

ST. LAWRENCE UNIVERSITY
KENYA SEMESTER PROGRAM
AFRICAN STUDIES 342/ ENVIRONMENTAL STUDIES 342/ BIOLOGY 242
BIODIVERSITY CONSERVATION AND MANAGEMENT IN EAST AFRICA

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INTRODUCTION

Biodiversity, a shortened form of the phrase ‘biological diversity’, refers to the variety and number of living organisms on Earth or parts thereof, along with the living and non-living systems that they depend on for survival. Biological diversity as we know it today is the product of millions of years of evolution, shaped by natural processes and, increasingly, by the influence of human beings. On its part, the term conservation derives from the Latin verb for ‘to keep’ (*servare*). In the most restricted use, the term implies preservation, keeping from harm or damage. In a wider context, it is used more broadly to imply wise use or management of resources. In either sense, the concept relates to the interphase between human beings and a great variety of natural phenomena, including man-made objects like paintings, historic buildings and culture. In the earlier years, conservation in East Africa was seen mainly against the background of the region’s vast wildlife estate, especially the charismatic large mammals and birds. This thinking has been gradually changing to embrace the broader biodiversity concepts that were stimulated by concerns over rapid species loss, particularly since the early 1990s.

Globally, the last century was characterized by exponential human population growth and by scientific and technological output. For the first time in human history, people born around 1950 witnessed the human population double during their lifetimes. By the time the world population hit the six billion mark on or about 12 October 1999, we had already far surpassed the standing biomass of any large animal species that ever existed on earth. By the 1950s, it had become patently clear that human beings could no longer afford to ignore the danger posed by heavy dependence of the economy on the natural resource base. Thus the 1960s heralded the beginning of the first organised attempts to address environmental issues in the development process. This gave rise to a strong environmental lobby. The Worldwatch Institute has recently chronicled the evolution of this environmentalism through to the current muddled debates about sustainable development¹. In the words of Edward O. Wilson², the lobby took it upon itself to hammer the point home that ‘a country that continued to level its forests, drain its aquifers, and wash its topsoil downriver without measuring the cost is a country travelling blind’. This is the worldview that has dominated recent conservation and development thinking.

Eastern Africa is widely recognized as a centre of globally important biodiversity. The oldest protected areas in East Africa were established during the 1890s, not long after the world’s first national park – the Yellowstone which was set up in 1872. Over the years, the conservation doctrine has come to be intricately associated with wildlife and habitats. Concern has been increasing over the effects of human-related pressures on the species richness, diversity and integrity of resources in both protected and non protected areas. Conservation of landscapes and

¹ WorldWatch Institute 2002. The Path to Johannesburg. Excerpt from *May/June 2002 World Watch Magazine* by C. Runyan. and M. Norderhaug.

² E.O. Wilson. The Bottleneck - Excerpt from the manuscript of his book: *The Future of Life*. Scientific American, February 2002.

ecosystems (e.g. forests, wetlands, marine and coastal areas) for their own sake is a more alien idea and, in this part of the world, only wins appeal when seen against the extractable resources they harbor.

Conservation Biology, the discipline that forms the basis for scientific approaches to conservation, has deep roots in East Africa. Its development drew heavily on a rich blend between decades of research and traditional knowledge that predates all modern science. Indeed, one could say that the latter is responsible for the relatively intact biota that still typifies large parts of East Africa, and the continent at large. A quick glance at the literature leaves no doubt about East Africa's contribution to the development of conservation theory and application which, unfortunately, now resides in western libraries and resource centers³ - out of the reach of most ordinary people.

So much written about the environment, status and loss of biodiversity conveys unremitting doom and the sense that time is running out. The problems are indeed serious, particularly when we acknowledge that the causes of this loss of biodiversity is the range of human activities that alter, damage and destroy natural habitats to suit human desires. Currently, approximately 40% of the total net primary productivity of the terrestrial environment is used or wasted in some way by humans around the globe. Research has shown that genetic variation is being lost even in domesticated species as farmers abandon traditional land use practices in favor of high tech commercial ventures. With increasing frequency we read and hear about mysterious decreases in or disappearances of living organisms. Often the organisms are reptiles, fish, birds or mammals - what we commonly refer to as wildlife. Land use changes pose the single most potential threat to conservation of natural resources especially wildlife in East Africa. This threat emanates from overlapping land tenure, socioeconomic and cultural issues as well as political influences.

Consequently, there is need to gain an insight into the contributory elements of increased human encroachment into the biodiversity hot spot areas such as protected areas including national parks and forest reserves in order to determine the future of biodiversity conservation and management.

To enlist peoples' support for biodiversity conservation, both inside and outside protected areas, an understanding is required of the relationship between communities living adjacent to protected areas and the conservationists. A growing consensus of feeling that natural resources conservation requires greatly increased involvement of local communities is necessary. Public participation and involvement is viewed as a prerequisite for reducing the conflicts between local people and natural resource managers. Co-management with communities and provision for tangible benefits to local communities are among the mechanisms advocated for reducing conflicts. Garnered by whatever means, the acceptance and support of local people are especially important for the long-term sustainability and security of natural resources.

