Biological Sciences Museum (RSUST) since 1992, in addition to his academic roles. Over the years his research interest has been on the forest and wildlife ecology of the Niger Delta. He has a considerable wealth of field experience having been involved in a series of environmental impact assessment (EIA) studies of major development projects in Nigeria. Akani has many published papers on the ecology of this basin and is a fellow of the Institute of Vertebrate Zoology, a member of the Nigerian Environment Society (MNES), and a member of the Nigerian Conservation Foundation (MNCF).