

**WILDLIFE TOURISM AND SUSTAINABLE
DEVELOPMENT: A CRITICAL SPATIAL ANALYSIS OF
RANTHAMBHORE TIGER RESERVE IN INDIA AND
KRUGER NATIONAL PARK IN SOUTH AFRICA**

*Thesis submitted to Jawaharlal Nehru University
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DOCTOR OF PHILOSOPHY

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DECLARATION

I declare that the thesis entitled “Wildlife Tourism and Sustainable Development: A Critical Spatial Analysis of Ranthambhore Tiger Reserve in India and Kruger National Park in South Africa” submitted by me for the award of the degree of Doctor of Philosophy of Jawaharlal Nehru University is my own work. The thesis has not been submitted for any other degree of this University or any other university.

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CERTIFICATE

We recommend that this thesis be placed before the examiners for evaluation.

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TO MY PARENTS

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Preface

The present study is an attempt to look into the changing and evolving role of the wildlife tourism in a sustainable manner. For this purpose a comparative study of two national parks of two different countries but in a similar climatic condition has been undertaken, Ranthambhore Tiger Reserve in India and Kruger National Park in South Africa, to identify the spatial analysis. The study also deals with the outlook of the local people around the parks and their understanding of importance of wildlife in two different socio-economic set up.

Tourism is internationally regarded as one of the world's fastest growing industries. Wildlife tourism is a part of this industry which has gain its popularity as people are more interesting to go to parks to see the wild animals in their natural habitat. Wildlife tourism is basically an interaction between the wildlife and the human beings. It has its advantages and disadvantages. Thus wildlife tourism plays an important role in creating public awareness about nature conservation or excessive tourism can lead to unhealthy changes in the wildlife habitat and any result in change of behaviour of wildlife animals.

The transformation of the South African National Parks from an institution of colonial to community-based conservation is part of the wider project of transforming South Africa into a just, democratic, and non-racial society. Regarding this, Kruger sets an example to others parks for its management and wildlife related policies.

Both the parks, Ranthambhore and Kruger have rich biodiversity. A large species of both flora and fauna is present in these two parks but there have been some fundamental differences in the policy initiatives, local population behaviour and success in conservation of the wildlife resources in both countries.

Based on these premise the work has been divided into five chapters.

The first chapter is Introduction, which deals in depth the evolution of definition and concepts like Tourism, Wildlife Tourism and Sustainable Development. Since National Park is a part of the wildlife tourism which in itself is a broader term includes all other section of wildlife based tourism like Ecotourism, Protected Areas, Parks, Sanctuaries and wildlife tourism itself. Besides this the chapter also deals with the

evolution of parks, cost and benefit of the parks, economic importance of the wildlife, protected areas, parks and sanctuaries. It also analyses the management of the wildlife resources, influences of ecology on conservation and also the constitutional protection for the wildlife.

The second chapter is India specific where the study area is Ranthambhore Tiger Reserve, which includes other two parks Sawai Man Singh Sanctuary and Keladevi Sanctuary, apart from the Ranthambhore National Park (RNP). Since the study area is more concentrated in the area around RNP so it deals with the area of Ranthambhore. A detailed analysis of national park has been undertaken beginning with the historical aspect, how the concept of wildlife in India evolved right from the ancient period to the present. Physical aspects include relief features, physiography, geology, climate, hydrology and vegetation of the park. Role of wildlife related policies and issues, economic development and implication of wildlife tourism and Wildlife Act initiated by the Government of India in order to save its dwindling wildlife resources have also been studied in details. The ecological development around the park and use of forest resources have also been studied. Guidelines given by the Govt. and problems related with RNP and its impact on locals has been highlighted.

Similarly, third chapter deals with the Kruger National Park of South Africa. The chapter begins and deals with early conservation in Africa in general and its evolution over the years. It also looks into the history of national parks in Africa and South Africa. The creation of Apartheid Parks and Ecotourism, and evolution of Kruger through different phases have been discussed in this chapter.

Moving ahead the chapter takes into account the geographical aspects. The study of Topography, Climate, Vegetation, Geology is undertaken as these physical parameter are the prime factors which determine the biodiversity of any region. The chapter deals further with the changing management through interventions and changing government. It dwells on the park, its journey and its broader role in generating economic and aesthetic values.

Chapter fourth is the comparative study of both the national parks, which start with the threats to existing national parks. In the beginning the chapter deals with the Kruger Parks and its management policies like fire management, biodiversity

maintenance etc. Land use pattern has been studied in the historical background of Makuleke tribe. Community involvement in the park activities and tourism has been discussed in details in this chapter. The second portion deals with the Ranthambhore National Park and threats to it. Local people around the park and their contribution to the wildlife and park officials have been studied in details. The chapter also analyses the management of the Parks in India with special reference to Ranthambhore and its impact on wildlife tourism. The last section deals with the primary survey which has been carried out in the RNP and villages situated around the parks, which shows the exact picture of the local people participation in the park activities. It also shows that how much the management and policies of the parks officials have benefited them and how much they owe form the park. All these have been presented through the analysis of data and diagrams.

The last chapter is the conclusion one, which is a consolidated finding of all the chapters. In the concluding part the main emphasis is on the present scenario and the future of the parks. Both the parks have different socio-economic characteristics and changing attitude of the people towards the parks. Ranthambhore National Park is still in its developing phase to make itself in a world-renowned Kruger National Park.

The uniqueness of this study lies in the policies and management followed by the Kruger National Park and a passion for work of its staff. But at the same time the intensity of crime also keep away the tourist from this park. I had only fifteen days field trip and due to this crime, I could not conduct my primary survey around the park villages. In spite of these limitations, I collected materials from the Parks and done a general survey of the staff, tourists and some local people inside the park. It is due to hard work and sincere efforts that present study has come out in the shape of thesis.

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Chapter I

Tourism, Wildlife Tourism and Sustainable Development: Conceptual Framework

Man is one of the most precious creations of nature. He has mastered nature for his comforts. Unfortunately he has also acquired the notion that he is at the centre-stage of the universe and all other forms of life are ordained to sub serve his interests. He has assumed that the whole universe exists for him and his happiness is the ultimate objective of the creator of the universe. This vain attitude has led to unlimited exploitation of nature by him for his pleasure and comforts. He is responsible for upsetting the ecological balance. It is due to his recklessness that large forest areas have been destroyed and as a result wildlife has been gravely endangered¹.

We should think back 125 years when we complain about lack of political concern with the environment, to the time when the first national park was established, and be thankful for what we have. Then, there were no environmental legislation, no environmental organizations, and almost no ecological concern. There were, of course, far fewer people in the United States, only about 40 million in 1872, but they were capable of immense destruction with no environmental laws or ethics to stop them. The entire natural landscape had little value for most people, and without the environmental consciousness that came with the national parks movement; the nation would be far bleaker than it is today.

Over the last one hundred and ten years, a system of national parks and protected areas has evolved. This important conservation effort has provided many benefits, and is the foundation on which we must continue to build. Endangered species have been brought back from the edge of extinction, some to harvestable levels, but for many others, the future still looks uncertain².

Nature is indeed mysterious and fascinating. Each constituent performs definite functions useful to others and keeps the universe in order. The western concept of Protected Areas (PAs) has narrowed down our vision of PAs as being untouched and pristine wilderness. But this view was based on ignorance of the historical relationship between people and their habitat, and of the role people play in maintaining biodiversity in forests, wetlands and grasslands. The dominant conservation ideology has

¹ Bisht, R.S. (2002), *National Parks of India*, , Ministry of Information and Broadcasting , Government of India, New Delhi, Publication Divisions.

² Stracey, P.D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture, Dept of Agriculture, Faridabad: Government of India Press.

erroneously held that people's interference is necessarily damaging to natural ecosystems, and therefore they should be kept away from PAs and excluded from policies deciding the management of PAs. As a result, conflicts have been growing and conservation goals have been threatened³.

Nearly 20 per cent of the planet is inhabited by indigenous or ethnic peoples, mainly on land where they have lived for thousands of years. In the past, the general belief was that protected areas (PAs) were places where boundaries of protection were established, and from where people were kept out or removed. Today as population pressures increase and the rights of indigenous people and local communities gain recognition and respect, an expanded approach to PAs is emerging⁴.

The modern wildlife movement's history really starts from the International Conference for the Protection of Nature held at Paris in 1931 which led to the formation of the I.U.C.N. (International Union for the Conservation of Nature). This was followed by the International Conference on African Fauna held at London in 1933 which resulted in the London Convention for the Protection of the Fauna and Flora of Africa (1933). After the last war and in collaboration with the U.N.E.S.C.O. (United Nations Economic, Social and Cultural Organisation), The I.U.C.N. General Assembly met at Paris in 1948 and at Finland in 1952, such general meetings alternating with meetings of its Technical Committee. In 1953, the Second International Conference on African Fauna was held in the Belgian Congo⁵.

Yellowstone Park-the world's first "national park", Congress established on March 1, 1872, more than two million acres located mostly in the northwest corner of present-day Wyoming-to be preserved and managed by the federal government for the enjoyment and benefit of the people. The origin of the national park idea-who conceived it, and whether it was inspired by altruism or by profit motives-has been disputed⁶.

³ Bisht R.S. (2002), *National Parks of India*, Ministry of Information and Broadcasting, Government of India, New Delhi: Publication Divisions.

⁴ Saloni, Suri (1996), "People's Involvement in Protected Areas: Experiences from Abroad and Lessons for India", in Kothari Ashish et al. (eds.), *People and Protected Areas- Towards Participatory Conservation in India*, New Delhi: Sage Publications.

⁵ Stracey, P.D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture, Dept of Agriculture, Faridabad: Government of India Press.

⁶ Sellars, R. West (1997), *Preserving Nature in the National Parks- A History*, London: Yale University Press.

Today, Sustainability is the key word for environmentalists, or for that matter anyone who cares about the future of this planet. At one time it may have been possible to live off the capital of the land, to leave the world a little less able to support those who came afterwards; now we have to find a sustainable lifestyle to have any hope at all for the future. Yet, with so many people of the world living in grinding poverty, sustainability becomes an almost impossible dream⁷.

A major form of outdoor recreation is Wilderness travel. More and more people are discovering the ultimate delight in the out-of doors, where the landscape is unmarred by roads, buildings, and the crush of people. In the national parks, wilderness begins just beyond the shoulder of the road and can be enjoyed by visitors the minute they enter park boundaries. Outside the national parks, roads invariably mean development, whether cutover forests, mined hillsides, or dammed streams. To the park motorist, roads seem numerous, but by far the greatest acreage in most national parks is road less.

Human beings, in their quest for economic development and improvement of the quality of life, must come to terms with the reality of resource limitation and the carrying capacity of ecosystems, and must take account of the needs of future generations. The three specific objectives of conservation as presented in the Strategy are; to maintain essential ecological processes and life support systems; to ensure that any utilization of species and ecosystems is sustainable; and to preserve genetic diversity⁸.

Protected areas play an obvious and central role in implementation of the Strategy, in terms of the achievement of its three principal objectives. They play a key role in the maintenance of many ecological processes and life support systems; for example, the role of protected forests in the maintenance of water cycles is obvious and well known. Protected areas are essential for the maintenance of genetic diversity and protected areas also contribute to assuring that utilization of species and habitats is

⁷ O'Brien, R. Bob (1999), *Our National Parks and the Search for Sustainability*, U.S.: University of Texas Press.

⁸ McNeely A. Jeffrey & Miller R. Kenton (1984), *National Parks, Conservation & Development, The Role of Protected Areas in Sustaining Society*, Gland, International Union for Conservation Nature and Natural Resources.

sustainable by providing benchmark areas against which changes in the productivity of adjacent managed areas⁹.

The various categories of protected areas and various types of management approaches are meeting the needs of countries of all economic, social, cultural, ecological and political backgrounds. Part of our challenge is to learn from this diversity and to develop the diversity of tools and methodologies needed to assure that parks and protected areas do indeed contribute to implementation of the World Conservation Strategy.

Parks and reserves have been seen in many countries as a key mechanism in maintaining the life support systems necessary for human survival and to meet human aspirations. Increasingly, parks and reserves are recognized as basic elements in balanced resource management. In this context, as in their role in tourism, they have economic importance.

The first practical expression of a changing position is to be found at the time of Asoka. In his Fifth Pillar Edict of the 3rd century B.C., there were laws to protect fish, game and forests. The age of exploitation had dawned. From now on wild life was to experience an ever-increasing pressure. The Moghuls were great hunters of animals and birds, while still retaining a keen interest in nature for its own sake and their concept of management was one of the chase. As in Europe game was protected in hunting preserves for the pleasure of kings and princes, a tradition which was handed down to the time of the British¹⁰.

For many years it has been the aim to separate wildlife from livestock and cultivation. In 1933, the Convention Relative to the Preservation of Fauna and Flora in their Natural State was signed in London and this convention called for the creation of National Parks. National Parks were to be large areas where hunting would be prohibited and which would be set-aside for perpetuity. Before then, reserves had been set aside for wildlife, for example, in South Africa and some large game hunters at the time thought

⁹ Tablot, M. Lee (1984), "The Role of Protected Areas in the Implementation of the World Conservation Strategy", in McNeely A. Jeffrey & Miller R. Kenton (eds.), *National Parks, Conservation & Development, The Role of Protected Areas in Sustaining Society*, IUCN, Gland, International Union for Conservation Nature and Natural Resources.

¹⁰ Stracey, P.D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture, Dept of Agriculture, Faridabad: Government of India Press.

that people and wildlife could co-exist. Furthermore, there is every expectation that the national parks might someday represent one of the largest areas of sustainable use in the world¹¹. Since that time National Parks have been created all over Africa and some wildlife has survived outside the protected areas. Yet, both in the Parks and outside of them, wildlife is decreasing in high numbers in many African countries¹².

The Indian Board of Wild Life has defined a wild life sanctuary as "an area where killing or capturing of any species of bird or animal is prohibited except under orders of the competent authority and whose boundaries and character should be sacrosanct as far as possible". The board has further clarified the position by stating that while the management of sanctuaries does not involve suspension or restriction of normal forest operations, it is desirable to set aside a completely sacrosanct area within a sanctuary to be known as "Abhayaranya". It has also indicated that sanctuaries should be made accessible to the public.

Similarly the board has defined a National Park as "an area dedicated by statute for all time to conserve scenery, natural and historical objects of national significance and wild life, and where provision is made for the enjoyment of the same by the public"¹³. While the principles underlying a wild life sanctuary and a national park are essentially the same, *i.e.*, maximum protection, the fundamental difference is that a Sanctuary is created by order of a competent authority, who may be the Chief Conservator of Forests or Minister of a State, while a National Park is created and correspondingly can be abolished, mutated or changed, only by the legislature of a State. The status and degree of permanency and protection is, therefore, much higher in a national park than in a sanctuary.

Tourism-Led Local Economic Development: The International Experience

Tourism is growing in significance as a lead sector for Local Economic Development (LED) in many developed countries. Indeed, in an international overview that "tourism is widely recognised as an instrument of local economic development". A

¹¹ O'Brien, R. Bob (1999), *Our National Parks and the Search for Sustainability*, U.S.: University of Texas Press.

¹² Prins, H. T. Herber and Jan Geu Grootenhuis (2001), "Introduction: The Value of Priceless Wildlife" in Prins, H. T. Herber et al. (eds.), *Wildlife Conservation by Sustainable Use*, Boston / London: Kluwer Academic Publishers.

¹³ Stracey, P.D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture, Dept of Agriculture, Faridabad: Government of India Press.

discernible trend across many developed countries is for LED initiatives to be anchored on promoting localities as centres of consumption rather than production, applying a tourism led approach to LED. Within Africa, South Africa currently offers the best and most innovative examples of the application of tourism-led LED. Indeed, across the developing world, it is acknowledged that post apartheid South Africa is a pioneer and innovator in the planning and practice of LED. In common with the experience of both North America and Western Europe, the major sectoral focus in South African LED interventions hitherto has been upon the manufacturing sector with a host of programmes geared to support localities as competitive centers for production: Nevertheless, with the new recognition accorded to tourism as a potential economic driver for the South African economy in the 21st century, tourism-led LED is firmly established on the local policy agenda¹⁴.

Although tourism is increasingly recognised as an important focus for national economic development planning not least in Africa at the local level, the potential for tourism to be an engine for economic expansion has largely passed unnoticed, until recently. Tourism was sought because of the positive impacts that it could offer for local economics, in terms of job creation and enterprise development. In particular, in a context of global restructuring and de-industrialisation, tourism offered opportunities for the renewal of urban economies that were in decline. In addition, tourism also played a wider role by helping to remould the image of these locations.

Finally, during the 1990s, many declining coastal resort areas of Western Europe began to re-engage with LED initiatives to rejuvenate seaside tourism and to aggressively compete with the newer tourism destinations. Overall, long seen as only a 'hit part' or 'minor' industry in terms of rural development, tourism has now assumed centre stage as a key component in LED strategies in several developed countries.

The origin of sustainable development

In contemporary terms 'Sustainable Development' is usually credited to the Brundtland Report, officially the report of the World Commission on Environment & Development (WCED 1987). Origin of 'sustainability' as opposed to 'sustainable

¹⁴ Rogerson, M. Christian (2004), "Tourism and Uneven Local Economic Development: The experience of Route Tourism In South Africa", in Rogerson, M. Christian & Visser, Gustav (eds.), *Tourism and Development Issues in Contemporary South Africa*, Johannesburg: African Institute of South Africa.

development' lie in concerns over conservation and can be traced back to the conservation movement of the mid-nineteenth century.

Sustainable development has been proposed as a model that can have utility in creating the impetus for structural change within society, one that venture away from a strictly socio-economic focus to one where development "meet the goals of the present without compromising the ability or future generation to meet their own needs"¹⁵

The concepts of sustainable development as discussed in the Brundtland Report (WCED, 1987) is a holistic one, and this element is at the heart of successful adoption of the concept. To talk of sustainable tourism in the sense that tourism can achieve sustainable development independently of other activities and process is philosophically against the true nature of the concept, as well as being unrealistic. Thus call for sustainable tourism to be developed irrespective of whether other, interrelated, segments are to be sustainable or not is inappropriate and contradictory¹⁶.

Sustainable Development first originated in the World Conservation Strategy published in the World Conservation Unit in 1980¹⁷. The fact that the government, international lending agencies, non-government organization, the private sector and academia can adopt the term sustainable development. Some of who could be viewed as having divergent and politically opposed objectives, is an ambiguity permits a variety of perspectives to be taken on sustainability. Much of this ambiguity can be traced to the most commonly quoted definition of sustainable development taken from the Brundtland Report.

The origin of sustainable development:

- Term can be traced to the conservation movement of the mid-nineteenth century.
- Establishment as a policy consideration in the World Conservation Strategy published by the World Conservation Union in 1980.
- Term gains greater attention and popularity after the publication of the Brundtland Report (1987).

¹⁵ International Union for the Conservation of Nature (1994), *Guideline for Protected Area Management Categories*, Cambridge: World Conservation Monitoring Centre, Gland: IUCN.

¹⁶ *ibid.*

¹⁷ Kothari, Ashish et al. (1996), *People and Protected Areas, Towards Participatory Conservation in India*, New Delhi: Sage Publication.

- ‘Earth Summit’ 1992 Rio de Janeiro, adopted ‘Agenda 21’ aimed at promoting sustainable development throughout the world¹⁸.
- Tourism is recognized as an economic sector that needs to develop sustainably at ‘Earth Summit II’ in 1997 at New York.

It is important to realise that sustainable development is not concerned with the preservation of the physical environment but with its development based upon sustainable principles. Emphasis is therefore placed upon the conservation of the resources base rather than the preservation of individual flora and fauna. In terms of the application of the concept of sustainable development to tourism, varying perspective have been adopted which are a reflection of the wider political debate about sustainable development outlined in the preceding section¹⁹.

A broad differentiation can be made between ‘Sustainable Tourism’ in which emphasis is placed on the customer and the marketing considerations of tourism to sustain the tourism sector, and using tourism as a vehicle to achieve sustainable development in which emphasis is placed on developing tourism as a means to achieve wider social and environmental goals. Therefore, ‘Sustainable Tourism’ will not necessarily equate with the aim and objective of sustainable development²⁰.

Development cannot take place upon a deteriorating environment resources base; neither can the environment be protected when development excludes the cost of its destruction. The main aim of the sustainable development is poverty alleviation that is satisfying the needs of the world’s population but achieving this in a way that does not threaten the earth’s resources nor the ability of future generation to satisfy their own needs.

Community in the sense of sustainable development focuses on the primary and quality of relationship among the people sharing a particular place and between the people and their environment, particularly their immediate environment. Sustainability, in the sense of community development is the act of generation saving options by passing

¹⁸ *ibid.*

¹⁹ Maser, Chris (2001), *Sustainable Community Development: Principle and Concepts*, Delray Beach, Florida: St. Lucie Press,

²⁰ Ildos, Angela,S. and Bardelli, G. Giorgio (2001), *The Great National Parks of the World*, New Delhi: Om Book Service.

them to the next generation, which saves options by passing them to the next generation and so on. Sustainability will demand a shift in personal consciousness from being self-centered to being other centered²¹.

Sustainable Development is a nonlinear process of system thinking through which the social significance of nonmaterial wealth, qualitative values and the heritage of both cultural diversity and identity can be accounted for in social decision making²². In this context, sustainability has at least ten essential elements:

1. Understanding and accepting the inviolate physical principles governing Nature's dynamics.
2. Understanding and accepting that we do not and cannot manage nature.
3. Understanding and accepting that we make an ecosystem more fragile when we alter it.
4. Understanding and accepting that we must reinvest in living system even as we reinvest in business.
5. Understanding and accepting that only a unified systemic worldview is a sustainable worldview.
6. Accepting and ignorance and trusting our institution, while doubting our knowledge.
7. Specifying what is to be sustained.
8. Understanding that sustainability is a continual process, not a fixed end point.
9. Understanding, accepting and being accountable for intergenerational equity.
10. Understanding, accepting and being accountable for ecological limitation to land ownership and the right of private property²³.

As a concept for joining development with environment concerns, Barbara Ward apparently used the term 'sustainable development' already in the mid 1970's. Dennis Pirage contributed to spread the concept further in his anthology on the sustainable society in 1977, and the International Union for the Conservation of Nature (IUCN) made

²¹ Redclift, Michael (1987), *Sustainable Development, Exploring The Contradictions*, London and New York: Methuen publishers.

²² Richard, M. Auty and Katrina, Brown (1997), *Approaches to Sustainable Development*, London: Pinter Press.

²³ William, M. Lsferty and Katarina, Eckerberg (1997) forwarded by John Gummer MP, " From the Earth Summit to Local Agenda 21: Working Towards Sustainable Development. Gland: ICUN.

it a central idea of its World Conservation Strategy in 1980²⁴. In turn the expression and viability of these ten elements depend on four human relationship and two questions; the relationship are

- (1) intra-personal
- (2) interpersonal
- (3) between people and the environment and
- (4) between people in the present and those of the future.

Development, in the context of sustainability, is a process of directing change, of social maturation if you will. Development as social maturation is a psychological transformation, which causes people to voluntarily reach beyond the immediacy of self-centeredness in a conscious effort to be accountable for the effect decision may cause in the future. Development thus becomes a process of change guided by the principle of social and environmental justice for all living things, not just humans, present and future²⁵. Sustainability means that development programs must, to the extent possible, integrate the local people's requirements, desires, motivation and identity in relation to the surrounding landscape.²⁶

The concept of sustainable development

The concept of sustainability first came to public attention with the publication of the World Conservation Strategy (WCS) in March 1980 (IUCN 1980). The WCS was prepared by the International Union for Conservation of Nature and Natural Resources (IUCN) with the assistance of the United Nations Environment Education Programme (UNEP) World Wildlife Fund (WWF), the Food and Agriculture Organisation of the United Nations (FAO) and the United Nations Educational, Scientific and Cultural Organisation (UNESCO). The WCS was a strategy for the conservation of the Earth's living resources in the face of major international environmental problems such as deforestation, desertification, ecosystem degradation and destruction, extinction of species and loss of genetic diversity, loss of cropland, pollution, and soil erosion. The WCS was developed by a combination of government agencies, non-government organisations and individual experts from over 100 countries.

²⁴ ICLEI (2000) International Council for Local Environmental Initiatives. UNCSD.

²⁵ Well, M.P. and K. Brandon (1992), *People and parks: Linking Protected Area Management with Local community*, Washington, DC: The World Bank/ WWF/USAID.

²⁶ Maser, Chris (2001), *Sustainable Community Development: Principle and Concepts*, Delray Beach, Florida: St. Lucie Press.

The notion of sustainable development espoused in the WCS emphasized the relationship between economic development and the conservation and sustenance of natural resources. The WCS was also significant in that it represent the halfway mark between the 1972 United Nation Stockholm Conference on the Human Environment and the 1992 UN Conference on Environment and Development (UNCED) in Rio de Janerio²⁷.

The WCS defined conservation as 'the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations'.

The WCS had three specific objectives

1. To maintain essential ecological processes and life-support system (such as soil regeneration and protection, the recycling of nutrients, and the cleansing of water), on which human survival and development depend;
2. To preserve genetic diversity (the range of genetic material found in the world's organisms), on which depend the breeding programmes necessary for the protection and improvement of cultivated plants and domesticated .Inimals, as well as much scientific advance, technical innovation, and the security of the many industries that use living resources;
3. To ensure the sustainable utilization of species and ecosystems (notably fish and other wildlife, forest and grazing lands), which support millions of rural communities as well as major industries²⁸.

In many ways, there was nothing new in this idea as it had been at the core of much of the conservation debate for many year. However, what was significant was the manner In which the report highlighted the global nature of environmental problems, emphasised the significance of the environmental-economic development relationship in the relationship between the developed and less developed countries (the North South debate), and provided a basis for some government and private sector response, albeit limited, to the problems and issues identified in the report.

The WCS was also significant in that it represented the halfway mark between the

²⁷ Andrew, Holden (2003), *Environment and Tourism*, London: Routledge.

²⁸ Hall, C. Michael & Lew, A. Alan (1998), *Sustainable Tourism: Geographical Perspective*, England: Pearson Education Limited.

1972 United Nations Stockholm Conference on the Human Environment and the 1992 UN Conference on Environment and Development (UNCED) in Rio de Janeiro (often referred to as 'the Rio Summit'). In a very real sense, the WCS can be regarded as a belated child of the Stockholm Conference, as one of the institutional results of the meeting was the establishment of the UNEP, which had substantial influence on the formulation of the WCS. In addition to assisting in the development and promotion of the WCS, the UNEP promoted the idea of the creation of a World Commission on Environment and Development (WCED) at its ten-year review conference in 1982. In 1983, the Commission was created as an independent commission reporting directly to the United Nations Assembly, with Gro Harlem Brundtland, then parliamentary leader of the Norwegian Labour Party, being appointed as its chair. It was not until the publication of the report of the WCED in 1987, *Our Common Future* commonly referred to as the Brundtland Report, that sustainable development entered into the popular lexicon. Five basic principles of sustainability were identified in the report²⁹.

1. The idea of holistic planning and strategy making;
2. The importance of preserving essential ecological processes;
3. The need to protect both human -heritage and biodiversity;
4. To develop in such a way that productivity can be sustained over the long term for future generations; and
5. Achieving a better balance of fairness and opportunity between nations.

Principles of Sustainable Development

The UNO's Brundtland Report (1987) and the 1992 Earth Summit Conference in Rio de Janeiro aimed for focuses on protection of the environment and making development less harmful to it, as it is considered that development take place in the environment. Many developing countries realize it and accept the need to protect their own environment and alleviate international environment problem. It has also been observed that poverty and environment are linked in a close and complex way. Poor people live in and suffer from degraded environment and very often they create environment, degradation because their poverty forces them to do so. The term

²⁹ World Commission on Environment and Development (WCED) (1987), *Our Common Future*, The Brundtland Report London: Oxford University Press.

sustainable development is now referred to in the wider economic world as a desirable goal to achieve through economic policy because the safeguarding and protecting biodiversity in the developing world is essential to the environment and economic well being of the west. Sustainable development in tourism may be mass tourism. The principles for sustainable tourism development are mentioned as follows:³⁰

1. The environment has an intrinsic value which outweighs its value as a tourist asset. Its enjoyment by future generations and its long-term survival must not be prejudiced by short-term interests.
2. Tourism should be recognized as a positive activity with the potential to benefit the community and the place as well as the visitor.
3. The relationship between tourism and the environment must be managed so that the environment is sustainable in the long term. Tourism must not be allowed to damage the resources, prejudice its future enjoyment or bring unacceptable impacts.
4. Tourism activities and development should respect the scale, nature and character of the place in which they are sited.
5. In any location harmony must be sought between the needs of the visitors, the place and the host community.
6. In a dynamic world some change is inevitable and change can often be beneficial adaptation to change, however, should not be at the expense of any of these principles.
7. The tourism industry, local authorities and environmental agencies all have a duty to respect the above principles and to work together to achieve their practical realizations.

The term 'sustainable tourism' is now being used to describe strategies for ensuring the long-term viability of all forms of tourism by meeting the needs of all its stakeholders through the development and operation of environmentally responsible tourism products³¹.

³⁰ IUCN-UNEP-WWF (1991), *Caring for the Earth: A Strategy for Sustainable Living*, Gland, Switzerland: WWF.

³¹ ODA- Overseas Development Administration (1996), *African Wildlife Policy Consultation*, Final Report of the consultation, Civil Services College, ODA, U.K.

Sustainable development requires part of the Earth's land area to be set aside as protected areas. Such areas, which include National Parks, make important contributions to human society by conserving the natural and cultural heritage for the enjoyment of people and ensuring ecological balance as nations' population increase.

In order to assist countries to achieve sustainable stewardship of their National Parks and related protected areas, WTO and UNEP have joined forces to publish these Guidelines. They have been greatly assisted in their preparation by IUCN as consultant.

These Guidelines are a practical working document intended for use by all those concerned with management of National Parks and related protected areas. They can be used by:

- Managers of National Parks and their staff;
- Managers of related protected areas including parks established by state, provincial or regional authorities;
- Personnel of National Tourism Administrations responsible for planning, area development and siting of ecotourism attractions;
- Members of local committees in which parks or protected areas are sited³².

Primitive Eco-tourism: The National Parks And Tourism: -

National Parks have carried different meaning to different countries with different socio-cultural and economic values. In the early years, national parks were living embodiment of romantic values³³. Even today some of the visitors, who are ardent lovers of nature, find national parks as something mysterious, virginal and adorable. As a result, the consumers oriented societies of the west looked at these protected areas as an object of utility in the market that could satisfy individual needs. Whereas many countries of Africa focussed on preservation of the richness of wildlife, both in number and variety.

The 'National Park' concept is more than a century old. It was emerged due to the increasing human pressure; plants and animals were beginning to disappear. The human activities "the anthropogenetic forces" affected the entire landscape, including the

³² McNeely, A. Jeffery et al. (1996), *Guidelines: Development of National Park & Protected Areas for Tourism*, Gland: Prepared with the assistance of IUCN.

³³ Francois, Vellas and Lionel, Becherel (1995), *International Tourism: An Economic Perspective*, London: Macmillan Press Ltd.

features of geological, archeological, historical and cultural significance³⁴. With the passage of time, the importance of such features was recognized. It was emphasized that such areas be preserved. This thought was the beginning for the national parks movement. The idea of national park was born in the United States. The establishment of Yellowstone National Park set the ball rolling for the national park movement all over the world³⁵.

The aim of the National Park Service was to include in the park system, all areas that contained 'scenery of supreme and distinctive quality or some natural features so extraordinary or unique as to be of general interest and importance³⁶.

The principal, on which the national parks were managed, established the wilderness idea within the national park-the notion that the parks 'must be maintained in an absolutely unimpaired form'. By the late 1920's concerns for endangered species led the supporters of national parks to recognize that parks contained more than just scenery and that protection of plants and animals association was an integral part of the nature of environmental conservation.

The first move towards ecologically based national parks was the creation of the "Everglades National Park" in Florida in 1934³⁷. From an ecological perspective, sustainable tourism means conserving the productive basis of the physical environment by preserving the integrity of the biota and ecological processes and producing tourism commodities without degrading other values. The Commission on National Parks and Protected Areas (CNPPA) identified the major objective behind establishment of a National Park. These objectives are³⁸:

1. To prevent exploitation in order to conserve species, ecosystem areas of natural beauty, historical culture, geological or archeological importance.
2. To enable visitors to benefit at different levels recreation, educational, cultural

³⁴ Angela, S.Ildos and Giorgio, G. Bardelli (2001), *The Great National Parks of the World*, New Delhi: Om Book Service.

³⁵ William, S., (1988), *Tourism Geography*, London: Routledge.

³⁶ Stabler, M. I. (eds.)(1997), *Tourism and Sustainability, Principle to Practice*, Wellington: CAB International.

³⁷ Hall, C. Michael (1998), "Historical antecedent of Sustainable Development and Ecotourism: New labels on old bottles?" in Hall, C. Michael and Alan, A. Lew (eds.), *Sustainable Tourism: A Geographical Perspective*, England: Prentice Hall.

³⁸ Pearse, Douglas (1987), *Tourism Today, A Geographical Analysis*, U.K.: Longman Scientific and Technical Ltd.

from the favourable result of this conservation.

3. To benefit from the conservation of scientific studies which would be impossible elsewhere.
4. These objectives are bases for the framing of the National Park management policies in various countries.

National nature reserves, national parks and equivalent reserve and bio-geographic must all meet the some three basic criteria. To be included in the UN-IUCN list are as area must:

1. Have adequate protection under statute.
2. Have adequate de facto protection.
3. Be at least 1,000 hectares in size with exceptions made for islands of smaller size.
4. In general, prohibit all forms of exploitation including hunting, fishing, lumbering, mining and public works construction as well as agricultural and pastoral practices³⁹.

The World Conference on Sustainable Tourism, held in Lanzarole was only one of a large number that produced recommendations on the application of Sustainable Development principles to tourism, in that case a ' Charter on Principles and Objective for Sustainable Tourism' the term sustainable tourism, rightly or wrongly has become widely accepted as a meaning tourism that is developed and operated in such a manner as to follow these principles⁴⁰. Where it has been adopted in the tourism industry, it has tended to be accepted for three reasons: economics, public relations and marketing. On the one hand, some aspects of sustainability as applied to tourism can be cost effective and in-fact, reduce costs.

In the field of tourism, studies of the economic impact of tourism are almost as old as those of tourism itself, while attention to the environment and social impact of tourism did not really begin until the 1970's. The application of the principal of sustainable development to tourism as a distinct sector inevitably raises difficulties. While the original call for sustainable development (WECD) discussed the application of the principal with respect to a number of contexts, tourism was not specifically discussed.

³⁹ Shaw, H. James (1985), *Introduction to Wildlife Management*, U.K.: Mc Graw Hill Book Co.

⁴⁰ Nira, Ramachandaran (2000), *Monitoring Sustainability Indices and Technique of Analysis*, New Delhi: Concept Publishing Company.

Thus a generalized statement of principle relating to the global environment has been adapted to a specific but unmentioned sector of that environment.

The application of sustainable principle to tourism is appropriate and praiseworthy in principle and in reality gives a rise to unrealistic expectations and demands. Tourism, like any single sector of the economy, or any single region, cannot achieve sustainability in the sense in which the term has become defined and so sustainable tourism became a misnomer. Second, a single sector or single region cannot exist divorced from other sectors and environments and thus true sustainable development can be achieved only at the global scale. Third, there is a very little idea about the needs or even the true preference of current generation of tourism and no reliable idea of the needs of future generation on which sustainable development is supposed to be based⁴¹.

Most calls for conservation and indeed preservation of resources and environment, have had as their base a concern for the long term survival of those resources and environments and such principles are central to the policies of many national parks agencies. The Canadian National Park Policy for example declares that the parks are protected for the education, enjoyment, and benefit of the present and future generation.

Sustainability means 'making things last'-what is being made durable can be an ecosystem, an economy, a culture, an industry, an ethnic grouping and so on⁴². It is, in fact, far easier to define sustainable than the twinned concept of development. Past attempts to theorize tourism's role in the development process have tended to downplay the environmental dimension that is central to sustainable development. This brief review has shown that 'sustainable tourism' is no easier to define and operationalize than the broader concept of sustainable development, nevertheless, sustainability remains a key concept around which debates between different tourism related stakeholders can revolve⁴³.

The Concept of Ecotourism in the Indian Context:

"Ecotourist" is a recently coined word for wildlife tourists or nature tourists.

⁴¹ Hall, C. Michael and Alan, A. Lew (1998), "The Geography Of Sustainable Tourism Development: An Introduction", in Hall, C. Michael and Alan, A. Lew (eds.) (1998), *Sustainable Tourism: A Geographical Perspective*, England: Prentice Hall.

⁴² *ibid.*

⁴³ Bonifae, B. G. and C. P. Cooper (1987), *The Geography of Travel and Tourism*, London: Heinmann.

Ecotourism aims at providing ecotourist with nature tourism opportunities and also aims at generating economic returns to strengthen PAs and augment economic benefits for local people. The presumption of this concept is that ecotourists are a separate entity who are aware of the rules and regulations of PAs and are capable of proper behaviour inside PAs. Such definition does not truly fit in the Indian scenario. The PAs in India are already under serious threat of pressures not only from the growing population of human and livestock but also from the market forces.

Unfortunately the present trend is towards creating lavish and costly tourist facilities. The need of the hour is to make wildlife tourism affordable by a large number of Indian and foreign tourists by creating cheaper and spartan tourist facilities. This will facilitate the achievement of the objectives of wildlife tourism to reach out to a large section of people for creating awareness and eliciting their support for conservation.

In India the profits made by private entrepreneurs and government from wildlife tourism is not recycled into enhancing PAs management and for generating economic benefits for local people. In USA where government made legislative changes to allow national parks to accept donations from individuals and organisations, this money is recycled into parks for improving facilities and interpretative programmes for visitors. In India no such mechanism exists⁴⁴.

Ecotourism is a form of tourism that offers economic support to attractive tourist destinations that would otherwise be exploited for timber, minerals, agriculture, or water resources. Ecotourism tends to be based on an ecological, natural and scientific focus. Sustainable tourism on the other hand, is part of the quest for sustainable development overall, where tourism makes a positive contribution to the future development policies of the whole region or community. In this context, sustainable development involves a planning policy and strategy aimed at ensuring the long term continuity of economic and social development, while respecting the environment and not jeopardising natural resources that are considered indispensable for future human activity.

The goals of such sustainable tourism are:

⁴⁴ Kumar, Suhas (2002), "Wildlife Tourism in India: Need to Tread with Care", in Sharma B.D. (ed.), *Indian Wildlife – Threats and Preservation*, New Delhi: Anmol Publications Pvt. Ltd.

- To develop greater awareness and understanding of the significant contribution that tourism can make to the economy and the environment of a region.
- To promote equity in development.
- To improve the quality of life of the host community.
- To provide a high quality of experience for the visitor.
- To maintain the quality of the environment on which the foregoing objectives depend.

Wildlife conservation in relation to tourism will obviously focus heavily on Ecotourism products. Even if the number of potential Ecotourism destinations were unlimited, uncontrolled tourism development in all the world's wilderness areas is undesirable. The full economic potential of the tourism industry in a given area cannot be realised by focusing on nature based tourism alone. Strategies for the future should therefore be based on developing both Ecotourism and mainstream tourism in the most environmentally positive ways. Two forms of tourism should be closely integrated. Wherever possible, tourists should be encouraged to participate in nature based tourism for at least part of their holiday even if this is not the main focus. This will provide funds directly or indirectly for the proper management and conservation of those natural resources which are essential to the quality of the local environment⁴⁵.

Communities Participation in Tourism

The use of the term community in tourism research has grown dramatically over the past two decades, in part because of the increasing development of tourism products that commodify community cultural resources. It is possible to discern two sub-streams in the way in which 'community' has been analyzed in the tourism literature. One priority structure external to the community and consider local residents as largely passive forces in development process⁴⁶. The community is seen to be 'serving' the industry's need rather than vice-versa. The other approach emphasizes local agency and sees

⁴⁵ ODA- Overseas Development Administration (1996), *African Wildlife Policy Consultation*, Final Report of the consultation, Civil Services College, ODA, U.K.

⁴⁶ Hall, C. Michael and Alan, A. Lew (1998), "The Geography Of Sustainable Tourism Development: An Introduction", in Hall, C. Michael and Alan, A. Lew (eds.) (1998), *Sustainable Tourism: A Geographical Perspective*, England: Prentice Hall.

communities and their constituent members playing an active role in determining tourism's outcome. Communities are seen as being capable of planning and participating in tourism development of making their voices heard when they are concerned and of having the capability to control the outcome of the industry to some degree.

Proponents of community participation in the tourism development process often ignore the well-known tendency of local elites to appropriate the organs of participation for their own benefit. Factors such as gender relation and races will affect power structure within communities, as will the ways in which these communities are embedded in broader socio-economic, political and environmental structure. Experiences shows that two type of participatory framework are emerging- "sanctional participation"- a degree of local involvement in decision making, but where government sets the agenda, objective and themes – and "independent political organization" which may utilize completely different means of access to decision making, industry confrontation⁴⁷. Most of the research on local participation in tourism project has focused on the former set of approaches. While sustainable development and sustainable tourism are difficult concept to define, they should by no means be viewed as redundant. Infact, they provide some essential common ground for the development of dialogue between stakeholders, who often hold divergent perspective on the development process.

The literature on sustainable tourism has paid scant attention to the organization of the production and delivery of tourism services. Tourism is a remarkably varied economic sector with important sectoral and locational differences in its organization⁴⁸. This can be illustrated by the ways in which tourist attractions and hospitality services can be either public or private goods. In addition, tourists require a variety of transport, accommodation, catering and other services and goods which can be either self provided or provided by establishments with a diverse set of ownership and operational characters. The essence of tourism is the way in which the global interacts with the local. The global local relationships are not static but are subject to a variety of restructuring processes. Attempts to make tourism more sustainable will be conditioned by the very nature of these restructuring processes, but it is equally true that the process of restructuring will,

⁴⁷ Abbasi, A. A. (1997), *Geographical basis of Tourism*, Indore (M.P.): Pangea Publication.

⁴⁸ Caughley, Graeme and Anthony, R. E. Sinclair (1994), *Wildlife Ecology and Management*, London: Blackwell Scientific Publication.

also influence the grand project of the sustainable tourism will also be influenced by the processes of restructuring⁴⁹.

World wide indigenous people are becoming more involved in the Wildlife tourism industry. Tourism enterprises controlled by indigenous people include culture-based attraction and other venture are largely a response to the spread of tourism into remote and marginal areas, including national parks, reserves and homelands that are traditional living areas for many indigenous groups. Environment, culture and spiritual aspects of indigenous heritage and traditions are especially featured in wildlife tourism, cultural tourism and alternative tourism markets⁵⁰.

Geographic and Political factors such as remoteness or indigenous control of land and culture also influenced the likelihood of indigenous people developing sustainable tourism ventures. The spread of tourism into remote areas often coincides with regions that are still the traditional homelands for surviving groups of indigenous peoples.

Tourism, at its best, is an enriching experience for the visitor. It can benefit heritage and other sites and provide the employment, income and other benefits for the host communities. But if badly planned or managed, it can turn into a disaster for the visitors the place and the host community.

The concept of sustainable development is the key to seeking a more productive and harmonious relationship between the three elements: visitors, host community and environment. Responsible environment practices have recently moved to the forefront of many industry agendas. There have been calls for ensuring that tourism is planned, developed and operated within the context of sustainable development principles⁵¹.

The definition of tourism proposed by the World Tourism Organization (1991), which was subsequently endorsed by the UN Statistical Commission in 1993. Tourism comprises the activities of traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business or other

⁴⁹ Hall, C. Michael and Alan, A. Lew (1998), "The Geography Of Sustainable Tourism Development: An Introduction", in Hall, C. Michael and Alan, A. Lew (eds.) (1998), *Sustainable Tourism: A Geographical Perspective*, England: Prentice Hall.

⁵⁰ Shaw, H. James (1985), *Introduction to Wildlife Management*, U.K.: Mc Graw Hill Book Co.