PURPOSE OF THE COURSE

This course is designed to arm the learner with skills and knowledge in tropical biology and to ideas on ways of slowing down or reversing the rapid loss of biological diversity in East Africa. It evaluates the efforts and approaches being undertaken by governments, conservation

Examples include the Miombo Program at Virginia Tech, the CRSP at Colorado State University, large collections at the Smithsonian, Field Museum of Chicago, Belgian, British and German museums etc

organizations and communities in East Africa to improve the environment while trying to uplift the living standards of the people. It explores the social, cultural, economic and political context of the relationship between humans and the natural resources, to appreciate present and future biodiversity management particularly in East Africa. The course will examine influences of the policy framework, local community participation, international influences, economic conditions natural resource potentials and constraints, and constraints and regulation on human-wildlife interactions. Biodiversity conservation in Kenya and East Africa is examined in the context of other competing land use alternatives in which its potential contribution to elevating local livelihoods is considered.

LEARNING OBJECTIVES

This course will expose the learner to East Africa's rich biological and physical diversity and the interplay between them and socio-economic and managerial factors. It will afford the learner an opportunity to evaluate the implications of actions, or lack thereof, being taken by different players at the local, national and regional levels in order to conserve and sustainably manage the region's vast biological resources. At the end of this course, the learner should be able to:

1. Describe and distinguish the biodiversity and ecosystems of East Africa as they relate to the rest of the world.
2. Understand the classification of the East African ecosystems, the different types of threats and their levels and challenges facing biodiversity conservation.
3. Appreciate the strengths, weaknesses of different approaches to conservation and management of biodiversity in East Africa.
4. Realize the challenges posed by human impacts on species and ecosystem viability.
5. Understand land tenure regimes and policies and appreciate the complexity of human-wildlife conflict and wildlife conservation issues in general.
6. Examine successful and unsuccessful models of participatory natural resource conservation.
7. Understand the constraints to conservation of natural resources among resource - poor rural populations, and show how the economic, socio-political and cultural context of local community influences possible solutions to biodiversity conservation.

LECTURE LIST

Course overview

Threats to biodiversity in East Africa

Approaches and history of conservation, management of biodiversity in East Africa

Categories of protected areas and their management

Raptor conservation issues

Ecology of tropical ecosystems: savannas and woodlands

The island biogeography theory

Implication of island biogeography theory on the design and management of African Parks

Effects of insularization: case study of Lake Nakuru National Parks
History of human-wildlife conflicts in Kenya and East Africa

Land and resource tenure regimes in Kenya

Community based conservation: ecological and socio-economic considerations

Tourism Industry in Kenya: Eco- Tourism Conservation or Economics?

International Issues in Bio-Diversity Conservation CITES and Ban on Ivory Trade

Game cropping and the bush meat trade

The ethics and management of sport hunting

COURSE ASSESSMENT

Assessment will be based by two analytical papers on a topic chosen by the students (60%), group presentations (30%) and class participation (10%).

Analytical Papers (60%)

The papers are both factual and analytical. Students are free to choose any topic related to biodiversity conservation in East Africa as long as it is not identical to the two group presentations topics. At the beginning of your paper, make your theme/topic very clear to your reader; what are you discussing? Remember that a paper needs a title, an introduction followed by the presentation of your data and arguments, and ending with a conclusion. Do not shy off from giving your personal opinion, presenting your own arguments and, giving recommendations and solutions. The paper should be 5 – 8 pages long, typed and double spaced and typed. Your arguments should be supported by specific references to published and unpublished sources.

Group Presentations (30%)

- Each student will choose two topics, one from the first three topics and the second from the last three.
- Students who chose the same topic will work as a team to prepare a 30 - 40 minutes presentation to the rest of the class followed by a 30 - 40 minutes discussion by the class.
- The first part of the presentations is factual and the second part is analytical.
- Presenters are encouraged to present their own views as long as they are supported by solid facts. If the team is divided on the issue, the presentations could take a debate's format.
- Team members are encouraged to prepare, discuss and share roles of their presentations well in advance. The entire team will receive the same grade for each presentation. Grading is based on the level of preparedness, the presented facts, quality of the presented material, strength of the arguments and ability to answer student and staff questions.
- For each presentation the entire class is required to do one or two required readings. However, each presenting team will be provided with extra reading material and they are also encouraged to use outside literature sources.

List of group Presentations Topics

1. Culling, birth control or translocation? Compare and contrast their positives and negatives.
2. Are game cropping and sport hunting means of destroying or conserving wildlife?
3. What are the major successes and shortcoming of community conservation initiatives in Kenya, East Africa and the rest of Africa? How can the shortcomings be overcome?
4. Is CITES a workable convention? Has it succeeded in curbing illegal trade of elephants and other endangered species? Should trade on products of wildlife species be banned or allowed on sustained yield bases?