⁵¹ Hall, C. Michael and Alan, A. Lew (1998), "The Geography Of Sustainable Tourism Development: An Introduction", in Hall, C. Michael and Alan, A. Lew (eds.) (1998), *Sustainable Tourism: A Geographical Perspective*, England: Prentice Hall.



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purposes⁵². According to the world travel and tourism council (WTTC) (1999), travel and tourism contributed directly and indirectly to the global economy in 1999. Tourism is predominantly based upon the consumption of experiences through an interaction with environments composed of wildlife, nature and indigenous culture. The development of tourism can also involve the denial of local people access to resources that they had previously enjoyed⁵³.

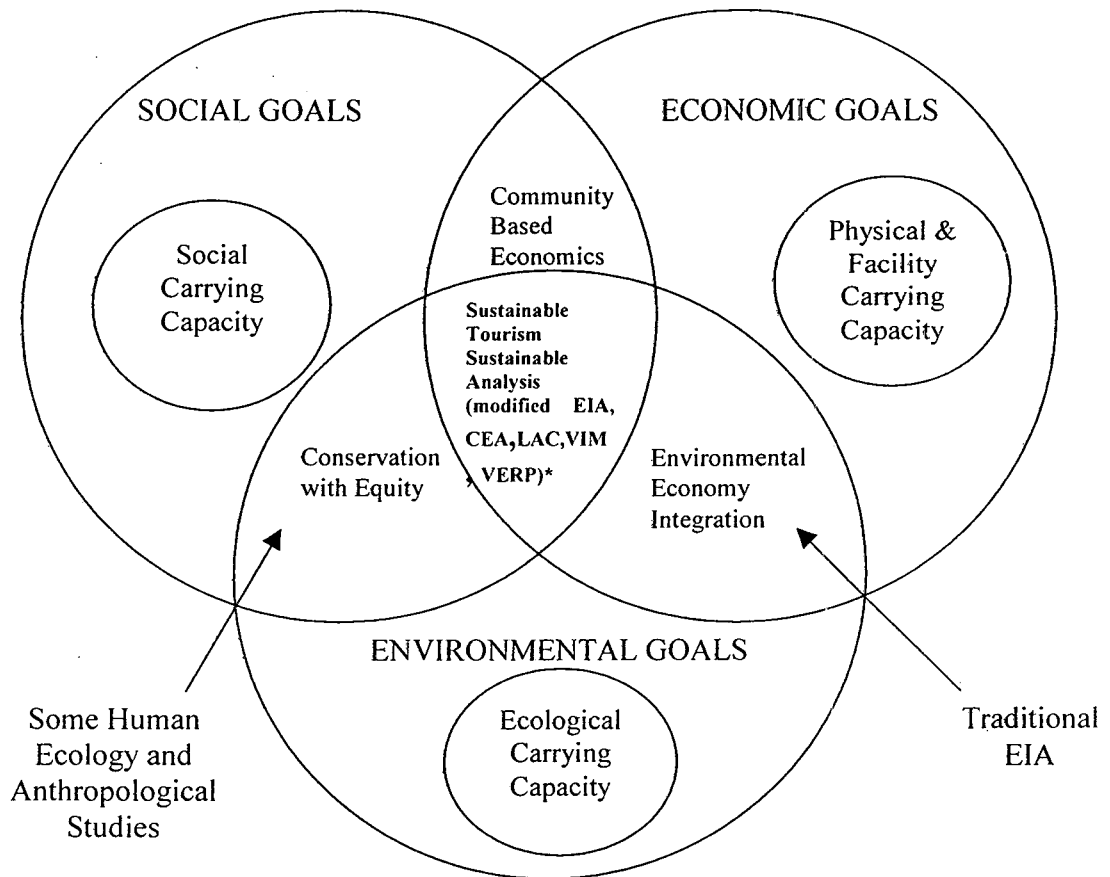
A major natural attraction for tourist is wildlife but certain aspects of human behaviour can adversely affect wildlife. The viewing of wildlife species in their natural habitats has become an attractive activity for an increasing number of tourists, resulting in the intrusion of human into environment, which had previously been the exclusive preserve of wildlife. Ironically, the desire to the tourist to enhance their perception of nature by observing wildlife at close quarters can bring disruption to natural behaviour of the wildlife they want to see. The extent of the impact of tourism on wildlife can be related to the type of tourist activity and the level of tourism development. The resilience of wildlife to the presence of human will influence the degree at which tourism proves harmful to a particular species.

⁵² Andrew, Holden (2003), *Environment and Tourism*, London: Routledge.

⁵³ Ildos, Angela, S. and Bardelli, G. Giorgio (2001), *The Great National Parks of the World*, New Delhi: Om Book Service.

Fig. I.1

Tools for Sustainability Analysis



*LAC- Limits of Acceptable Charge
VIM- Visitors Impact Management
VERP- Visitors experience and Resources Protection
EIA- Environment Impact Assessment
CEA- Cumulative Effects Assessment
Tools to assist sustainability analysis for sustainable tourism system

(Adopted from Dalal-Clayton, B. (1992), Modified EIA & Indicators of Sustainability analysis, in Industrial and III World Environmental Assessment: The Urgent Transition to Sustainability, the 12th Annual Meeting of the International Association for Impact Assessment 19-22 August, World bank, Washington.)

Since tourism is one of the world's largest industries, it is associated with many of the prime sectors of the world's economy. Any such phenomenon that is critically

interwoven into the fabric like economically, socio-culturally and environmentally and relies primary, secondary and tertiary levels of production and services is difficult to define in simple terms. Tourism broadly categorized that includes facilities like accommodation, transportation and attraction. The tourist represent the human component, the site include the actual destination or physical entity and the marker represent some form of information that the tourist uses to identify and give meaning to a particular attraction. Under the conditions of tourist site-maker, virtually anything could become an attraction, including services and facilities. Wildlife is not simply the foundation, it has been clear that wildlife is not a foundation for attraction, but an attraction in and of itself. To a birder, for example, individual species become attraction of the most specific and most sought-after kind⁵⁴.

“Sustainable tourism is an extension of the new emphasis on sustainable development”

Ecosystem Specific indicator: -

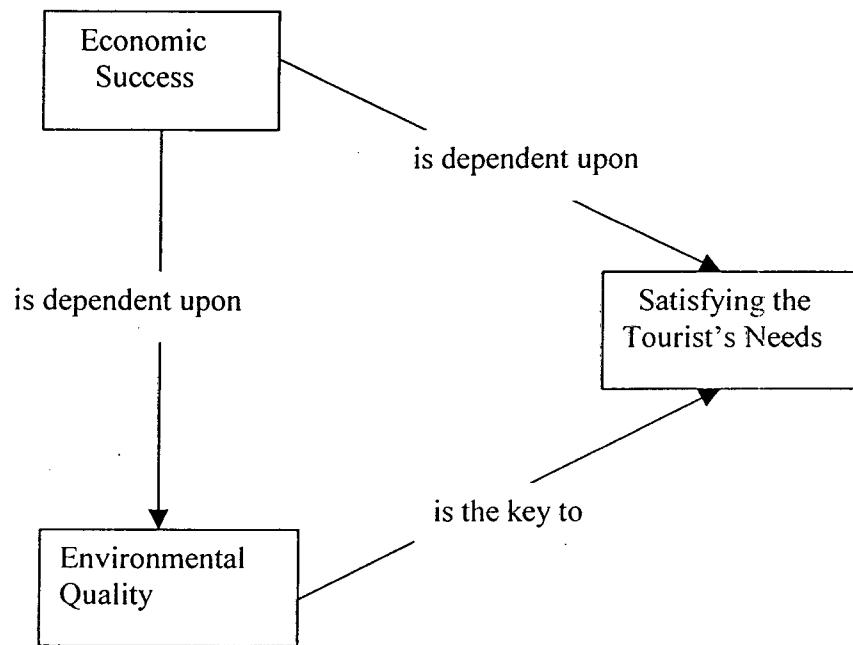
Ecosystem	Sample indicators
-Managed Wildlife Parks	Species health (reproductive success, species diversity) Use intensity (ratio of visitors to game) Encroachment (percentage of park affected by Unauthorized activity) ⁵⁵

⁵⁴ David, A. Fennel (1999), *Ecotourism-An Introduction*, London: Routledge.

⁵⁵ *ibid.*

Fig.I.2

The relationship between natural environment, the local economy and tourism



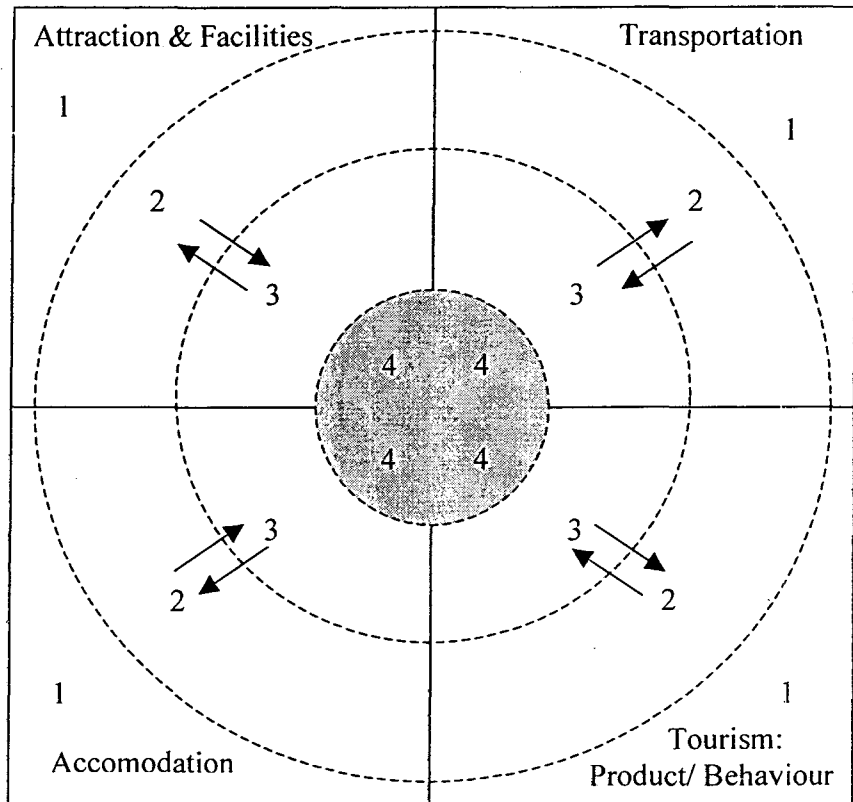
(Adopted from Andrew, Holden (2003), Environment and Tourism, London: Routledge)

This is a fact that tourism can have negative impacts upon the environment, including the use of natural resources in an unsustainable fashion, the creation of pollution and the displacement of peoples, suggests that the wealth creation from tourism development is not universally beneficial. Government possesses the powers of legislation to establish protected areas and a variety of different types of designation exist. By the early 1990's protected areas covered nearly 5 percent of the earth's surface, within over 130 countries having some area of their land surface under protected area status (World Tourism Organisation, 1992)⁵⁶.

⁵⁶ Symonds, William, C. (1990), "Crocodile vs. Condos: Can We Protect Our National Parks?", *Business Week*, August,(8):23-37.

Fig I.3

Degree of Sustainable Tourism



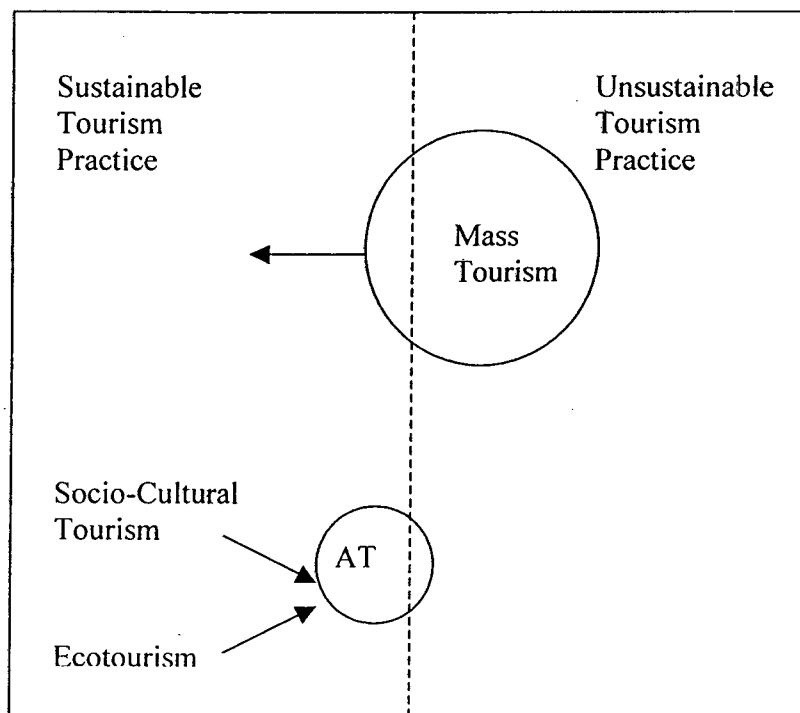
 Sustainable Tourism (4)  Unsustainable Tourism (1)

(Adopted from David A. Fennell (1999) "Ecotourism – An Introduction", Routledge-London.)

This figure illustrates that sustainability has to be more simply one aspect of the industry (e.g.. accommodation) working in a sustainable way. The aim for sustainability is to ensure that all aspects of the industry are working in concert. In addition the figure incorporates the notion of both human and physical elements working with each of the four sectors that is the fact that the people working at a physical attraction very much dictate the extent to which sustainability is achieved at the site.

Fig. I.4

Tourism Relationship



AT – Alternative Tourism

(Adopted from Weaver, D. B. (1998), Ecotourism in the Developed World, London: CAB International)

According to the corresponding circles in the diagram the figure provides a good sense of the relation of mass tourism and alternative tourism. It also indicates that most forms of alternative tourism are sustainable in nature (in theory). AT has shown two types of tourism, socio-cultural AT include rural or farm tourism. Ecotourism, however, involves a type of tourism that is less socio cultural in its orientation and more dependent upon nature and natural resources as the primary component. The belief is that ecotourism is distinct from mass tourism and various other forms of AT⁵⁷.

⁵⁷ David, A. Fennel (1999), *Ecotourism-An Introduction*, London: Routledge.

One of the most familiar protected area designated worldwide, and one in which tourism plays an important role, is national park. The responsibility for passing legislation to establish a national park lies with government. They are usually established with the objective of protecting outstanding natural areas from over development and providing areas of access to nature for tourists and recreationists. The first national park in the world was created at Yosemite in America in 1890 and it is not an accident that its establishment coincided with the increasing urbanization of America, in the latter half of the nineteenth century⁵⁸. The creation of national parks can be interpreted as being anthropocentrically driven, placing emphasis on the conservation of nature for our own enjoyment rather than for its intrinsic value. National parks may also play a greater part in the national psyche than just purely being areas for nature conservation and recreation. The creation of national parks is symptomatic of a release of national guilt over the harm humans have caused to the non-human environment, during the process of industrial modernization. However, he also suggest that although the creation of the parks represents a “good deed” of industrial civilization, there creation also help to affirm the power of humans over nature⁵⁹.

Tourism may compromising 3 basic elements: (1) a dynamic element, which involves travel to a selected destination; (2) a static element, which involves a stay at the destination and (3) a consequential element, resulting from the above two, which is concerned with the effects on the economic, social and physical subsystem with which the tourist is directly or indirectly in contact.

Evolution of Parks

The concept of ‘Park’ is one that is firmly established within civilization. The Greek and Romans met at designated open spaces (agorae), while in medieval times the European nobility used their private lands as hunting reserves. The concept of ‘park’ began to be recognized as a means by which to secure outdoor recreation opportunities in the countryside. Park and protected areas have a certain mystique to travellers interested

⁵⁸ Dunean, Brack (2000), “Sustainable Development-We will have to do Better”, *World Today*, Aug-Sept:127-134.

⁵⁹ Hall C. Michael (1998), “Historical antecedent of Sustainable Development and Ecotourism: New labels on old bottles?”, in Hall C. Michael and Alan, Lew (eds.), *Sustainable Tourism: A Geographical Perspective*, England: Prentice Hall.

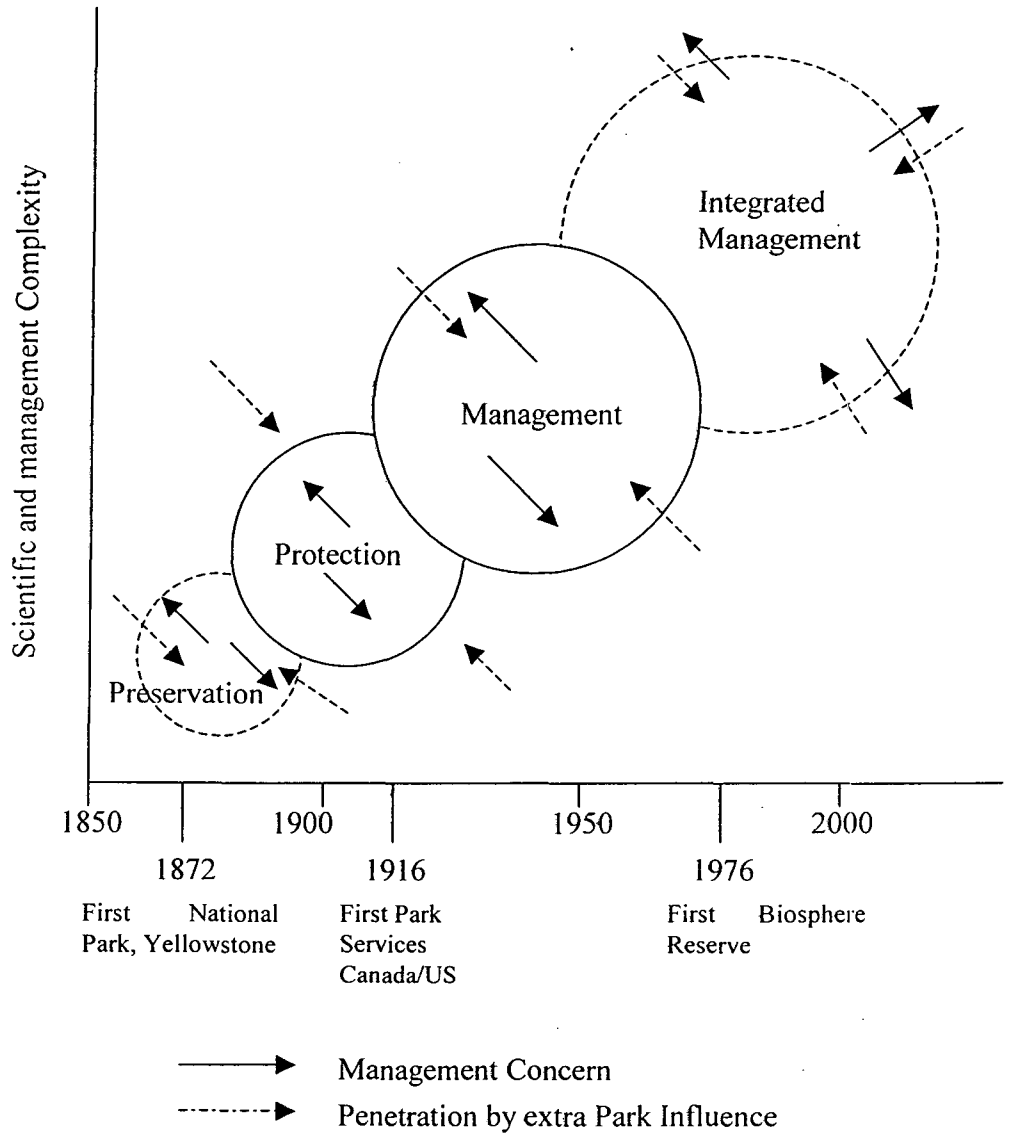
in some of the best representative natural or countries⁶⁰. Foremost, the park was set up to prevent the exploitation of wild life and the environment, for the purpose of recreation and finally as a means of scientific study. Around the world, the national parks are broadly mandated with the dual purpose of protection representative natural areas of significance and encouraging public understanding, appreciation and enjoyment. Their main focus, therefore, is to balance recreational use with the protection of unique physiographic land and water regions. Historically, the presentation ideal within parks was not fully developed or emphasized. However, as the system of protected areas continues to grow (as shown in the increasing circles over time), park management philosophies have become better integrated, recognizing that parks do not exist as ecological islands but must be managed according to environment conditions both inside and outside their boundaries⁶¹. Parks, therefore, have come to rely on tourism as a means by which to generate income from a growing world population with increasing disposable time, financial well being and personal mobility.

⁶⁰ Kothari, Ashish et al. (1996), *People and Protected Areas, Towards Participatory Conservation in India*, New Delhi: Saga Publication.

⁶¹ David, A. Fennel (1999), *Ecotourism-An Introduction*, London: Routledge.

Fig. I.5

The Evolving Role of Parks⁶²



(Based on Dearden P. AND R. Rollins (1993), 'The Times they are a changing' in Dearden P. and R. Rollin (eds.), *Parks and Protected Areas in Canada: Planning and Management*, Toronto: Oxford University Press)

⁶² Dearden and Rollins (1993), The Evolving role of parks, in David, A. Fennel (1999), *Ecotourism-An Introduction*, London: Routledge.

Categories and Management Objectives of Protected Areas

While all protected areas control human occupancy or use of resources to some extent, considerable latitude is available in the degree of such control. The following categories are arranged in ascending order of degree of human use permitted in the area⁶³.

I. Scientific reserve/strict nature reserve. To protect nature and maintain natural processes in an undisturbed state in order to have ecologically representative examples of the natural environment available for scientific study, environmental monitoring and education, and for the maintenance of genetic resources in a dynamic and evolutionary state.

II. National park. To protect outstanding natural and scenic areas of national or international significance for scientific, educational, and recreational use. These are relatively large natural areas not materially altered by human activity, and where commercial extractive uses are not permitted.

III. Natural monument/natural landmark. To protect and preserve nationally significant natural features because of their special interest or unique characteristics. These are relatively small areas focussed on protection of specific features.

IV. Managed nature reserve/wildlife sanctuary. To ensure the natural conditions necessary to protect nationally significant species, groups of species, biotic communities, or physical features of the environment when these require specific human manipulation for their perpetuation. Controlled harvesting of some resources may be permitted.

V. Protected landscapes. To maintain nationally significant natural landscapes characteristic of the harmonious interaction of man and land while providing opportunities for public enjoyment through recreation and tourism within the normal lifestyle and economic activity of these areas.

VI. Resource reserve. To protect the natural resources of the area for future use and prevent or contain development activities that could affect the resource pending the establishment of objectives based on appropriate knowledge and planning.

⁶³ McNeely, A. Jeffery et al. (1996), *Guidelines: Development of National Park & Protected Areas for Tourism*, Gland: Prepared with the assistance of IUCN.

VII. Natural biotic area/anthropological reserve. To allow the way of life of societies living in harmony with the environment to continue undisturbed by modern technology; resource extraction by optimistic agricultural return.

Costs and Benefits of Tourism in Protected Areas

In addition to their many other functions (protecting watersheds and soils, ameliorating local climate, maintaining populations of important species of plants and animals, scientific research, education, improving environmental conditions in surrounding areas, and maintaining cultural values) national parks play an important role in promotion tourism in almost all developing countries. Many of these areas are focal points for international tourism, particularly in eastern and southern Africa, Costa Rica, Ecuador, India, Nepal, and Indonesia. In most countries of Asia and South America, tourism to national parks has primarily been a national phenomenon, and until very recently foreign tourism was only a secondary objective.

Protected Areas and Their Value for Tourism:

Wise planning and protection of parks and reserves is an integral part of creating and maintaining an environment which provides for quality of life. Parks and reserves provide an essential resource for the constructive use of leisure time in positive, healthy outdoor recreation. They provide, too, an essential resource for environmental education, giving the opportunity to observe natural processes at first hand and to appreciate, understand and assess the consequences of man-induced change in the environment.

The importance of parks and reserves are for tourism. The national parks and reserves not only are a source of national pride; they are the cornerstones of the nation's tourism, an industry of great economic importance for both foreign exchange earning and in employment opportunities. The same applies in many countries but, without sound planning, there is the danger of tourism and the development it brings destroying the very resource on which it is based⁶⁴.

Protected areas need to be seen as a part of ecodevelopment as well as maintaining and enhancing the quality of human life, thus meeting society's needs in the

⁶⁴ Stracey, P.D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture, Dept of Agriculture, Faridabad: Government of India Press.

wide variety of ways outlined.

The framing of a suitable act for the creation and management of national parks in India is a matter for some consideration. Whether the legislation should be all-embracing and enabling so that national parks can be created under it whenever required or whether it should be specific for individual national parks as they are created, is the question. The former type of broad legislation is preferable if it is clearly specified in the act itself that no alteration in the boundaries or the status of park can be carried out at any time without the approval of the legislature. This type of act gives one a free hand to bring into existence national parks of similar type at any time when desired, whereas if separate legislation is to be repeated each time a national park is created there are obvious drawbacks⁶⁵.

There is a growing literature on the economics of protected areas. There are several distinct approaches and areas of application. These include: 1) economic valuation of natural resources; 2) bioeconomic modelling of natural resource use; 3) using economic incentives to encourage conservation, and 4) conservation financing mechanisms.

WILDLIFE-BASED TOURISM

Historical development

The economic utilisation of wildlife through tourism assumes an ever-increasing importance in many countries of the world. Although tourism is certainly not always, or necessarily, associated with wildlife, this has become a major factor in the development of tourism, which according to the World Travel and Tourism Council is likely to grow into the world's largest industry by the year 2000. Any wildlife, from butterflies to elephants, in any region of the world, from the Antarctic to the tropics, has a potential for economic utilisation through tourism. Generally it is rather the diversity of wildlife, which fascinates man and which may thus support commercially oriented wildlife tourism. However, in some cases specific single-species wildlife has become the basis for tourism.

⁶⁵ Stracey, P. D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture, Dept of Agriculture, Faridabad: Government of India Press.

The increase of wildlife-based tourism was fostered by several concurrent historical developments. On the one hand, the number and diversity of areas set aside for the protection of wildlife have significantly increased around the world, particularly in those countries which gained their independence after the Second World War. Although the spectacular wildlife resources in these areas were mostly not managed for any particular purpose, the general infrastructural development in the particular countries also made the wildlife resources increasingly accessible to the foreign traveller. At the same time governments in these countries became aware of the economic potential of tourism in general and often quite unrealistically perceived the wildlife resource as a means to promote it, thus establishing more and more "national parks" in the hope of eventual economic returns from them through foreign-exchange earning wildlife-based tourism. Such economic postulation was often politically necessary as an argument against the interests of the local population who became legally deprived of a natural resource they had previously used for subsistence⁶⁶.

On the other hand the perception in "western" societies that nature, and more particularly wildlife, had to be "preserved", i.e. rigorously protected against human interference including any use other than scientific research, changed gradually into the concept of nature conservation,

After the Second World War and in the wake of the economic development of the "Third World" it was realised and accepted that natural resources had to be conserved for sustainable utilisation by man. In respect of protected areas the only option for use seemed to be their development and management for tourism from which the surrounding human society was also to benefit. The above-mentioned economic interest of politicians (in newly independent countries) and the changing perception of wildlife conservationists coincided and generated growing numbers of "national parks" to be economically utilised through international tourism.

At the same time, of course, the demand for wildlife-based tourism did increase in all industrialised countries due to the estrangement of the industrialised societies from nature. Man has an innate affinity with nature, wilderness and the fierceness as well as

⁶⁶ Roth, H. Harald & Gunter Merz (1997), *Wildlife Resources- A Global Account of Economic Use*, Berlin Heidelberg: Springer-Verlag.

the beauty of wild beasts. With the growing affluence, increasing spare time and the technical means of overseas travel the encounter with and observation of large herds of wild animals became one of the most desirable travel goals of tourists, in addition to the attraction of strange exotic cultures and the colourful tropical environment. Wildlife-based tourism may therefore be understood in pan as a sentimental or emotional compensation for the alienation of industrialised societies from nature, enhanced by the economic needs of developing countries.

Initially it was mainly the wildlife in protected or especially managed areas, which was utilised for the development of the various types of wildlife-oriented tourism, mainly national parks for game viewing and photographing and controlled hunting areas or hunting concessions for hunting tourism. However, as the considerable economic potential of wildlife tourism became apparent, more and more private landowners, and in some countries also communal authorities, started catering for both game viewing and trophy hunting in an effort to draw direct economic benefit from the wildlife resources present. In fact, the economic incentive for many landowners who were previously only engaged in agriculture and animal husbandry, was so great that in Southern Africa alone hundreds of these started reintroducing wildlife species which had hitherto been eliminated, onto their lands. Considerable investments were and still are being made in many countries not only in the development of national parks for tourist use, but also on private land with a view to building up wildlife resources for future economic utilisation through tourism⁶⁷.

Economic Importance of Wildlife-Based Tourism

The general importance of wildlife-based tourism and its economic potential is well reflected by the surface area of land set aside for wildlife conservation in different countries or regions. The total surface of protected areas in the various regions and relates them to the total size of the particular region. Tourism generally utilises any protected areas as long as these are accessible and developed for tourism. Wildlife tourism, however, is mainly based on national parks and managed reserves, such as Game Reserves or Controlled Hunting Areas. In economic terms it is difficult to distinguish

⁶⁷ibid.

between tourism in general and wildlife-based tourism. In all regions wildlife constitutes an important aspect of tourism, but only in those in which it is particularly abundant and diverse, such as East and Southern Africa, is it the dominant resource for tourism. In many countries wildlife-rich conservation areas, although designated for tourist use, have not yet been developed for tourism. In others, large areas are preserved for forestry. Where they contain wildlife or could be stocked with it, many forest reserves could well serve commercialised hunting tourism as the most lucrative form of wildlife use. Thus, there is still great potential for future development of wildlife-based tourism.

The flow of tourists to the designated wildlife areas is rather difficult to evaluate as it is monitored reliably only in some countries. However, it is often very considerable.

As with any tourism, wildlife-based tourism has, of course, significant macro and micro economic effects. These are, however, difficult to separate from the overall economic impact of tourism in general. The annual financial turnover of international tourism has been estimated by the UN Environmental Programme at not less than US\$ 195 million. For Africa south of the Sahara, in which tourism is largely oriented to wildlife, an estimated 11 % of export earnings are derived from tourism, in Latin America 13% and in South-East Asia 9%. It is particularly interesting to note that compared to an annual increase of about 8% in total mass tourism, the individualistic tourism orientated towards specific interests such as wildlife is believed to increase by 10 to 15% annually. Wildlife-based tourism, as a non-consumptive form of wildlife utilisation, definitely produces very considerable macro economic benefits. In contrast to most consumptive utilisation of wildlife for provision of food and raw materials, it earns much-wanted foreign exchange. It also creates local employment and fosters local trade and secondary industries in remote undeveloped areas. In fact, tourism is fast becoming one of the most important sources of revenue for many developing countries⁶⁸.

The Comparative Advantage of Wildlife

Nature conservation in southern Africa is conveniently divided into that within ecological reserves and that on land outside, supporting conventional productive enterprises like farming. The institutions evolving outside parks and reserves are

⁶⁸ Ikenouye, Osamy (1972), "National Parks and Tourism", in Harroy Jea -Paul (eds.), *World National Parks-Progress & Opportunities*, Brussels: Hayez.

generally adequate to be socio-politically acceptable and to allow wildlife to achieve its comparative advantage over other forms of land use. This advantage is based on environmentally benign hunting and tourism services and is often considerable in dry savannas. These savannas cover three-quarters of Africa south of the Sahara where crop and livestock production, on a broad scale and without irrigation, are economically and ecologically hazardous and faltering.

With their high dependence on elastic service industries through tourism and recreational hunting, which add economic tiers to an animal production system, wildlife enterprises can be both sustainable and profitable. Profits from the finite ecological energy can be harvested from natural systems without stressing them and can be increased by growing either the volume or quality of the services. It does not require over grazing or greater extraction of energy from the natural ecosystems. Tourism and hunting markets also favour a diversity of healthy animals in well-maintained and varied habitats, with the result that wildlife ventures are environmentally friendly, socio-politically acceptable to most societies and favour nature conservation⁶⁹.

Management of Wildlife Resources

The geographical location, limits, and structure of these communities are determined by the environment, which is the total of all physical and biological factors acting upon the community, from weather, soils, and topography to complex interrelationships between the plants and animals themselves. As a result of evolutionary processes and through such mechanisms as competition each species population within a natural community has become fitted to a particular *niche* in relation to both physical and biological factors of that community's environment⁷⁰.

Ecological relationships between the management of wildlife and other natural resources

Wildlife species respond directly to the quality of their environment, hence their welfare is directly dependent on the management of related natural resources. Some generalities, with exceptions, pertaining to forest management and wildlife are:

⁶⁹Child, Graham (2004), "Growth of Modern Nature Conservation in Southern Africa", in Child, Brian (ed.), *Parks in transition: biodiversity, Rural Development and the Bottom Line*, IUCN, London: Earthscan Publishers.

⁷⁰Burger, V. George (1979), "Principles of Wildlife Management", in Teague D. Richard & Decker Eugene (eds.), *Wildlife Conservation- Principle and Practices*, Washington, DC: The Wildlife Society.

- Deciduous forests produce more wildlife than coniferous forests.
- An open forest is more productive than a closed canopy forest
- A mixed age stand produces more wildlife than an even aged stand.
- A mixed species stand of trees produces more wildlife than a single species stand.
- The intermingling of small units of different age classes and different species of trees will produce more wildlife than large units of one species or even-aged stands.
- Openings in tropical forests provide more food for ground dwelling animals than continuous unaltered forests⁷¹.

Management of Wildlife

The question of its management comes up once an area is declared as a National Park. It is implied by the legal provisions for constituting the National Park that it has to be free from exploitation and no grazing has to be permitted there. The first principle for the management of the National Park is that it should be of adequate size, its boundaries should be thoughtfully chosen and buffer zones be provided against shooting, grazing and cultivation. Full protection to wildlife can be provided only when these parks are free from exploitation and extraction because it is under the cover of these activities that illegal activities like poaching and killing flourish. The degraded habitat in the National Park should be restored to its natural state by executing a well-conceived management plan.

It is important that game animals are confined within the National Parks for the sake of their own safety and protection. For this fencing should be provided in the parks or permanent boundary ensuring at the same time that it is not done across migration routes or normal feeding routes.

For durable protection to the National Park, its surroundings should be identified as Special Area for Eco-Development (SEAD) where conservation-oriented development programmes should be implemented. This calls for the involvement of local people. The cooperation of the people in the neighbourhood of the Park will guarantee the successful management of the Park.

⁷¹ Roth, H. Harald & Gunter Merz (1997), *Wildlife Resources- A Global Account of Economic Use*, Berlin Heidelberg: Springer-Verlag.

The National Park would require professional cadre of forest personnel fully trained in all aspects of forest and wildlife management who train and provide leadership to the lower ranks and workers concerned with wildlife. As far as salary is concerned the officers and staff should be well-paid and provided incentives and modern amenities. Without a happy and contented protective staff the parks will only become a heaven for poachers. In brief, for the scientific management of the National Park, there should be a comprehensive plan for meeting manpower needs, recruitment policy, training programme and career development of wildlife officers at various levels.

Adequate publicity and propaganda should be launched to educate the public about the role and importance of wildlife and its habitat to get their support. The more important is to direct such publicity towards the youth. This can be done by including wildlife material in the text books, exhibiting posters, wall charts, short films, calendars, organizing seminars, lectures etc. Over visitation to park is undesirable, as it tends to spoil the park features. This should be checked by careful management.

All the illegal activities in the park like poaching of wildlife, illicit removal of trees and other forest products from the National Parks should be closely monitored and action plans should be designed to protect the wildlife and its habitat from these damaging onslaughts. It may be necessary to constitute anti-poaching squads which should be equipped with fast moving vehicles, fire arms, wireless sets, etc⁷².

Wildlife Management: Little Understood

Although environment protection has been debated, discussed and judicially scrutinized at length, no such corresponding exercise has been undertaken in regard to strategy and practice concerning wildlife conservation and management. In India, it is only in the aftermath of Rio Earth Summit (1992) that the urgent need of a long-term strategy for the conservation of our biodiversity was realized as is evident from National Conservation Strategy, 1993. Nevertheless, the justification of wildlife protection and conservation is little discussed, still less known and much less understood even by wildlife managers and forest fraternity. More than often the policy makers-the ministers, members of legislatures, politicians and bureaucrats ignore or sideline existing wildlife

⁷² Bisht, R.S. (2002), *National Parks of India*, Ministry of Information and Broadcasting, Government of India, New Delhi: Publications Divisions.

legislation, rules and administrative practices under the cover of bogey of development thereby endangering, degrading and destroying vital natural resources like forests, plants, and wildlife species, etc. Herein an attempt is made to discuss and examine critically the law, policy and practice of the entire gamut of wildlife management with the hope that human species learn to live with wildlife specie not only for the survival of wild animals but also for the very survival of man on this planet.

The Wildlife (Protection) Act, 1972, however, defines the nature and meaning of wildlife in its true perspective. It makes a functional distinction between 'wild animal' and 'wildlife' for purpose of understanding and management of wildlife. It says 'wild animal' means and includes any animal specified in Schedule I, II, III, IV and V wherever found. In other words, wild animals mean those, which are listed by the Act in the various schedules and are found in nature and natural habitats and are not domesticated ones⁷³.

People's Parks

In complete contrast to process parks, people's parks would be areas in which all natural resources are used for the benefit of humans. For such parks to remain sustainable, consumptive uses must be regulated to ensure that harvesting rates of renewable resources do not exceed their regenerative capacity. Mining of exhaustible resources could be allowed provided that the net benefits from mining are positive, and lead to a sustainable increase in total social welfare. People's parks operate according to principles of conservation, whereas process parks operate according to principles of preservation

A number of international agencies have become involved in the process of aiding individual countries in the process of identifying candidate's natural areas. As the need for more protected areas continues to gain momentum globally to the types of lands use and practices of conservation found in different. The IUCN has been especially effective in charting a course for the planning, establishment and management of protected areas globally⁷⁴. Its categories for conservation management illustrate the variability of protected areas that have developed internationally, each of which focuses on different aspects of development and preservation. The extent of the work of the

⁷³ Dhyani, S.N. (1994), *Wildlife Management*, Jaipur and New Delhi: Rawat Publications.

⁷⁴ Edington, J.M. and M.A. Edington (1986), *Ecology, Recreation and Tourism*, Cambridge: Cambridge University Press.

IUCN goes well beyond the categorization of protected areas, though, to include establishing a system of biogeographically provinces of the world; Publishing lists and direction of protecting the quality journal parks; cooperating with United Nations agencies (e.g. UNESCO); holding international meetings, such as the world conference on parks and Protected Areas and supporting field project for the establishment and management of protected areas. "Parks as manifestation of the development of conservation must continue to act as test sites for human environment interaction"⁷⁵.

Community Development:

The characteristic of community development is based on local initiatives, in that it advocates a site-specific approach to finding solution to community problems using community members and community resources. Typical community development encompasses all aspects of the community and focuses on the best quality of life possible for its members and may involve creating new range of opportunities for all members of the community⁷⁶. Tourism is increasingly seen as a key community development tool in the 1990's within the recognition of its economic contribution in bolstering stagnating economic contribution sectors, and instability to unify community members.

The relationship between parks and aboriginal people has displacement and socio-economic fragmentation of aboriginal people.

Community benefits:

1. Continued and/or exclusive access to biophysical resources of the protected area for subsistence purposes.
2. Provision of technical and professional training opportunities relating to positive tourism and conservation agencies.
3. Priority status in hiring programmes undertaken by tourism interests and conservation agencies.
4. Priority status in the licensing of business to be operated in the parks or protected area.
5. Compilation of traditional knowledge and heritage values of the aboriginal societies by the conservation jurisdiction, for use both the communities themselves in

⁷⁵ Andrew, Holden (2003), *Environment and Tourism*, London: Routledge.

⁷⁶ Dharam, Ghai (1994), *Development and Environment: Sustaining People and Nature*, Oxford: Blackwell Publishers/ UNRISD.

strengthening their societal traditions, and by the conservation agency in managing the protected area and in giving to its visitors a heightened appreciation of the traditional society⁷⁷.

National Parks and Sanctuaries: Semantic Difference

The question which naturally crops up in the mind whether the protected networks so created in the form of national parks and sanctuaries differ conceptually, legally and institutionally. It may be noted that national parks and sanctuaries are areas earmarked exclusively for providing state legal protection and management of wildlife species—animals, birds, and plants. The original Act had four varieties of protected or reserved areas, namely, national parks, sanctuaries, game reserves and closed areas over which the right to hunting varied in degrees. The Wildlife (Protection) Amendment Act, 1991 has, however, repealed the provisions relating to game reserves and closed areas. It has also uniformly banned hunting except as provided for in Sections 11 and 12 of the Act. From layman's point of view, one may be tempted to make some semantic difference between the national park and the sanctuary whereas in actual practice the difference between these protected networks comes to a vanishing point of jurisprudence⁷⁸.

Sanctuaries and National Parks are the final refuge of wild life and constitute an insurance against the total disappearance of species. The original idea of a sanctuary in India was a shooting-block closed to shooting and declared as such by the Conservator of Forests from time to time.

The idea of a national park first saw the light of day in India in 1936 when the Hailey (now Corbett) National Park of the Uttaranchal was created. Beyond the fact that this park was declared as such after special legislation was introduced, there is no difference between it and an ordinary sanctuary in regard to the prohibition on capture and killing of animals and birds, while the area experiences the normal forest work and exploitation of a forest reserve. The definition of a national park, which was evolved at the 1933 London Conference on African fauna is the one universally accepted at present. According to it a national park is an area:

⁷⁷ Kothari, Ashish et al. (1996), *People and Protected Areas, Towards Participatory Conservation in India*, New Delhi: Sage Publication.

⁷⁸ Dhyani, S. N. (1994), *Wildlife Management*, Jaipur and New Delhi: Rawat Publications.

- Placed under public control, the boundaries of which shall not be altered except by competent legislative authority;
- Set aside for the protection and preservation for all type of wild animal life and wild vegetation for the benefit, advantage and enjoyment of the general public;
- In which hunting of fauna or collection of flora is prohibited except under direction of the park authority⁷⁹.

National Parks and Tourism

The world's relatively recent economic boom has brought many people abundant leisure time. How to spend that time has become an important problem for both individuals and society as a whole. With the beginning of the 20th Century, the general public also began to enjoy recreation or leisure time activity. Since World War II, recreation has become a very important part of people's lives, and they enjoy a wider variety today than ever before. Desire for recreation is part of human nature but, in the past, lack of time and money denied this to most people. However, the increasing prosperity has reduced these barriers gradually.

Meanwhile, the concentration of population in urban areas has become a worldwide trend with a particularly sharp increase in industrialized countries. Although people living in urban areas benefit from the various conveniences the areas can provide, they are expected to live in an unnatural environment. Even in a highly urbanized civilization, as a biological animal and a member of the ecosystem of nature, man cannot be really independent of his natural surroundings. The more man's living environment becomes artificial, the more eagerly he seeks comfort in natural surroundings. This is a natural instinct. National parks have an important role to play in providing people with an ideal place for outdoor recreation in natural surroundings⁸⁰.

According to the classification by the World Conservation Union (IUCN) of protected areas, national parks are defined as areas, which contain exceptionally beautiful or unique landscape, fauna and flora of national or international importance. Normally national parks are of considerable size and only to a minimal degree influenced by human

⁷⁹ Stracey, P. D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture, Dept of Agriculture, Faridabad: Government of India Press.

⁸⁰ Ikenouye, Osamy (1972), "National Parks and Tourism", in Harroy Jea -Paul (1972), *World National Parks-Progress & Opportunities*, Brussels: Hayez.

activity; no intensive economic use is permitted. Apart from scientific research tourism is the only form of land use compatible with the primary conservation goal. National parks are always State land and accordingly administered and managed by government agencies. Construction and subsequent use of tourist facilities may, however, be leased out to private enterprise.

Tourist use of national parks comprises all activities, which are associated with the temporary sojourn of visitors during which catering and other offered services might be utilised by them. In those national parks which contain important rare or spectacular wildlife, the tourist activities are usually limited to game viewing in various forms and the observation and photography of specific wild animals. Apart from the recreational aspect, education in natural history and ecology is a major secondary goal of national-park management. However, tourist use of national parks must always remain secondary to the primary management goal, which is to conserve the natural features and to maintain the biodiversity of the particular area. As a general rule, the total economic value of national parks is dominated by non-use values and use values from tourism are less important.

There has been a tendency in the past, particularly in developing countries, to wishful thinking with regard to the development of national parks tourism. Many areas qualifying from a point of view of nature conservation have been designated for development as national parks, and thus for tourist use, without considering the infrastructural and economic requirements of tourism against the present ecological constraints. In fact, many national parks around the world are unsuitable for the more profitable mass tourism with some countries.

Apart from the viability of the offered "product", any national park's tourism requires efficient advertising and marketing services and the involvement of international tour operators if it is to be successful. The lack of these and governmental policies unfavourable to private enterprise are often the most serious constraints to the development of wildlife tourism in potentially suitable national park⁸¹.

Economics in Tourism in National Parks

⁸¹ Roth, H. Harald & Gunter Merz (1997), *Wildlife Resources- A Global Account of Economic Use*, Berlin Heidelberg: Springer-Verlag.

Tourism to natural areas is economically important in many developing countries, in virtually all tropical areas, the attractions of nature are used in tourist promotions irrespective of whether national parks are appropriately developed for tourism. In the countries with particularly outstanding natural attractions, tourism is often as the primary justification for the creation of national parks⁸².

Wildlife conservation arose largely due to the slaughter among many wildlife species in the 19th century, and large-scale habitat-destruction in the 20th century. It is therefore quite understandable that managers charged with preserving those relatively few and usually small areas of rapidly diminishing natural heritage did so in a very cautious and conservative manner⁸³.

The spirit and force behind the origin of the National Parks idea has, in all countries, been the demand for the preservation of nature; so that something shall remain as it used to be, unspoilt by the advance of civilization. There has, of course, also been a demand for places of recreation, but that quite different demand can be satisfied in quite a different way, by the development of holiday resorts of many kinds. The boundary between these two human requirements may sometimes be a little blurred; but there is in humanity a very deep seated love of wild nature, which National Parks must satisfy, or else degenerate to become merely 'playgrounds for the people'⁸⁴. Ecotourism currently represents less than 10% of the total global tourism market. Its importance to individual markets is however considerable, with estimates in some countries as high as 70-80% and according to WTO, it could be achieving growth rates of 30%⁸⁵.

In 1990, Boo defined Ecotourism as "Tourism that involves travelling to relatively undisturbed or uncontaminated natural areas with the specific object of studying, admiring and enjoying the scenery and its wild plants and animals" By 1992 this

⁸² McNeely, A. Jeffery et al. (1996), *Guidelines: Development of National Park & Protected Areas for Tourism*, Gland: Prepared with the assistance of IUCN.

⁸³ A Revision of Parts of the Management Plan for the KNP, Vol. VIII (1997), *Policy Proposal Regarding Issues Relating to Biodiversity Maintenance, Maintenance of Wilderness Qualities And Provision of Human benefit*, Skukuza, SANP.

⁸⁴ Braack, Leo and C. Marais (1997), *Contribution towards a policy on tourism in the KNP*, in Vol. 8. Policy proposals regarding issues relating to biodiversity maintenance, maintenance of wilderness qualities, and provision of human benefits, A revision of parts of the management plan for the Kruger National Park, Skukuza: South African National Park..

⁸⁵ ODA- Overseas Development Administration (1996), *African Wildlife Policy Consultation*, Final Report of the consultation, Civil Services College, U.K., ODA, 18-19 April.

definition had been extended to "nature travel that actually contributes to conservation by generating funds for protected areas; creating employment opportunities for surrounding communities and providing environmental education for visitors"⁸⁶.

There was a time, through the middle of the twentieth century, when the national parks reigned indisputably as America's grandest summertime pleasuring grounds. Managed by the National Park Service after 1916, the spectacular mountains, canyons, forests, and meadows set aside to provide for the public's enjoyment appealed tremendously to a public increasingly mobile and enamored of sightseeing and automobile touring.

In recent decades the situation has changed. Today many national parks, although still beautiful, are marred by teeming, noisy crowds in campgrounds, visitor centres, grocery stores, and restaurants, and by traffic jams on roads and even on trails. The push and shove of hordes of tourists and the concomitant law-enforcement problems eclipse the unalloyed pleasure that earlier generation surely experienced. Bland, unattractive modern structures have replaced many of the rustic park administrative buildings and tourist facilities of the past. Housing for rangers and other employees frequently is comparable at best to urban tract homes. Spending fewer hours in the backcountry, rangers more and more find themselves encumbered by office work. In addition, the National Park Service has experienced a decline in its discretionary authority, as it must confront powerful, competing special-interest groups that watch every move. With their natural conditions degraded by air and water pollution, accelerated development of adjacent lands, extensive public use, and inappropriate actions taken by the Park Service itself, the national parks have become the focus of angry battles over environmental issues that often result in litigation by batteries of lawyers.

Through the decades, as the national park concept gained strength and other nations followed the American example, the Madison Junction campfire emerged as the legendary birthplace not just of Yellowstone but of all the world's national parks. In many ways, the national park movement pitted one utilitarian urge tourism and public recreation-against another-the consumptive use of natural resources, such as logging,

⁸⁶ Boo, E. (1992), Quoted by J. Hummel: *Ecotourism development in protected areas of developing countries*, World Leisure & Recreation , 36 , 1994.

mining, and reservoir development⁸⁷.

Establishment of a Sanctuary and National Park in Indian Context

Sections 18 to 34 deal with the setting up of the Sanctuary, investigation and extinguishment of claims and extinguishment of rights in relation to any area notified as Sanctuary. Under Section 18(1) of the Act the State Government, by notification can declare any area to be a Sanctuary if it considers that such area is of adequate ecological, faunal, floral geomorphological, natural or zoological significance for purpose of protecting, propagating or developing wildlife or its environment. The notification as nearly as possible shall specify the limits of such area. For this purpose roads, rivers, ridges or other well-known or readily intelligible boundaries can describe the area.

Under Section 35 of the Wildlife (Protection) Act, 1972 the State Government by notification may declare its intention to constitute an area as a National Park if it considers that for reason of its ecological, faunal, floral, geomorphological or zoological association or importance it is needed to be constituted as a National Park for the purpose of protecting, propagating or developing wildlife therein or its environment. Such a notification shall define the limits of the area, which is intended to be declared as a National Park. The investigation and determination of claims and extinguishment of rights in relation to any land in such area shall be undertaken in accordance with the provisions of section 19 to 26A of the Act. After the period for preferring the claims elapses and all claims made in relation to any land in the area intended to be declared as National Park have been disposed of by the State Government and all rights in respect of the lands proposed to be included in the National Park have been vested in the State Government, a notification specifying the limits of the area, comprising the National Park and declaring it as the National Park, is issued indicating the date from which the declaration is effective.

Once a National Park or a Sanctuary has been constituted, no alteration in its boundaries can be made except on a resolution passed by the legislature of the State. No hunting is permissible in the National Parks or a Sanctuary. No damage to the habitat of the wildlife can be done within a National Park or a Sanctuary. However, if the State

⁸⁷ Sellars, R. W. (1997), *Preserving Nature in the National Parks – A History*, New Haven & London: Yale University Press.

Government is satisfied that destruction, exploitation or removal of wildlife from the National Park or a Sanctuary is necessary for the improvement and better management of the wildlife therein, it can authorise the issue of permit for these purposes by the Chief Wildlife Warden.

No grazing can be permitted in the National Park and no cattle can be permitted to enter therein except such cattle, which is used as a vehicle by an authorised person. It will thus be seen that there is an element of permanency in the area and boundaries of a National Park or a Sanctuary as any alienation of the area or change, in its boundaries can be done only with the authority of the Legislature. The National Parks are also free from exploitation to protect the habitat of the wildlife so that wildlife can live without outside interference, in the surrounding of natural flora of the area as far as possible⁸⁸.

The Indian Board for Wildlife (IBWL), opined the basic idea underlying a sanctuary and a national park is thus essentially the same. It is to provide maximum protection for wildlife. But there is one important difference. A sanctuary is created by the order of the competent authority. It may be the Chief Conservator of Forests, the minister or the state government. A national park, on the other hand, can be created, abolished, or changed only by an Act of a state legislature.

At the outset, it may be said that the notion of wildlife sanctuary and national park has identical commonalities and conditionality. So, the difference between the two as stipulated by the IBWL is misleading and legally incorrect in the light of the provisions of the Wildlife (Protection) Act, 1972 and its Amendment Act of 1991.

Both the sanctuaries and the national parks are the creature of statute. There are similar corresponding provisions in regard to their establishment, management, supervision, control and restrictions regarding entry, carrying of weapons, ban on hunting, investigation of offences, punishment, etc. The Amendment Act of 1991 is thorough in giving the same quality and concern of protection to wildlife irrespective of their being within a sanctuary or national park by abolishing 'big game', 'closed area', 'small game', 'special game' by earmarking land only for national parks or sanctuaries. Under the Amendment Act of 1991, the continuance of the rights of the tribals over land

⁸⁸ Bisht, R.S. (2002), *National Parks of India*, Ministry of Information and Broadcasting, Government of India, New Delhi: Publications Divisions.

inside the sanctuary has been recognized for the first time in order to establish harmony between tribals and the sanctuaries⁸⁹.

Characteristic of National Park Usages and Tourism:

Government establishes national parks as natural parks. Their characteristics and basic administration are clearly defined in the legislation. This set an example for the administration of national parks. Today, most countries have national park systems. Keeping national park areas as natural as possible without even a road is an ideal system, but pressures to overdevelop national park areas pose serious threats. A constant reminder should be given of the warning concerning the development of commercial tourism made by the Vatican Congress. On the other hand, if recreational diversification and expansion is inevitable, various facilities are needed to meet this demand.

National parks exist basically for the public. Everyone has the right to enjoy them equally. However, people, who live near them, especially those located near large cities, are utilizing most national parks, this mainly is based upon the parks locality and accessibility, there is some danger that these parks will come to be used only by local residents. However, as people begin enjoying recreation more frequently, national parks in remote areas are being used by an increasing number of visitors who live far from park sites. Likewise, sightseeing spots with international fame have become popular with people of many countries. Internationalization of these tourist spots will be promoted further in the future.

The number of international travelers has tremendously increased. Statistics of the International Union of Official Travel Organization (IUOTO) shows that the number of world travelers in 1950 was 25 million. This increased five-fold to 128 million in 1966. No doubt this trend will continue. Most travellers seek some unique tourist charm when they visit foreign countries. And they especially enjoy natural splendor in any country.

It is vitally necessary that governments take special measures to increase the quality of these national parks for international tourism. Transportation and accommodations need further promotion especially transportation facilities from airports to

⁸⁹ Dhyani, S.N. (1994), *Wildlife Management*, Jaipur and New Delhi: Rawat Publications.

national parks. Hotels also should improve their facilities and service⁹⁰. The problems between parks and local population who feel that restriction of access to traditionally used resources and the disruption of local cultures and economic by tourist, etc. have led to hostility resentment and damage to park property. There are eight key obstacles to effective management of park-people relationship, namely

1. The institutional structure of national park (i.e. the concept of park and their policy structure).
2. The lack of trust between local people and park authorities.
3. The lack of communication between parks and local people.
4. The large number of different stakeholders in the parks.
5. The polarization of power between government and local population.
6. The risk and uncertainty in entering into discussion aimed at reducing conflict.
7. The enforcement of agreement between the park and local population.
8. The lack of opportunity for all to participate in the decision making process⁹¹.

In general, the threats to parks and parks management have evolved over time, having been primarily internal but now more external in their orientation. This evolution has coincided with the belief that the roles of parks have changed significantly from when they were developed initially, at which time the primary role was to cater to recreation⁹². This is no longer the case, at least in theory, however, with the recent change the importance of ecological functioning of parks above the recreational component. Maintenance of ecological integrity through the protection of natural resources is to be the first priority when considering park zoning and visitor use in the management plan. Park zoning is one of the key planning and management tools within parks. Zones are established on the basis of natural resources and their need for protection and capacity to absorb recreational involvement⁹³.

Private Sector Participation in Tourism to Parks

Government-sponsored park tourism was first developed to cater for the domestic

⁹⁰ Ikenouye, Osamy (1972), "National Parks and Tourism", in Harroy Jea –Paul (eds.), *World National Parks-Progress & Opportunities*, Brussels: Hayez.

⁹¹ *ibid*

⁹² Sengupta, Ramprasad (2001), *Ecology and Economics, An Approach to sustainable Development*, New York: Oxford University Press..

⁹³ Andrew Holden (2003), *Environment and Tourism*, London: Routledge.

market, but soon began to attract foreign visitors, including those from overseas, especially as air travel grew after World War II. The tourism being managed by a government agency in parks and reserves, which had already earned an enviable reputation for its excellence, was an ideal vehicle and catalyst for the government's purpose. Park authorities learned a great deal about tourism from the experience, while the private sector gained a deeper appreciation of the business opportunities from well-managed nature-based tourism.

The spectacular African megafauna supported by an adequate physical infrastructure gives the region a comparative advantage in nature-based tourism and outdoor recreation over much of the world, including the rest of Africa. Exploiting this potential means using the lessons of the past to grow an agile competitive industry that will enable the sub-region, as a cooperative entity, to secure its fair share of future markets⁹⁴.

The management of nature

With park development simulating resort development elsewhere in the country, perhaps the most distinguished characteristic of the park was their extensive, protected backcountry. The location of roads, trails, hotels and other recreational tourism facilities only in selected areas means that much of the vast park terrain escaped the impact of intensive development and use⁹⁵.

Most national parks came into existence already altered by intensive human activity, although the early national parks were set aside principally for the enjoyment of special scenery rather than for wildlife preservation, wildlife quickly became recognised as a significant feature of the parks. Game species, highly prized by hunters, also proved to be the most popular for public viewing.

In the early decades of the national parks, forests and grasslands both became special management concerns. In line with accepted policies on other public lands (and on private lands), suppression of forest fires in the parks quickly emerged as a primary objective. The treatment of nature in the early national parks set precedents that would

⁹⁴ Child, Graham (2004), "Growth of Modern Nature Conservation in Southern Africa", in Brian, Child (ed.), *Parks in transition: biodiversity, Rural Development and the Bottom Line*, IUCN, London: Earthscan Publishers.

⁹⁵ Sellars, R. West (1997), *Preserving Nature in the National Parks- A History*, New Haven & London: Yale University Press .

influence management for decades. Later referred to as "protection" work, activities such as combating poaching and grazing, fighting forest fires, killing predators, and manipulating fish and ungulate populations constituted the backbone of natural resource management. These duties fell to army personnel in parks where the military was present and ultimately, in all parks, to the field employees who were becoming known as "park rangers." As their efforts to curtail poaching and livestock grazing required armed patrol, the rangers rather naturally assumed additional law-enforcement responsibilities. In addition, they assisted the park superintendents by performing myriad other tasks necessary for daily operation of national parks, such as dealing with park visitors and with concessionaires. Deeply involved in such activities, the park rangers were destined to play a central role in the evolution of national park management.

That the national park idea embraced the concept of mostly non-consumptive land use did not mean that the parks were nonutilitarian. On the contrary, the history of the early national park era suggests that a practical interest in recreational tourism in scenic areas triggered the park movement and perpetuated it⁹⁶.

Influences of Ecology on Conservation

There is little doubt that most ecologists have a deep conviction that by unraveling the complexity of nature they will contribute to the conservation of natural systems. It is not surprising then ecologists have a sense of responsibility and "ownership" of conservation and tends to assume the omnipotence of their science as the driving force behind conservation philosophy and practice. Thus, as ecologists have found fault with the balance-of-nature paradigm, there has been the tendency to assume that conservation has fallen short under its tenure⁹⁷.

Every national park must have the minimum requisites of fauna, flora, scenery etc. and in the case of a sanctuary that is to be up-graded there must be the basic essentials of efficient management and protection. Provision should be made for buffer-zones and enforceable boundaries and the ideal should be 'non-intervention by human agency' except for acts essential for the maintenance of as large a stock of wild life as

⁹⁶ibid.

⁹⁷ Kevin, H. Rogers (1997), "Operationalizing Ecology under a New Paradigm: An African Perspective", in Pickett S.T.A. et al. (eds.), *The Ecological Basis of Conservation, Heterogeneity, Ecosystem and Biodiversity*, New York: Chapman & Hall.

possible, *i.e.*, improvement of water-supply where necessary, manipulation of fire as a biotic factor, provision of artificial salt-licks, construction of roads, paths, look-out towers, rest houses, etc. Sanctuaries of course do not require special legislation and can be declared at any time by Government. The Government can also introduce modifications in their status and exploitation of forest produce, which is a grave weakness in their constitution⁹⁸.

Before bringing a national park into existence in India it must be confirmed that the area is of sufficient importance and status to deserve the appellation. Administration of the area must be improved and illegalities such as poaching and unauthorised grazing eliminated. Adequate publicity should be given to the idea so that the ensuing legislation will be favourably received. The legislation itself may be of an embracing nature or specific for the particular park and it must clearly state the authority who will administer the park and the acts permitted in it, if any. The size of the park must be adequate, the boundaries well chosen and buffer zones provided against shooting, grazing and cultivation. "Both sanctuaries and national parks may be formed out of reserved or protected forests and where extraction of forest produce or other forms of revenue operations, all of which are disturbing to wild life, are unavoidable it is desirable to have an inner sanctuary (Abhayaranya) where no disturbance whatever is permitted.

In addition to sanctuaries and national parks there may be certain areas in which wild life is to be afforded protection, for instance in and around towns and sacred places or near lakes and in river valley catchment's areas. At other times such protection is necessary to enable a species of wild life, which is on the verge of extinction, to re-establish itself. Government may declare such areas or species as 'protected' for temporary periods or even permanently⁹⁹.

Wildlife Action Plan, 1983

Another significant plan of wildlife conservation is the policy perspective documents the Wildlife Action Plan, 1983, providing a framework of strategy as well as action programme for wildlife conservation. An action-oriented programme, it was launched with the participation and support of appropriate and competent authorities and

⁹⁸ Stracey, P. D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture. Dept. of Agriculture, Faridabad: Government of India Press.

⁹⁹ *ibid.*

voluntary non-governmental organizations (NGOs). Its main components are¹⁰⁰:

- *Establishment of a Representative Network of Protected Areas.*
- *Management of Protected Areas and Habitat Restoration.*
- *Wildlife Protection in Multiple Use Areas.*
- *Captive Breeding Programmes.*
- *Wildlife Education and Interpretation.*
- *Research and Monitoring.*
- *Domestic Legislation and International Conventions.*
- *National Conservation Strategy.*
- *Collaboration with Voluntary Bodies.*

Constitutional Protection in India

The philosophy and principles expounded in the Stockholm Declaration concerning protection of natural environment and wildlife had their direct impact on India as some of these principles were incorporated in the Constitution (42nd Amendment) Act, 1976. In this context, the Act lays down in categorical terms that the state shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country." In Part IV -A that deals with fundamental duties of the citizens, the Indian Constitution stipulates, "it shall be the duty of every citizen to protect and improve the natural environment including forests, lakes, rivers and wildlife, and, to have compassion for living creatures."

In the realm of environmental and resource conservation, most of these conventions are sequel to Stockholm Conference, 1972 and Rio Earth Summit, 1992. India, as an active member in the said UN conferences on environment protection, adopted a large number of conventions, which concern or relate to India¹⁰¹. Ironically, today, the biggest threat to many national parks in the developed world is tourism. Over popularity is perhaps one of the greatest hidden dangers to the environment.

¹⁰⁰ Dhyani, S.N. (1994), *Wildlife Management*, Jaipur and New Delhi: Rawat Publications.

¹⁰¹ *ibid.*

That the parks are trying to protect and by giving an area the status of a national park it automatically become an attraction place to visit¹⁰². This can be especially problematic for park management in areas where national park status was given several decades ago, but the pace of technological change and transport development has meant that they have become easily accessible to large numbers of peoples for day trips and vacations.

Although many countries possess national parks, the type and amount of permitted human activity in them may vary considerably. When the parks were created they already included human settlement and associated economic activities such as agriculture, forestry and some extractive industries¹⁰³. Ultimately, the type of national park or protected area that is established in a country is likely to be a reflection of a variety of different factors, including existing levels of economic development, population density and the extent of institutional and financial support from government¹⁰⁴.

In less development countries, the rationale for the establishment of national parks is much more closely associated with the conservation of wildlife supported by the revenues from tourism. Indeed, the day to day running and operation of the parks is often dependent upon the revenues received from international tourism. In less developed countries, national parks act as important focal point for attracting international tourists, for example east and South Africa, Coasta Rica, India, Nepal and Indonesia.

However, sometimes the creation of national park in less developed countries has adverse cultural impacts, including the displacement of indigenous people. Although national parks are very important for aiding conservation of the natural environment, their creation can result in costs beside benefits. The key to achieving success in national park is the development and implementation of suitable management plans, which balance the use of natural resources, the needs of the local people and the expectations of the tourists.

¹⁰² David, A. Fennel (1999), *Ecotourism-An Introduction*, London: Routledge.

¹⁰³ *ibid.*

¹⁰⁴ Stabler, M. I. (ed.) (1997), *Tourism and Sustainability, Principle to Practice*, Wellington: CAB International.

Summary of the cost and benefits of national parks

BENEFITS

- Protect landscapes, wildlife and ecological communities.
- Provide a place for people to have access to and experience the countryside. Tourist can also provide revenues for scientific research & conservation projects.
- Offer employment opportunities for local people to become involved in conservation of the environment rather than destructive practices such as cleaning natural vegetation for agriculture and poaching.¹⁰⁵

COST

- Unless carefully management, recreation and tourism can pose a threat to both the landscape and wildlife that the park was established to protect.
- Granting of national parks status focuses attention on the area. This may possibly lead to the attraction of too many tourist and overcrowding of the area.
- Indigenous people can be excluded from their territory to protect landscape and wildlife.

Sustainable development must be implemented where people are invested with a sense of place and are able to learn, feel and be empowered to act at the local level. Sustainable Development must be integrated into policies and decisions in local communities where people have the power to effect change and make decisions based on unified systematic world view a “first world”, one that begins healing the environment in the present for the future. Local communities, as the force that drives change for better or worse one thus the appropriate scale for dealing with sustainable development¹⁰⁶.

Community in the context of sustainability, is a group of people with similar interest living under and exerting some influence on the common development of their

¹⁰⁵ Andrew, Holden (2003), *Environment and Tourism*, London: Routledge.

¹⁰⁶ Maser, Chris (2001), *Sustainable Community Development: Principle and Concepts*, Delray Beach, Florida: St. Lucie Press.

place of residence, where they have some degree of local autonomy¹⁰⁷. People in a community share social interaction with one another and organization beyond government and through such participation are able to satisfy the full range of their daily requirement within the local area. The community also interacts with the larger society both in creating change and in reacting to it. Finally, the community as a whole interacts with the local environment, molding the landscape within it, rests and is in turn molded by it.

In a unified worldview, a local community serves five purposes: -

1. **Social Participation**- where and how people are able to interact with one another to create the relationship necessary for a feeling of value and self worth.
2. **Mutual Aid**- services and support offered in time of individual or familiar need.
3. **Economic Production, Distribution and Consumption**- jobs, import and export of products, as well as the availability of such commodities as food and clothing in the local area.
4. **Socialization**- educating people about cultural values and acceptable norms.
5. **Social Control**- the means for maintaining those cultural values and acceptable norms¹⁰⁸.

Local community development is a process of organization facilities and action that allows people to create a community in which they want to live through a conscious process of self-determination¹⁰⁹. A prerequisite for sustainable development in a local community is that it must be inclusive, relating all relevant discipline and special profession from all walks of life.

The World Wildlife Fund from its inception in 1961 has placed prime importance on the saving of natural areas as part of the general conservation of nature and wildlife. It has provided funds for the purchase and rental of land for parks and reserves, both as grants and as loans, and has used its influence up to the highest levels to encourage the establishment of parks. WWF will continue to play its part in educating governments and

¹⁰⁷ Pearse, Douglas (1987), *Tourism Development*, Longman, Scientific and Technical, New York: John Wiley and Sons.

¹⁰⁸ Maser, Chris (2001), *Sustainable Community Development: Principle and Concepts*, Delray Beach, Florida: St. Lucie Press.

¹⁰⁹ *ibid*

peoples, and in channelling funds towards the conservation and maintenance of as much of the natural world as possible for the benefit of future generations of mankind¹¹⁰.

The protected areas i.e. wildlife sanctuaries and national parks are supposed to protect biodiversity. On the paper they cover slightly more than 4 percent of the total area of India. In theory, they are to be kept inviolate to protect and conserve all the non-human beings that they hold including plants and also including all the physical features their ecosystems contain. In reality, all of them are inhabited by substantial number of human beings who interact with these ecosystems in various ways. In addition, these protected areas are threatened by civilizing, commercial and technological forces, which want to use these landscapes for purposes other the protection of biodiversity¹¹¹.

Social activists argue that the real protectors of the forest are the local communities. If they are allowed to pursue their traditional lifestyle, forest and other habitats will be automatically conserved¹¹². The character of vegetation together with climate and physical features of the landscapes defines the habitat pattern of the area. The habitat pattern in turn determines the character and distribution of life forms of given areas¹¹³.

The current system of education also gravitates towards exploitation of nature. It leads to a rise in material aspiration without in any way providing a sustainable base for them. In plain terms it ignores the facts that economic development to be successful needs a strong and sound natural foundation. Traditional communities should not claim a share in the remaining biodiversity but should be involved in a nation-wide, labour intensive programme of natural and environmental regeneration.

¹¹⁰ Harroy, Jea –Paul (1972), *World National Parks-Progress & Opportunities*, Brussels: Hayez.

¹¹¹ Gole, Prakash (2001), *Nature Conservation and Sustainable Development in India*, Jaipur: Rawat Publications.

¹¹² OECD (1980), *The Impact of Tourism on the Environment*, General Report, Paris.

¹¹³ Inskip, E. (1991), *Tourism Planning: An Integrated and Sustainable Development Approach*, New York: Van Nostrand Reinhold.

Chapter II

Ranthambhore Tiger Reserve: Sustainable Development of Tourism and Wildlife Protection

India is known for socio-cultural tourism products world widely. Its historic building, traditional fairs and festivals, customs and rituals have contributed a lot to make it choice of all age group of tourist from all walks of life. The tourism industry has affected the country and the residents and thus known as everybody's business. Therefore the main issue of the country's tourism industry is not to sell our heritage but to sustain it for future generations¹.

Tourism is a fast growing phenomenon. In recent times, it has become the catchword in developing countries, as it is economic and social force of major properties around the world. In fact international tourism has become one of the most poignant items of international trade and outdoes staple and essential commodities. Tourism being a thoroughly dynamic force, the target audience is being wooed throughout the world. With the renewed emphasis on outward oriented growth, which has accompanied the rise of new liberal development strategies, increasing attention has been focused on international tourism as an important potential growth sector for many countries. The international tourism sector has indeed enjoyed prolonged rapid growth in many areas during the post war period.

Tourism has immense economic potential. It influences and affects social, environmental and land development policies. It contributes to the transfer of wealth from the industrialized to the developing countries. it has already become a very important component of our economy. But still tourism in our country is considered as most talked about but least worked upon. The percent share of India in the world tourism traffic is 0.4 percent during 1995 and this certainly reflects the above².

Our country is endowed with unique and rich animal and plant life which is mainly attributable to a vast range of habitats from the high mountain to the coasts. India is considered sixth among the twelve-mega biodiversity countries of the world. Little wonder than that our country supports some 15000 species of plants, 1693 of fish, 181 amphibians, 395 reptiles, 1175 birds and 372 mammals, 60,000 of insects and 5000 of mollusc. This is the known biodiversity; there may be several thousand more which are

¹ Modi, Shalini (1997), *Community Involvement & Holistic Development of Tourism*, New Delhi: Tourism Consulant, Padra Road.

² G. Krishna, Ranga, Rao (1994), *Profile of Sustainable Tourism Development in Select World Heritage Attraction*, Gwalior: IITTM.

yet to be discovered.

Protected areas in India have been created basically for the conservation of our natural heritage and the fast depleting living resources ecological processes and functions. The value of compatible tourism is providing an opportunity to build up a sizeable public support in favour of protected areas specifically and to the ethos of conservation generally³.

In India the very term wildlife is new. Hitherto, as stated above, the emphasis has been no sport and hunting and the word commonly employed has been 'game'. In recent years this term is being discarded when applied to the management of sanctuaries, etc., which are now generally referred to as wild life sanctuaries. The term *wild life* is appropriate when dealing with the management, control and conservation of the wild animal population as a whole as distinct from the purely game animals⁴.

The forest administration in India is more than hundred years old. Efforts to identify plant species as a part of wildlife and to recognise the importance for providing special protection to endangered plant species have so far been negligible. While the rapid disappearance of some beautiful animals stimulated efforts to protect fauna, this has not been the case with flora⁵.

Wildlife in India Through Different Phases

In India Wildlife passed through different phases. Its can be described through different phases under four distinguishable periods namely, (1) Vedic-Hindu period, (2) Medieval-Mogul period, (3) British period and (4) Post Independence period. The brief description of wildlife under different periods that it passed from the state of abundance in ancient India to a state of decline and critical survival as at present is as follows.

Vedic-Hindu Period:

Forests and wildlife in India was in abundance right from the ancient time. The early Aryans were pastoral people who loved nature and lived in its sylvan surroundings. *Aranyas* (forests) and ashrams (hemlitage) were inextricably linked with Vedic religion

³ Kumar, Suhas (2002), *Wildlife Tourism in India: Need to Tread with Care*, in Sharma B.D. (ed.), *Indian Wildlife – Threats and Preservation*, New Delhi: Anmol Publications Pvt. Ltd.

⁴ Stracey, P.D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture, Dept of Agriculture, Faridabad: Government of India Press.

⁵ Hosetti, B.B. (1997), *Concept in wildlife Management*, Delhi: Daya Publishing House.

and culture. The ashrams in the forests were the cradle of Aryan civilization. The teachings of our sages, who dwelt in forests in complete harmony with nature, enjoined on the people to treat all animals and birds with compassion. In accordance with the teachings and tenets enshrined in various scriptures, animals and birds were given full protection. Our sages and gurus gave such spiritual messages as *Ahimsa Parmodharma* (non-violence is the greatest religion) and *Sarve Santu Niramaya* (may all beings remain healthy). *Punish Sukta* invoked peace and happiness to all men and animals⁶.

No wonder, the habitats of wildlife during those times were "Abhayaranyas" where animals and birds roamed about without fear of man.

The *Abhayaranyas* of those days could be compared with the modern National Parks. Shooting of animals and birds in these *Abhayaranyas* was prohibited and severe penalties were prescribed for breach of law. Death penalty was prescribed for killing an elephant. Extraction of timber and other forest produce from such protected forests was not allowed. Even inside the protected forests the dangerous animal was not killed. Animals inside the protected forests were not disturbed because wild beast was trapped and brought outside the area of the forests and then killed.

With the passage of time and greater demographic pressure more and more forests were brought under the plough. With the shrinkage in their habitat, the wildlife dwindled. It was perhaps this alarming trend. The fifth Pillar Edict of Asoka is the earliest record of steps taken for the protection of wildlife in India. In this inscription of 3rd century BC, a list of birds, beasts, fish and insects was inscribed which were strictly to be preserved.

Moghul Period:

The Moguls were great lovers of game. They preserved wildlife for *shikar*, the hunting preserves were known as *Shikargahs*. The kings and princes hunted for pleasure in these preserves. Their interest in the preservation of wildlife is reflected in the memoirs of the emperors and chronicles of contemporary European travellers. Towards the end of the Mogul period and beginning of the British rule there was an abundance of wildlife in

⁶ Bisht, R.S. (1995), *National Parks of India*, Ministry of Information and Broadcasting, Government of India, New Delhi: Publications Divisions, reprinted 2002.

India. Similarly, the game animals and birds were in plenty. Preservation of wild animals was a necessity for the Mogul rulers⁷.

British Period:

During the early days of British rule the area under forests was quite large. There was no dearth of game animals and birds in the country. However, with rapid rise in human population and economic dependence on primary sector the demand for land became insatiable causing heavy inroads into the forests. The area under forests dwindled leading to the decline in wildlife. The invention of the gunpowder gave a thrust to this trend.

It also became a fashion with army officers, tea planters, and civil officers to take on wildlife just for fun. There was total neglect of wildlife. Poaching and wanton shooting resulted in depletion of a variety of animals and near extinction of some species. It is on record that on account of indiscriminate shooting of lions in Gujarat, in 1913, Mr. Willinger the then District Forest Officer reported that only six to eight lions were left in an area of 1893 sq. km. It was only then that a total ban was imposed on lion shooting and this species was saved from extinction.

During the Second World War when timber extraction was intensified to meet the need of the army, forests and wildlife suffered immensely. All these factors contributed to the decline of the wildlife in India.

After Independence:

On an average 1.5 lakh hectares of forests were diverted per year greatly reducing the habitat of wildlife. The "Grow More Food Campaign" proved disastrous to wildlife. With more roads passing through and greater commercial utilization of forests, wildlife was exposed to the glare of flashlights and gunshots by night.

It is reported that 11 different species of elephants existed in Shiwaliks as compared with a single species that we have now. Similarly, there is only one species of rhinoceros in India as against six in the past. The beasts of prey were also far more numerous than today. India has, therefore, come down from the state of plenty of wildlife

⁷ Bisht, R.S. (1995), *National Parks of India*, Ministry of Information and Broadcasting, Government of India, New Delhi: Publications Divisions, reprinted 2002.

to a critical stage where vigorous efforts are required to be made to protect and multiply them for maintaining natural equilibrium⁸.

Wildlife Tourism Related Policies & Issues

Wildlife tourism is one who blends a wish for enjoyment with an actual or at least potential interest in wildlife and with the objective of observing and being in close proximity to wild animals, plants and ecosystems.

Wildlife tourism must be oriented towards the low budget visitor and it must in some way involve the common person. At the risk of a slight digression it must be mentioned here that wildlife policies in India have generally tended to alienate the common citizen, especially the villagers who are made to sacrifice in the interest of wildlife protection. It would be thoroughly unjust, and perhaps counter productive in the long run to build up a system of elite wildlife tourism in India, which is what seem to be happening⁹.

The role of tourism as an organized industry is becoming increasingly important. The success of project tiger has increased the potential for wildlife tourism in India. Several national parks and sanctuaries draw a fair amount of tourist traffic. There is considerable potential for increasing wildlife tourism in India, both as the primary motivation for visiting India and also as an added attraction for “general interest” tourist¹⁰. The success of conservation efforts under project tiger in particular has greatly increased the potential for wildlife tourism. Given proper habitat management, animal management, law enforcement and wildlife education, wildlife tourism can be stepped up considerably above present level of tourist traffic. A beginning in developing wildlife tourism was made in the 4th plan by taking up the construction of forest lodges in five wildlife sanctuaries, namely Bharatpur (Rajasthan), Kaziranaga (Assam), Sasangir (Gujarat), Jaldapar (West Bengal), Dandeli (Karnataka). These scheme spilled over to the fifth plan, some more new forest lodge project were taken up, namely Betla in Palamau Game Sanctuary (Bihar), Ranthambhore in near Sawai Madhopur in Rajasthan

⁸ Bisht, R.S. (2002), *National Parks of India*, Ministry of Information and Broadcasting, Government of India, New Delhi: Publications Divisions.

⁹ Sinde, Pratiba (1996), *Wildlife Tourism: Some Policy Issues*, New Delhi: New Publications.

¹⁰ *ibid.*

(renovation and expansion), Simlipal in Orissa and development of a Lion Safari Park at Nandankanan (Orissa)¹¹.

Wildlife Tourism and Economic Development

Tourism is an important source of foreign exchange to developing and developed countries. Tourism has expanded worldwide over the past few decades with the development of air travel and many of the countries visited, contain substantial wildlife population. In some cases, particularly in Africa, the wildlife is the principle tourist attraction and much of the income occurring from tourism can be credited to the wildlife.¹²

It must be clear that the economic value of wildlife through tourism is distinct from any other value. Societies often support activities that are demonstrably uneconomic, such as the preservation of ancient building. As with the game cropping, some conservationist have stressed the revenue earning potential of the game viewing as a reason for the existence of national parks and the reserve but argument may recoil upon the proponents if the parks prove to be uneconomic¹³.

Indian national parks are generally much smaller than those in Africa, although of great interest. Tourism is well developed in India but most visitors go there to see the temples and art treasures rather than the wildlife. Travel to the national parks and reserves is difficult and there are few facilities for the visitors. Game viewing is difficult because more of the animals are nocturnal than in the case in Africa and many live in thick country and thus difficult to see¹⁴.

Implications of Wild Life Tourism

Wildlife viewing in developed countries with South Africa included in this category is a form of recreation for residents of the countries. In contrast, wildlife based tourism in developing countries is principally an occupation for visitors from overseas. The implication is that only people in the developed world are interested in wildlife. This is a simplification but the statement is essentially correct because only people from the

¹¹ Paper (1995) *Wildlife Reserve*, Seminar on Promotion of Wildlife Tourism in India.

¹² Panwar, H.S. & J.B. Sale (1986), "The National Wildlife Action Plan", *Indian Forester*, Vol. 112 No.10: 841-844.

¹³ Kothari, A. P. (1989), *Management of National Park and Sanctuaries in India: A Status Report*, New Delhi: Indian Institute of Public Administration.

¹⁴ *ibid*

developed world can afford to be interested in wildlife. Tourism of any kind is available only to the relatively well off and the third world peasant struggling to earn enough for the basic essentials of life is unlikely to have money to spare even visit national parks in his own country. If tourism were simply a one-way traffic whereby developing countries provided facilities for the rich from the developing world to enjoy themselves, it would be unlikely to be popular with the governments of the home nation. The fact that most third world countries actively promote their tourist trade suggests that they consider it worthwhile. The advantage, of course, is the foreign exchange, that tourists bring to a country. Tourism is a form of invisible export in that money enters the country but no goods leave it in exchange¹⁵.

History of National Park in India

According to the Indian Board for Wildlife, "a National Park is an area dedicated by statute for all time to conserve the scenery, natural and historical objects, to conserve the wildlife there in and to provide for enjoyment of the same in such manner and by such means, that will leave them unimpaired for the enjoyment of future generations with such modification as local conditions may demand".

In the most countries of the world, the national, central or federal government of the country can only create a National Park. But in India a state government can constitute a National Park in its State Legislature-preferably subject to certain standards, which are being laid by the Indian Board of wildlife. The history of National parks in India begins in 1936 when the Hailey (now Corbett) national parks of United Provinces (now Uttaranchal) was created. The definition of national parks evolved in 1933 at the London conference of African fauna, according to which a national park is an area placed under public control, the boundaries of which shall not be altered except by competent legislative authority. The area is declared for the protection and preservation for all time of wild animal life and wild vegetation for the benefit and advantage and enjoyment of the general public. In this area hunting of fauna or collection of flora is prohibited except under the direction of park authority¹⁶.

¹⁵ Kothari, A. et al. (1989), *Management of National Park and Sanctuaries in India: A Status Report*, Indian Institute of Public Administration, New Delhi: IIPA.

¹⁶ Hosetti, B.B. (1997), *Concept in wildlife Management*, Delhi: Daya Publishing House.

Though the first bird sanctuary in the country was set up at Vedanthangal (Tamil Nadu) in 1898, the first National Park, the Hailley National Park which is now known as Corbett National Park, was set up much later in 1935 in Uttar Pradesh. Until 1975, there were only 5 National Parks and 128 Wildlife Sanctuaries spread over an area of 24,000 sq. km.

The number of National Parks and Wildlife Sanctuaries has risen to 80 and 441 respectively in 1998. The total area under National Parks and Wildlife Sanctuaries is about 23.2 per cent of the country's forest area and 4.53 percent of the geographical area. This shows that there has been remarkable improvement in the conservation effort in the country during the last few years and the National Parks have contributed significantly in the conservation effort. Within the overall objective of providing improved habitat for protecting, propagating and developing wildlife in general, some National Parks have been established to undertake schemes and programmes for protecting threatened and rare species¹⁷.

In India the first step was the 1887 Act for the Preservation of Wild Birds and Game followed by the similar 1912 act that, however, has remained practically a dead letter in the States where it has been adapted. The Government forests wild life has received fair protection through the shoaling rules of the Indian Forest Act. In 1935 through the efforts of the then Society for the Preservation of Wild Life, the Government of India held a conference in Delhi on wild life. This gave an impetus to the movement, which resulted in the formation of the Hailey National Park in Uttar Pradesh but with the 2nd World War, the enthusiasm soon died down. It is significant that probably because of the national character but also possibly because of motives of enlightened self-interest, the only organizations for the preservation of game which have survived for many years have been those created by British tea and coffee-planters in north Bengal (the Bengal Dooars) and in south India (Travancore, Plains and Nilgiris)¹⁸.

¹⁷ Bisht, R.S. (1995), *National Parks of India*, Ministry of Information and Broadcasting, Government of India, New Delhi: Publications Divisions, reprinted 2002.

¹⁸ Stracey, P. D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture, Dept of Agriculture, Faridabad: Government of India Press.

Growth of Protected Networks (1972-1994)

Since the establishment of the first Vedanthangal Bird Sanctuary (Tamil Nadu) in 1819, India has made phenomenal progress in the establishment of national parks and sanctuaries wherein the main forms of wildlife species are protected and conserved. For instance, Kaziranga Wildlife Sanctuary (Assam), originally a forest reserve up to 1906, became a game sanctuary in 1926 and finally a wildlife sanctuary in 1945. The Hailey National Park, now known as the Corbett National Park, has the distinction of being the country's first wildlife reserve in Garhwal (Uttaranchal) established in 1936¹⁹.

India's national parks and wildlife sanctuaries are varied, picturesque and rich in biodiversity. Of course, the philosophy of national parks is ancient in origin and its vague idea is found in Kalidas' immortal *Shakuntlam* and Vana Bhatt's *Kadambari*. Indeed, the *ashrams* of the saints were abodes where men and animals lived in harmony. Kautilya's *Arthashastra* too gives great importance to the protection of animals. However, it was the emperor Asoka who had given a concrete shape to this idea by establishing *abhayaranyas* which are the forerunners of modern wildlife sanctuaries.

Many of the existing national parks and sanctuaries were hunting reserves of former princely rulers of Kerala, Mysore, Gujarat, Rajasthan, Punjab, Madhya Pradesh, etc. For example, the magnificent Bandipur Wildlife Sanctuary in Mysore plateau was established by Maharaja of Mysore as his own private game reserve. The present Sariska National Park (Rajasthan) was hunting reserve of Maharaja of Alwar, and Ranthambore National Park of Maharaja of Jaipur and Keoladeo Ghana Bird Sanctuary of the former rulers of Bharatpur State.

India had no major plans or programmes to protect wildlife during the first three decades of its independence. On the contrary, independence ushered in a period of destruction of wildlife on an unprecedented scale. As a result of food shortage or grow more food campaigns, the central and state governments initiated a national drive to protect crops from the depredations of wild animals. Guns were issued freely to farmers—an action, which literally doomed almost all animals near extinction. Some steps were, however, adopted in 1951 when Province of Bombay enacted the Wild Animals and Wild Birds Protection Act, 1951. In 1952, India had only 33 national parks and wildlife

¹⁹ Dhyani, S.N. (1994), *Wildlife Management*, Jaipur and New Delhi: Rawat Publications.

sanctuaries, most of them were mainly established prior to 1947 but their number gradually increased from 9 to 72 in 1963 covering approximately an area of about 7,700 sq. km. Despite this increase, India's Wildlife policy lacked dynamism and the necessary direction mainly due to lack of awareness of the need and importance of conservation of wildlife species through the creation of a string of national parks and sanctuaries all over the country as representatives of all the main eco-systems²⁰.

After the attainment of independence by India and largely through the efforts of Lt. Col. R. W. Burton, the wild life conservation movement gained a new impetus. The Advisory Committee for Co-coordinating Scientific Work in India, in 1951, appointed a sub-committee of leading sportsmen and wild life enthusiasts "to examine and suggest ways and means of setting up National Parks and Sanctuaries for the conservation of the rich and varied fauna in India".

The functions of the Indian Board of Wild Life are as follows:

- (1) To devise ways and means for the conservation and control of wild life through co-ordinated legislative and practical measures with particular reference to seasonal and regional closures and declaration of certain species of animals as protected animals and prevention of indiscriminate killings.
- (2) To sponsor the setting up of national parks, sanctuaries and zoological gardens;
- (3) To promote public interest in wild life and the need for its preservation in harmony with natural and human environment;
- (4) To advise Government on policy in respect of export of living animals, trophies, skins, furs, feathers and other wild life products;
- (5) To prevent cruelty to birds and beasts caught alive with or without injury;
- (6) To perform such other functions as are germane to the purposes for which the board has been constituted²¹.

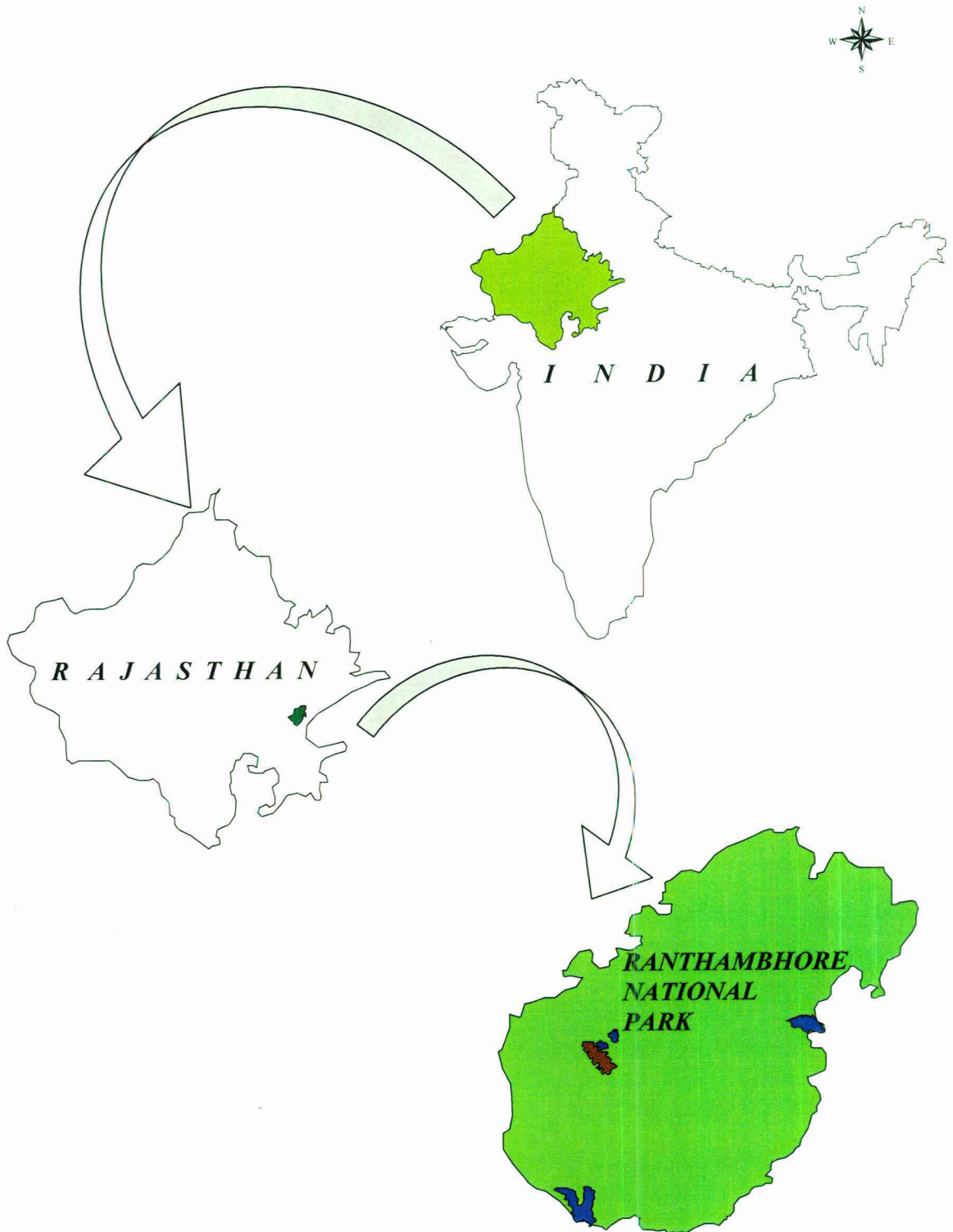
National Parks are now constituted under the provisions of the Wildlife (Protection) Act, 1972, which is a Central Act. State Governments can declare by a notification any area which is considered suitable for protection and conservation for its ecological, faunal, floral, geomorphological and zoological importance, as a National

²⁰ Dhyani, S.N. (1994), *Wildlife Management*, Jaipur and New Delhi: Rawat Publications.

²¹ Stracey, P.D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture, Dept of Agriculture, Fridabad: Government of India Press.

Map II.1

LOCATION OF RANTHAMBHORE NATIONAL PARK



Note: Map Not to Scale

Park. In a National Park all the private rights are extinguished and it is insulated from human intrusion, commercial forestry and cattle grazing so that conditions are created which are conducive to natural and balanced growth of flora and fauna. These National Parks not only save the wildlife from human assault but also serve mankind in more than one way. Wildlife in a National Park, with all its diversity, grandeur and charm is a source of education and aesthetic enjoyment. The rich and luxuriant trees and plants of the park conserve soil, retain and regulate the flow of water and enrich the weather regime effecting overall improvement in the environment of the area²².

After independence Government of India made some plans for the development of forests and their natural habitats. National forest policy was the first step in this direction in which one third of geographic area was aimed to achieve as forest areas (60 percent in plains and 20 per cent in hills for ecological balance and preservation of wildlife. Government of India is conscious for the preservation and development of wildlife and has taken many steps in the direction. Among these steps the most important is the financial assistance to states for the development of sanctuaries and national parks. Due to our corrupt sincerity this scheme became a failure²³.

Profile of the Ranthambhore National Park:

Ranthambhore is rich compact habitat but fragile ecosystem. Being situated in the Sawai Madhopur District of Rajasthan between longitude 76° 23' to 76° 39' E and latitude 25° 54' to 26° 12' N, the area of Ranthambhore marks lineup of Aravalli and Vindhyas ranges at an average altitude of 450 m above sea level²⁴. It comprises of numerous valleys and flat hilltops forming picturesque of the historical Ranthambhore fort. The pure stands of dry deciduous forest of *Angeissus pendula* provide an ideal habitat for the tiger.

No systematic management of the forest and the wildlife existed prior to 1796 when this area was handed over to the rulers of Jaipur by the Moughals, since then the

²² Bisht, R.S. (2002), *National Parks of India*, Ministry of Information and Broadcasting, Government of India, New Delhi: Publications Divisions.

²³ Hosetti, B.B. (1997), *Concept in wildlife Management*, Delhi: Daya Publishing House.

²⁴ Sharma, J. R. et al.(1999), "Status of forest and Change in Biomass in and around Ranthambhore National Park", *Annals of the Rajasthan Geographical Association*, Vol. XV & XVI, 43-50.

area has been conserved as the game preserve of the ruling clans of Jaipur. The maharajas of Jaipur were keen lovers of shikar and therefore they preserved and zealously protected the wildlife and the forests²⁵.

After independence this area, which was basically a reserve forest was taken over by the forest department of government of Rajasthan and in the year 1957-58 a part of this area was declared as a wildlife sanctuary. In 1973, Ranthambhore was selected as one of the nine project tiger areas. Finally, it got the status of National Park in 1980.

Rajasthan is a compact but fragile ecosystem very much susceptible to disturbances even by a small factor. The animals have a limited food and shelter and have to manage within these limited resources. A little fire can destroy the whole grass and fodder resource leading the animals to starvation. Even drought may result in drying up the water holes, which may lead the animals to death by dehydration. There is no adjoining alternative forest, where all the animals can conveniently shift and take shelter to tide over the effect of the adverse climate or other natural or artificial disturbance. In such circumstances the animals have no other alternative but to escape by adapting to the changed condition to a stage of tolerance. The tracts consist of hills of the Aravallis and the Vindhya ranges forming numerous valleys, gentle hill slope and flat hilltops called 'Dangs'. The elevation varies from 215 metres above mean sea level to 500 metres above mean sea level²⁶. The reserve is contiguous to the forests of Karauli and Sapotra in the north and north east, intercepted by river Banas and its ravines. The southeastern boundary is flanked by the ravines of rivers kandoli, a tributary of Chambal, which forms an important route for the animals for crossing over to the Shivpuri forest of Madhya Pradesh.

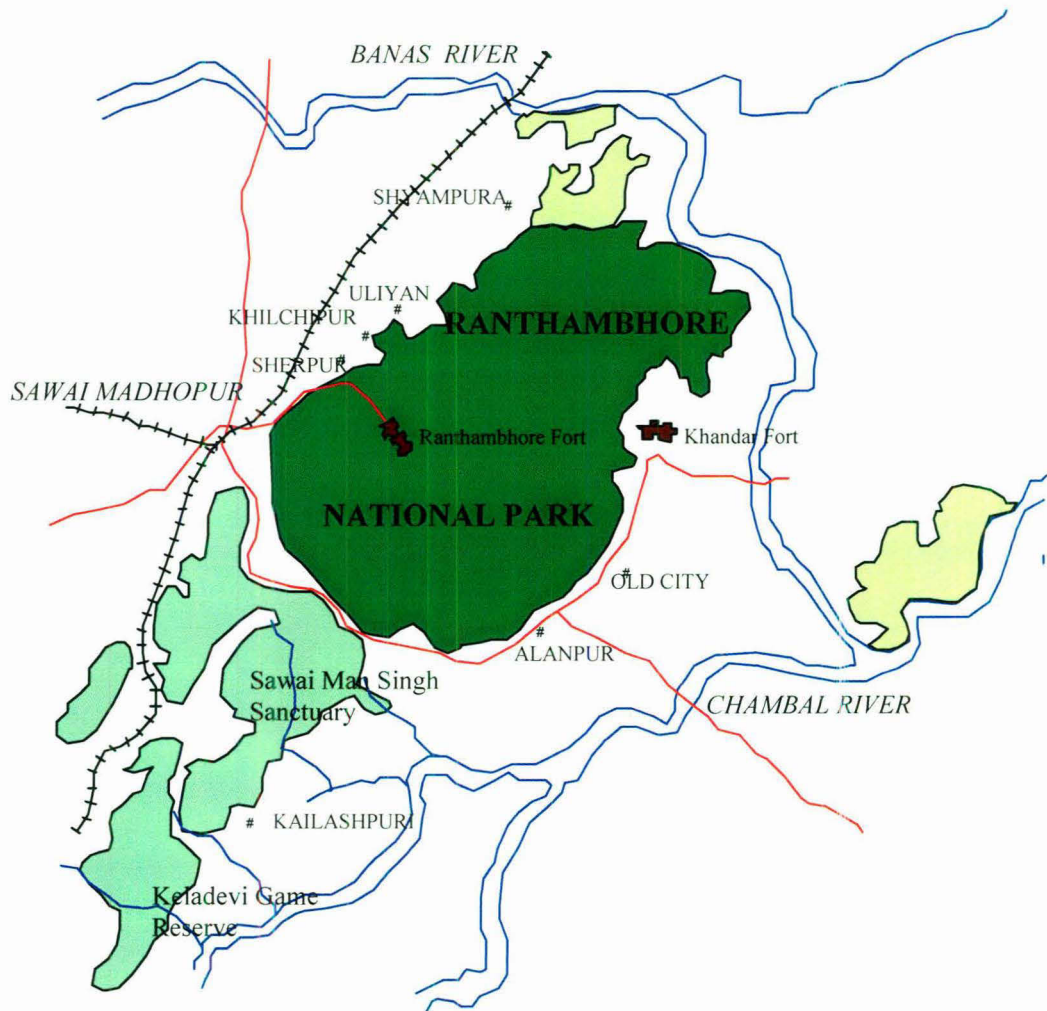
Ranthambhore gets its name from the two hills "Ran" and "Thambhore" which are in close proximity. Ranthambhore national park is set between the Aravalli and Vindhya ranges²⁷. It is an ecological island in the vast, degraded surroundings of Rajasthan. Like many other protected areas, the forests of Ranthambhore were owned by the erstwhile rulers of Jaipur state and were protected as private hunting grounds. Over a

²⁵ Vardhan, Harsh and Bapna, T. K. (1980), *Ranthambhore Pug Marks*, Jaipur: Holiday Publication.

²⁶ "Tiger Reserve Ranthambhore"(1979)- International Symposium on Tiger, New Delhi.

²⁷ *Ranthambhore Revisited*, 1998, World Wide Fund for Nature.

Map II.2 RANTHAMBHORE TIGER RESERVE



- RIVER
- RAILWAY LINE
- ROAD
- OTHER FOREST AREA
- SAWAI MAN SINGH AND KELADEVII SANCTUARY
- RANTHAMBHORE NATIONAL PARK

Note: Map Not to Scale

Based on Chatterjee, Sudipto and Manish Pande, *Ranthambhore Revisited*, WWF, India.

period of time these forests have undergone changes in terms of legal and administrative status. In 1955, parts were declared a game sanctuary.

The total area under the National Park is 392.50 sq. km, out of which 274.50 sq. km is core and the remaining 118 sq. km is the buffer area. The total Ranthambhore Tiger Reserve area is 1174.19 sq. km, and includes two other protected areas: Keladevi Sanctuary and Sawai Mansingh Sanctuary.

The Ranthambhore National Park, towards the end of the last decay, was joined to the other game reserves, sanctuaries and reserved forest in order to provide a buffer zone to the main park and thus reduce the grazing pressure of the wild and domestic and also to provide a contiguous corridor to wildlife for their better genetic breeding. Thus the reserved forest, which existed on the main core area, was given the status of sanctuaries and game reserves. This contiguous zone now spread to more than 100 sq. km. area from north-east to south-west under different names.²⁸

The most prominent of these extended areas is the Kailadevi Sanctuary spreading to the north of Banas River and having a rich growth of trees and grasslands for wildlife. To the south-west lies the Mansingh Sanctuary, separated from the Ranthambhore core by the Jaipur road. Still further to the south along the rail road to Kota are the Kualji game reserves, spreading out in the four isolated patches²⁹.

After its inclusion in Project Tiger, the main emphasis was laid on elimination of biotic pressure and habitat improvement. In 1980, a part of Sawai Madhopur sanctuary was notified as National Park and in 1983, to provide room for the increased wild life population of Ranthambhore Park, adjoining forest Block of Karauli and Sapotara Tehsil having an area of 674 sq. km. were notified as Keladevi sanctuary, which later on was transferred to Project Tiger in 1992³⁰. The total area of Ranthambhore National Park now stands 1334.64 sqkm. Details of the area are as under:

²⁸ Sharma, H. S. (2000), *Ranthambhore Sanctuary Dilemma of Eco-Development*, New Delhi: Concept Publishing Company.

²⁹ Vardhan, Harsh and T.K. Bapna (1980), *Ranthambhore Pug-Marks*, Jaipur: Holiday Publication.

³⁰ Negi, S. S. (2000), *Hand Book of National Park, Wildlife Sanctuaries and Biosphere Reserve in India*, IIIRD Revised Ed., Indus Publishing Company.

Area statement of Ranthambhore Tiger Reserve

1. Ranthambhore National Park	392.50 sq. km.
2. Sawai Mansingh Sanctuary	127.60 sq. km.
3. Kwalji Game Reserve	7.58 sq. km.
4. Keladevi Sanctuary	674.00 sq. km.
5. Other forest area	132.96 sq. km.
Total Area	1334.64 Sq. Km.

Formation of these adjoining sanctuaries and game reserves has indeed added to the ecology of the area, giving opportunities to the wildlife to intermingle instead of being caged amidst the plethora of hills. It will also have an added impact on the tiger population, which needs large areas to reign upon and feed themselves. The grazing pressure of domestic animals of the nearby villages will also be lessened when these sanctuaries and closed areas are periodically opened for grazing and cutting of grasses, especially after the rainy season³¹.

Ranthambhore Tiger Reserve is situated in southeast of Rajasthan at the confluence of the Vindhyas and Aravalli hill ranges. It is bound in the south by the river Chambal and to the north is the river Banas. In the north-east, it is joined to the forest of Karauli by a narrow corridor of forest. The same is true in the south-west where it joins the forest of Phalodi. The Park virtually looks like a green island of protected forest amidst a landscape, which is immensely dotted by villages, farmlands and over-grazed wasteland. Therefore it is famous for its natural heritage and rich biodiversity including tiger and other wild animals. It attracts 30000 to 40000 tourists annually from all over the world. It is indeed one of the most interesting and beautiful wild life reserves in the world where one can see the history intermingling with the natural history. One can experience the thrill of standing in between different time memories, joy, pride, honour and bravery.

Prior to the declaration of this wildlife reserve as a National park, the area was a game reserve of the former feudal kings and Maharajas of Jaipur. History and natural

³¹ Choudhary, S.S. (2000), *Ranthambhore Beyond Tigers*, Udaipur: Himanshu Publications.

history blend harmoniously in nature's stark beauty at Ranthambhore. The majestic fort growing out of a steep cliff, the tree entrancing lakes- Padam Talab, Rajbagh and Milak Talab, Lahpur, Mansarovar and Galai sagar (the last two are on the periphery of the project) with islands of lotuses and the syncline lopes of Aravallis and Vindhaya ranges surrounding the lakes; vividly paint a picture of the glory and the grandeur of the place which was once the domain of the kings and maharajas of Jaipur³². Nearly a thousand years old, the massive fort of Ranthambhore has witnessed countless battles by the Chauhan rulers and many others including the Mughal Emperor Akbar. It is said to have been built in 944 A.D. and is one of the India's most ancient fortress. In the vicinity of the fort today is the Ranthambhore National Park that is teeming with a variety of plants and animals.

The forests around the Ranthambhore declared a National Park in 1981. Almost twenty-four years earlier in 1957 it was declared a wildlife sanctuary. It also got an armour in the form of Project Tiger in 1974. Under the Project Tiger, 16 villages with thousand people and ten thousand cattle were to be relocated outside the park boundary. The resistance of the villages soon became obvious and did not come as a surprise. People's sentimental attachment to their traditional homes and environment was strong, as the villages had existed in those forests for over 200 years.³³

The least that could be done for the uprooted villages was to provide various compensation such as more land than what they originally owned, good house sites, wells and pump sets, temple, school and playground facilities. Resettlement was an uphill task. Gradually the villages were shifted, one after another, from 1976 to 1979 ostensibly for the benefit of the villagers as well as the parks. About a dozen villages were relocated outside the park boundary into two new villages Gopalpur and Kailashpuri.

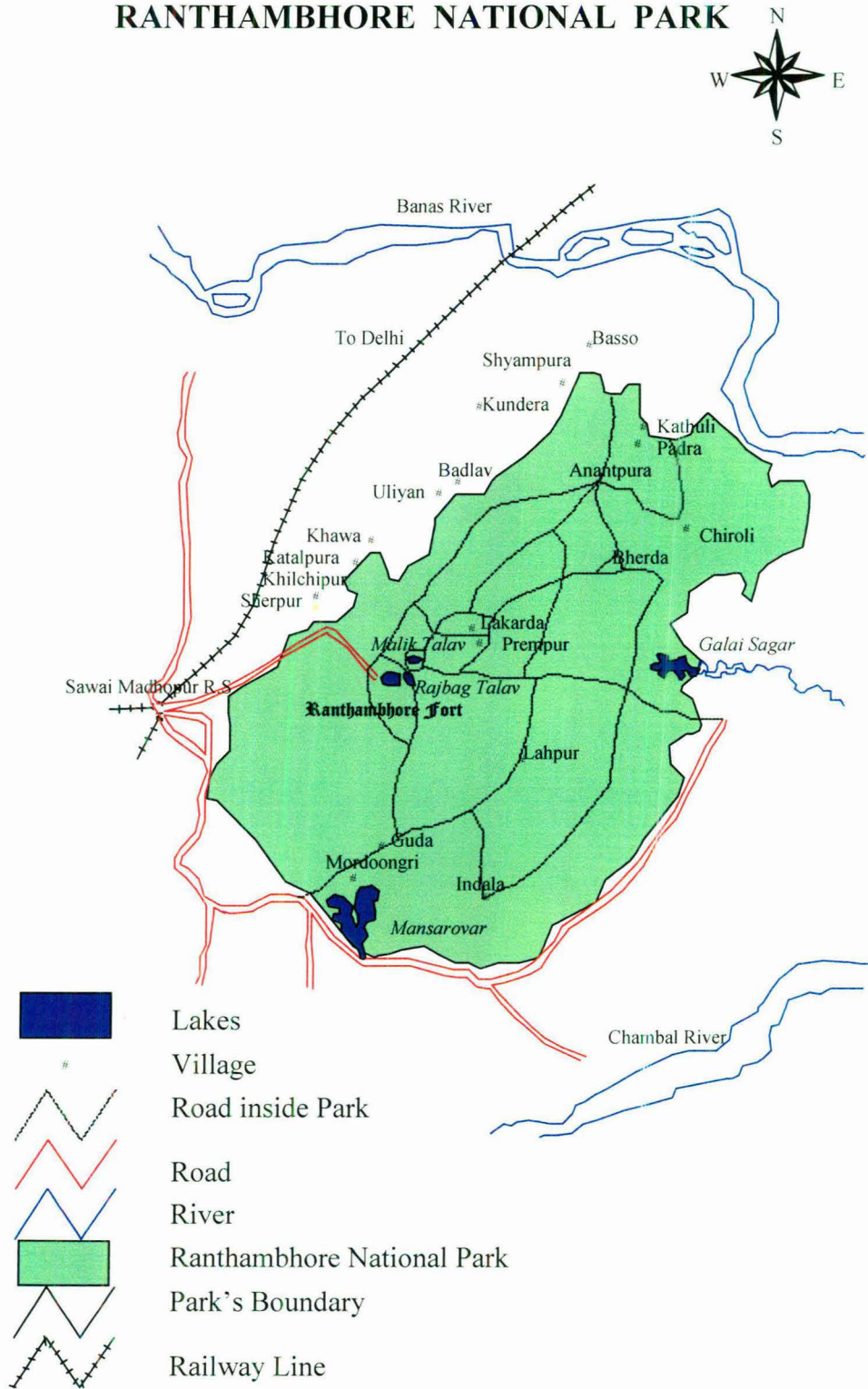
Kailashpuri is too far from the park to have any relationship with the Park Forest or wildlife. The Tiger Reserve comprises of shallow perennial lakes, anicuts, bundh, steep hills, gentle slopes, plateau, narrow valleys and deep gorges. It consists of rolling hills extending from southwest to north-east direction i.e. from Kwanji Game Reserve to Kailadevi Sanctuary, interspreading plateaus, seasonal stream and nallahs, lakes, tanks

³² Vardhan, Harsh and T. K. Bapna (1980), *Ranthambhore Pug Marks*, Jaipur: Holiday Publication.

³³ Desai, Kiran & Quo Vadis (1996), *Ranthambhore*, Ahemadabad: C.E.E.

Map II.3

RANTHAMBHORE NATIONAL PARK



Note: Map Not to Scale

Adopted from Ranthambhore Forest Department, Sawai Madhopur, Rajasthan

and rivers. The perennial streams and nallahs are not available due to limited rainfall and presence of large vertical cliffs in the Tiger Reserve³⁴.

Geographical Background of Ranthambhore National Park

Relief features

Geologically the terrain comprises Pre-Cambrian metamorphic, igneous and sedimentary rocks, belonging to Pre-Aravalli and Vindhya. Since the relief features and the total landscape is of the paramount importance in an ecological study as they determine the distribution of plant communities and provide habitat to wildlife. A maze of low hills and parallel ranges from the general landscape of the area. These hills are of the Aravalli and Vindhya mountain system, which have entangled here. The general relief varies from 250 to over 450 metres altitude above sea level. The main cliff on which Ranthambhore fort is located ranges from 472 to 482 metres high above mean sea level³⁵. A few isolated hills are on the north east, on one such hill the famous Khandar fort exist. The steep faces of the hills and ranges are on the north west, which merge with the plains of Banas River. The northern slopes of ranges have steep escarpment, which is characteristic feature of the Vindhya uplands. The entire hilly area presents a senile topography.

Geologically, the area is distinctly divided into two major units. The eastern side of the area is occupies by the Vindhya group mainly comprise sand stone, shales, lime stone and bresale of widely variable composition and characters occupying most part of this reserve. They are separated from the older rock units namely pre-Aravalli and Delhi by a reserve fault tending North-East, South-West called Great Boundary fault. The western hill ranges of the center of Ranthambhore Sanctuary belong to the Aravalli group of rocks, which are folded and fractured³⁶.

Physiography and Geology

Physiographically, Sawai Madhopur district is characterized by the northern extension of the great Vindhyan plateau covering southeastern parts of the district. The

³⁴ Choudhary, S.S. (2000), *Ranthambhore Beyond Tigers*, Udaipur: Himanshu Publications.

³⁵ Sharma, H. S. (2000), *Ranthambhore Sanctuary-Dilemma of Eco-Development*, New Delhi: Concept Publishing Company.

³⁶ *ibid.*

terrain comprise of Pre-Cambrian Metanorphic, Igneous and Sedimentary rock belonging to Pre-Aravallis Vindhya³⁷.

The soil texture varies from sandy loam to clayey loam in arable and non-arable lands. Alluvial deposition occurs all along stream. Colour of the soils varies from yellowish to grey. Soils become hard in absence of moisture. Ranthambhore has many problems. They don't just concern the tiger. They concern growing biotic pressure, the threat of poaching, the lack of research, problem with motivation and dedication of the staff, problems of tourism management and control so on.

The geology of the south-eastern region is mostly shared by these two rock systems. Their distribution is broadly determined by the two important fault which occur in this region about 12 miles apart and run in the north-east to south-west direction. The south-eastern fault known as "Great Boundary Fault of Rajputana" passes through Phalodi-Bodal-Lahpur-Chiroli and Quadeen. It is along this fault that Gwalior is brought against Vindhya. The north-western fault is not very clear owing to the large spread of alluvium under which it lies but is a real fault and important in effects. At different places along its length the lower Vindhya, Kaimur, lower Rewa and upper Bhanders are brought against Gwalior.

Gwalior system

The rocks of this system are comparatively exposed over a large area north-west of the eastern fault and the Banas river. They are least exposed, as syncline comprises chiefly quartzite interbedded with subordinate shales and dolomite flows and sills. Quartzites are succeeded downwards by shales and slates and are pink or reddish and compact. Dolomites are exposed in south-west of Anantpura, Kachida Valley near Berda, Lakrada areas of the Reserve and run along the bottom of deep narrow strike valleys³⁸.

Lower Vindhya

They are exposed near Shyampura, Dhundarmal Ka Darwaza and Bher area of the Reserve containing quartzites and conglomerates.

³⁷ Choudhary, S. S. (2000), *Ranthambhore Beyond Tigers*, Udaipur: Himanshu Publications.

³⁸ Sharma, H. S. (2000), *Ranthambhore Sanctuary Dilemma of Eco-Development*, New Delhi: Concept Publishing Company.

Upper Vindhvans

They are exposed mainly between south-eastern fault and the Chambal river where upper Bhandar sandstone with a horizontal strata forms large plateau lying over a mass of crumbling siltshales. The Vindhyan rocks here weather into fine sandy soils, aluminous, calcareous and ferruginous soils including deep dark loams and black soils which miscellaneous species including acaheela, Tendu, Dhok etc.

Climate

The climate is sub-tropical with distinct, hot and rainy season. With the minimum temperature going as low as 1° C, the maximum may touch 47° C. Summer months are from April to June, rainy months are from July to September and Winter months are from October to March. The reserve has a tropical type of climate with distinct winter, summer and rainy seasons. The winter extends from November to February, the summer from March to July and the rainy season from August to October. The pre monsoon period of May to June is extremely hot. The average minimum temperature is 5.6°C in the month of January and average maximum temperature is 43°C in the month of May. The average annual precipitation is 800mm³⁹.

Humidity

Relative humidity is generally over 60% during the south-west monsoon. During the rest of the period the air is dry. The relative humidity is extremely low in May averaging only 37%. But it starts increasing by the end of June due to effect of pre-monsoon showers, when it may be around 66%. During the rainy season it exceeds 75% but in winters again it ranges from 45% to 60%. The humidity varies from place to place, in the well-crowned valleys it is always higher where the animals come for a siesta during the day and it is always lower on the crest of the hills, which are always exposed to sun and winds.⁴⁰

Rainfall

The average annual rainfall is about 68.73 cm. But it is highly variable, the annual rainfall was less than the average, from 1991, it shows the positive trend. 92% of the precipitation occurs during the period June to September. Droughts are also not

³⁹ Sharma, J. R. et al. (1999), "Status of forest and Change in Biomass in and around Ranthambhore National Park", *Annals of the Rajasthan Geographical Association*, vol. XV & XVI: 43-50.

⁴⁰ Choudhary, S. S. (2000), *Ranthambhore Beyond Tigers*, Udaipur: Himanshu Publications.

uncommon. The rivers and water holes start drying up soon after the rains and become boggy by the end of winters leaving little hope for respite to the wild animals. The grasses also thin out in the low rainfall months and by the beginning of March, the Park appears to be barren and devoid of forage to the animals⁴¹.

Winds

Winds are light to moderate. Strong winds in summer and early south-west monsoon season blow mainly from westerly and south-westerly direction. Thunderstorms in May to September and dust storms during summer are common. Cold waves from north to north-west direction blow during winter.

The rainfall, temperature and humidity invariably affect the distribution of wild animals and birds. These climatic factors influence the seasonal migration of these animals. However, in the pinch period of May and June when the sources of water are limited to only a few spots where perennial supply of water and the hydrology of the area is affected.

Hydrology

Availability of water is the most potent factor in the distribution of animals and plants. During the monsoon season a large number of waterfalls cascade down the cliffs providing the most spectacular and exquisite beauty to the area. As there are large numbers of vertical cliffs in this Park, water flows down the waterfalls very soon even during the small span of rainfall for a day or two. The park has six reservoirs of water that has water throughout the year. Damming the rivers has artificially created Galai Sagar and Mansarovar reservoirs and they supply water for irrigation to nearby villages. Due to human activities at these points the wild animals seldom visit these sites. It is only during the peak summer season, when other water holes get dry, that the animals come to these sites⁴².

The other four tanks are natural in which the rainwater collects into the natural depression. Padam Talao is a vast shallow lake on the banks of which the famous Jogi Mahal stands. It has water round the year. Herds of wild animals visit this lake every morning and evening giving a picturesque view to the pleasure of the visiting tourists.

⁴¹ Sharma, H.S. (2000), *Ranthambhore Sanctuary Dilemma of Eco-Development*, New Delhi: Concept Publishing Company.

⁴² *ibid.*

Raj Bagh is another big lake having water through out the year. This lake is quite close to Padam Talao but is less extensive in area. Milak Talao is another large depression to hold rainwater but the arrival of monsoon is delayed, then this lake gets dry⁴³. Another small lake is Lahpur lake formed by damming the Lahpur River. The lake dries up in February and provides little respite to the wild animals.

Nonetheless, about a hundred water holes exist in the park that provide water to animals in the pinch periods. Some of them are scattered pools; they form a part of the ecosystem of the park and serve as valuable water reserves. While it is true that no artificial supply of water can be brought here and the wilderness of the area has to be preserved to form its own ecosystem and natural equilibrium, it is significant that the available water should be harnessed to the maximum and the life be rejuvenated in lean summer months⁴⁴.

Vegetation:

The forest occurring in the reserve fall under group 5 tropical dry deciduous forest and group 6 tropical thorn forests, according to the survey, three main tree species are *Anogeissus pendula* (Dhok), *Butea monosperma* (Cheela), *Accacia Catechue* (Khair), *Diospyros melanoxylon* (Tendu), *Zizyphus Mauritians* (Ber), *Lannea Coromandaloies* (Gurjan), *Nimosops hexandra* (Khrini), *Wrightia Tomentosa* (Kat kherni), *Sterculia Urens* (Karaya), *Boswellia Serrata* (Salar), *Syzygium Cumini* (Jamun), *Magnifera indica* (Aam), *Mitragyna Parriflora* (Kadamb), *Accacia Icucephloea* (Raunj). The under growth is generally scanty depending upon the light condition on the forest floor.

In the fully stocked areas grosses and herbs are generally deficient. The well stocked Dhok areas form nearly 65% of the forest. Cheela and Khair occupy the rest of the area. There are five big water reservoirs in and around the reserve. Two of them are on the fringes and three of them are situated in a series inside the core. These three lakes are important sources of water for the animals during the pinch period. Besides these,

⁴³ Sharma, H.S. (2000), *Ranthambhore Sanctuary Dilemma of Eco-Development*, New Delhi: Concept Publishing Company,

⁴⁴ Vardhan, Harsh and T. K. Bapna (1980), *Ranthambhore Pug Marks*, Jaipur: Holiday Publication.

there are so other places well distributed all over the reserve where the animals come to drink water during summer. Hence there is no competition for water in this reserve⁴⁵.

Forestry operations in the reserve have been completely, prior to the launching of the project tiger, the collection of the minor forest produce was permitted in the reserves. There is no timber felling worth the name. The department earlier felled firewood coups but now all these operations have been discontinued.

With the shifting of the villages from the core area the movement of men on foot has been reduced considerably. However, on some of the occasions people from all the direction come to worship their Deities, which still exist inside the reserve. On such occasion they create considerable disturbance, which last for a day or two only⁴⁶.

A limited number of tourist come to the reserve and their movement is restricted to a limited area only. Five in this reserve are rare because of lack of human movement. Similarly no epidemic disease has been notified among the animals so far except stray eases of foot and mouth disease observed in the ungulates.

Restoration of the reserve to natural with state for the benefit of the tiger and associated animals and the elimination and control of the depleting factors are the main objective of the management in this tiger reserve of Ranthambhore.

The vegetation is primarily of the dry deciduous (*Anogeisus pendula*) forest subtype. The area of this reserve includes the confluence of the ancient Aravalli range with the Vindhyan range. The diverse flora and fauna in the forest includes at least 300 species of trees, 50 species of aquatic plants, 100 species of herbs, grasses and seasonal plants, 272 species of birds and 22 species of mammals, apart from reptile, amphibian and insect species. Ranthambhore is known for its tigers. In the first ever census of the tiger in the year 1971, the population in Ranthambhore was estimated at 14 in the year 1991, tiger number were estimated as 45 more recent estimate reveal that there is a decline (37 as on may 2002). The original 392.5 sq. km. is surrounded by 96 villages with an estimated population of 2,25,000 people, 1,50,00 livestock and the never ending pressure of migratory livestock. The population of both people and livestock are directly

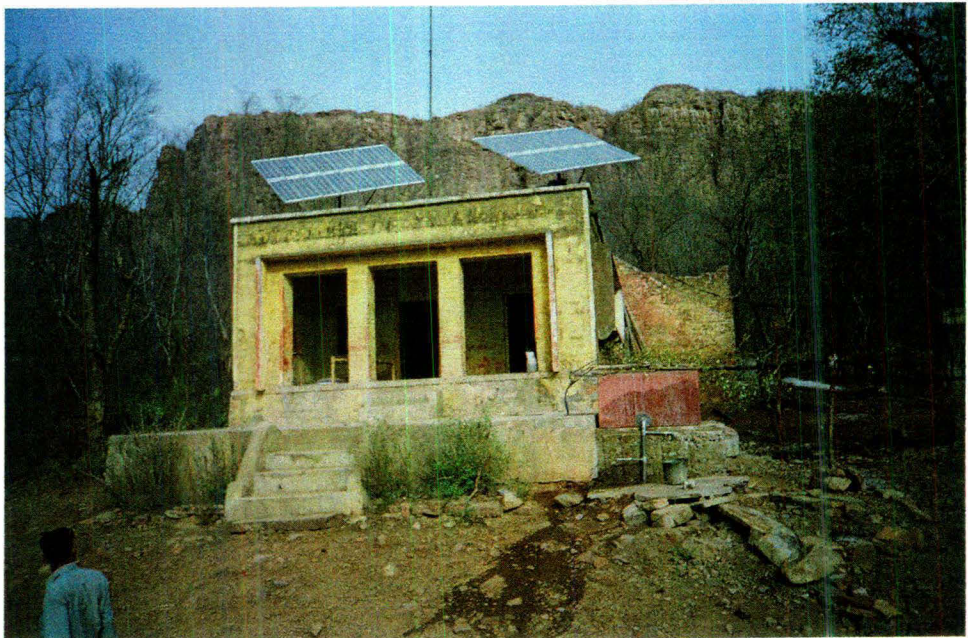
⁴⁵ Sharma, H.S. (2000), *Ranthambhore Sanctuary-Dilemma of Eco-Development*, New Delhi: Concept Publishing Company.

⁴⁶ ibid

Ranthambhore National park



Pic. II.1 Main Entrance Gate of Ranthambhore National Park Near Fort



Pic. II.2 Guda check post(Chowki) inside the Ranthambhore National Park

dependent on this forest area for pastureland, timber and firewood and any other vital minor forest produce that they require⁴⁷.

Till 1973, there were sixteen villages inside the park forest, out of which twelve were rehabilitated. Apart from this, the park forest is which twelve were rehabilitated. Apart from this, the park forest is and a livestock population of nearly 150,000. The communities that inhabit the areas surrounding the park are Meenas, Gujjars, Jats and Berwas among others, with the first two being the largest in number. Meenas hold a Scheduled Tribe status and their main occupation is agriculture. They are known for their assertive nature and wield considerable political clout. Gujjars are mainly dependent on cattle rearing for livelihood. Most of them also own land, but they continue to engage in cattle rearing. Mogias are mainly hired for protection of crops from animals, and Khatiks are engaged in cattle-selling activity. The communities which provide support services also have links with their forests⁴⁸.

The entire area of the Ranthambhore National Park (392.5 sq. km.) having the remnants of old abandoned villages, is criss-crossed by fair weather jeepable roads and bridla path. Outside the core area of the park, the fertile alluvial land of the Banas in the north is dotted by a large number of villages, mostly along the railroad to Delhi.

Inside the core area, remnants of the old villages like Anantpura, Chiroli, Kachida and Bherda in the north, Lakarda and Lahpur in the middle and Guda in the south exist. The rudiments of the old buildings and the sikargahs of the former Maharajas of erstwhile Jaipur State still exist. The existence of a few villages on the eastern margins of the national park viz. Sawata, Talaora, Moi Khan and Khandar is again due to the existence of fertile alluvium of Banas and Chambal rivers, which make a confluence in this part and the river inundation for most of the year spread layer of newer alluvium year after year.

The Ranthambhore National Park falls in two tehsils, the Khandar in the north & east and Swai Madhopur in the west & south, the former having a larger area. It is easy therefore to understand that the entire area in and around the national park is thickly inhabited by people, most of whom are "Meena" a schedule tribe of Rajasthan who

⁴⁷ Choudhary, S. S. (2000), *Ranthambhore Beyond Tigers*, Udaipur: Himanshu Publications.

⁴⁸ Kothari, Ashish et al. (ed.) (1996), *People and Protected Areas- Towards Participatory Conservation in India*, New Delhi: Sage Publications.

unlike other tribes of Rajasthan state, are well settled and practice indigenous agriculture and animal husbandry since the earliest time⁴⁹.

Ranthambhore is an outstanding example of project tiger efforts at conservation in the country. The forest ground was once the private hunting ground of the Maharajas of Jaipur. In 1955, declared as Sawai Man Singh Wildlife Sanctuary and subsequently in 1972, the Project was launched. Sawai Man Singh sanctuary has a flat and rocky terrain and some hills with gentle slopes. The Devpura irrigation dam in the sanctuary is a useful source of water for wildlife and good habitat for aquatic flora and fauna. Keladevi sanctuary is the northern extension of the Ranthambhore Tiger Reserve in Karauli and Sawai Madhopur district. It has hills in its southern, northern and eastern parts. At many places, it has the curious features of two separate ridges running parallel to each other.

It was felt that the 392.5 sq. km. of dry deciduous habitat of Ranthambhore National Park could viably sustain a healthy tiger population. In 1980, it was notified as a National park. Today, project tiger at Ranthambhore is responsible for the management of 627.13 sq. km. In 1992, the Keladevi sanctuary was brought under the same umbrella of management, making the total area to 1174 sqkm. with 392 sqkm. as the core⁵⁰.

The Ranthambhore National Park at the junction of the Aravalli and Vindhyas is a unique juxtaposition of natural and historical richness, standing out conspicuously in a vast arid and demanded tract of eastern Rajasthan, barely 14 km. from the town of Sawai Madhopur. It is spread over highly undulating topography, varying from gentle to steep slopes, from flat-topped hills (Indala, Doodh, Bhat and Chiroli) of the Vindhyas to the conical hillock and sharp ridges of the Aravallis, from wide and flat valleys (Lahpur, Nalghati, Khachida, Anantpur etc.) to narrow rocky gorge. An important geological feature, the great boundary fault where the Vindhyas moved against the ancient Aravallis, passes from here.

The forest between such ridges is dense. The river Chambal binds the sanctuary to the west by the river Banas that finally flows into the Chambal. Some gorges, due to high moisture retention and cooler temperature, are nature's treasure houses. They are locally known as 'Khoh'. The slopes of the khohs are covered with dense forest. These khohs are

⁴⁹ Sharma, H.S. (2000), *Ranthambhore Sanctuary Dilemma of Eco-Development*, New Delhi: Concept Publishing Company.

⁵⁰ Thapar, Valmik (2001), *Saving Wild Tigers*, Delhi: Permanent Block.

the most suitable habitat for wildlife. The main khohs in Keladevi are Nibhera, Kudka, Chairmul, Ghanteshwar, Jail and Chidi.

The 1981 census revealed that there were 1,49,675 people living in 60 villages around the Ranthambhore National Park and dependent on its natural resources. Today Ranthambhore National Park is slowly turning into an island incredibly rich in biodiversity, surrounded by sixty villages depending to a large extent on the natural resources of the park. Among these villages 12 are resettled villages, now a part of two complexes from the area inside the park and the people have suffered economic deprivation by losing access to centuries old resources of firewood, fodder, water and raw material for different traditional crafts from the parks forest and lakes⁵¹.

In the recent past there has been a criminalisation of the villager in a slow process as more and more of the forest and its produce is banned for his consumption. In such condition, it is not surprising that the relationship between the park and villages is often strained and tense, leading to occasional open conflicts and confrontation, especially during critical periods of the year.

The main constraint concerns the balance between socio-economic development and the environment. The high pressure created by the rural population on the environment is the major constraint this is due to a series of interconnected factors.

1. The land available to the villages for exploitation has decreased with the constitution of the national park.
2. The ever increasing population in the villages that surrounded the park.
3. The rural economy of these villages was based earlier on traditional management of resources and kept a balance as the availability and use of land not affected the capacity of the land to regenerate and enrich itself⁵².

The heavy pressure of the population on the natural resources can be easily observed in this area:

- The overgrazing of livestock in and around the villages and the buffer area of the national park.

⁵¹ Desai, Kiran & Quo Vadis (1996), *Ranthambhore*, Ahemadabad: C.E.E.

⁵² Sharma, J. R. et al.(1999), "Status of forest and Change in Biomass in and around Ranthambhore National Park", *Annals of the Rajasthan Geographical Association*, Vol. XV & XVI, 43-50.

- The excessive felling of the trees for firewood, timber and leaf fodder are also easily visible.

The effect of this pressure creates a degraded “desert” landscape in the buffer zone of the park and the surrounding area.

Sustainable Tourism Planning and Development

Tourism continues to grow at a dramatic rate at the global level and the increasing pressure of tourist traffic naturally aggravates the degradation of the environment and social milieu. A happy compromise has to be worked out in between the two extremes: whether to promote tourism at the cost of environmental degradation or to preserve environment for “no tourism” through a forceful, well conceived, defensible and amenable to implementation policy⁵³. To solve these problems, appropriate development strategy for achieving environmentally sustainable tourism is right choice. The drive for the increase in tourism is based primarily on economic benefits, not on whether such levels of tourism are sustainable. It is the ‘Sustainable Tourism Development’ which needs to be more adequately stressed and promoted, as against the present tendency to pamper international tourism, in the interest of the tourism industry as such and that of the economy as whole.

Sustainable Tourism is a positive approach intended to reduce the tensions and friction created by the complex interaction between the tourism industry, the visitors the environment and the communities which are host to holiday makers. The basic economics of tourism must be planned according to the sustainability and present carrying of tourist areas for future need.

In the Brundtland Report on our common future, sustainability is defined, as “the idea that needs of today’s visitor should not be met at the expense of future generation” In short sustainable tourism development means that Exploitation of Resources, Direction to Investment and Orientation of Technology should be consonance with the needs not only of the present but also of the future.

⁵³ IUCN (1974), *Proceeding of the World Congress on National Parks*, Gland: IUCN-The World Conservation Union.

The process of sustainable tourism has already started in the form of island tourism in Andaman and Lakshadweep islands. It has been decided that a few islands on selective basis will be opened out for tourism purposes keeping in view their carrying capacity and the constraint to preserve their environment.

Since ancient times, Indians culture has taught men to love and respect nature, seeing themselves as part of it. Wildlife conservation too, had its origin in India in the remote past as killing animals and felling of trees were not only illegal but were considered anti social and irreligious.

Tourism is capable of destroying itself if not properly planned. The well-known aphorism that “tourism destroys tourism” has duly to be taken care of through efficient planning. Proper planning of the strategy for tourism development as also for any other sector, tourist or general, would, therefore seem to be of paramount importance⁵⁴. Tourism development is like a double-edged sword: it can be of great benefit but it can also be a source of great stress. This bring out the cruciality of the need for community development, as all travel is essentially linked with communities, in tourism development planning to be successful and sustainable, careful cooperation and coordination of both public and private sector becomes desirable as well as necessary⁵⁵.

Though 9.2% of country's land falls in the category of protected area which includes 85 national parks with 1.08%, 446 sanctuaries with 3.43% and 531 protected area with 4.5% of the area, visitors and locals population pressure, unsavory conflicts among NGO's over human and animal rights, spread of industrial interest into protected areas and a major spurt in poaching activities with rhino horn and tiger ones fetching thousands of dollars in the international markets are some of outstanding issues that threaten our national parks and genetic wealth they hold.

The WWF as a part of its framework for regional cooperation in South Asia to generate a more realistic and focused approach towards overall conservation programme, has chalked out a comprehensive Tiger Conservation Action Plan to strengthen ongoing efforts for protection of tigers through new and innovative initiatives. The strategy includes mobilization of support for tiger conservation at political and policy making

⁵⁴ Mishra, P.K. (1997), “Ecology, Wildlife and Tourism”, Paper presented in the Conference on August 1997 on Sustainable Tourism Planning and Development, IITM, Gwalior.

⁵⁵ *ibid.*

levels generating grassroots supports through local communities and a support mechanism by way of information collection and dissemination, education and awareness. The first step towards sustainable planning and development is to protect the environment and initiate efforts for environment friendly tourism.

Conservation of Wildlife

India, despite known for sustainable development approach right from the time of the Mauryas, when they introduced do's and don'ts for Abhiyaranyas (Parks), could not plan and control rules and regulations for sustainable development of tourist places but could not implement respective guidelines and development evaluation standards. The development needs to be monitored carefully lest they are in danger of environment damage that is irreversible.

A number of proposals have been made for the protection of flora and fauna and restoration of lakes, fountains and parks. There is lack of co-ordination with people, as we do not find active participation of Gram-Pradhan and local social workers in the planning and management of tourist places⁵⁶.

But what is perhaps more serious is that the plus points of tourism are either not being shared by the local people or it is perceived by the locals that the gains are being concerned by a few "outsiders". In either case the harm is done to the noble and healthy activity of tourism. The mistakes we have made are on the front of policy planning or in lack of communication and awareness⁵⁷.

Tourism is one of those activities, which cuts across different sectors. Several NGO's insist that 'tourism' as an activity is inherently unsustainable as it forests use of transport, generates waste in destination areas, consumes water and demand energy, encourage development of new infrastructures. Sometimes in the most sensitive locations and affect the culture of people living in tourist destination. Moreover, it is stated the high temporal seasonality of tourism with its high peaks in certain seasons leads to high pressures on the receiving areas, resulting in stress on ecosystem, local culture, transport

⁵⁶ Bagri, S.C. & A.C. Bhatt (1998), *Sustainable Tourism Planning and Development*, Gwalior: IITTM.

⁵⁷ Mathur, Anil (1995), *Community involvement & Holistic Development of Tourism*, New Delhi: Travel Journalist.

systems and so on. By and large the NGO's maintain that it is quite doubtful whether something called 'sustainable tourism' exist⁵⁸.

Much of the present tourism business takes place in ecologically sensitive geographical areas and a number of environmentally sensitive regions in the world are also those regions preferred by tourist as their holiday destinations. Unfortunately, the major attempts at defining eco-tourism and formulating a strategy for sustainable development have remained ecocentric.

The term sustainable development refers in general, to desirable social and economic progress and there shall be different views about what is desirable. As generally thought the development means improvement in living condition for which economic growth and industrialization are essential. But if there is no attention the quality of growth and to social change one cannot speak of development. Sustainable tourism also refers 'alternative-tourism' which implies that a form of tourism is being developed, which is more environment friendly, in both physical and cultural form, than the mass tourism that went before it. Some new terms may also be incorporated, such as eco green, rural, farm, sports and adventure. Within then there seems to be an implicit assumption that such form of tourism after a better social and environmental balance than the existing model of mass tourism⁵⁹.

In India, the growth of tourism has been taking place without taking into consideration rest of the public, who are one of the major constituents of successful societal marketing of tourism services. The link between the tourism services marketers and tourist have led to the congestion of tourist places, littering of trash at beach and hill resorts. The simulated presentation of cultural events has created opposition among the local people towards tourism related services and tourist at the tourist destinations. Hence, involvement of local public, especially the social action groups local people and regulatory bodies in the formulation of tourism planning in the respective tourist sites, should be given top priority by the tourism marketers and planner. Formation of a triad,

⁵⁸ Chauhan, Swaraj (1996)- *Sustainable Tourism*, NGOs Perspective Consultant, New Delhi, India: WWF.

⁵⁹ Ansari, S. Hasan (1998), "Role of Tourism for Sustainable Development – A Case study", Haryana Dept. of Geography, M.D. University Rohtak.

consisting of tourism marketers, tourist and local public will help in the sustainable marketing concept approach⁶⁰.

The future of tourism industry at the beginning of the 21st century is not as bleak as perceived by a number of tourism experts, marketers, planners etc. this fear has only emanated from unwidely and random development of tourism destination in India. The basic cause of such a development is the adoption of earlier selling data later on modern marketing concept by the marketers and the planners. The panic button for a tourism-induced holocaust in India at the beginning of the 21st century in the forms of AIDS, drug abuse, child and women prostitution, social tension has been struck by a number of social action groups. However, the problem can firmly be tackled with the help of a societal marketing concept strategy approach.

In India, although, the protected areas have been growing rapidly, they are being managed in a manner, which is alienating the wildlife population residing within them. If carefully planned and managed wildlife tourism can help conserve the wildlife and the environment of the protected areas. The guiding principle for sustainable tourism development is to manage the natural and human resource so as to maximize visitor's enjoyment and local benefit while minimizing negative impacts upon the destination site, community and local population. Many protected areas in India have tourism development, which was either not initially planned or the planning was not implemented. This result into criticism of wildlife tourism as a threat for wildlife conservation. A basic principle in wildlife tourism in maintaining the carrying capacities of the protected areas. To avoid carrying capacity problems in protected areas there have minimum basic infrastructure for promoting wildlife tourism, new placed have been suggested. In addition to visits to wilderness areas, adjacent areas, sustainable cultural tourism, have been identified for promoting package tours. Continuous monitoring and management of eco-tourism in these areas are required to ensure that no serious problems result from tourism development⁶¹.

⁶⁰ Dutta, Dev Malya (1998), *Application of Modern Societal Marketing Strategy Concept for Sustainable Tourism Development in India*, Dept. of Management, Burdwan University, Burdwan.

⁶¹ Rao, R. J. (1997), *Strategies for Sustainable Eco-tourism Development in Protected areas of Madhya Pradesh*, Sr. Lecturer, School of Studies in Zoology, Gwalior: Jiwaji University.

India, a destination for a large number of tourists offers a range of tourist attractions including wildlife and their habitats. The environment resources exploited for tourism attract tourist because of their outstanding beauty, recreational possibility or educational and cultural interest. Ecotourism is a real environment charisma, which knows no international boundaries or man-made restrictions of caste, creed or religion. Ecotourism offers the opportunity for conservation; business and government to work together in a way that could be a model for all enterprises seeking sustainable development of natural resources.

Although tourism has emerged as a major socioeconomic force in the country, it has environment implications. The promotion of eco-tourism will help in cleaning our industrial dumps, preservation and maintaining wildlife, flora and fauna, replication of environmental technology, development of social forestry by enhancing forest covers. The universal desire to view wildlife in a natural setting as possible, concentrates large number of tourists into a limited numbers of areas endowed with rich wildlife habitats⁶².

Over many years India has relentlessly pursued the goal of becoming Asia's prominent center for ecotourism. Different state government have established tourism department, which are promoting ecotourism in this respective states. Although, centers of ecotourism are located all over the country, only limited areas have more tourist arrivals, mainly due to the ideal wildlife species and public awareness. Large numbers of wildlife areas in different states are not known to many ecotourists. These areas have to be proved for attracting more tourists and also to divert the tourist's traffic from the over populated areas where wildlife tourism has an adverse impact on wildlife species.

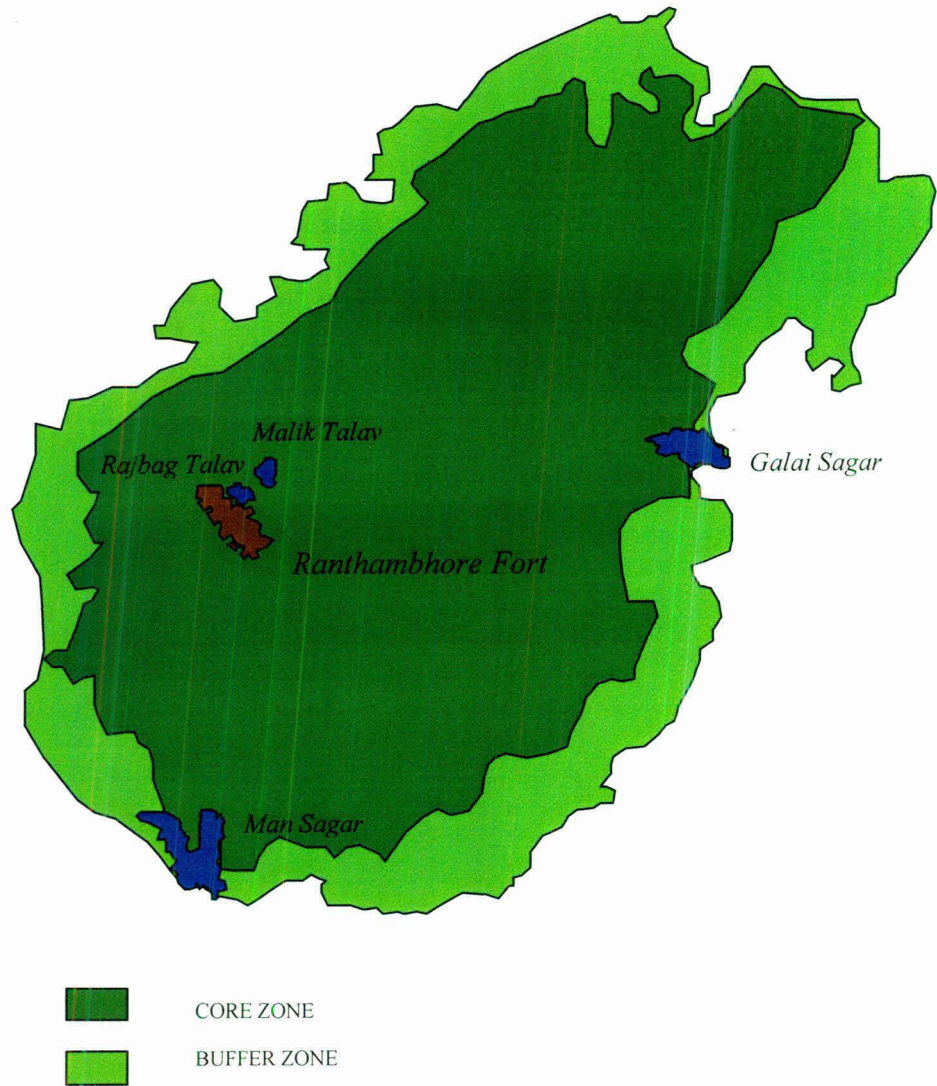
Project Tiger and Ranthambhore National Park

The Chauhan rulers of Ajmer in 944 AD built the historic fort of Ranthambhore inside the park, from which the park derives its name. The ruins of this fort now dominate the approach to the park. The fort is atop a rocky plateau about 481 metres (1578 feet) high and inside it are still seen the ruins of palaces, tombs, numerous Hindu and Jain temples and the Dargah of Muslim Saint. In 1955 these forest became the Sawai Madhopur wildlife Sanctuary with an area of 127km (79 miles) and were designated as

⁶² *ibid.*

Map II.4

**CORE AND BUFFER ZONES OF
RANTHAMBHORE NATIONAL PARK**



Note: Map Not to Scale

Based on Sharma, H. S. (2000), *Ranthambhore Sanctuary: Dilemma of Eco-development*, New Delhi: Concept Publishing Company

National Park in 1980. In 1984 the adjoining forests became the Sawai Man Singh Sanctuary and the Keladevi Sanctuary. These sanctuaries plus some other protected forests were merged with the National Park in 1992 to constitute the present Ranthambhore Tiger Reserve, which has a total area of 1334.64 sq. km. One of the biggest achievements of this management was the relocation outside the park of sixteen villages that had existed within it.

With the launching of the tiger project in the year 1974 and the protection and management provide to it there under, the Reserve has attained the distinction of being considered as one of the best Tiger Reserve in India.

In the vast arid denuded tract of Rajasthan, Ranthambhore appear like an oasis in the desert, thanks mainly to the conservation efforts afforded under the 'Project Tiger'. It is an example of how an ecosystem in the arid zone can be restored to its full dynamism. Situated at the junction of the Aravallis and Vindhya, Ranthambhore is interesting both as a wildlife reserve and as a place of historical importance.

The steep slopes of the sprawling Vindhya range with gently rolling plateaus on the hill support pure forest of dark canopy interspread with open grasslands. Scattered pools are the main source of water in the valleys during the dry season⁶³.

The 392.5 sq. km. RNP is an ecological island. The human population growth rate in the area is 3.2 % p.a. Both the cattle and human population are either totally or particularly dependent on the resources of the park for meeting their basic requirement of fodder and of firewood, timber, grasses and building materials⁶⁴.

Ranthambhore is a classic specimen of a delicate arid ecosystem. Its well forested hills stands in the sharp contrast to the vast denuded landscape all around it. It presents an observing insight in the adoption capabilities of animals to the seemingly adverse environmental attributes. A large biomass of fauna and flora exist in harmony through vigorous dynamics interaction. Summer scarcity of water is a benign balancing constraint in this unique reserve⁶⁵.

The effort under the project has been to minimize the factors, which deplete the ecosystem and to promote the beneficial ones. Main adverse factors in the reserve were

⁶³ Thapar, Valmik (1986)- *TIGER Portrait of a Predator*, London: Collins.

⁶⁴ Ministry of Forest and Environment (1990), Government of India, *Project Tiger Report*, New Delhi.

⁶⁵ Singh, T.V. et al. (1982) *Studies in Tourism, Wildlife Parks & Conservation*, Delhi: Metropolitan.

heavy stock grazing and demands of timber and firewood. a number of villages were a major cause of disturbance and poaching hazard. Effective protection was enforced with added staff and intense patrolling. The chief achievement of the reserve has been the complete elimination of stock grazing and relocation of sixteen villages. The resurrection of the ecosystem is easily discernible in the form of pronounced recovery of vegetation and water regime. This has helped the total floral and faunal diversity the natural prey species of the tiger have substantially gone up with a concomitant in the tiger numbers⁶⁶.

The Vanishing of Tiger and Impact on Tourism

The park sprawls over a highly undulating topography, varying from gentle slope to vertical rocky escarpments, from the flat-topped hills of the Vindhya to the conical hillocks and sharp ridges Aravallis, from the wide and flat valleys to narrow rocky ravines. Apart from many waterholes, there are important habitats for the wildlife. But droughts are not uncommon and during summer areas the animals have to move long distance in search of water.

In the first census of tiger, 27 years ago, the tiger population in the park was estimated at 14. In 1991 the number went up to 45. But then poachers took a heavy toll of tiger and within a couple of years the tiger population was reduced to 15. The tiger population is again on the increase by 1997 the census figure was 32 tigers⁶⁷. The latest survey has been done, the number of tiger population gone down by 16 in actual and 21 officially.

Use of Forest Resources Around the Ranthambhore National Park

Wood is the primary fuel used in villages, for which the forest is the only source of supply. The buffer, which is badly degraded in several parts of the area provides little dead wood for burning, and the villagers often cross over to the core for replenishing the supply. *Dhok (Anogeisus pendula)* is an excellent fuelwood species and its branches, twigs or stumps are often cut for burning. *Cheela (Butea monosperma)* is among the other trees used for fuelwood.

Wood is collected and stocked several months in advance, as the summers are

⁶⁶ *ibid.*

⁶⁷ Ranthambhore Project Tiger, 1973-1983.

very harsh. Professional head loading is another practice prevalent in Ranthambhore. The Forest Department issues 80-100 permits for collecting head loads of wood for a period of 15 days. This wood is sold in Sawai Madhopur. The actual number of head loaders far exceeds this permitted number. Although head loaders are not permitted to carry either sickle or axe into the forest, in actual practice almost everyone carries them and cuts branches and even small trees from the forest.

Another common practice in these villages is gifting cartloads of wood to relatives in villages away from the forest. Often people from far away villages come to these villages to buy wood for special occasions. Apart from cooking, which requires a constant supply, wood consumption peaks before the monsoons when villagers repair or reconstruct houses. The roofs of the houses are made of large wooden frames on which baked mud tiles are arranged. The mud tiles on each house are replaced annually and their manufacture requires massive wood burning.

The cattle and goats depend primarily on the forest for grazing, but the village pastures are severely depleted, providing little. Grass support even during monsoons. An illegal encroachment on village pastures is a common phenomenon, thereby further increasing the pressures on forest land. Grazing pressure in the forest starts building up in July when the fields have been sown after the first showers.

Another common phenomenon in the villages surrounding Ranthambhore is large-scale immigration from distant villages. Relatives bring their cattle, goat, sheep, etc., for grazing in the Ranthambhore forests; in some cases it is for a monthly payment, but more often than not it is due to social contacts and is an act of social obligation⁶⁸.

Taking the positive values there is first the argument that the various wild creatures of the Indian sub-continent, whether mammal, bird, insect, reptile, fish or amphibian, should be preserved because they are part of our heritage and because knowledge of and acquaintance with them is part of our culture. The part that wildlife plays in Indian art, architecture, literature and mythology is significant. Then there is the undefinable aesthetic joy and pleasure, which we derive from the contemplation of a wild creature, which has its own peculiar charm and beauty no matter how frightening it may

⁶⁸ Desai, Kiran et al. (1996), "Joint Management of Ranthambhore National Park", in Kothari, Ashish et al. (eds.), *People and Protected Areas- Towards Participatory Conservation in India*, New Delhi: Saga Publications.

appear in certain aspects and by the study of its habits, movements and interrelationship with other wild creatures, apart from the mere knowledge that it is alive and is to be found in a certain place. This aesthetic enjoyment is akin to the thrill with which we enjoy the beautiful works of nature and the comprehension, no matter how imperfect, we have of her mysteries. It is considered that the tourist who is in search of animals or birds obtains almost as great a thrill and satisfaction in knowing that they exist in the locality as in actually finding them⁶⁹.

Ecological development around the Ranthambhore National Park include the site-specific policies formations based on detailed socio-economic, anthropological and land use surveys of the area and people around the park can form the only basis for serious ecological development. The people living around Ranthambhore National Park have to be involved actively in the site specific policy formulation of the area for their priorities and benefits so that imbibed in the policy is a precious traditional knowledge and wisdom.

People living around a protected area must find income generation possibilities to relieve their struggle for survival and create same time and space in their lives to support and protect the environment. At the moment most people around Sawai Madhopur feel the presence of the National Park has ruined their livelihood. Since no 'polluting' industrial development is possible under the legislation in force. But there is no dearth of environment friendly industries. The town and area urgently require environment friendly industries and a survey on this is essential with the support of local people⁷⁰.

Guidelines Regarding Tourists and Vehicles in Ranthambhore National Park

It has been decided that activities in the R.N.P. shall henceforth be regulated by the state Department of tourism (SDT)/ Rajasthan Tourism Dept. Corporation (RTDC), subject to permission being granted for this purpose in accordance with the provision of the wildlife (protection) Act 1972 & subject further to observe by the SDT/RTDC of the following guidelines. These guidelines shall come in to effect immediately.

⁶⁹ Stracey, P.D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture, Dept of Agriculture, Fridabad: Government of India Press.

⁷⁰Thapar, Valmik (1986), *Tiger Portrait of a Predator*, London: Collins.

1. The total number of vehicles allowed in each trip in the RNP shall as follows.

General Vehicle – 3 VIP – 3

2. Not more than two trips will be allowed in a day. The park authorities would prescribe the time and the duration of the trip.

3. Booking of tourist and vehicle (including VIP reserve) for entry in the RNP shall be done by SDT/RTDC from the tourist seasons 2004-2005 onwards.

4. Only the vehicle registered for this purpose by SDT/RTDC will be allowed to enter the park. The SDT/RTDC would regulate the type, quality and passenger capacity of the vehicle entering the park.

5. If the number of tourist entering the RNP in a vehicle is less than the seating capacity of the vehicle, then they will be required to make payment of the entry fee for the full seating capacity. This direction shall not apply to the last vehicle entering the RNP on each trip in a day.

6. The number of vehicle specified above may be increased for short spell of time, keeping in views the reason as holidays/ years end and such similar season.

7. Each vehicle entering the RNP should be accompanied by a qualified guide. The guide will be registered with the park authorities, a list of such registered guides will be provided by the park authorities to the SDT/RTDC. The SDT/RTDC will regulate the allotment of these guides for accompaniment with the vehicle entering the park and shall also ensure compliance of the relation to this order.

8. Each registered guide must carry the private code of conduct with him and he must apprise each tourist of the provision of this code before entering park. The guide must be dressed in proper uniform and display his name in uniform.

9. The park authorities will provide information in advance to the SDT/RTDC of the route prescribed for the vehicle entering the park. The particular route to be taken by the vehicle entering the park display the route number allotted to it prominently in the front and the back of the vehicle.

10. SDT/RTDC would ensure that the route are allotted to vehicle in such a way that the number of vehicle going on each route is about the same. In the interest of preservation of

the fauna, it would be desirable to discourage convergence of the vehicle at any particular point or location inside the park⁷¹.

11. The drivers of the tourist vehicle must be dressed in proper uniform, which should display their names, and they must also carry their driving licence with them.

12. The drivers of the tourist vehicle should be instructed to maintain a distance of at least 500 metres from each other, when plying in the same route in the park.

13. The drivers of the tourist vehicle should be instructed to maintain distance of at least 30 metres from the wild animals sighted in the park,

14. It would be necessary for each nature guide accompanying a tourist to submit a “visit information” to the park authorities after each visit.

15. The ticket (permit) for entry of a vehicle tourist in to the park is regulated by the provision of wildlife (protection) Act 1972. The format of this ticket (permit) would be as prescribed by state forest Department (SFD) and it would be the responsibility of the SDT/RTDC to obtain the ticket (permit) books from the office of the DCF/DD (Core).

16. A copy of the Challan of the deposited amount, as well as the counterfolios of the sold tickets (permits) will be deposited by the SDT/RTDC in the office of DCF&DD (Core) on a weekly basis, on the first working day of each week.

17. SDT/RTDC must ensure that the rates prescribed by the SFD for the entry of tourist and vehicle in to the RNP is displayed at the booking encounters and at other prominent places.

These guidelines issued with the concurrence of the tourism Department to boost the tourism in the Ranthambhore National Park so that the Park work could be done in proper way.

Problems Related to People and Park in Ranthambhore

The Ranthambhore National Park is facing problems, which are inherent in sudden change in the relationship of the people with their environment and their surrounding. The changed relationship of the people around the park with the forest was brought about almost overnight and in a manner, which left little room for readjustment as far as the people were concerned. This basic issue has engendered changed

⁷¹ Government of Rajasthan (2005), *Guidelines For RNP accorded Vide I.D. No. 42 Dated 20-09-04*, Ministry of Tourism and Forest Department, Sawai Madhopur, Rajasthan.

relationship, brought about by an administrative order in legal but not substantive, hence the conflict are between the enforcers of the law – the park management and the people, while because of the reduced accessibility to the forest of the park, some cases have been reported in which villages have clashed with one another. Apparently, creation of the park does not seem to have considered the ability, let alone the administrative order. People, therefore, are now in an unenviable state of conflict with the law, conflict with forest habitat. A National Park is the beginning of great problems of protection as well as of protection⁷². Problems can be classified into three categories; management related, village resource related and altitudinal.

In 1973, Ranthambhore National Park was included as a potential area under 'Project Tiger' and was the smallest of the nine areas selected. It was felt that this 392sq km. of dry deciduous habitat could viably sustain healthy tiger population. In 1980 it was notified as a National Park. Today Project Tiger Ranthambhore is responsible for the management of 627.13 sq. km. and included in 1992 is also the Keladevi Sanctuary under this same umbrella of management.

The Ranthambhore National Park deals at present with nearly one-lakh tourists every year. Management of wildlife tourism has undertaken on this issue. Ranthambhore reflects an example of how wildlife tourism can become a source of disturbance for the park and the forest personnel involved in it. A serious analysis of this phenomenon would be vital for a deeper understanding and insight In the future of wildlife tourism and its impact on our National Park⁷³.

It is vital that serious scientific studies of both flora and fauna be regularly conducted in Ranthambhore National Park to understand the changing relation. Such scientific information can be the only basis for the serious wildlife management of this park i.e. regular satellite interpretation. Park management and staff must be trained in wildlife management and this training should be frequent, so that they may keep in touch with the changing realities. Site specific wildlife management policies should be agreed on by both state and central government and have time bound schedule for implementation. Poaching and legal cases concerning the abuse of this natural resource

⁷² Desai, Kiran & Quo, Vadis (1996), *Ranthambhore*, Ahmedabad: C.E.E.

⁷³ Thapar, Valmik (1986), *Tiger Portrait of a Predator*, London: Collins.

should be dealt with quickly and effectively and if necessary reform in the system governing this abuse should be considered. The involvement and assistance of outside experts, scientific institutions and research organizations to monitor, review and participate in the wildlife management of an area is a must to develop collective concern and consensus⁷⁴.

Regular and frequent dialogue, discussion and educational activities with people and children in villages and towns regarding the importance of this wilderness of this area are vital to build support and increase awareness of this rich biodiversity. The involvement of concerned groups of people in patrolling the edges of the park, whether from village or town, can only be vital as a deterrent to poaching, and will create a sense of community integration concerning wildlife management. A local level steering committee to monitor the yearly wildlife management will play a vital role for the people's involvement with a National Park. Such yearly reviews must also look at the growing and genuine problems of forest staff.

Ranthambhore is the only preserve in the country with a place in India's past history and virtually one of the finest national parks from the wildlife point of view. Though the state government and the central government have taken some initiative to make the RNP as one of the most tourism-related National Parks. New guidelines have been added from time to time to make its function easier. Now the forest and the tourism Department both are working together for the development of the park.

⁷⁴ Rodgers, W.A. et al. (2000), *Wildlife Protected Area Network in India: A review (Executive Summary)*. Dehradun: Wildlife Institute in India.

Chapter III

Kruger National Park: Sustainable Development of Tourism and Wildlife Protection

Wildlife has always been a distinctive component of the day to day life of Africans. Animals and plants play important roles in African culture. These roles cannot be destroyed-not even by the best Western intentions. Utilization of wildlife is an old form of land use and is practiced throughout the world, but perhaps nowhere more than in Africa. Its people have used wildlife in the past and continue to do so today, despite attempts by colonial administrations and postcolonial independent governments to stop them¹.

This seemingly great success is the policies of post-colonial African governments, which have maintained and often increased networks of national parks, game and sanctuaries for the protection and management of wildlife.

Wildlife has been alienated from Africa since the colonial era, and the pattern continues. Rural communities lost their rights over land and wild animals. Thus, the majority of people in Africa today have little concern for the welfare of wildlife.

On the African continent conservation of wild life may be said to have started some time after the Dutch occupation of parts of South Africa in the 1830's. The Boers who were born hunters rapidly destroyed the wild life, particularly meat animals and elephants for ivory but Paul Kruger, their wise and far-seeing leader, realising the need for conservation created the Sabie Game Reserve in 1898 out of lands donated by himself and some of his friends. This eventually became the now famous Kruger National Park. This lead was followed by King Albert of the Belgians who established what is known as the Park Albert in the Belgian Congo and by the British, always a highly animal-conscious race, who were the first to put an end to professional hunting of ivory and meat in their East African possessions. The French and the Portuguese in their African territories followed their lead a little later².

In today's Africa there are more national parks and nature reserves than during colonial times. The new African Convention for Conservation of Nature and Natural Resources, signed in 1968 by the African heads of state and now in force, deals specifically with national parks, nature reserves and other conservation areas. An article

¹ Lewis, Dale and Nick Carter (1983), *Voices of Africa- Local Perspective on Conservation*, W.W.F., Washington, DC: Washington, DC Publications.

² Stracey, P.D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture . Dept of Agriculture, Fridabad: Government of India Press.

of the Convention stipulates that “The contracting states shall maintain and extend, where appropriate, within their territory and, where applicable, in their territorial waters, the national parks and other conservation areas existing at the time of the entry into force of the present convention, and preferably within the framework of land use planning programmes, shall assess the necessity of establishing additional national parks and other conservation areas in order to:

1. Protect those ecosystems which are most representative of and particularly those which are in any respect peculiar to their territories;
2. To ensure conservation of all species and more particularly of those listed or to be listed in the Annex of this Convention. (At present more than 350 species are listed).³

Africa, which is the second largest continent, exceeds 11,600,000 square miles, 4,960 miles from north to south and 4,650 miles from east to west. Just below the slim Mediterranean strip we find the world’s biggest desert-the Sahara, as almost insufferable red-hot areas. Even the southwest coasts were not easy to negotiate since another great desert, the Kalahari, slithers down to the Atlantic. The equatorial region is hot and humid and the intricate green tangle of rain forest is even more of a hurdle⁴.

Africa contains significant remnants of the life that existed during the Pleistocene period throughout the grasslands of the world. East and south of the Sahara have provided shelter for the reserve of these wildlife, the most diverse and extensive wildlife habitat left on the face of the earth in the form of its national parks and sanctuaries. King Albert of Belgium conceived the idea of using national parks concept to African wildlife.

In 1925, Albert National Park was created in present Zaire⁵. This was the first park anywhere in the world devoted entirely to systematic scientific research. Despite pressure of population, poachers and political changes, most of the African nations have their national parks and preserves. African national parks are known for their unrivalled variety and extent of wildlife.

³ Kai Curry-Lindahl (1972), *AFRICA-National Parks, Habitats, Biomes and Ecosystem*, in Harroy Jea – Paul (ed.), *World National Parks-Progress & Opportunities*, Brussels: Hayez.

⁴ Ildos, S.Angels and Bardelli, G.Giorgio (2001), *The Great National Parks of the World*, New Delhi: Om Book Service.

⁵ Edington, J.M. and M.A. Edington (1986), *Ecology, Recreation and Tourism*, Cambridge: Cambridge University Press.

Long before the African countries became independent, various colonial administrations realized the necessity of drawing up plans for the control and conservation of the wildlife. In this field, the pioneering work was done by the Transvaal, which established the Sabie game reserve in 1898. The London Conference of 1900 discussed measures for the conservation of wild animals in Africa and agreed on important recommendation for the establishment of game reserves. African National Parks are known for their unrivalled variety and extent of wild life. Most of the parks in Africa were created during the colonial era and after the Second World War. Interest in the management of wild life as a natural renewable resources and a source of economic benefit has quickened in the last few years in Africa. One distinct features of the national park is that tourism is encouraged in a majority of cases⁶.

Eight biomes or major habitats are represented in 167 national parks and equivalent reserves in Africa. Most of these conservation areas are listed in the UN List of National Parks and Equivalent Reserves (1969). The obvious emphasis is upon protection of ecosystems and endangered species as living parts of the environment. In other respects also, the Convention reflects advanced ecological thinking.

Most national parks are located in areas, which were regarded as unsuitable for development. In Africa this often means arid, or semiarid regions or tsetse-infested areas. Many such regions are valuable wildlife habitats, which feed and shelter a remarkably diversified fauna. The wealth of large mammalian species particularly characterizes many African national parks making them incomparable with anything elsewhere in the world. But very few of these national parks represent intact ecosystems in the sense that they are ecologically autonomous. Most national parks in Africa, this applies also to other continents are influenced heavily by man made activities both inside and outside their boundaries. Only some high mountain reserves with alpine and sub-alpine habitats are virtually uninfluenced by human activities⁷.

Grassland and woodland savanna are the most frequently represented major habitats in the national parks of Africa. Most of them are situated in arid or semi-arid

⁶ Eltringham, S. K. (1984), *Wildlife Resources and Economic Development*, New York: John Wiley and Sons Ltd.

⁷ Kai Curry-Lindahl (1972), *AFRICA-National Parks, Habitats, Biomes and Ecosystem*, in Harroy Jea – Paul (ed.), *World National Parks-Progress & Opportunities*, Brussels: Hayez.

regions least suitable for cultivation or animal husbandry. Deserts and sub-deserts are poorly represented. It is claimed that deserts do not need to be protected because they either protect themselves or there is nothing in them to protect. This is untrue. Both the vegetation and fauna in deserts are vulnerable to over exploitation. Both are worthwhile preserving as productive resources. However, most of the larger desert mammals are nomadic and therefore difficult to cover adequately within the boundaries of a reserve⁸.

Early conservation in Africa

Before the arrival of European settlers, sub-Saharan Africa was essentially a subsistence economy, where most people lived off the land. Because they depended on indigenous natural resources for their survival, native Africans had to ensure that the supply of these resources was not depleted. Accordingly, indigenous African institutions had evolved to incorporate their own conservation ethics.

Both the stability of indigenous institutions and African conservation ethics were severely disrupted during the colonial era. The European colonists used their advanced technologies to displace and restrain local people and exploit natural resources at a much faster rate than before. Initially, resources seemed to be so abundant that colonists were not concerned with conservation. However, by the mid-nineteenth century the rapid depletion of forests and wildlife in southern Africa had led to increasing calls for governments to restrict the exploitation of these resources.

Early measures to conserve wildlife were largely concerned with "game" species, i.e. large animals that were hunted. The rationale for these measures was simply to ensure that the supply of hunting stock was not exhausted. In broad terms, there were three different groups of people who hunted wildlife: sport hunters (mostly English-speaking), commercial hunters (mostly Afrikaners) and subsistence hunters (native Africans). As wildlife became scarce, these groups started to compete for the rights to hunt. The first group to lose their rights was the subsistence hunters.

Wildlife based tourism seems to be most important in Africa since the wish to see wild animals is often the primary motive for visiting the continent. Elsewhere there are

⁸ Kai Curry-Lindahl (1972), *AFRICA-National Parks, Habitats, Biomes and Ecosystem*, in Harroy Jea – Paul(ed.), *World National Parks-Progress & Opportunities*, Brussels: Hayez.

other tourist attractions and if nature reserves are visited at all, it is as a minor diversion from the main tour. The fact that the large number of wild animals can be seen so readily in many of the parks is an important factor that attracts visitors to Africa. Africa also has sandy beaches, coral reefs and magnificent scenery, but so have other places and it is the wildlife, which may tip the balance towards Africa in deciding where to go for a tropical holiday⁹. The significance of wildlife based tourism in Africa lies in the fact that the best national parks have a few other attractions and indeed, often not much in the way of natural resources of any kind.

Tourism in the entire African continent is still in its infancy. However there has been sign of substantial growth in this field since 1950. In east African countries, wild life is the main attraction and a large number of tourists have been visiting the region only to see animals in their natural habitat located in the rift valley. For many African countries, species diversity and the abundance of wild life are important resources, providing the basis for safari tourism and viewing and photographing of game. In region of high biodiversity or highly charismatic fauna, eco-tourism represents 40-60% of international tourism whereas wildlife related tourism accounts for 20-40%.

In the field of nature conservation, South Africa has a reputation as one of the world's leading countries, with its well-managed system of public protected areas, extensive private sector involvement and conservation-linked community development initiatives. The substantial system built up during this century was done with scant regard for the majority of South African people.

Environmental racism took many extreme forms in apartheid South Africa. Since the 1994 democratic elections in which the government led by the African National Congress (ANC) came to power, considerable efforts have been made to redress these injustices. These initiatives, although incomplete, are part of the transformation process within the national parks system and broader society.

South Africa has been recognized as the third most biologically diverse country in the world. South Africa is a highly attractive tourist destination and is striving to position itself as a world-class contender within this high growth industry. The fastest growing

⁹ United Nations Environmental Programme and Kenya Wildlife Fund Trustees (1988), *Guidelines for Public Participation in Wildlife Conservation-Case studies in Kenya*, People Parks and Wildlife, Kenya.

segment of tourism in South Africa is ecological tourism (eco-tourism), which include nature photography, bird watching, and botanical studies, hiking and mountaineering. At present tourism is the 4th largest industry in South Africa¹⁰. As the altitude (and consequently rainfall) increases from east to west, a great biodiversity can be witnessed progressing from scrub and savannah upwards into South Africa's unique fynbos floral system, rainforests, and climax grasslands on the top of the escarpment where water is more abundant.

Biomes and Species in Need of Preservation

Even if the important functions of national parks in Africa are recreational, social, educational and scientific, their prime purpose is to preserve habitats, biomes and ecosystems, as well as vegetal and animal species. Additional advantages of such reserves are the protection of watersheds; of mountain slopes from erosion; of watercourses from drying out; of plains from desiccating; the preservation of gene pools of plants and animals; and to serve as sample areas for comparison with artificial habitats. Geographically, the national parks and equivalent reserves of Africa are unevenly distributed. While Southern Africa (7 countries) has 68 such reserves according to the UN List, Northern Africa (the 5 Mediterranean countries) has only 4. Western Africa (14 countries) has 17; Central Africa (10 countries) 34; and Eastern Africa (7 countries) 43 national parks¹¹.

Distribution of national parks and equivalent reserve in the five major regions of Africa:

Region	Number of Reserves
-Northern Africa (5 countries)	
Algeria, Libya, Morocco, Tunisia, U.A.R.	4
-Western Africa (14 countries)	
Dahomey, Equatorial Guinea, Gambia, Ghana, Guinea, Ivory Coast, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo, Upper Volta.	17

¹⁰ South Africa Year Book (2000-2001), 7th ed. Edited and Published by the Government Communication and Information System, Pretoria: South Africa.
¹¹ Kai Curry-Lindahl (1972), "AFRICA-National Parks, Habitats, Biomes and Ecosystem", in Harroy Jea Paul (ed.), *World National Parks-Progress & Opportunities*, Brussels: Hayez.

-Central Africa (10 countries)	
Angola, Burundi, Cameroon, Chad, Central African Republic, Congo (B), Gabon, Rwanda, Sudan, Zaire.	34
-Eastern Africa (7 countries).....	
Ethiopia, Kenya, Malawi, Somalia Republic, Tanzania, Uganda, Zambia (with Zambia's 18 new "national parks" =61)	43
-Southern Africa (9 countries)	
Botswana, Lesotho, Malagasy Republic, Mauritius, Mozambique, Rhodesia, South Africa, South West Africa, Swaziland.	68

When the USA's national parks were inaugurated in 1872 with the opening of Yellowstone, it was with the far-reaching idea of converting vast undeveloped areas into public parks or pleasure grounds. No one then realized how important these areas would become for future¹².

The History of National Parks in Africa

In the 90-year history of the African national parks, it was during the last decade that ecological concepts in some countries became increasingly involved when formulating a policy for national parks. In no way Africa has been particularly late in the evolution of national park philosophy because, apart from in the USA there are still few national park system in the world which are characterized by ecological consciousness.

The first nature reserves in Africa date back to 1897 when Umfolozi Game Reserve, St. Lucia Game Reserve and Hluhluwe Game Reserve were established in Natal, South Africa. The next important step followed in 1925 when Africa's first national park was created: Albert National Park in what was the then Belgian Congo. In 1926, South Africa upgraded the Sabie Game Reserve (created in 1898) to Kruger National Park¹³.

One of the world's best-known and most profitable national parks, the Kruger National Park (KNP) in the Republic of South Africa, was established in 1898 as the

¹² Ikenouye, Osamy (1972), "National Parks and Tourism", in Harroy Jea Paul (ed.), *World National Parks-Progress & Opportunities*, Brussels: Hayez.

¹³ Kai Curry-Lindahl (1972), "AFRICA-National Parks, Habitats, Biomes and Ecosystem", in Harroy Jea Paul (eds.), *World National Parks-Progress & Opportunities*, Brussels: Hayez.

Sabie Game Reserve. The park is one of the largest parks in the world, with the main aim to protect the biodiversity of the region. The latter includes 147 mammal species, 500 species of birds, 116 species of reptiles, 34 species of amphibians, 49 species of fish, 457 species of trees and shrubs, 1500 species of smaller plants and countless species of insects. The KNP covers a total surface area of 19,624 sq. km. with a total length of 350 km and an average width of 60 km. Most of the park consists of flat grass and bush covered plains, interrupted by the low Lebombo Mountains situated along the border of Mozambique¹⁴.

Negotiations are under way with neighbouring countries which will significantly enlarge the park to form the Limpopo Transfrontier Conservation Area. This will be the largest national park in the world. From a parks management perspective it is necessary to maintain a high quality of service to persuade these tourists to return annually. The reason for visiting this park is: to view the variety of animal life to relax; and to break away from their normal routine. The decision to travel to KNP was made at least three weeks in advance and the respondents stayed between four and seven days¹⁵.

No less than 26 entirely new national parks or equivalent reserves have been established in the new independent nations of Africa. In addition, eight nature reserves have been upgraded to national parks. During the same period (since 1960) Portugal upgraded two reserves to national park status and established another equivalent reserve in Angola and Mozambique, while South Africa created two new national parks and one equivalent reserve.

In looking back through the history of African national parks how 'different lines of thinking, policy and management techniques have evolved'. The geographical, ecological and sociological backgrounds differ widely from one country to another, as do traditions in administration and education inherited from former colonial rulers. An understanding of the living nature in modern society is only possible through education. Most independent African countries took over education systems modelled on ancient European lines, which were designed when environmental problems and ecological principles were little known or not understood. Textbooks on biology and natural history

¹⁴ Dennis, N. (2000), *Kruger: Images of an African park*, Cape Town: Struik.

¹⁵ Saayman, M. & E. Slabbert (2004), "A Profile of Tourist visiting the Kruger National Park", *Koedoe, Research Journal*, South African National Park, 47/1: 1-8.

were European and dealt chiefly with European plants and animals. This old-fashioned education could hardly inspire Africans and was a serious handicap for the appreciation of national parks.

South Africa followed the USA pattern for running national parks, that is, about 90 percent of the reserves remain untouched land while about 10 percent or less is used for tourism development. The Kruger National Park in particular became tremendously popular as a recreation area and attracted a great number of overseas tourists. At present almost all national parks in Africa, established after World War II, combine several aims: preservation, research, recreation and tourism. These may together without conflict if the areas concerned are wisely managed¹⁶.

National Parks and Equivalent Reserves

These include national parks proclaimed in terms of the National Park Act, 1976, provincial park and nature reserve and indigenous state forests. Some of these natural and scenic areas are extensive in size and include large representative areas of at least one of the country's biomes. The national parks are: Kruger National Park, Kalahari Gemsbok National Park (now part of the Kgalagadi Trans frontier Park), Addo Elephant National Park, Bontebok National Park, Mountain Zebra National Park, Golden Gate Highlands National Park, Tsitsikamma National Park, Augrables Falls National Park, Karoo National Park, Wilderness National Lakes Area, Marakele National Park, Tankwa-Karoo National Park, Knysna National Lakes Areas, Richterveld National Park, Vhembe/Dangola National Park, Vaalbos National Park, Aghulas National Park, Namagua National Park and cape peninsula national park which incorporates Cape of Good Hope, Table Mountain and Silver Mine Natural Reserve¹⁷.

The South African National Park (SANP) has accepted the duty of making a positive and responsible contribution to the conservation of biodiversity and to the environment on a global scale. This is done through responsible participation in the affairs of the IUCN, the convention on International Trade in Endangered Species of wild fauna and flora (CITES), the Worldwide Fund for Nature (WWF) and other agencies.

¹⁶ Kai Curry-Lindahl (1972), "AFRICA-National Parks, Habitats, Biomes and Ecosystem", in Harroy Jea Paul (ed.), *World National Parks-Progress & Opportunities*, Brussels: Hayez.

¹⁷ South Africa Year Book 2000-2001, 7th ed. Edited and Published by the Government Communication and Information System, Pretoria.

There are other protected areas proclaimed under the legislative instruments in South Africa, but which are equivalent to the national parks such as the Greater St. Lucia Wetlands Park, the Natal Drakensberg Park and the Hluhluwe Umfolozi Park¹⁸.

National and provincial parks in South Africa, as well as private game reserves, involve local communities in the conservation and management of national resources. The communities are not only benefiting financially from eco-tourism but are also becoming aware of their responsibility to the environment. The high foreign exchange value of eco-tourism enables significant economic value to be assigned to ecological reserves in this way helping to promote their conservation¹⁹.

SOUTH AFRICA

Geographical Background:

South Africa occupies the southern extremity of African continent and lies pole ward of the Tropic of Capricorn extending as far as latitude 34° and 51' South. It covers an area of 12,19,080 sq. kms. and share the borders with Namibia on the Northwest, with Botswana on the North, Zimbabwe, Mozambique and Swaziland on the north-east. On its eastern part, Lesotho, which is entirely surrounded by South Africa.

Most of the South Africa consists of a vast plateau fringed by a narrow coastal plain on the three sides. Separating the two is an escarpment of mountains and hills, dominated by the mighty Drakensberg range. The relief is generally monotonous, consisting of undulating to flatland-scapes over wide areas. There are three major sub-regions.

1. High velds between the 1200 and 1800 metres grooming a triangle area which consist of southern Transvaal and the most of the Free States.
2. A swell over 1500 m high, aligned WNW-ESE, part of which is known as the Witwatersrand, rising gently from the plateau surface to the north of the high veld and forming a major drainage divide; and
3. The middle Velds, generally between 600 and 1,200 m, comprising the remaining

¹⁸ Freitag, S. et al. (1996), " Nature reserve selection in the Transvaal, South Africa: what data should we be using?", *Journal of Biodiversity and Conservation*, March ,Vol.5 No.3.,:48-56.

¹⁹ Caughley, Graeme and Anthony R.E.Sinclair (1994), *Wildlife Ecology and Management*, U.K.: Blackwell Scientific Publication.

part of the plateau²⁰.

The dry savannah woodlands contain the richest distribution of large mammal species found in any sub region in the world. This is due to the high nutritional value provided in this vegetation and the extensive range supporting large populations of ungulates (hooved mammals) and their associates.

Elephant, Rhino, Buffalo, Lion and Leopard, together with rare Antelope such as Tsessebe, Sable, Roan and Hartebeest are found here. This is also one of the last remaining viable habitats for the African Wild Dog in South Africa. The highest concentrations of Giraffe in Southern Africa are found in this central region between the Letaba and Sabie rivers with the main concentrations in the Klaserie valley. Altitude and relief forms have an important influence on temperature and on both the amount and distribution of rainfall and there is a strong correlation between the major physical and the major climatic regions²¹.

In the Biosphere, a mere 1.4% of the country's total land surface contains this unique, free ranging distribution of mammals together with a remarkable 55% of the total terrestrial biodiversity found in South Africa.

The remarkable richness of South Africa's biodiversity is largely the result of the mix of the tropical and temperate climate and occurring in the country. South Africa ranks as the third most biologically diverse country in the world and of major global importance for biodiversity conservation. Some 18,000 vascular plant species occur nowhere else. The white paper states that South Africa is one of the six countries in the world to have an entire plant kingdom within its national confine known as the Cape Floral Kingdom, this area has the highest recorded species diversity for any similar sized temperate or tropical region in the world.

South Africa has a Savanna biome, which in an area of mixed grassland and trees and is generally known as Bushveld. In South Africa, protected areas are managed to conserve living resources that are essential for the sustainable development. Conservation

²⁰ Catherine, Fjohnson et al. (1999), "The flora of the Addo Elephant National Park, South Africa: Are threatened species vulnerable to elephant damage", *Journal of Biodiversity and Conservation*, Nov., vol.8 No11: 124-131.

²¹ Ildos, S.Angels and Bardelli, G.Giorgio (2001), *The Great National Parks of the World.*, New Delhi: Om Book Service.

in these living areas is applied by maintaining the essential ecological process and life supporting systems, preserving genetic diversity, controlling erosion of soil and soil depletion, providing opportunities for research education and monitoring. In these protected areas endangered and rare fauna and flora are covered, ecologically degraded habitats are restored, cultural and historical treasures such as rock art and historic building are preserved. There are eight management categories of protected areas in South Africa, which conform to accepted categories of International Union for Conservation of areas in Nature (IUCN)²².

According to the National Register of Protected and conservation areas in South Africa, there are 431 formally protected areas covering 5-6 % of the land surface area. These areas are under the control of the national, provincial and local government. There are also 463 private reserves in South Africa bringing the number of protected areas to 1174 or nearly 7 % of the land surface area²³.

The History of National Parks in South Africa

In 1994, the post-apartheid government inherited seventeen national parks, the flagship of which is the second oldest national park in the world, the Kruger National Park (KNP). Established more than a century ago, in 1898, the KNP now covers nearly two million hectares and is unrivaled in the diversity of its life forms, with 147 species of mammals and 507 species of birds. The other national parks in South Africa are smaller, but constitute part of an attempt to develop the conservation of a representative sample of each of South Africa's diverse ecological systems.

These protected areas reflect the relations of power and privilege that have shaped South African society. Under apartheid the majority of South Africans were subjected to a double exclusion from the national parks: black South Africans were denied access as visitors and were excluded from power, authority, and influence in decision making and policy formulation within their national parks.

From 1926, these parks were administered by the National Parks Board, one name confusingly used both for the governing body of non-executive board members (technically the Board of Curators) and for the organization as a whole. In 1996, the

²² Chadwick, Douglas, H. (1996), "Place for Parks in the New South Africa", *National Geographic*, 190(1), July: 432-441.

²³ Ibid

National Parks Board was renamed South African National Parks (SANP), after a public competition was held to find a new name²⁴.

Before 1994 board members were exclusively appointed from the ranks of white males who were generally closely aligned with Afrikaner nationalism. Specifically, board members developed "close bonds with the Nationalist Government after 1948 (when the latter came to power)". These bonds were cemented with the inclusion on the board of the centrally appointed provincial administrators. The organisation as a whole was therefore white-controlled and largely reflected the culture and practice of apartheid. For example, until the 1980s, black visitors to the Kruger National Park were only allowed accommodation at Balule, a tented camp, established in 1932 with very rudimentary facilities. Access for black visitors was also restricted by economic factors such as entry fees and the need for motorized transport both difficult condition given the levels of deprivation and impoverishment imposed on black people by apartheid²⁵.

Overcrowded and degraded rural areas surrounded the parks. Overall, they reflected the worst aspects of "colonial" conservation. For example, there was a total neglect of the archaeological record that shows that some of the parks-particularly Kruger-were the sites of settled African mining and trading communities for hundreds of years. The prevalent colonial philosophy of exclusion and domination of indigenous peoples involved forced removals at gunpoint.

The only Africans allowed to remain in Kruger were low-paid laborers, reflecting the culture of the white administration with its racist employment and housing practices. In terms of jobs in the Kruger National Park, preference was given to labourers from Mozambique rather than to South Africans, on the grounds that the Mozambicans were prepared to work for extremely low wages. Within the organization there was no overt acknowledgment that it was the labour of the thousands of black workers that made the national parks possible²⁶.

²⁴ Jacklyn, Cock and David, Fig (2002), "From Colonial to Community Based Conservation, *Environmental Justice and the Transformation of National Parks (1994-1998)*, in Mcdonald, A. David (ed.), "Environment Justice in South Africa", Ohio, U.S.: Ohio University Press.

²⁵ Carruthers, J. (1995), *The Kruger National Park: A Social and Political History*, Pietermaritzburg: University of Natal Press.

²⁶ Jacklyn, Cock and David, Fig (2002), "From Colonial to Community Based Conservation, *Environmental Justice and the Transformation of National Parks (1994-1998)*, in Mcdonald, A. David (ed.), "Environment Justice in South Africa", Ohio, U.S.: Ohio University Press.

The pattern of dispossession of rural people as a consequence of the creation of national parks and game reserves is not unique to South Africa; it can be seen in many countries in both the North and the South²⁷. The difference lies in the scale on which this dispossession has occurred. For example, the first warden of Kruger National Park, Colonel James Stephenson-Hamilton, earned the nickname Skukuza for the way he forced the indigenous inhabitants out of the park from 1902. The outcome is that for many black South Africans dispossession is the other side of the conservation coin.

Social justice in a democratic South Africa demands that the land claims of dispossessed local communities should be addressed; a factor recognized by the inclusion in the constitution of provisions for land restitution and related legislation. Legally recognized land claims have the potential to unravel conservation efforts and dismantle many protected areas in the name of social justice. With this in mind the new Board took the initiative of establishing a Land Claims Committee and set out in a policy document its commitment to settling claims by negotiation, mindful of the need to balance social justice and its mandate to conserve biodiversity. The Land Claims Committee has access to parks officials; the relevant land claims commissioners, government departments, advocacy groups, and affected communities and their legal representatives.

The Creation of Apartheid's Parks

When apartheid ended in 1994, 5.52 percent (about 67,340 square kilometers, or 26,000 square miles) of South Africa's total land area was under state-run wildlife protection. This included 16 national parks (with 6 more in the process of formation) and more than 100 provincial or homeland nature conservation areas²⁸.

South Africa's parks became some of the most luxurious and racially exclusive playgrounds in the world. They are today among the bitterest legacies of apartheid. The creation of Kruger, South Africa's first park and the second oldest in Africa, began in the 1890s when Boer farmers trekked into what they called the Transvaal (today the Northern and Mpumalanga Provinces), forcibly evicting an estimated 3,000 Tsonga people from land between the Sabie and Crocodile Rivers. In an act signed by the president of the

²⁷ Rothenberg, D. (1995), *Wild Ideas*, Minneapolis: University of Minnesota Press.

²⁸ Wahl, M. & K. Naude (1994), *National Register of Protected Areas*, Pretoria: Department of Environment Affairs and Tourism.

Transvaal, Paul Kruger, this vast area was proclaimed a game reserve. Like other settlers in the Transvaal, Kruger made a fortune through ivory hunting. Then, however, he became concerned that if the slaughter continued, the elephants and other game would be wiped out within a generation, as had already happened in South Africa's Cape Colony.

South Africa's parks and reserves were created as an emergency response to the decimation and rapid decline of wildlife that began as European settlers cleared and fenced land for ranches, agriculture, mines, and towns. Until the late nineteenth century, whites hunted wild game indiscriminately, sometimes for food, sometimes for trade, and increasingly for pleasure and trophies. Following the Anglo- Boer War at the turn of the century, the British seized control of the Transvaal, created more reserves, and, in 1926 passed the National Parks Act and merged the reserves into Kruger National Park²⁹.

Between 1926 and 1969, Kruger's borders remained substantially the same and Africans within its boundaries continued to be forcibly removed.

Historically, South Africa's parks have been closely linked to military and paramilitary personnel and operations. Today, South Africa's military is the country's largest single land holders and its properties include parks and reserves. As elsewhere in Africa, the park service includes many former military officers and its tactics mirror military operations. In the 1980s and early 1990s, for instance, Kruger was patrolled by a military unit trained by South African Defence Force instructors, and the border Kruger shared with Mozambique was one of the most strategically sensitive in southern Africa.

Although South Africa's national park system was a product of and instrument for white rule, it managed to maintain a benevolent image under apartheid. In the eyes of most white South Africans and much of the Western world, wildlife protection was viewed as "a righteous cause," implemented with scientific and technical professionalism and unsullied by the country's policies. While apartheid South Africa was officially shunned by the rest of the world, its park system and conservation efforts continued to receive international accolades³⁰.

²⁹ Isaacson, Rupert (1995), *South Africa: Swaziland and Lesotho*, London: Cadogan Books.

³⁰ Honey, Martha (1999), *Ecotourism and Sustainable Development- Who owns Paradise?*, Washington, DC: Island Press.

Ecotourism in South Africa

Despite such opportunism by the apartheid old guard, the new South Africa widely and innovatively embraced ecotourism. Today, the central government; its tourism agency, SATOUR; national and provincial park boards; academic programs at the University of Pretoria and elsewhere; the African National Congress (ANC); and many other groups are promoting ecotourism. And here, more than elsewhere, ecotourism is defined as synonymous with local community involvement, profit sharing, and empowerment through tourism projects and conservation programs.

From the outset, the Mandela government was under enormous pressure to change the status quo in and around the park system. One of the first issues was whether the game parks would continue to exist at all. Throughout the country, marginalized and impoverished communities on the edges of the parks demanded that parkland from which they had been evicted be returned to them; that they be given access to firewood, plants, grazing pasture, water, and other resources inside the parks; and that they get real economic benefits from tourism. Quickly, the new government decided that the parks would not be dismantled, and President Mandela went further, pledging that the ANC would increase the amount of land under protection to 10 percent as recommended by the IUCN. At the same time, the new government committed itself to reorganizing park operations, to carrying out substantial land redistribution, and to developing programs so that people on the periphery would begin to benefit from the parks and from tourism.

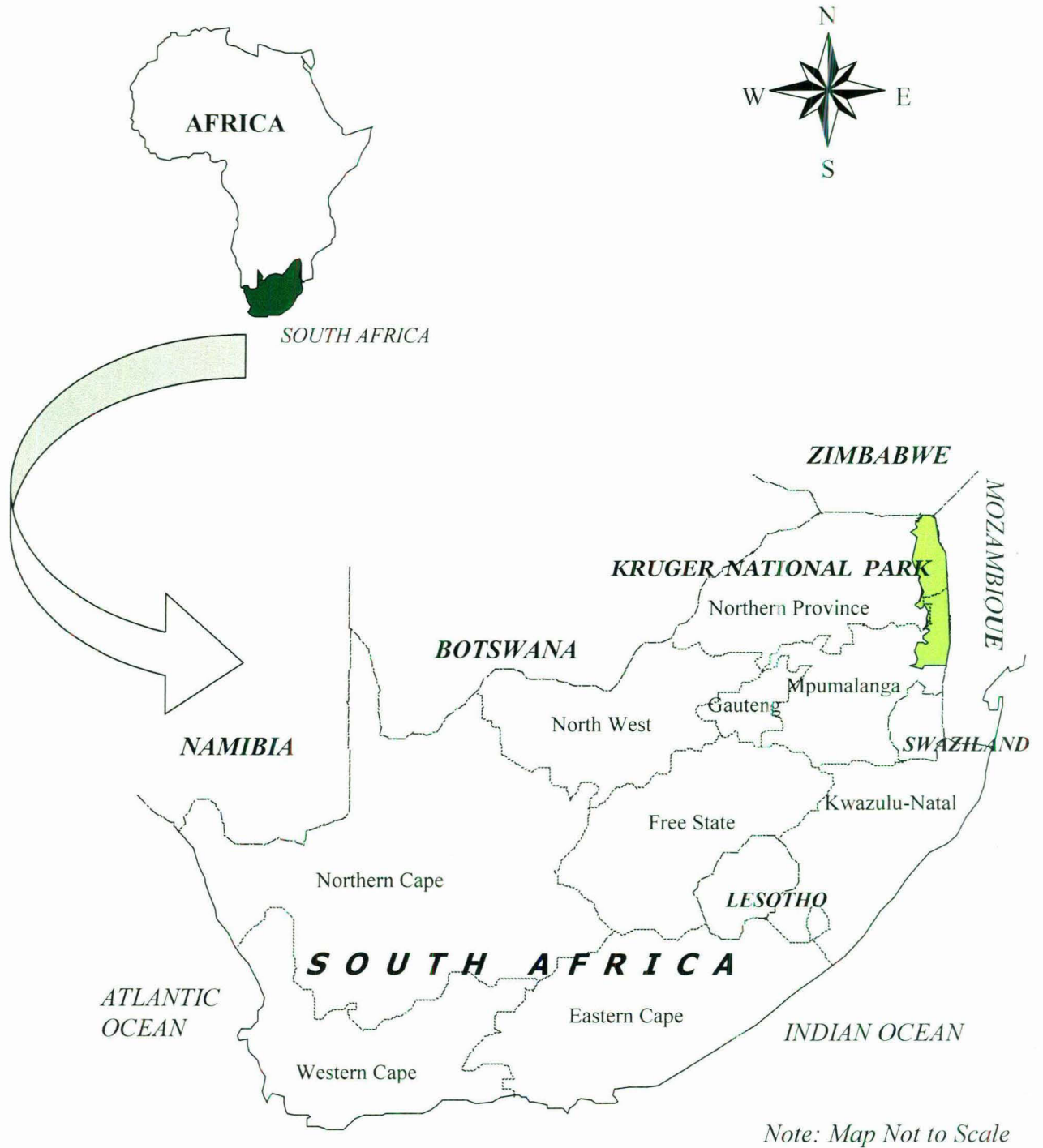
On average, foreigners spent only 1.5 days in game lodge accommodations, and only 16 percent visited Mpumalanga Province (formerly the Eastern Transvaal), South Africa's premier wildlife destination. As a SATOUR study concluded, "Although nature is a strong attraction for overseas tourists, the bulk end up staying with friends and relatives and/or hotels rather than game lodges for most of their stay here³¹.

In 1989, for instance, 90 percent of the visitors to Kruger National Park were South Africans, almost exclusively whites, and more than 60 percent of the profits from nature-based tourism came from South Africans. Since the elimination of apartheid, South Africa's tourism attractions, including the nature-based facilities, are being opened

³¹ Tourism Concern/ World Wide Fund (1992), *Beyond the Green Horizon: Principles for Sustainable Tourism*, Tourism Concern, Godalming.

Map III.1

LOCATION OF KRUGER NATIONAL PARK IN SOUTH AFRICA



Kruger National Park

and diversified in terms of race, national origin, and, to a degree, class. South Africa's parks were officially opened to all races in the 1980s, but nonwhites were accommodated in separate facilities from whites, to avoid, park officials contended, "incidents"³².

The Kruger National Park

The Kruger National Park (hereafter referred to as the "Kruger Park", the "Park" or simply "Kruger") has been described as the brightest jewel in Africa's treasure chest. It offers a wildlife experience that ranks with the best in Africa. Established in 1898 to protect the wildlife of the South African Lowveld, this two million hectare protected area is unrivalled in the diversity of its life forms and a world leader in advanced environmental management techniques and policies. The last century has seen the park carefully developed. Unlike many reserves and sanctuaries, it is blessed with an outstanding road network, and in recent years its perimeter fencing has been substantially reduced allowing greater migration ranges and increased wildlife populations.

Kruger at a Glance

The Kruger National Park is situated in the lowveld of northeastern South Africa, bordering Mozambique in the east and touching on Zimbabwe in the north. It is an elongated park of about 2 million ha, roughly 350 km from north to south, with an average width of 60 km. The Crocodile River in the south, the Luvuvhu and Limpopo rivers in the north, and the Lebombo hills in the east form natural boundaries. The park is bordered on the west mainly by high-density areas and by private and provincial game reserves.

There is an east-west altitude gradient, with basalt plains about 200 m above sea level in the east rising to 700 m in the granite hills in the southwestern areas. Kruger is geologically split down its long axis, with the undulating western parts underlain by granite and the more level eastern plains underlain by basalt. The rhyolitic Lebombo hills in the far east, the granite mountainous terrain in the southwest between Malelane and

³² Honey, Martha (1999), *Ecotourism and Sustainable Development- Who owns Paradise?*, Washington, DC: Island Press.

Pretoriuskop, and the sandstone hills northeast of Punda Maria show a diversity in geological parent material that is translated into distinctive associated biota. Kruger straddles two climatic transitional zones: the tropical and subtropical north and the temperate south. Summer temperatures regularly exceed 35°C, and winter temperatures are moderate. Frost rarely occurs and is limited to low-lying areas³³.

Kruger is drained by five perennial rivers that flow from west to east through the park and into Mozambique and a large number of seasonal rivers of varying sizes. The larger seasonal rivers have pools that hold water during all but the driest years.

This heterogeneity in the abiotic template at different spatial and temporal scales creates a habitat diversity that supports an impressive array of species. Thus far the following species have been identified: 147 mammals, 505 birds, 119 reptiles, 49 fishes, 34 amphibians, 1,980 plants, and many thousands of invertebrates³⁴.

History of Kruger:

In 1884, Transvaal President Paul Kruger's government declared Africa's first nature reserve, Pongola, close to the border of Swaziland in what is now northern KwaZulu-Natal. As the land had already been hunted to extinction, this "gameless" game reserve was a curious project, bravely supported by a handful of courageous politicians and conservationists for fourteen years³⁵. These early conservation efforts were motivated by the need to protect some resources for later exploitation, rather than a desire for their outright protection on any sort of idealistic basis.

For many years it had been apparent that wildlife, which formed a key part of the Boer Republic's economy, was dwindling. The Volksraad, the governing body of the ZAR, was empowered to declare areas of state land closed to hunters. The primary reason for the proclamation of this reserve was to allow wildlife the chance to breed so that it could later be shot. Soon afterwards, a contemporary European's report, written in 1894, concluded that a complete natural ecosystem was contained within the area

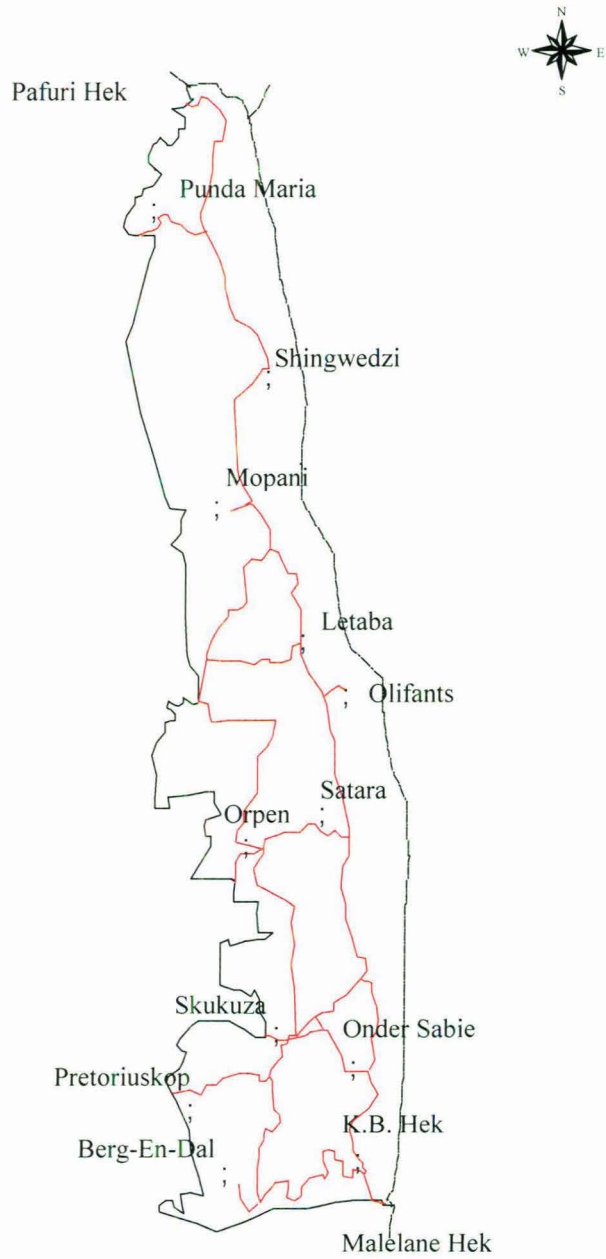
³³ Carruthers, J. (1995), *The Kruger National Park: A social and political history*, Pietermaritzburg: University of Natal Press.





³⁴ Mabunda, David et al. (2003), "The Kruger National Park: A Century of Management and Research", in Toit Johan T. Du et al. (eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*, Washington, DC: Island Press.

³⁵ Dennis, N and B. Scholer (1995), *The Kruger National Park wonder of an African Eden*, London and Cape Town: New Holland Press.

Map III.2

KRUGER NATIONAL PARK



-  Tourist Camps
-  Roads
-  Parks Boundary within Provinces
-  Parks International Boundary

Note: Map Not to Scale

Based on Saayman, M.& E. Slabbert (2004), "A Profile of Tourist visiting the Kruger National Park", *Koedoe*, Research Journal –SANP.

between the Lebombo Mountain and the Drakensberg Escarpment³⁶. Abel Chapman reported that the area was already extensively over-hunted, and the game was in rapid decline. He proposed setting it aside as a protected area in its entirety in order to conserve the natural diversity. He thereby anticipated part of the rationale for today's Kruger to Canyons Biosphere. However, by the time he delivered the paper to the International Convention for the Preservation of Wild Animals in London in 1900, Kruger's government had pre-empted his recommendation by protecting a rather smaller area.

One quarter of a million hectares of Lowveld land was set aside as a 'Government Reserve' on 26 March 1898. The fledgling reserve was given the name the Sabi Game Reserve. This area remains at the core of today's Kruger National Park. In the grand style of traditional governance inherited from the British colonial system, two policeman were put in charge of the entire reserve. However, the Boer War ensued, and any semblance of order broke down³⁷. After a bitter peace was negotiated in 1902, a former Intelligence Officer of the Sixth Inniskilling Dragoons, James Stevenson-Hamilton, was appointed as the Sabi's Reserve's first Warden.

In 1903, Stevenson-Hamilton oversaw an extension of the Sabi Reserve twenty kilometres or so back towards the Drakensberg Escarpment. He was also put in charge of a new Reserve established that year, the Shingwedzi, comprising an additional half a million hectares of land to the north of the Sabie. At this time, he displayed an example of the foresight that earned him the local name of Skukuza - "he who sees far" or "he who sweeps clean". He negotiated with the private landholders to lease the property between the two reserves in order to join them together in a contiguous whole.

Sabi Game reserve and Shingwedzi Reserve Established by 1903

In 1914, Stevenson-Hamilton rejoined the British Army in France for the duration of World War I. During his absence the Union government deliberated on the future of the reserves. Since hunting was no longer a mainstay of the economy, the justification for the game reserves had evaporated, and there was pressure to make the area available for farming. The reserves were expensive to maintain, generated no revenues, occupied land potentially useful for other purposes and harboured dangerous animals. Pressure mounted

³⁶ *ibid.*

³⁷ South Africa Year Book 2000-2001, 7th ed. Edited and Published by the Government Communication and Information System, Pretoria: South Africa.

to have them de-proclaimed³⁸.

The survival of the Sabi and Shingwedzi Reserves ultimately came down to an aesthetic, rather than economic, rationale. Upon his return to South Africa, Stevenson-Hamilton, impressed by the success of National Parks in the United States of America, had been lobbying for more permanent protection for these parts of the Lowveld. He carried with him the South African public, who quickly became enamored with the idea.

In 1926, today's current boundaries were settled with the expropriation from the Phalaborwa tribes of the areas between the Letaba and Olifants rivers. The area removed from protection amounted to almost a million hectares in extent, and included the areas known today as Numbi, Mkhuhlu, Thulamahashe, and Acornhoek. The Kruger National Park was formally promulgated in the same year. Kruger National Park takes shape, Expropriation in 1923 of 9,28,000 hectares from the Sabie Game Reserve.

Some of the land excised in 1923 proved unsuitable for cattle ranching or agriculture, intensive or extensive. By the 1970s some, notably Londolozi, had been turned back to nature with the establishment of a new breed of luxury game reserve. Whilst less destructive to the ecosystem than ranching, these areas were nevertheless fenced off from the Greater Kruger ecosystem. The boundaries of the Kruger National Park itself remained largely stable after the tumultuous first quarter of the twentieth century. The next major change came in 1993 when the western boundary fence was removed from the areas adjoining the private nature reserves, driven by principally political and opportunistic motives³⁹.

This fence removal has, nevertheless, helped to restore the ecological integrity of the system. The vegetation and the animals that feed on it have had some opportunity to return to their pre-expropriation numbers and organisation. To the west of the Park, further reserve consolidations have helped this trend. Continuing expansion of the Balule, Blyde-Olifants, Makalali and Selati conservancies is helping the restoration of biodiversity.

The veterinary fence "red line" now effectively delimiting the Greater Kruger has moved seventy kilometres west in places. Thus more than 300,000 hectares of privately

³⁸ Freitab, S. et al. (1996), " Nature reserve selection in the Transvaal, South Africa: what data should we be using?", *Journal of Biodiversity and Conservation*, March, Vol.5 No.3,.:48-56.

³⁹ *ibid.*

owned protected areas have been incorporated into the Kruger National Park ecosystem. By the late 1990's an additional 1.8 million hectares of protected areas was included in the greater Kruger ecosystem. The late 1990s saw the fruition of the most audacious effort yet to expand the protected Kruger system. Agreement was reached to extend the unfenced area to the east, crossing the border into Mozambique, and almost doubling again the size of the Reserve. Finally, binding agreement were signed between the Governments of South Africa, Mozambique and Zimbabwe in 2002 which will lead to the establishment of the world's largest reserve, the Greater Limpopo Trans Frontier Park.

With a length of 350 km. from Limpopo River in the north to the Crocodile River in the south and a width of 50 km. from Phalaborwa in the west to the feet of Lebombo Mountains in the east, the region sprawls across the north-east corner of the South Africa between Zimbabwe, Swaziland, Mozambique and the Great Escarpment, a massive mountain rampart that plunges 1,500 meters from the inland plateau to the coastal plain⁴⁰. The territory is rich in diversity, ranging from hot, wild, bushveld country to gentle foothills, green with orchards to timber, laced by river and waterfalls and have to a treasure house of forest, flowers and ferns. Above all it is a region of wilderness. It is the house of the Kruger National Park; have to be the largest variety of wild creatures on earth, and to many smaller game reserves.

The Kruger National Park, Africa's oldest and one of the world's most famous wildlife sanctuary, is internationally acclaimed for its model management, which successfully uses tourism to fund conservation, it is a model of ecotourism. At the border between the South Africa and Mozambique, making the boundary of the oldest parks in Africa, Kruger National Park is named after Hephanus Johannes Paulus Kruger, former President of South Africa as well as commander in the war against the English between 1899 and 1902. As early as 1884, this statesman proposed to establish a reserve to protect the fauna endangered by the hunting. The Kruger Park grew out of the Sabie Game Reserve proclaimed in 1896. The park was born on 26th March 1898 and proclaimed in 1926 as Kruger National Park named after former president of South Africa, Paul Kruger. And so it is today. Kruger Park remains one of the few places on our earth where we can

⁴⁰ Dennis, N. and B. Scholer (1995), *The Kruger National Park wonder of an African Eden*, London and Cape Town: New Hooland Press.

look back in the mirror of our past⁴¹. As the geography and geology vary, the average rainfall differs significantly across the Biosphere region, averaging 368 mm per annum in the plains, but increasing to up to eight times the quantity (3,000mm) on the plateau. As the altitude (and consequently rainfall) increases from east to west, a great biodiversity can be witnessed progressing from scrub and savannah upwards into South Africa's unique fynbos floral system, rainforests, and climax grasslands on the top of the Escarpment where water is more abundant.

The Escarpment region, consisting of the Blyde River catchment, the Valley of the Olifants, Legalametsi Nature Reserve and Wolkberg Wilderness Area contains 140 endemic species of plant, reptile, amphibian and invertebrate found to date. It is interesting to note that Mariepskop contains well over 2,000 plant species - more than the whole of the Kruger National Park and far exceeding Table Mountain's plant diversity. The whole region holds up to 75% of all terrestrial bird species, 80% of all raptor species (all the vulture species have been recorded) and 72% of all mammals found in South Africa.

There are at least 300 wildlife sanctuaries in South Africa ranging from national and provincial parks to small private game reserves. The largest and most visited reserve is the Kruger National Park. Roughly the size of Wales or comparable in area to the American state of Massachusetts, the park occupies almost two million hectares eastern Transvaal lowveld. The park is not the world's largest of its kind, nor is it particularly scenic. Most of it is flat and rather dull, with only a few significant hills rising here and there and the occasional giant rocky outcrop. But it is recognized the world's leader in African fauna and flora research and environmental management.

The Kruger is, without doubt, a wilderness without peer, the monarch of game parks. It can be broadly divided into 2 regions⁴²:

i) *South of the Olifants*: The Kruger park's southern section, with its broad game-rich grasslands was the first to be developed being the oldest and most accessible park, the southern half of the Kruger National Park has more accommodation, roads, picnic places, view points and even say, animals, than the northern half. This region is criss-crossed by

⁴¹ *ibid*

⁴² Dennis, N. and B. Scholer (1995), *The Kruger National Park wonder of an African Eden*, London and Cape Town: New Hooland Press.

rivers and streams fringed with much kind of trees some of them very large.

ii) *Kruger, North to Pafuri*: The wild northern segment of the Kruger Park beckons the serious game-viewer and the lover of unspoilt Africa. For the tourists there is little to match the natural treasures of the Kruger Park's northern half. Some of the landscape appears monotonous from the Olifants River to the vicinity of the Zimbabwe border. Mixed mopane scrub and forest stretch as far as the eye can see. The Luvuvhu River flows east into the Limpopo at the fork the borders of South Africa, Mozambique and Zimbabwe meet. The spot is known as Crook's corner⁴³.

Covering a vast land area, the park offers a number of differing eco-systems and landscapes to which various species gravitate, these include the densely vegetated banks of five rivers flowing across from west to east. The far northern reaches are perhaps the most ecologically interesting, being the meeting place of major ecosystems supporting a remarkable density and variety of animals, reptiles and insects.

'The Big Five' – elephant, lion, leopard, rhino and buffalo are a major draw card at the Kruger National Park. More than 25,000 mammals representing 137 species roam the reserves tangled bushveld and sun-soaked savanna plains. The diversity is not confined to animals. There are 507 species of birds. In addition there are some 300 species of trees in the parks, five main botanical divisions. South Africa is an acknowledged leader in wild life management and research and provides conservation advice and assistance to many African countries.

The Kruger dominates the entire Lowveld, and is perhaps South Africa's greatest single tourist attraction. This park plays host to around 5,000 people daily and, for the inexpensive game-viewing holiday. Beautifully maintained game – viewing roads leads visitors to splendid viewing sites and to waterholes that often team with wildlife. Along the Kruger's western boundary which was fenced until recently, but the barriers are now coming down and the animals are able to move freely – are three of the world's largest private reserve; Klaserie, Timbavati and Sabi Sand⁴⁴.

In 1993 a historic event for the ecosystem occurred and the first in a series of major Kruger fence removals - 180km of western boundary fence was removed from the

⁴³ Carruthers, J. (1995), *The Kruger National Park: A social and political history*, Pietermaritzburg: University of Natal Press.

⁴⁴ *ibid*

areas adjoining the private and provincial nature reserves. A further 200 km. of eastern fence is now planned for removal as wilderness areas in the countries of South Africa, Mozambique and Zimbabwe are united into the Greater Limpopo Park. This could in turn be followed by the removal of up to 300 further kilometres over the next five years between communities and private landowners. The protected areas of southern Africa's eastern savannahs and escarpment now make up a unique constellation of reserves and resource areas, the likes of which are found nowhere else in the world.

Physiography of the park

Topography:

Separately, the Bushveld Igneous Complex extruded to the surface of the planet some 2 billion years ago. Particularly unique to the region, and to the south of the Kruger to Canyon biosphere, is the Barberton Mountain Land, which forms part of the Kaapvaal Craton. This constitutes the oldest exposed rock on the planet and has provided a wealth of insights into the formation of the planet for geologists. African landscapes have evolved remarkably free of climatic cataclysms for at least 100 million years. This has allowed the evolution and maintenance of unusually diverse fauna and flora, intricately adapted to each other and to their environment⁴⁵. The successive ecological layers of plants, herbivores and carnivores can only be as abundant as the supply of nutrient permits. Similarly, the soil can only be as rich as the rock from which it is formed.

The Park lies in the north-eastern part corner of South Africa. More than 350 kilometers long and about 50 km at its widest; it covers more than 19,000 sq. kms. Foreign countries about three of its boundaries: to the north lies Zimbabwe, Mozambique hugs the eastern perimeter and Republic of Venda nestles along the northwestern border. As an ecological unit, it is fortunate that natural barriers coincide with three boundaries: the Luvuvhu and Limpopo River in the north, the Crocodile River in the south and the Lebombo mountain range along the east⁴⁶. Unfortunately, the western boundary is an arbitrary line cutting directly across traditional migration paths of large herds of antelope

⁴⁵ Caughley, Graeme and Anthony, R. E. Sinclair (1994), *Wildlife Ecology and Management*, U.K.: Blackwell Scientific Publication.

⁴⁶ South Africa Year Book 2000-2001, 7th ed. Edited and Published by the Government Communication and Information System, Pretoria: South Africa.

such as zebra and wildebeest. When, between 1959 and 1961, this boundary was fenced no longer make their annual winter treks to the foothills of the Drakensberg for water and grazing. However, several hundred windmills and artificial waterholes have since been established to provide water for animals, which used to trudge across the plains to quench their thirst.

Several major rivers – the Crocodile, Sabie, Sand, Olifants, Letaba, Shingwedzi, Luvuvhu and Limpopo are spaced more or less evenly over the considerable length of the Park. These water sources, all flow from west to east, indicating a general slope of the land in that direction. Height above sea level varies from about 260 meters on the central grass – filled plains to 839 meters in the southwest near Malelane. As well as the Lebombo Mountains thrusting up along the eastern edge of the Park, large hills are also found around Berg-en Dal and Pretovriuskop. Further north, towards Olifants camp, and Letaba, occasional hills again appear, and hilly outcrop also occur around Punda Maria and Pafuri. Elsewhere the park tends to be rather flat, within gentle undulations and sporadic boulders-strewn granite extrusions⁴⁷.

Climate:

Daytime temperatures are rather high during summer, frequently reaching well over 40° centigrade but an average being about 30° centigrade. The nights are warm, having minimum temperature around 18° centigrade. During winters, the days are usually cloudless and warm, with an average maximum temperature of 23° centigrade⁴⁸. It cools down rapidly in the late afternoon and the nights are cold, generally about 8° centigrade during the early hours before sunrise. Extreme minimum temperature may be as low as -4° C but these are the exceptions. The warmest months are December and January while the coolest weather is experienced in June and July because it lies in the summer-rainfall region, the rainy season normally commences in September or October. December, January and February usually receive the heaviest downpour, after which the rainfall tapers off to little or no rain during June, July and August. Except for the fairly high areas around Punda Maria, rainfall tends to be lowest in the northern part of the Park and

⁴⁷ Chadwick, Douglas, H. (1996), "Place for Parks in the New South Africa", *National Geographic*, 190(1), July: 432-441.

⁴⁸ Dennis, N. and B. Scholer (1995), *The Kruger National Park wonder of an African Eden*, London and Cape Town: New Hooland Press.

heaviest in the south. These rainfall patterns are important to visitors seeking the best game viewing.

These conditions are normally followed by the development of a low-pressure cell over the interior, resulting in an influx of hot, moist equatorial air from the north and northeast, and subsequently thunderstorms as air is sucked down from the weather systems more normally associated with the Congo⁴⁹. The establishment of equatorial low-pressure troughs over the subcontinent often causes widespread and continuous rain over the Lowveld. This effect is known as Intertropical Convergence.

Like other semi-arid regions of the world, the Lowveld is exposed to great variations in the amount of rainfall received in any one year. The reason for the low rainfall in the Lowveld and its variability lie in the position of the region relative to the main weather-generating circulation systems. The latitude of the Central Lowveld coincides with a zone of dry, descending air. This results in lots of sunshine and warm temperatures but little rain. It is only when the tropical circulation shifts southwards in the summer months that the high pressure cells can be elbowed aside, sucking moist air from over the ocean and sometimes leading to spectacular thunderstorms.

Vegetation:

The vegetation in all but the wettest part of Kruger is classified as sub arid to arid wooded savanna; botanists recognize at least eight major vegetation zones, subdivided into 35 landscapes or 11 land systems. Vegetation structure varies from open plains with low shrubs and a sparse tree canopy to closed gallery forest along certain rivers. There is also undulating open low woodland savanna, dense shrub on deep sand, and sparsely vegetated broken shrub land dotted with large baobab trees.

The size of the park and particularly its north-south length makes a considerable range of vegetation zones inevitable. Collectively these may be termed bushveld, but a number of distinct zones can be recognized within this overall term. The drier northern area, stretching from the Olifants River through to the Limpopo, is predominantly mopane country. The western half of this section consists of tough red bush-willow. East of this through to the Lebombo mountains are vast unbroken height with few other trees to break the monotony. Further north, towards Punda Maria, the soil and rainfall change,

⁴⁹ *ibid.*

encouraging luxuriant stands of mopane forest. And towards Pafuri and the Limpopo the majestic Baobab trees become increasingly abundant, towering as ageless sentinels over the surrounding vegetation. South of the Olifants river the vegetation diversifies. Large, grassy plains with abundantly scattered Knobthorn (*Acacia nigrescens*), Marula (*Sclerocarya birrea*) and Leadwood trees (*Combretum imberbe*) dominate the landscape around Satara, lower Sabie and Crocodile Bridge. The south-western part of the Park, including Skukuza and a wide strip along the western boundary up to Orpen Gate, consists mainly of thorny thickets and fairly dense stands of red bush-willow, knobthorn, tamboti (*Spirostachys africana*), marula, and a wide variety of other tree species⁵⁰.

A fairly small but distinct zone is formed in the high-lying areas around Pretoriuskop where silver terminalia (*Terminalia sericea*) and shrubby sicklebush (*Dichrostachys cineria*) are dominant. Stands of tall grass separate the trees, which also include the familiar marula and a range of thorny acacias. Heavily wooded forests adjoin all the major rivers with magnificent trees such as Sycamore Fig, the Natal Mahogany, Fever trees and Nyala trees among the largest and most beautiful⁵¹.

Geology

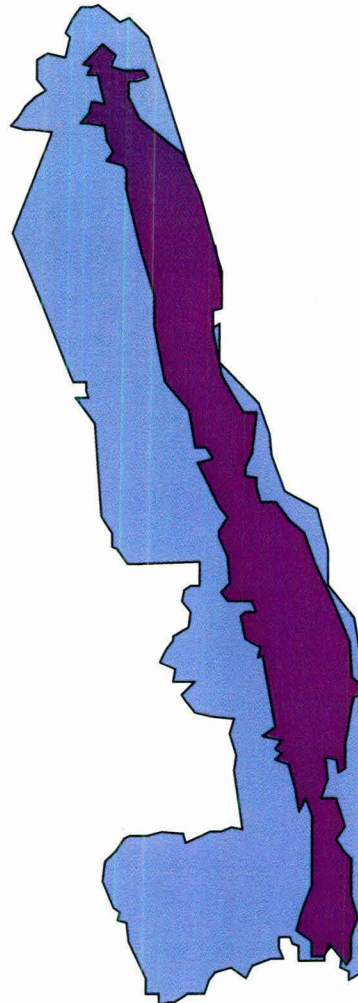
South Africa is underpinned by one of the oldest rock formations to have formed on earth. The Kaapvaal Craton formed in excess of 3,600 million years ago, and has remained floating on the surface of the planet ever since, anchoring surrounding cooling rocks around it over subsequent aeons. By 3 billion years ago it was the size of the state of Texas and, as such, is the largest structure geologists have identified from that time. Together with the West African and Congo cratons, the Kaapvaal formed a pivot around which, current theorists believe, the rest of today's continents crystallized - the original super continent Pangaea. Subsequently this singular land mass fragmented into Laurasia, which drifted off to the north, and Gondwanaland, which fragmented into the southern hemisphere's continents, including present day Africa. A combination of the age and conditions under the craton fermented a unique mineral wealth for the country. Around 2.8 billion years ago, gold was deposited in a range of Greenstone Mountains formed around the northern side of a lake to the west of present day Johannesburg. This

⁵⁰ Ildos, S. Angels and Bardelli, G. Giorgio (2001), *The Great National Parks of the World*, New Delhi: Om Book Service.

⁵¹ Braack, Leo (1988), *Kruger National Park-A visitors Guide*, Cape Town: Struik Publishers.

Map III.3

GEOLOGY OF KRUGER NATIONAL PARK



Basalt



Granite

Note: Map Not to Scale

Based on <http://www.kruger2canyons.com>

Witwatersrand range has accounted for more than 50% of the world's gold production to date⁵².

Local geology

The geology of the Lowveld is organized into broad bands, oriented in an approximately north-south direction. The bands represent successive layers, once horizontal but now tilted downward towards the east by the immense forces that were associated with the shifting of the continents. So, a journey from east to west across the Lowveld Savannah is also a trip backward in time, from a mere 50 million years ago to the beginning of the world.

The evolution of the Lowveld landscape dates back to the break-up of Gondwanaland and the opening of the Mozambique Channel, which initiated drainage to the Indian Ocean. At that time Karoo sediments and lavas covered the whole area. The greater part of the area was underlaid with Archaean Old Granite and, in the case of the Murchison Range, even more ancient metamorphic rocks of the Primitive System.

Research on the rainfall patterns in the KNP over the last 100 years indicates a cyclical tendency in rainfall volumes, with 10 years of above average rainfall typically followed by ten years of below average precipitation.

Rainfall

Kruger falls in the southern African summer rainfall zone. Rain falls mostly from October to March, usually in the form of thunderstorms, and the period from April to September is dry. The long-term average annual rainfall for the whole park is 530 mm, with a clear gradient that varies from 730 mm per annum in the southwest at Pretoriuskop to 400 mm per annum at Pafuri in the northeast. Rainfall cycles of 15-20 years are recognizable, with 7-10 years being wetter than the long-term average, followed by a 7 to 10 year drier period.

It is worth noting that the high temperatures during summer cause a high evaporation rate, which reduces the effectiveness of the precipitation. Hail occurs on a regular basis, but at low frequencies. Mist in winter is common in the lower lying areas. Frost occurs as an exception in the lower lying areas of the Kruger National Park.

⁵² Dennis N. and B. Scholer (1995), *The Kruger National Park wonder of an African Eden*, London, Cape Town: New Hooland Press.

Climate acts with geology as a critical determinant of the ecological potential of a landscape. The climate of the Lowveld follows a trend from wetter and cooler weather in the south and west to drier and hotter in the areas of the north and east.

The highest monthly average was recorded in 1982: 41.1°C. The coolest months are June and July where the average minimum and maximum are 9° C and 24.7° C respectively. The average rainfall over this period was 513 mm per annum. Rain usually falls between October and March, with a peak in December and January. On average there are thunderstorms for 25 days of the year. The wind usually blows from the South-to-South East, usually under 12.6 km/hr. The strongest winds of around 30 km/h usually blow in October. From August to October this wind sometimes swings to blow from the north; this is usually a hot dry wind⁵³.

Impact of Early Humans on the Kruger System

Humans affect the environment through physical presence and in an intangible social manner through decision making, induced conflict, religion, and other factors. Low population densities and low intensity resource use by Stone Age hunter and gatherer probably would have constitute a low impact period in the Kruger's prehistory, and it is accepted that early human did not shape the environment in a permanent way.

From Colonialism to Conservation

The first non-Africans influencing the Kruger area were Arabian traders up to the eighteenth century, followed by the Portuguese control of the gold and slavery trade through East African ports and Dutch and Voortrekker pioneers a century later.

The development of Kruger had its beginnings in the recognition that the impacts of humans on lowveld game populations and hunting prospects in the late 1800s and early 1900s were unsustainable and that the game needed protection. Impacts of professional hunting in the erstwhile Transvaal were enormous, and the decimation of elephant populations must have influenced structural heterogeneity in the region, but to what degree is difficult to assess.

Establishment of the Sabi Game Reserve in 1898 saw the first separation of the human component from the landscape when scattered villages were resettled west of the boundary. Over time Kruger became renowned through its wildlife research and

⁵³ Braack, Leo (1988), "Kruger National Park-A visitors Guide", Cape Town: Struik Publishers.

management programs, mirrored by staffing structures, but the basic philosophy of protectionism prevailed. Nature conservators set the standards and norms based on biotic and abiotic associations, generally excluding the human component from the historical or management landscape. In contrast, it was soon noted that for conservation objectives to be met, the public had to be allowed access to Kruger. This resulted in the development of tourism facilities and infrastructure, in a manner aimed at maintaining the natural qualities of Kruger as far as possible. This essential paradox continues to this day, often with tension between activities (such as road construction) and the intended philosophy (minimum interference) behind them⁵⁴.

It is necessary to include some early history because it shows how long humans have interacted with this ecosystem. The different eras were chosen to show when human impacts on the system, political power, and management or research philosophy changed. These changes were seldom abrupt and usually had a developing period or overlapped and sometimes coincided with increased technology or the influence of certain people.

The Hunter-Gatherer Period:

Archaeologists also use the phrase "Stone Age" for this period because of the stone tools that were used during this period. The Earlier and Middle Stone Age people and the San (or Bushman) of the Later Stone Age period lived in this area for many thousands of years and are thought to have had little impact on the natural processes and populations. The San, the last remaining group of the Stone Age⁵⁵, were hunters and gatherers and possibly scavenged from the prey of carnivores. They led a nomadic life in small groups, wandering through the area following migrating game herds⁵⁶. They used the bow and arrow and microlithic tools and left a rich heritage of their rock paintings of animals and humans in numerous shelters in rocky outcrops in Kruger as well as deposits of ash, bone, small stone tools, and ostrich eggshell beads.

Humans affect the environment in two ways: through physical presence in high numbers and in an intangible social manner through decision-making, induced conflict,

⁵⁴ Freitag, Stefanie et al. (2003), "Anthropogenic Influences at the Ecosystem Level", in Toit Johan T. Du (eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*, Washington, DC: Island Press.

⁵⁵ Deacon, H. J. and J. Deacon (1999), *Human beginnings in South Africa: uncovering the secrets of the Stone Age*, Cape Town: David Philip Publishers.

⁵⁶ Plug, I. (1989), "Aspects of life in the Kruger National Park during the Early Iron Age. South African Archaeological Society", *Goodwin Series* 6: 62-68.

religion, and so forth. Low-density occupation and low-intensity resource use of the Stone Age hunter-gatherers probably would have constituted a low-impact period in Kruger's history.

Farmers, Metalworkers, and Traders: The Iron Age (AD 200-1836)

Archaeological research has demonstrated that Iron Age communities had settled in southern Africa by at least AD 200⁵⁷, and by about AD 400 the first Bantu speaking people started settling in the present-day Kruger area along the Letaba River. In the next 1,000 years additional groups settled along the Luvuvhu, Letaba, Olifants, Sabie, and Crocodile rivers. Population numbers are thought to have peaked around 15,000 during this period, resulting in localized homogenization of the ecosystem. The Kruger area is considered to have been marginal or transitional in terms of cultural-historical occupation and farming, with a noticeable influence of human and livestock diseases such as nagana and malaria.

The period between 1800 and 1835 was a time of upheaval and changes in black political power south of the Limpopo River. This was a state of continuous war known as the Difaqane or Mfecane. This was also the time when Shaka, ruler of the Zulu nation, conquered many other black tribes and dispersed others toward Swaziland, the South African lowveld, Mozambique, and Zimbabwe⁵⁸.

The Colonial Period: Pioneers and Hunters (1836-1902)

Early in the nineteenth century white people started exploring the area north of the Vaal River, and Louis Trichardt was the first white Voortrekker to trek through the present-day Kruger to Delagoa Bay (Maputo) in Mozambique in 1836. Rural white Afrikaners and black Africans used wildlife as a resource and depended on produce from the environment for their existence. The period 1836-1902, including the Anglo-Boer War, was characterized by uncontrolled hunting for meat, skins, and ivory. This decimated the game populations in the lowveld (the low-lying area in which Kruger is situated), and conservation of wild animals. As far back as 1858 laws to regulate hunting were proclaimed by the South African Republic.

⁵⁷ Hall, M. (1987), *The changing past: farmers, kings and traders in southern Africa*, Cape Town: David Philip Publishers.

⁵⁸ Mabunda, David et al. (2003), "The Kruger National Park: A Century of Management and Research", in Toit Johan T. Du et al. (eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*, Washington, DC: Island Press.

After years of campaigning by various people for the creation of a game reserve between the Sabie and Crocodile rivers⁵⁹, and with the looming Anglo-Boer War, President Paul Kruger eventually signed the proclamation creating the Sabi Game Reserve in 1898.

Game Preservation Era (1902-1925)

After the Anglo-Boer War, formal protection of game in the lowveld started in 1902 with the appointment of James Stevenson-Hamilton as warden of the Sabi Game Reserve. The British colonial administrators had a long history of European game preservation that centered around the creation of game sanctuaries to be used as exclusive hunting grounds by sportsmen and gentlemen.

From 1902 to 1926 the emphasis was on the protection and rebuilding of these game populations. Stevenson-Hamilton laid out the foundations of the new game reserve⁶⁰. In 1903 the area between the Sabie River and the Olifants River was added to the Sabi Game Reserve, and the Shingwitsi Game Reserve (an area between the Letaba and Luvuvhu rivers) was proclaimed. He also moved out the many isolated black families who lived in and were not employed by the reserve, earning him the unflattering nickname Skukuza ("he who sweeps clean"). This policy of creating parks and moving indigenous people out of the area was followed in many other parts of the world, causing animosity from neighbouring rural communities⁶¹.

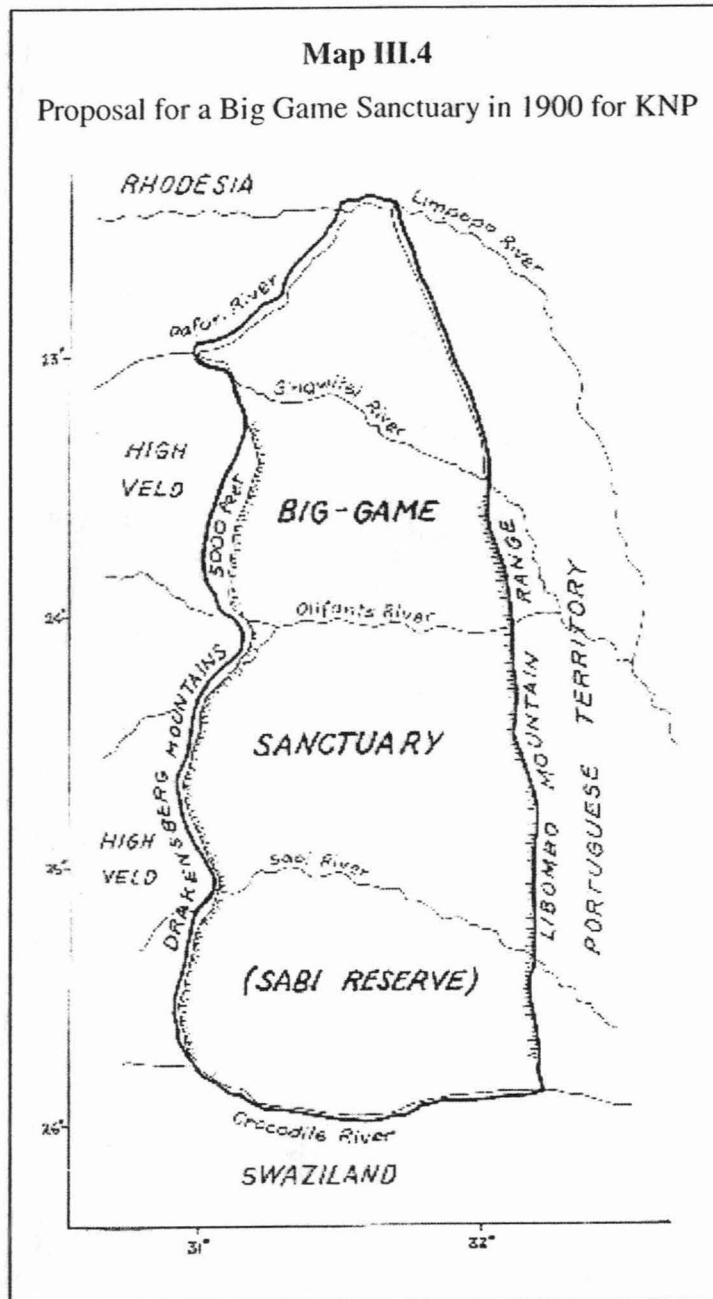
With help from some influential people he started lobbying to have the reserves proclaimed national parks. After much lobbying behind the scenes, this eventually happened after the Nationalist party came into power in 1924 and passed the National Parks Act (1926), when the Sabi and Singwitsi reserves were amalgamated and named the Kruger National Park⁶².

⁵⁹ Carruthers, J. (1995), *The Kruger National Park: A social and political history*, Pietermaritzburg: University of Natal Press.

⁶⁰ Carruthers, J. (2001), *Wildlife and warfare: The life of James Stevenson-Hamilton*, Pietermaritzburg: University of Natal Press.

⁶¹ Burnham, P. (2000), *Indian Country, God's Country: Native American and the national Parks*, Washington, DC: Island Press.

⁶² Mabunda, David et al. (2003), "The Kruger National Park: A Century of Management and Research", in Toit Johan T. Du et al. (eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*, Washington, DC: Island Press.



Rendition of Abel Chapman's proposal for a big game sanctuary presented in London at the International Convention for the Preservation of Wild Animals, 1900

Adopted from <http://www.kruger2canyons.com>

Creating a National Park (1926-1946)

The new legislation provided for a Board of Trustees to be appointed, and the era of exclusive power of the warden was over. This also meant that the public obtained

access, and the first three tourist cars entered in 1927. The state undertook to pay for management and maintenance of the new national park, but development had to be financed from tourist income. This necessitated the construction of roads and tourist accommodation facilities.

After initially using the South African Railways to manage tourism, in 1931 the board appointed outside contractors to provide catering and trade to tourists because of the lack of internal funds. These concessions continued until 1955, when the board again took them over after continuous complaints by the public concerning poor service. Initial accommodations were rustic, and Stevenson-Hamilton was determined to provide visitors with a wilderness experience.

The stabilization of water resources to distribute game more evenly and counter the perceived desiccation of the lowveld was started in 1933 when the first six boreholes were sunk, signaling the start of more permanent form of management intervention. In 1938, after a foot-and-mouth epidemic among domestic stock in the region, the state veterinarians ordered the destruction of all cloven-hoofed domestic stock that were kept for milk and food in and around the park⁶³.

The Development of the Kruger Park

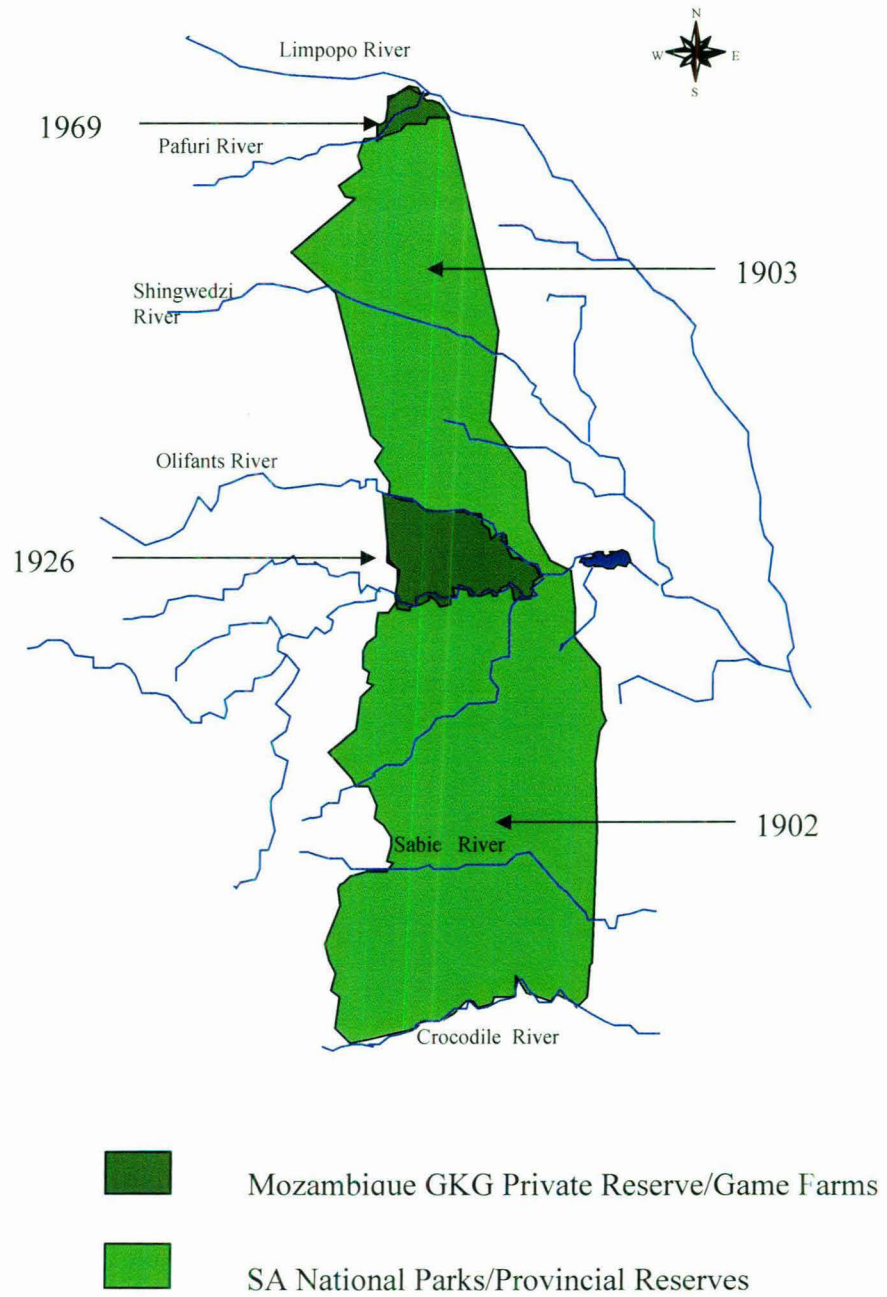
The southern part of the Kruger Park was first established as the Sabi Game Reserve in the last decade of the nineteenth century. At that time there was very little game remaining, and the intention was to create a reserve of future hunting stock (although subsequent events ensured that the South African public have never again hunted there). The area was selected mainly because endemic diseases made it inhospitable for humans and livestock.

The Kruger National Park was proclaimed in 1926, when Parliament passed the first National Parks Act. By this time, the rationale for protecting the area had changed somewhat, with a new focus on recreational and educational values. These values supposedly formed the core of the Parks Board's policies, but social and political factors also played a considerable role in Kruger's development. Since its proclamation, the Park has served a purpose as a powerful national and cultural symbol, and has played a role in

⁶³ Mabunda, David et al. (2003), "The Kruger National Park: A Century of Management and Research", in Toit Johan T. Du et al. (eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*, Washington, DC: Island Press.

Map III.5

EVOLUTION OF KRUGER NATIONAL PARK

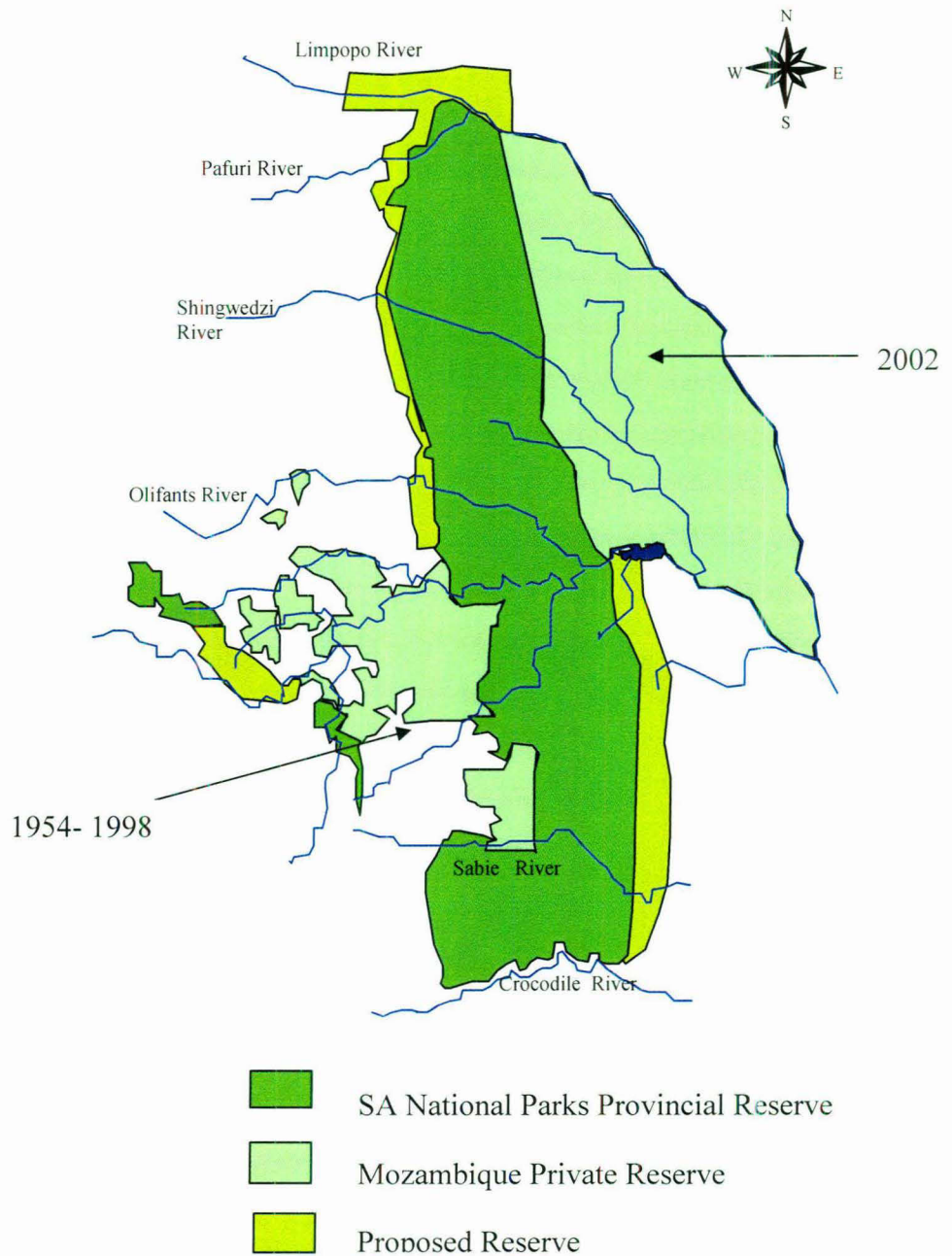


Note: Map Not to Scale

Source: <http://www.kruger2canyons.com>

Map III.6

EXPANSION OF KRUGER NATIONAL PARK



By the late 1990s an additional 1.8 million hectares of protected areas was included in the greater Kruger ecosystem.

Source: <http://www.kruger2canyons.com>

Note: Map Not to Scale

creating first a white South African national identity and thereafter an Afrikaner nationalist identity.

From its inception, the Kruger Park was run along paramilitary lines. Many early game wardens had a military or law enforcement background, rather than one grounded in science. A strongly regimented approach pervaded the development of the park, and is still evident in the design of most existing rest camp facilities and many of the policies and attitudes toward park visitors.

The history of the Kruger Park has been one dominated by the inequality of Apartheid. Now that South Africa is attempting to transform itself into a more equitable society, this should be reflected by changes in the Park's public role. Officially, all South Africans are now equal stakeholders in Kruger. In reality, they are not treated as such. Not only does the National Parks Board appear very selective in identifying its local stakeholders, but also management's recent actions suggest that it even regards citizens of countries on other continents as more important stakeholders than the majority of South Africans⁶⁴.

The Era of Management by Intervention (1946-1990)

It was during this period that discrete management and research functions emerged, and that specialist service divisions dealing, for instance, with technical and tourism services, developed.

Management

Colonel J. A. B. Sandenberg took over from Stevenson-Hamilton as warden in 1946. He outlawed controlled burning of grass and reintroduced carnivore control in parts of the park. Kruger was in a dry cycle, and in late 1950 the Letaba River stopped flowing for the first time in history. In 1955, tourist numbers exceeded 100,000 for the first time, marking the end of a quiet and romantic era. Kruger was becoming an institution run increasingly on business principles⁶⁵.

To cope with the proposed extensive development of road networks and tourist facilities, a Technical Services department was established in 1958. It completed fencing

⁶⁴ Braack, L.E.O. (1988), *Kruger National Park-A visitors Guide*, Cape Town: Struik Publishers.

⁶⁵ Mabunda, David et al. (2003), "The Kruger National Park: A Century of Management and Research", in Toit Johan T.Du et al. (eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*, Washington, DC: Island Press.

of the park boundaries for veterinary and disease control purposes, demanded by the National Department of Agriculture: the southern boundary along the Crocodile River in 1959, the western boundary in 1961, the eastern boundary in 1976, and the short northern boundary in 1980. The fence curbed the spread of diseases to domestic stock in the adjoining areas, kept dangerous animals from marauding outside, and facilitated boundary patrolling for poaching control.

The fence turned the park into an ecological island for large mammals. It prevented certain populations from moving seasonally and thereby escaping natural pressures such as water scarcity and droughts, fire effects on grazing, disease epidemics, and local predation. The boundary fence also abetted populations of large herbivores such as elephant, buffalo, and hippo. These no longer left the park and were not shot or snared in the surrounding buffer areas. In turn, concern for the impact of these large herbivores on the environment led the park managers to control their numbers through culling operations.

The first complete aerial census on elephant and buffalo was carried out in 1967. Managers were surprised at this rapid growth because Stevenson-Hamilton (1905) had thought there were no elephants in 1903 and that only 10 had crossed into the park from Mozambique by 1905. Acceptable upper and lower population limits were set for these species and an annual culling program commenced. A decision was also made to use the meat and byproducts from culling, and a certified abattoir was erected in Kruger. Culling techniques were honed to conform to high ethical and animal welfare standards. The management motto of Kruger became "management by intervention"⁶⁶.

During this time more people were being crowded into the rural areas west of Kruger through various government resettlement schemes, including forced removals. Industry, commercial forestry, and agriculture were developing in the upper catchments adjoining Kruger. Environmental impacts became bigger, especially a decrease in flow in perennial rivers, with strong agricultural irrigation boards dividing available water. Park managers had no legal right to claim water for the environment, and attempted to manage the situation by building dams in the park.

⁶⁶ Pienaar, U. de V. (1983), "Management by intervention: the pragmatic/economic Option", in R. N. Owen-Smith (ed.), *Management of large African Mammals in Conservation Areas*, Pretoria: Sigma Press.

Reintroduction of species that were extinct in Kruger was a priority and was very successful in the case of rhinos. White rhino were first reintroduced from Natal in 1961, and today the Kruger population numbers about 5,000, the largest in the world.

Conservation managers in Kruger successfully resisted this onslaught, thanks largely to brave black field rangers on the ground. The voting public were allies of Kruger, and through a public outcry the government was stopped from allowing coal mining in the park in the late 1970s. Infrastructure was established, roads built, and tourism facilities constructed so that by the end of this period the development footprint in Kruger was much the same as today⁶⁷.

The New Democracy: Black Empowerment (1990-2002)

The 1990s were a decade of rapid change for South Africa and its national parks. Major sociopolitical transformation, and a strong paradigm shift in ecosystem science and management, contributed to windows of opportunity that not only promoted the role of blacks in society, but also allowed innovations in management and research, extension of conservation estate, and far-reaching policy renewals.

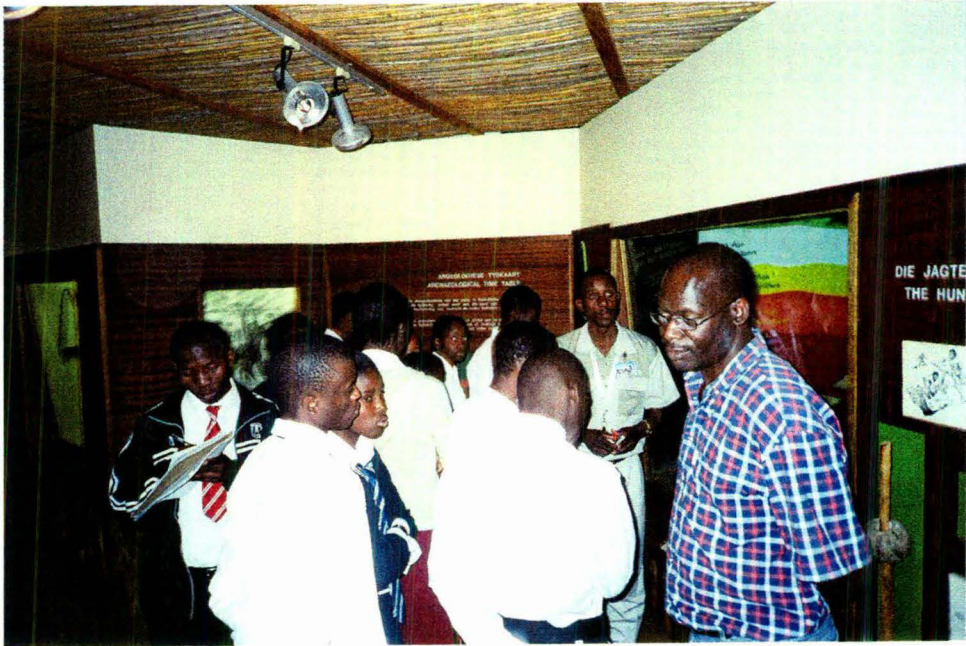
Political Changes

On February 2, 1990, President Frederik W. de Klerk released Nelson Mandela from prison and legalized all banned political parties. The first free elections were held in 1994, and the African National Congress (ANC) became the elected government. Initially the ANC government did not take a clear stand on the role of national parks, and some politicians made statements to newspapers that Kruger should be handed to local black cattle farmers. Nelson Mandela mapped the future relationship between national parks and the government in 1998 at the Kruger Centenary Celebration. He said that the conservation responsibility rested with "new leaders" and that he would like to see them build viable partnerships with neighboring communities.

From 1991 when Dr. Nganani Enos Mabuza became the first black board member to David Mabunda in 1998 when he became the first black director of Kruger. Due to these changes developments played a key role in changing government per

⁶⁷ Mabunda, David et al. (2003), "The Kruger National Park: A Century of Management and Research", in Toit Johan T. Du et al. (eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*, Washington, DC: Island Press.

Stevenson Hamilton Library: Kruger National Park



Pic. IV. 3 Parks Awareness Among the school Children inside the Kruger



Pic. IV.3 A small Museum inside Kruger National Park

ception, with national parks being viewed as important national assets that attract international ecotourists.

Transformation is under way. Gender equality, affirmative action, and equal opportunities have become management objectives with clearly set targets. Whereas initially there were no blacks or women in Kruger management positions, in 2002 there were 36 white men, 20 black men, 11 black women, and 4 white women⁶⁸.

Kruger: Managing a Heritage

In the 19,624 sq. km. Kruger National Park, managers have been explicit in its acceptance of the balance-of-nature paradigm since proclamation in 1898. Following the initial years of little active management signs of change drove managers to control the perceived balance by "pragmatic intervention".

It is difficult to ascertain the ecological impacts of these actions because they could, at least in part, have been effective in preventing the obvious Tsavostyle "boom-and-bust" process. In typical manner, the "Afrikaner" heritage was protected from all that threatened to disrupt it.

Under the tenure of the balance-of-nature paradigm diametrically opposed management regimes were imposed on two of the worlds largest conservation areas. There was no consensus from managers as to how to put the overriding paradigm into practice; and ecology was unable to help. It may be argued that these were special cases since there was little ecological research to support management decisions and that most ecological expertise was of temperate origin and of little use in African savannas⁶⁹.

The 1986 Masterplan for the Management of the Kruger National Park stipulates that hanging circumstances, new insights or other factors make it essential that the document and its policies be formally reviewed every five years, with appropriate changes made and submitted to the Board for approval. As the history of the management of the KNP, as well as descriptions of its physical and biological attributes, are comprehensively documented in the 1986 Masterplan. The six-volume Masterplan for the Kruger National Park represented a major milestone in defining structures, providing

⁶⁸ South African National Parks (2002), Annual Report 2002, Pretoria.

⁶⁹ Kevin, H. Rogers (1997), "Operationalizing Ecology under a New Paradigm: An African Perspective" in Pickett S.T.A. et al. (eds.), *The Ecological Basis of Conservation, Heterogeneity, Ecosystem and Biodiversity*, New York: Chapman & Hall.

perspective and a cohesive plan for the management of this Park⁷⁰.

Indeed, over the past century, South Africa has built some of the world's most scientifically managed, best-policed, most luxurious, least expensive, and most exclusive national parks. Subsidized with millions of Rand per year in government funding, South Africa's park system served a certain vision of conservation and the pleasures of the white elite. Like South Africa's other game parks, Kruger has been, as one environmentalist explained, run by an "old white boys network": a small community of managers, conservationists, and scientists that was 99 percent white and very ingrown, with a pecking order and an "us-versus-them" mentality⁷¹.

Kruger National Park, located in the country's Northern and Mpumalanga Provinces, along its borders with Mozambique and Zimbabwe, is the flagship of South Africa's world-renowned national park system. Covering a staggering 19,624 square kilometers, Kruger is about the size of New Jersey. In addition to the facilities here at its Skukuza headquarters, Kruger has twenty-three other rest camps, including meticulously remodeled whitewashed wattle-and-daub guest houses dating from the 1930s; secluded cottages built of rough stone, wood, and thatching grass; and a tasteful, modern conference facility with theaters, lecture hall, and boardroom. It accounts for almost 80 percent of the National Parks Board's bed-night capacity and earns more than 80 percent of the total revenue. As one of South Africa's most heavily visited parks, Kruger not only pays for itself but also has helped finance other, less well-known parks⁷².

The park offers multiple ways to view the game: self guided tours, with tourists driving their own cars; bush drives with (almost certainly) a white ranger and a black tracker; night drives; guided walking tours; and one- to five-day hikes conducted by armed rangers. The KNP has cultural resource conservation obligations due to the presence of important archaeological relics.

LOCAL

1. The patterns of geology and rainfall provide spatial heterogeneity, which

⁷⁰ Braack, Leo (1997), *A Revision of Parts of the Management Plan for the Kruger National Park, Vol. VII (7), An Objective Hierarchy for the Management of the KNP*. Internal report. Skukuza: South African National Park.

⁷¹ Honey, Martha (1999), *Ecotourism and Sustainable Development- Who owns Paradise?*, Washington, DC: Island Press.

⁷² *ibid.*

- promotes and in many cases is necessary to maintain high biodiversity.
2. Convergence zones of different biota promote high biodiversity in the KNP.
 3. Veterinary regulations impose certain restrictions and obligations on the KNP.
 4. Adjacent lands uses impact in various ways on the KNP and have to be incorporated in management considerations.
 5. Perceptions of people outside the KNP on resources available within the Park affect management of the KNP.
 6. Malaria has a potentially negative impact on tourism and staff.
 7. Land claims may affect the size and/or management options within the Park.
 8. Provincial borders and the limited jurisdiction of the NPB outside the KNP affects the efficiency with which management options can be exercised.
 9. Problem animals affect neighbour-relations and require special attention.
 10. Invasive alien plants and other organisms from adjacent areas have potentially serious consequences on biodiversity within the KNP.
 11. The KNP is prominent in local tourism, which has many advantages but also imposes certain obligations.
 12. The KNP provides employment opportunities, a market outlet, and source of business custom for local communities⁷³.

Upon reaching this point it was decided that the three key themes of the proposed new KNP Mission Statement (biodiversity maintenance, human benefits, wilderness qualities) were too broadly divergent to address simultaneously and that it would be more practical to derive objectives separately for each of the three key components, and to integrate the objectives later with due regard to their compatibility.

Zoning of the Park

The concept of zoning and its application within the KNP has been the subject of considerable debate for many years, in particular the quality of pristineness which should prevail, the management and also the geographic extent of such zones within the KNP. Criticism has been levelled at Park management, reflecting a broad range of perceptions

⁷³ Braack, Leo (1997), *A Revision of Parts of the Management Plan for the Kruger National Park, Vol. VII (7). An Objective Hierarchy for the Management of the KNP*, Internal Report. Skukuza: South African National Park.

of what Wilderness should be and how it should be treated. Amongst others, concern has been expressed about the lack of conformity of KNP Wilderness areas with the strict criteria applied by other countries, whereas in contrast some persons have been critical about the perceived huge Wilderness areas within the KNP reserved for exclusive use by a privileged few⁷⁴.

Zoning proposals have been couched in different terminology, from Management Zonation to Wilderness Zonation to the present Recreational Opportunities Zoning (ROZ), but in essence these represent different levels or approaches having the same common objective, that being to describe a management system which would allow some areas of the KNP to be left as undisturbed as possible, while other areas would be developed to differing degrees for tourism use. Zonation of the KNP followed a positive approach to external regional development activities, and continues to do so⁷⁵.

Factors Influencing Zoning

Presently existing infrastructure and development heavily influenced drawing up the zonation as proposed in this document. Zones catering for the mainstream tourists, i.e. main roads and rest camps, are situated in the centre of the KNP due to the fact that past development of the KNP has been in these areas and that Wilderness Zones are usually located on the periphery of the KNP.

It should be recognised here that for practical reasons it would be difficult, if not impossible, to exclude any area of the Park from all management actions. Accidental fires may need to be controlled, anti-poaching operations may have to be conducted, elephant impact may have to be modified, and monitoring exercises may have to be done. These are all likely to be exercises of short time duration, and Pristine or Primitive Wilderness zones in which wildlife management actions are being conducted could be closed to public use for the limited management period.

There is considerable need for the KNP to become far more involved in regional planning and to follow a more comprehensive and inter-disciplinary approach in regional

⁷⁴ Cheney, C. S. et al. (1996), *Wilderness Areas and Rezoning of the Kruger National Park*, Memorandum and Map, Skukuza: Kruger National Park.

⁷⁵ A Revision of Parts of the Management Plan for the KNP (1997), Vol. VIII (8), *Policy Proposal Regarding Issues Relating to Biodiversity Maintenance, Maintenance of Wilderness Qualities And Provision of Human benefits*, Skukuza: South African National Park.

affairs. This should promote and improve the integration of spatial and temporal planning and would necessitate improved monitoring and planning systems.

Zonation Objectives

A series of Objectives relating to zonation are herewith proposed:

"Wilderness Qualities" Objective:

To maintain within all areas of the KNP those spiritual and experiential qualities associated with the concept of wilderness, achieved through defined management of zones aimed at preserving differing degrees of wilderness experience.

1. By "spiritual and experiential qualities" is meant, amongst others, solitude, remoteness, wildness, serenity, tranquility, harmony, reflection and self-appraisal, peacefulness, pleasantness, wonder and appreciation, awe, acceptance of the moods of nature, humility, discovery, fear, inspiration.
2. Where the attributes of a naturally functioning ecosystem and its associated ambience remain essentially unimpaired by humans⁷⁶.

According to this new zoning approach there is no area in the KNP from which visitors are to be excluded, and it allows opportunity for yet more visitors to enter the KNP, and to be exposed to a greater range of wilderness experiences. The ultimate number of tourists, which will be allowed within the park, will be guided by the zoning classification, which strives to maintain certain wilderness qualities within particular zones. A finite number of visitors will be allowed on a daily basis within zones A to D to maximise wilderness experience, whereas in zones E to G there is the potential to allow more visitors than at present, although with appropriate planning to promote equitable distribution of people throughout the zones⁷⁷.

It is suggested that the KNP be divided into six zones. These are two botanical reserves, two high elephant impact zones and two low elephant impact zones. The management of these zones will be driven by "Thresholds of Potential Concern (TPC)". These TPC's are specified limits of ecological change, which should not be exceeded. The specified management for each zone will be followed until there are indications that

⁷⁶ A Revision of Parts of the Management Plan for the KNP (1997), Vol. VIII (8), *Policy Proposal Regarding Issues Relating to Biodiversity Maintenance, Maintenance of Wilderness Qualities And Provision of Human benefits*, Skukuza: South African National Park.

⁷⁷ Braack, Leo and Chris Marais (1997), *Contribution Towards A Policy on A Revision of Parts of the Management Plan for the KNP*, Vol. VIII (8), Tourism in the KNP.

one or more of the TPC's have been reached or exceeded⁷⁸.

History of Boundary Fencing

The western boundary of the Kruger National Park had been a thorny problem since 1903. The western, southern and northern boundaries as well as parts of the eastern (international) border, were fenced in 1960-61 "in order to curb the spread, of foot-and-mouth disease and other epidemic diseases transmissible from game to domestic stock". Previously hunters and poachers had killed considerable numbers of game when it crossed into settled country during dry seasons. The eastern boundary with Mozambique was finally fenced off in 1974, thereby isolating the Park from its main historical source of immigrant elephants.

Cross Border Raiding

Boundary problems have not been altogether solved. Predation by lions and spotted hyaenas on livestock occupying communal lands along the northern sector of the western border is a monthly occurrence. Where problem animals are shot the community is given the carcass and skin or, in cases where there are safari hunting concessions, lions may be taken as trophies. Elephants break out along the southern boundary onto both communal lands and sugarcane farms in the dry season. There may be as many as twenty cases a month and where necessary, problem animals are shot. The western and southern fences are at present being electrified in order to eliminate all cross-border raiding. Effects of this total closure of dispersal routes on park populations have yet to be determined. Elimination of losses of crops and livestock should improve relations with neighbouring land users⁷⁹.

Boundaries and Fencing

The Sabi and Shingwedzi reserves were characterized by low species densities, local extinctions, sparse settlement and seasonal use by humans. In 1926, proclamation of the Kruger National Park resulted in western boundary definition through negotiations with landowners, without considering ecological boundaries. Main drivers of boundary

⁷⁸ Braack, Leo (1997), *A Revision of Parts of the Management Plan for the Kruger National Park, Vol. VII (7). An Objective Hierarchy for the Management of the KNP*. Internal report. Skukuza: South African National Park.

⁷⁹ Bigalke, R.C. (2001), "functional Relationship Between Protected and Agricultural Areas in South Africa and Namibia" in Prins, H.T. Herber (eds.), *Wildlife Conservation by Sustainable Use*, Boston / London: Kluwer Academic Publishers.

fencing were the protectionist segregation philosophy to conservation, veterinary control requirements and political boundary definition with Mozambique and Zimbabwe. By 1976, Kruger was entirely fenced, although segments were again removed from the mid 1990s onward as neighboring conservation-oriented holdings went into agreements with Kruger. Although some boundary adjustments and land swaps have had political implications only, others have resulted in biodiversity losses. Of significance were the 1960-1961 and 1967-1968 southwestern boundary changes that excised areas west of the Nsikazi River, including Numbi Hill, to facilitate provincial road construction. Fencing not only affected locally rare species but also affected east-west migratory patterns of wild beast.

Fences have separated land management practices, resulting in sharp fence line contrasts. These are generally unquantified in the Kruger context, and visual interpretation of changes in heterogeneity may appear harsh, although plant diversity (all species weighted equally) may be higher in adjacent communal lands. With or without fences, the effective size of Kruger is gradually shrinking in certain areas through land-use change and encroaching development, whereas the "Greater Kruger Park" expands in other areas as private and provincial conservation areas are incorporated⁸⁰.

Master Plan of Zonation

In the 1975, master plan for the management of the KNP a system of zoning was presented in which the management priorities of each zone were prescribed. The zoning was based on conservation priorities with specified limitations on the intensity of tourism developments within each zone. A total of 32 zones was identified, and divided into five main priority categories, viz:

i) Botanic priority areas

Areas of particular botanical interest.

ii) Wilderness areas

Areas of minimal human influence to serve as reference sites, especially for research purposes.

iii) Rare antelope priority areas

⁸⁰ Freitag, Stefanie (2003), "Anthropogenic Influences at the Ecosystem Level", in Toit Johan T. Du et al. (eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*, Washington, DC: Island Press.

Areas managed for the maximum benefit of rare antelope and/or other species

iv) Elephant priority areas

Areas which harbour large concentrations of elephants but where they do not pose a threat to the habitat and/or associated animal populations⁸¹.

Although no attempt was made to categorise the intensity of tourism development, three main categories could be deduced, i.e. areas in which no development of any kind would be considered, areas in which existing facilities were considered adequate and areas in which further expansions could be considered.

Various other categories have also been suggested by other sources. Van Riet in 1985 referred to the system suggested by the International Union for the Conservation of Nature (IUCN) in 1972 in which provision was made for four major categories, i.e.

- (i) strict natural areas "set aside for the absolutely free interaction of ecological factors.
- (ii) managed natural areas, where "management is required, for the maintenance of ecological stability".
- (iii) wilderness areas, i.e. "areas set aside for the use of man as wilderness areas".

Requirements for such areas were that they should be extensive in size, free of man-made constructions and to be used by man only in such a way that does not necessitate access roads, and

- (iv) natural environment recreation areas, i.e. areas set aside for the construction of the necessary facilities to accommodate visitors⁸².

Limitations

The Kruger National Park and the associated private reserves are classified as permanent reservoir areas for foot-and-mouth disease (FMD) and fall within the FMD control zone enforced by Animal Health services. The zone is divided into three control categories with diminishing stringency of control measures towards the west. Kruger and adjacent agricultural land, including the Associated Private natural reserve, constitutes the first FMD control area bounded on the west by a Red Line. No buffalo may be moved beyond the Red Line. Other cloven hooved animals are allowed out only if quarantined

⁸¹ Joubert, S.C. J. (1975), *Research Objective*, Kruger National Park. 1-21, (Revised 1982, 1983).

⁸² Van Riet, W. F. (1987), *An Ecological Planning Model for use in Landscape Architecture*, Ph.D. Thesis, Pretoria, University of Pretoria.

and tested serologically negative for FMD, so that live game sales are inhibited. Products from cloven hooved animals are released from the Red Line after they have been subject to prescribed zoo sanitary treatment. Trophies are therefore subject to treatment and it is difficult to remove meat. The second control area limits movement of live animals; carcasses may be transported provided the head, feet and entrails have been removed. The third zone bounded by the Drakensberg Mountains is maintained as a buffalo-free zone⁸³.

Kruger, the crown jewel of South African National Parks (SANParks), provides considerable financial revenues. Since its inception and sporadic development, management has been driven by a desire to minimize human influences and maintain "pristine" characteristics. However even without overarching global influences this noble intention is contradictory because the Kruger ecosystem has been and still is affected by human presence, direct and indirect use, and management policies and actions. The myriad positive and negative human induced impacts have all played some part in shaping the ecological and spiritual landscape of the Kruger. These are overlaid on the geological template, geomorphological history, prevailing climate, and ongoing spatial and temporal redefinition through the forces of nature, which in themselves are being shaped indirectly by humans⁸⁴.

Wildlife Outside Protected Areas

In South Africa communally held land is generally densely populated, heavily grazed and supports little wildlife. Under apartheid policies 80 % of the population occupied 13% of the land area. This places a severe limitation on the possibilities for wildlife utilisation even in dispersal areas around formal reserves.

The fact that significant numbers of landowners avail themselves of these systems reflects their interest in wildlife utilisation. In the northern Cape Province where cattle's ranching is the main form of land-use, there were 942 game camps with certificates of adequate enclosure in 1992. They covered 4,106,564 ha or 15.9% of the total area of

⁸³ Bigalke, R.C. (2001), "functional Relationship Between Protected and Agricultural Areas in South Africa and Namibia" in Prins, H.T. Herber (eds.), *Wildlife Conservation by Sustainable Use*, Boston / London: Kluwer Academic Publishers.

⁸⁴ Freitag, Stefanie et al.(2003), "Anthropogenic Influences at the Ecosystem Level", in Toit Johan T.Du. (eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*", Washington, DC: Island Press.

farmland in the region. In the old Transvaal province the number of registered game farms (exempted farms) increased from 711 in 1985 to 1763 totalling 2,653,315 ha (11.5% of the province) in 1993. In addition there were 450 private nature reserves covering 1,277,900 ha (5.6%). Kwazulu-Natal had 52 commercial game reserves covering an area of 85,271 ha in 1990. In South Africa as a whole the National Game Organisation estimated that there were 9,000 game ranches of all categories occupying 8 million hectares in 1990⁸⁵.

Government initiatives to implement land redistribution in South Africa have led to debate about alternative uses for nature reserves, and specifically for the Kruger National Park. However the National Parks Board has since been challenged in terms of the new Restitution of Land Rights Act.

At the same time public nature reserves are heavily utilised and the Kruger Park is estimated to turn away four out of every five potential visitors. "Exclusive resorts have been able to increase their revenue by 1,000 per cent over the last four years by picking up the backlog.

The substantial wildlife resources on privately owned commercial farms in South Africa are largely independent of the park and reserve network. Important factors in their development have been:

- Extensive holdings of semi-arid grazing land.
- Personal interest and belief in wildlife by landowners.
- Relaxation of legal restrictions on landowners.
- Improved techniques of game capture and transport.
- Availability of scientific information/extension.
- Expectations of financial benefits.
- Markets for meat, hunting and viewing opportunities.
- Infrastructure facilitating marketing and utilisation⁸⁶.

⁸⁵Bigalke, R.C. (2001), "functional Relationship Between Protected and Agricultural Areas in South Africa and Namibia" in Prins, H.T. Herber (eds.), *Wildlife Conservation by Sustainable Use*, Boston / London: Kluwer Academic Publishers.

⁸⁶Earnshaw, Allan and Lucy Emerton (2001), "The economics of Wildlife Tourism: Theory and Reality for Landholders in Africa", in Prins, H.T. Herber (eds.), *Wildlife Conservation by Sustainable Use*, Boston / London: Kluwer Academic Publishers.

Ecological importance:

Like many areas of the world, sub-Saharan Africa has suffered significant habitat destruction, degradation and fragmentation. South Africa has lost at least 57% of its natural wildlife habitat through the activities of mankind.

Research suggests that only about 6% of South Africa is under official protection, falling somewhat short of the recommended International Conservation Union figure of 10%. However, the ANC Government has announced plans to increase the amount of protected land, and this figure is gradually increasing⁸⁷.

The region is positioned to contribute uniquely to the conservation of South Africa's landscapes because of the typical interfaces between the ecosystems associated with the escarpment and the savannah. The rapid change in the altitude of the land has created some unique niche habitats, each with their own endemic species. The extensive savannah ecosystem found within the Biosphere Reserve is not currently a threatened system, and is probably one of the more resilient systems in the country. However, because of the size of the area that is protected (by the state and by private landowners), its value to conservation actually increases exponentially.

The Kruger to Canyons Biosphere Reserve Initiative must be seen in the context of the increasing need for Integrated Environmental Management in the region and by providing the processes to be used by communities to empower themselves to access resources and develop the capacity to enter the mainstream economic pool of activities in the region.

The Role of the Kruger National Park

The highest state conservation authority in the South Africa is the National Parks Board. The activities of the Parks Board are regulated by an act of Parliament, the National Parks Act 57 of 1976⁸⁸. The Board manages a number of protected areas around the country, of which the largest and oldest is the Kruger National Park. The Kruger Park is unquestionably South Africa's flagship conservation area. At a size of about two million hectares, it covers more land than all the country's other national parks put together.

⁸⁷ Braack, L.E.O. (1988), "Kruger National Park-A visitors Guide", Cape Town: Struik Publishers.

⁸⁸ South African National Park (2002), *Vision of Change: Social Ecology and South African National Parks*, Pretoria: South African National Park Board Report.

Kruger is a national asset, in the sense that it falls under the legal jurisdiction of the South African government, and its land is owned by the state. International law recognizes sovereign rights to all biological resources and land, and South Africa is thus theoretically entitled to decide how to manage its own protected areas without regard to the rest of the world. In practice, South Africa has to consider the interests of other countries as part of its foreign policy strategy, although the interests of its own people should prevail where there are differences in international opinion.

Management of the KNP

Environmental management policies were being challenged by system fluctuations such as droughts and floods, changing perceptions of the ecosystem, and outside stakeholders. The scorching droughts of the early 1990s, with the lowest annual rainfall yet recorded for the park, and the February 2000 floods, during which the Sabie River burst its banks and flooded a third of Skukuza, attested to human inability to control nature⁸⁹. A huge wildfire raged through the park on September 4, 2001 and killed 24 people as well as elephants, white rhinos, and other species. These events illustrated that management actions can lessen or exacerbate the impact of these natural forces but that rigid policies are seldom appropriate. Kruger management has adopted an adaptive management process that promotes learning by doing, based on best available knowledge, as the most appropriate tool to manage the park in an ever-changing environment.

There has always been an unusually close research-management link in Kruger, for two possible reasons. In the 1950s environmental management was an emerging science, and newly appointed scientists and managers learned together and from each other; the first degree in wildlife management in South Africa was awarded in 1965. Second, since 1961 at least one of the two most influential posts in ecosystem management, the park warden and the head of conservation management have been drawn from the ranks of Kruger researchers. With the 1998 appointment as park warden of David Mabunda, whose background is in business and education, the SANParks board

⁸⁹ Pienaar, D.J. et al. (1997), "A Revised Water- Distribution Policy for Biodiversity Maintenance in the KNP" in Leo Braack (eds.), *A Revision of Part of the Management Plan for the Kruger National Park*, Vol.8, Skukuza: South African National parks

implemented its decision that Kruger should be run on sound business principles⁹⁰.

The management of large national parks such as Kruger is complex. Impacts and stakeholders all operate at different scales, from local to international. Decisions made inside the park have sociopolitical and economic impacts outside the park, and the long boundaries mean that there are many neighboring communities influenced by and influencing biodiversity and other management actions inside the park.

In an attempt to address this challenge, a Social Ecology Section was established in Kruger in 1995 that sought to involve neighbouring communities more effectively. Important communication channels have been established, but there is still a long road ahead to foster a sense of pride and ownership among the park's neighbours.

An exciting new development is the establishment of the Great Limpopo Transfrontier Park, which will join the Kruger with the Limpopo National Park in Mozambique and the Gonarezhou National Park in Zimbabwe. This will create a conservation area that covers 36,000 sq. km., with prospects of even more land being added to it in the future. A joint management board has been established to manage this mega park, and management and tourism plans have been drafted.

Kruger Park management objectives

The Kruger Park conforms to the description of a product park, delivering a combination of products, some of which are of benefit to certain people, and others that are intended to satisfy environmental management objectives (for the ultimate benefit of others). Some people may feel that this approach succeeds in achieving both goals; others may argue that it achieves neither to their satisfaction. However, many people probably feel uncomfortable with either extreme approach, and would prefer a compromise. The question to consider is whether management could achieve a better balance by changing its mix of policies⁹¹.

Enhancing tourism revenues

Tourism constitutes the principal existing revenue source for the Kruger Park. It is difficult to predict what additional revenues could be earned from tourism in the Park. To

⁹⁰ Mabunda, David et al. (2003), "The Kruger National Park: A Century of Management and Research", in Toit Johan T. Du et al. (eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*, Washington, DC: Island Press.

⁹¹ *ibid.*

a large extent this depends on levels of demand and the behaviour of competitors. However, in the longer term, Kruger will face increasing competition from the private sector and other conservation agencies. There are countless different possibilities, and the extent of additional revenue-earning possibilities would depend on the specific options that are chosen.

Kruger's tourism operations are also spatially inefficient. There are several very large camps, served by a few roads. Many visitors drive their own vehicles, so traffic volumes are substantial, and congestion is a problem during peak periods. In many other reserves, tourists are accommodated in much smaller camps, and taken out on guided drives in open vehicles⁹². This system has many advantages, and has enabled private reserves such as the Sabi-Sand to achieve far higher returns per hectare from tourism.

The future of the Kruger Park depends on the availability of sufficient funds for effective management and protection. Thus, whatever approach is adopted toward environmental management, the Board is more likely to achieve its objectives if it manages its finances efficiently. To do this, it should manage the Park's operations according to commercial principles, within the constraints imposed by its conservation objectives.

The future survival of national parks such as Kruger will be guaranteed only by unconditional support of the black majority of South Africa's population. The challenge to managers is to make national parks relevant to the daily lives of all South Africans.

⁹² South African Park Board Report, 1990.

Chapter IV

Specific and Unique Problems in Maintenance of the Reserve in Two Diverse Milieux

It has been very correctly said that no natural resource is more sensitive to conservation than wild life and no natural resource has suffered more from lack of conservation. The human race has a long record of shameful over-exploitation of the earth's natural resources and of wild life in particular and it was not until a large number of species had been made extinct and the danger signals could no longer be ignored that the nations of the world woke up to the necessity for husbanding nature¹.

Indeed, present-day management of nature in the parks differs substantially from that in the early decades of national park history the most fundamental difference being the degree to which science now informs the Service's natural resource practices. And in an age of ecological science, the extent to which the Service manages parks in a scientifically informed way may be seen as a measure of its true commitment to ecological principles.

The central dilemma of national park management has long been the question of exactly what in a park should be preserved. Is it the scenery the resplendent landscapes of forests, streams, wildflowers, and majestic mammals? Or is it the integrity of each park's entire natural system, including not just the biological and scenic superstars, but also the vast array of less compelling species, such as grasses, lichens, and mice? The incredible beauty of the national parks has always given the impression that scenery alone is what makes them worthwhile and deserving of protection. Scenery has provided the primary inspiration for national parks and, through tourism, their primary justification².

When the first Europeans entered Africa, they found countless numbers of wild animals and immediately began to hunt them indiscriminately, without any regard to biology or ecology, whether animal was plentiful or scarce. All species were hunted. Animal Sanctuaries that were in place for hundreds of years were disrupted. Although, the so called big-game species suffered most from European hunter, their decline was blamed on Africans, who hunted them only rarely. In traditional African cultures, elephant, rhinoceros, buffalo, hippopotamus, lion, and leopard were hunted only under

¹ Stracey, P.D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture, Dept. of Agriculture, Fridabad: Government of India Press.

² Sellars, R.W. (1997), *Preserving Nature in the National Parks – A History*, New Haven & London: Yale University Press.

exceptional circumstances³.

Europeans realized something had to be done or there would be no more safaris. Instead of looking toward practices that had sustained wildlife in Africa for thousands of years, they introduced conservation measures that had been designed and implemented in Europe and North America. In an African context, these measures were not rational, sustainable, or scientific. The methods used to enforce conservation were cruel. People were forcibly removed from their land to make room for animals. Use of animals and plants either as food or as a means of maintaining cultures and traditions was prohibited. Anyone who opposed these measures was severely punished.

To ensure continuity and growth, a destination (attraction) is dependent on, inter alia, tourists and the satisfaction of their needs. Although total satisfactions of tourists' needs are not the goal in itself, striving to achieve this enables the attraction to attain its own goals⁴. To achieve maximum tourist satisfaction, marketing strategists divide the heterogeneous market into fairly homogeneous groups of tourists, a process that is referred to as market segmentation. Through market segmentation one can develop a tourist profile that will enable KNP to concentrate its resources and efforts so that maximum penetration of that market can be achieved⁵.

The number of parks and game reserve in South Africa are on the increase, which leads to stiff competition. Except for national parks, there are also parks at local, provincial and government levels, as well as more than 8000 privately owned game reserves. All these parks and game reserves are offering an ecotourism experience. Other destinations/attractions are winning competitive battles through careful analysis and response to the core values and needs of the segmented travel market place⁶. KNP needs to do the same. With regard to the international travel to South Africa, research by South African Tourism indicated that more than 80 % of these tourists travel to South Africa for game and nature experiences. This creates yet another opportunity for marketers to pro-

³ Lewis, Dale and Nick Carter (1993), *Voices of Africa- Local Perspective on Conservation*, W.W.F., Washington, D C: Washington, DC Publications.

⁴ Doole, I. & R. Lowe (2001), *Interantinal Marketing Strategy*, London: Thomson Learning.

⁵ Saayman M. & E. Slabbert (2004), "A Profile of Tourist visiting the Kruger National Park", *Koedoe*, Research Journal – South African National Parks, 47/1: 1-8.

⁶ Hassan, S.S. (2000), "Determinants of Market Competitiveness in an environmentally Sustainable Tourism Industry", *Journal of Travel Research*, 38: 239-245.

file tourists travelling to the KNP⁷. It is, therefore, important for the KNP to profile the target market accurately and to understand its diversity. The profiling of a tourist typically involves four components namely demographic, geographic, psychographic and socio-economic characteristics⁸.

From a marketing point of view, park management knows who the target market is, especially during the months of May to July. The marketing message for the international market should therefore focus on the fact that May to July is the best game viewing months of the year. If the policy is to focus primarily on the domestic market during these months, then the status quo should be maintained. From a management policy point of view, an analysis of certain aspects of the profile, e.g., spending can give important information on how to create a situation where tourists can spend more money. One way of addressing the latter is by the development of more recreational facilities for children. This will not only lead to more spending in the park but also for investing in a future market for this and other parks. Other parks can take note of these results and implement similar research in order to compare results⁹.

Threat to Existing National Parks

A considerable number of the existing African national parks and equivalent reserves are subjected to increasingly heavy pressure from the surrounding human population, either through demands for land for settling, grazing rights or agriculture, and/or development schemes, which are adverse to the long-term interests and benefits represented by the conservation areas. Fires; overgrazing by livestock; poaching on an industrial scale; irrigation; drainage; air, water and soil pollution; deforestation of nearby areas which alters the water regime; and other man-made factors, cause environmental changes in many national parks of Africa even when the sources of these habitat modifications are located outside the reserves. In particular, watercourses flowing through national parks and their lakes and swamps may be polluted, or are silted or drying up, due to human activities occurring hundreds of miles away. Irrigation schemes

⁷ SAT (South African Tourism) (2002), *South African Tourism: Business Plan and Budget Version*, Johannesburg: South African Tourism.

⁸ Kotler, P. et al. (1999), *Marketing for Hospitality and Tourism*, New York, NY: Harpercollins.

⁹ Saayman, M. & E. Slabbert (2004), "A Profile of Tourist visiting the Kruger National Park", *Koedoe, Research Journal – South African National Parks*, 47/1: 1-8.

in South Africa, upstream in the rivers, which flow through the Kruger National Park, have upset the ecology and hydrology of this reserve by making perennial rivers seasonally dry. This unnatural state has forced the national park authorities to build dams in order to save hippopotami and other aquatic animals from local extermination. Such dams make the landscape artificial¹⁰.

The Recent Update of The KNP Management Plan

The 1986 Masterplan for the Management of the Kruger National Park provides a Mission Statement and guidelines for management of this Park. It stipulates that changing circumstances, new insights or other factors make it essential that the document and its policies be formally reviewed every five years, with appropriate changes made and submitted to the Board for approval.

The Strengths of the KNP: Vital Attributes that need to be Maintained¹¹.

1. The matrix formed by variations in geology and climate promotes spatial heterogeneity and hence biodiversity.
2. Biogeographic convergence zones within the KNP yield high biodiversity.
3. Due to relatively low past disturbances, the biota and ecological processes are largely intact.
4. Multiple, diverse rivers cross the KNP, promoting biodiversity.
5. The KNP includes one of the most biodiverse rivers in South Africa (the Sabie).
6. The KNP is one of the largest national parks in the world.
7. The predominant land-use form of the KNP (non-consumptive ecotourism) is compatible with biodiversity conservation.
8. The KNP has a well-developed infrastructure and staff for research and management.
9. Well-developed data-bases exist, affording insight and foundations which support management decisions.
10. Many forms of adjacent land use promote biodiversity conservation, corridors,

¹⁰ Kai Curry-Lindahl, (1972), *AFRICA-National Parks, Habitats, Biomes and Ecosystem*, in Harroy Jea – Paul (eds.), *World National Parks-Progress & Opportunities*, Brussels: Hayez.

¹¹ *A Revision of parts of the Management Plan for the Kruger National Park* (1997), - Vol. VII (7), An Objective Hierarchy for the Management of the KNP, Skukuza: South African National Park.

preventing the KNP from being an island.

11. The KNP is of major importance for cultural resource conservation.
12. The KNP is protected by the National Parks Act, affording a high level of assurance of long-term survival of the Park.
13. The KNP is the hub for tourism in the Lowveld and a magnet for foreign exchange, thus affording some justification for and assurance that the KNP and its biodiversity will continue to be conserved.

The KNP as an arid savanna has a high spatial and temporal biodiversity. The emphasis would remain on ecosystem management objectives (rare species management, etc) and tourism development areas. Less than 3% of the KNP which is directly disturbed by human infrastructure (camps, roads, dams, bridges etc), there is no area in the KNP in which any component of biodiversity (composition, structure, function) is significantly affected by tourism activities at current or reasonably projected future levels of use. If biodiversity is not being affected, then clearly there is no reason why humans should be excluded from any area of the Park¹².

The following categories of Recreational Opportunities, representing different degrees of "Wilderness Qualities", is recommended, and represents a major increase in visitor opportunities from that currently available.

- A. Pristine Wilderness Areas of much smaller extent and more numerous than previously available, in which small groups can hike on foot and overnight anywhere in self-carried tents with a "no-trace-left" camping ethic. Horse/camel/elephant Trails and river-boating are also envisaged as possibilities.
- B. Primitive Wilderness Areas are similar to the above but do have some signs of human impact visible on occasion. Several groups may be allowed in at the same time and will sleep in portable tents or small permanent camps on the edge of the zone.
- C. Semi-primitive General Visitor Areas represent a range of restricted access 4-wheel drive routes, one-way rustic roads, tented small camps offering opportunities for low numbers of individuals for personal enjoyment or guided groups for bird watching, nature courses, or guided walks.

¹² A Revision of Parts of the Management Plan for the KNP (1997), Vol. VIII (8), Policy Proposal Regarding Issues Relating to Biodiversity Maintenance, Maintenance of Wilderness Qualities and Provision of Human benefits, Skukuza: South African National Park.

D. Limited access, motorised general visitor areas with gravelled roads and one small camp which conforms to the present Private or Bushveld camps. It is suggested that a few sites be developed along the Mala Mala/Londolozi concept to accommodate the needs of an increasing market.

E. General access motorised visitor areas, which are the traditional game viewing routes with associated sophisticated roads, picnic sites and view-points to be used by sedan cars, buses and public open-vehicles.

F. High-density Development Areas represent rest-camps, staff, villages, Rangers Posts, in which a broader range of entertainment opportunities than currently available may be presented for visitors.

G. Edutainment Centres at a few selected sites along the borders of the park to cater especially for the needs of communities adjoining the KNP, combining opportunities for entertainment and environmental education¹³.

Natural vegetation and animal communities formed the basic criteria on which the various zones were determined in 1975. Subsequently extensive surveys were undertaken throughout the KNP and on the basis of geomorphological features, soil types and vegetation composition and structure 35 landscapes were identified. As these landscapes play a decisive role in determining the associated faunal communities they were proposed as the most appropriate units for the zoning of the KNP. It was reasoned that the composition of the landscapes reflected the structural and species diversity of the area, and that structural and species diversity represented the primary priorities in the management of the KNP¹⁴.

The system adopted by the United States National Park Service provided for six basic categories, i.e. (i) high density recreation and public service parklands; (ii) general outdoor recreation parklands; (iii) natural environment parklands; (iv) outstanding natural features (v) primitive parklands, and (vi) historic, archaeological and cultural resources.

¹³ Braack, Leo (1997), *A Revision of Parts of the Management Plan for the Kruger National Park, Vol. VII (7), An Objective Hierarchy for the Management of the KNP*. Internal Report. Skukuza: South African National Park.

¹⁴ A Revision of Parts of the Management Plan for the KNP (1997), Vol. VIII (8), Policy Proposal Regarding Issues Relating to Biodiversity Maintenance, Maintenance of Wilderness Qualities and Provision of Human benefits, Skukuza: South African National Park.

However, people do not visit conservation areas simply to see wildlife, which could be viewed at less cost in zoological and botanical gardens. Although often not consciously realised, in the case of the KNP it is the intangible attributes associated with this conservation area, which attracts and appeals to so many people. These attributes include solitude, remoteness, wildness, serenity, peace, harmony, opportunity for reflection and self-appraisal and a host of others, which for convenience can be termed 'wilderness qualities.

Attempts to promulgate Wilderness legislation in South Africa have also been in progress for some time, as yet unsuccessful, but with substantial support. Although we propose that within the KNP no area exists from which humans could justifiably be permanently excluded, there is strong motivation to retain substantial tracts in a state in which human impact is negligible; these reasons include:

- To satisfy the need of an increasing number of people wishing to experience truly pristine, unaffected wilderness where for a while they can consciously immerse themselves in a sense of remoteness and a return to basic essentials. Some measure of the need for such opportunities is the considerable sums of money many people are willing to pay to have access to such Wilderness areas.
- To keep options open for future generations of people¹⁵.

The challenge therefore lies in providing appropriate opportunities and satisfying as wide a range of public needs along this continuum of undiluted to diluted wilderness qualities.

The process by which the different zones were determined include the following:

- Due consideration for the distribution of current wilderness areas and associated wilderness trails.
- Designation of the most appropriate and suitable environmental zonation for a specific area.
- The extent to which the zonation for a specific area could potentially be affected and
- Altered in both kind and degree by future human actions (which could either be

¹⁵ Joubert, S.C. J. (1986), *Masterplan for the Management of the Kruger National Park*. Vol.6, Skukuza: Kruger National Park.

internal or external).

- The distribution of the impacts which currently determine the zonation for a specific area through time and space (e.g. could a current 'Primitive Wilderness' be upgraded later to 'Pristine Wilderness' by removal of a highly visible radio mast) and
- Cognizance of any uncertainty or sensitivity relating to a current zone designation for a specific area¹⁶.

Tourism is a very necessary and essential adjunct to the concept of wildlife conservation, since it provides the justification why wildlife should be conserved in the first place. Tourism is also the principle source of the revenue required to pay for sustainable management of the KNP (and most other National Parks). The two concepts conservation and tourism, at least in the case of the KNP, are therefore inextricably linked, interdependent upon each other. It is the challenging responsibility of the Board and its KNP managers to find that acceptable balance to accommodate increasing numbers of tourists without impacting unacceptably on the wilderness qualities, which those tourists seek within the KNP¹⁷.

It remains a fact, nevertheless, that National Parks are the sole areas of land set aside and condoned at national level for the express purpose of conserving in perpetuity the wildlife and/or other characteristic features which led to the proclamation of that National Park. In the same manner as the Defence Force is the ultimate guardian responsible for security and maintaining the territorial integrity of this country, the Police Service the ultimate guardian for maintaining law and order, so National Parks Board too has the ultimate responsibility to ensure that some areas of South Africa remain conserved in an essentially undisturbed manner for subsequent generations to return for purposes of scientific study, self-discovery, and a basic return to roots. Neither other agency has that responsibility nor ability.

The difficulty which Park managers are faced with therefore is to satisfy the

¹⁶ A Revision of Parts of the Management Plan for the KNP (1997), Vol. VIII (8), Policy Proposal Regarding Issues Relating to Biodiversity Maintenance, Maintenance of Wilderness Qualities And Provision of Human benefits, Skukuza: South African National Park.

¹⁷ Braack, Leo and Chris Marais (1997), *Contribution Towards A Policy on A Revision of Parts of the Management Plan for the KNP*, Vol. VIII (8), December, Tourism in the KNP, Skukuza: South African National Park.

rightful demand of the public to enter and share in the enjoyment of the KNP, but not at the expense of those qualities which make up "wilderness atmosphere" which draws people to the Park.

Fire Management in the KNP

Fire is an integral component of savanna systems and the regular occurrence of fire events has been recorded by early European seafarers and explorers of the African continent. Even without the presence of humans igniting fires, the nature of savanna systems with a high grass fuel load and usually occurring in areas having distinct wet and dry seasons is such that lightning-induced fires are relatively frequent, especially in the area represented by the KNP where early wet-season electrical storms are common.

Aside from the underlying geological/soil template, some of the most significant factors influencing biodiversity in the KNP include rainfall, fire. Frequency and extent of rainfall and fire in particular would strongly impact upon the composition and structure of vegetation in a particular area, which in turn would influence the associated animal life¹⁸.

Despite research efforts over many decades into various aspects of fire in the KNP, conservation managers still do not have a sufficient understanding of fire to confidently predict the cause-and-effect relationships of large-scale fire-programmes, and much of the information essential for confidently defending any new fire policy is lacking. Fire management in the KNP has been practiced at least since 1926 and through a wide range of procedures reflecting available knowledge and philosophical approaches at any particular time.

Historical Fire Management in the KNP

Uncontrolled Burning: 1902-1957:

The Pretoriuskop sourveld was subjected to annual burns by sheep farmers which held grazing rights for that area until 1924, such burns usually being initiated between February and April so as to promote green fodder for their stock during the winter months. Substantial additional areas of what is now the KNP were also burnt annually or

¹⁸ Biggs, H.C. and A.L.F. Potgieter (1999), "Overview of the fire Management Policy of the Kruger National Park", *Koedoe*, 42: 101-110.

biennially during autumn or early winter during the entire period from near the turn of the century until 1948¹⁹.

Triennial Burn policy: 1958 to 1992

A series of large fires during 1954 in the KNP led to a decision to divide the Park into blocks by tourist and firebreak road. This network of graded firebreak roads ultimately resulted in some 400 blocks and for the first time allowed effective control over both natural and man-induced fires. In 1958 a veld burning policy was adopted. Concern about veld-fires also resulted in the appointment of a botanist in 1954, who implemented a comprehensive burning experiment to investigate the effects of fire.

Lightning-supported burns: 1993 - 1997

The National Parks Board of Trustees on 5th June 1993 approved a proposal in support of so-called "Wilderness Fires". All lightning fires would be allowed to burn unchecked whenever and however far such fires burnt but all human-ignited fires were to be limited to the smallest feasible area.

Nevertheless, no mammal mortality attributable to these fires could be found despite several helicopter and fixed-wing patrols during and immediately after the fires, and good follow-up rains resulted in rapid regeneration of grass²⁰.

Fire is recognized as one of the most critical agents capable of effecting dramatic change in ecosystems. The Lowveld savanna is a fire-adapted system and its evolutionary history was considerably shaped by fire. The two primary sources of fire ignition both historic and current are humans and lightning. The policy proposed here for management of fire within the KNP can be summarised as follows:

- That fire is an essential and positive agent contributing to biodiversity within the Lowveld savanna
- That, as a long-term aim, lightning fires should be allowed to burn undisturbed and to their full extent. However, in the short term, as an interim policy for the next five years to allow the system to recover from the perceived excessive burns

¹⁹ Van, Wyk, P. (1971), "Veld Burning in the Kruger National Park- An interim report of some aspect of research", Tall timber fire Ecology Conference. 11:9-31, Skukuza: South Africa.

²⁰ A Revision of Parts of the Management Plan for the KNP (1997), Vol. VIII (8), Policy Proposal Regarding Issues Relating to Biodiversity Maintenance, Maintenance of Wilderness Qualities and Provision of Human benefits, Skukuza: South African National Park.

arising from historic policies, only 50% of any major fire management block will be allowed to burn due to any one particular lightning fire. A lightning fire moving into an adjoining major fire management block (there are 17 such blocks making up the KNP) will also be allowed to burn up to 50% of such a block.

- Human-ignited fires should be actively prevented or contained to the smallest possible area. The extent of human-ignited fires, which will inevitably arise each year due to accidental causes or arson, may be viewed as some kind of compensation for the fires, which historic humans initiated in the area.
- That two replicates of two different fire regimes should be implemented as large-scale experimental blocks so as to provide some means of comparison of the long-term effect of the proposed Lightning-supported fire policy applied in the remainder of the KNP²¹.

Water-Distribution Policy for Biodiversity Maintenance in the KNP

The water distribution policy for the KNP attempts to simulate the natural distribution of water with the positive consequences it will have on biodiversity, without detracting from the tourist's experience.

The effects of the closure of the nominated artificial water points are examined and it has extended the area of wet season range in the KNP from 17.6% to 32.4% during years with average rainfall. This is thought to be beneficial for especially low-density herbivores such as roan antelope.

It is perceived that this revised water-distribution policy for the KNP will assist in the restoration of intrinsic biodiversity at the landscape level through the simulation of the natural availability of water. It will however be necessary that a monitoring programme be implemented to assess the consequences of the proposed water distribution policy²².

²¹ Braack, Leo (1997), *A Revision of Parts of the Management Plan for the Kruger National Park, Vol. VII (7), An Objective Hierarchy for the Management of the KNP*. Internal Report. Skukuza: South African National Park.

²² A Revision of Parts of the Management Plan for the KNP (1997), Vol. VIII (8), Policy Proposal Regarding Issues Relating to Biodiversity Maintenance, Maintenance of Wilderness Qualities and Provision of Human benefits, Skukuza: South African National Park.

Linking Conservation to Social Justice

The SANP is informed by a new conception of conservation that is radically different from that generated during the country's colonial and apartheid past. This new vision centers on the inclusion rather than the exclusion of people and on linking conservation to human needs. "Until very recently the dominant understanding of environmental issues in South Africa was an authoritarian conservation perspective"²³. Throughout Africa the establishment of national parks and conservation areas involved the removal, social dislocation, and exclusion of indigenous communities.²⁴

The SANP is now committed to promote a different concept of conservation, linked to issue of development and human needs. It is a concept that implies a harmonious relationship between people and parks and builds on traditional conceptions of wilderness and wildlife in African indigenous cultures. The key to the new concept of conservation is that it attempts to link the protection of biodiversity to human benefits ranging from employment of local people to their access to the sustainable utilization of resources within the parks. The shift could be described as the move away from a colonially inspired model of conservation focused on preservation to a more indigenously conceived model.

The most significant aspects of this process of change relate to six spheres in which transformation has been attempted. These spheres are as follows:

1. Land restitution

One of the key issues of environmental justice that the new board has attempted to address is that of land restitution. Land restitution is also an aspect of reinstating an indigenous concept of conservation. While only four percent of South Africa's land area is devoted to protected areas. This must be understood in the context of the land shortage created by the Land Acts of 1913 and 1936, which restricted African land ownership to only 13 percent of the country. This is one of the most unjust legacies of colonialism and apartheid. Africans, who make up 70 percent of the population, were confined to eroded,

²³ Cock, J. (1991), "Going Green at the Grassroots: The Environment as a Political Issue", in Cock, J. and E. Koch (eds.), *Going Green: People, Politics and the Environment in South Africa*, Cape Town: Oxford University Press.

²⁴ Carruthers, J. (1995), *The Kruger National Park: A social and political history*, Pietermaritzburg: University of Natal Press.

overcrowded reserves. Although the laws have been repealed white South Africans continue to control more than 80 percent of the country's total agricultural land. Since 1994, the post-apartheid government has embarked on a multifaceted program that aims to correct this injustice²⁵.

Introduction of Makuleke Tribe

The claim of the Makuleke community concerned 23,700 ha of land in Limpopo Province that they had occupied for some 200 years. In 1969, after resisting removal from this area for 30 years, the Makuleke were expelled from the Pafuri Game Reserve, which was then incorporated into Kruger. In 1995 the community applied for repossession of the land under the Restitution of Land Rights Act (1994) and the Communal Property Associations Act (1996)²⁶. When making the negotiated settlement between interested parties, the presiding judge took into account a number of environmental considerations and the fact that the land in dispute was a national park and an internationally recognized Ramsar wetland. In terms of the agreement and the reversion of land title to the Makuleke, the community agreed not to resettle on the land but to retain certain rights of use and access. In effect, the community manages the area in collaboration with South African National Parks (SAN Parks)²⁷.

The Makuleke case attracted publicity for a number of reasons. The claim was fiercely resisted by Kruger management as a threat to the integrity of Kruger and its exclusive authority over the park. They were concerned about the precedent, it might set for other land claims and possible deproclamation of large sections of many of South Africa's parks. However, it was one of the first land claims to be successfully resolved because the contesting parties eventually shifted their positions to reach a compromise, regarded by some as a win-win situation. On one hand, SAN Parks underwent policy changes that favoured co-management initiatives and led to protecting biodiversity rather than protecting power structures. On the other hand, although the Makuleke leaders never wavered from their demand for return of title to the land, they became willing to use their

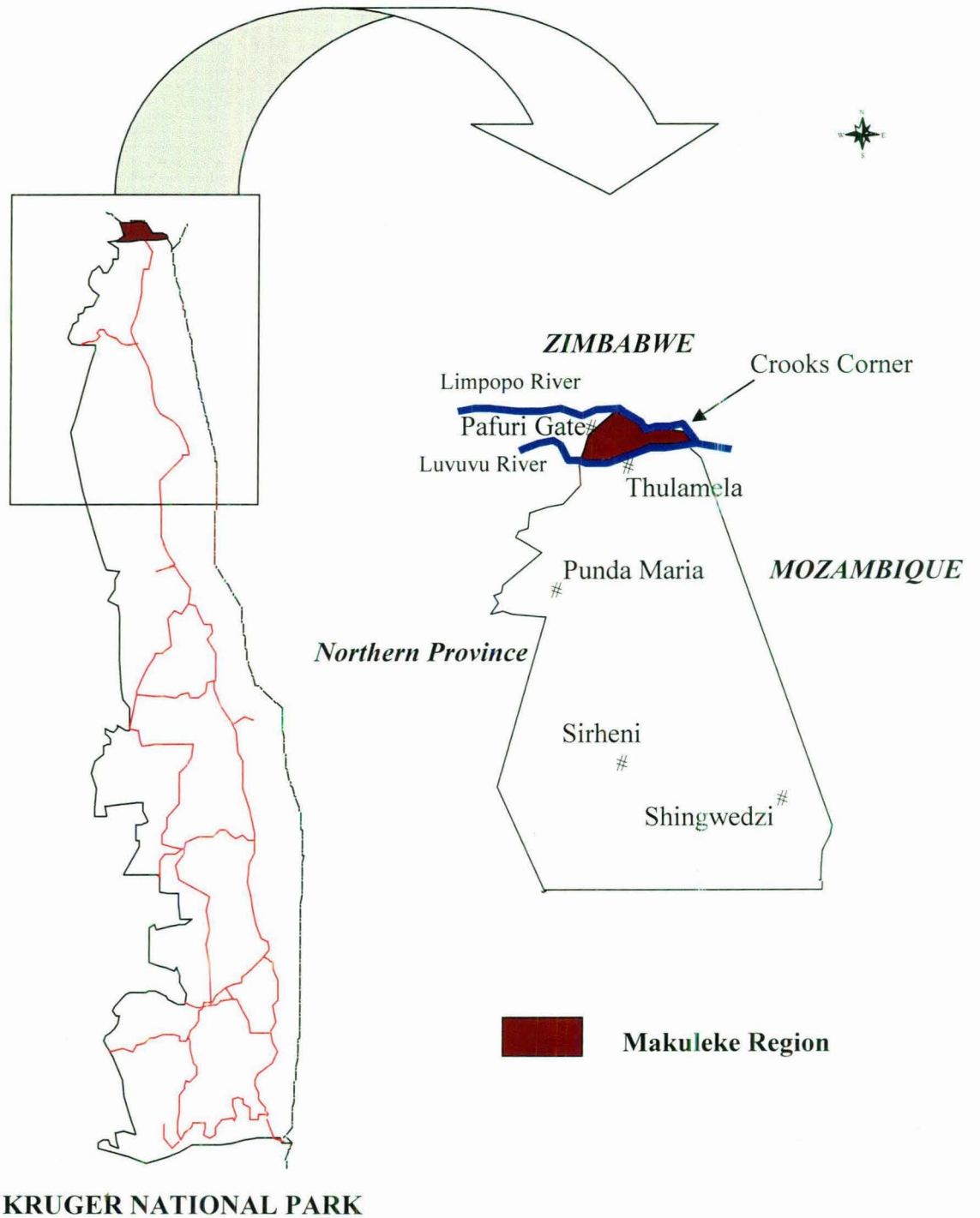
²⁵ Letsoalo, E. (1987), *Land Reform in South Africa: A Black Perspective*, Johannesburg: Skotaville.

²⁶ Pollard, Sharon et al. (2003), "Beyond the Fence: People and the Lowveld Landscape", in Toit Johan T. Du, et al. (eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*, Washington, DC: Island Press.

²⁷ de Villiers, B. (1999), *Land claims and national parks: the Makuleke experience*, Pretoria: Human Sciences Research Council.

Map IV.1

THE MAKULEKE REGION



Note: Map Not to Scale

Based on McDonald, A. David(2002), "What is Environmental Justice?", in McDonald, A. David (ed.), *Environmental Justice in South Africa*, Cape Town: University of Cape Town Press.

restored land for conservation and ecotourism as a contractual park. Although the eventual outcomes have not yet been evaluated, it is regarded as significant that the power relations between the park and local people shifted as a new contract between them were defined²⁸.

A "contract park" will be established for a period of fifty years and will be managed by a Joint Management Body on which the SANP will be represented. This model follows an earlier example of a contract with the communities in the Richtersveld National Park in the Northern Cape, who in 1991, successfully prevented the SANP from imposing more authoritarian arrangements. In order to manage its interests in relation to the park, the Makuleke community has formed a Community Property Association and it aims to establish low-impact tourist lodges. The SANP remains responsible for conservation activities, while the community will be responsible for all tourism activities in its portion of the park. Capacity building and employment creation programs, supported by development aid from foreign donor organizations, aim to ensure that the community can, in time, also take responsibility for the conservation management of the land. The agreement also provides that some 5,000 hectares outside of the Kruger National Park will also be included within the contractual area in the community park. In essence, therefore, the size of the Kruger National Park has been expanded as a result of this settlement²⁹.

The agreement has been described as "a unique attempt to harmonize the protection of biological diversity with the interests of rural people"³⁰. The agreement has important implications for the mobilization of indigenous culture in support of conservation. One of the values of the ceremony marking the agreement in May 1998 was the reassertion of the sense of identity of the Makuleke, which is closely linked to the land and fauna of the Pafuri triangle. This link was expressed in the form of a play performed at the signing ceremony by members of the community.

The historic Makuleke agreements were reached because the community was willing to participate in ecotourism and conservation.

²⁸ Glazewski, J. (2000), *Environmental Law in South Africa*, Durban, South Africa: Butterworth.

²⁹ Cock, Jacklyn and David Fig (2002), "From Colonial to Community Based Conservation, Environmental Justice and the Transformation of National Parks (1994-1998)", in McDonald, A. David (ed.), *Environment Justice in South Africa*, Ohio: Ohio University Press.

³⁰ Koch, E. (1998), "Ecofile", *Out There*, March, p.71.

The Makuleke agreement was only reached after two years of negotiations, and the Makuleke people expect benefits from ecotourism that have yet to materialize. A similar dynamic exists in the Southern Kalahari and may have an impact on other contract parks around the country.

2. Elimination of Racism and Sexism: A Change from Within

Environmental justice also involves significant internal changes in South African National Parks. Specifically it means ensuring that all levels of the internal organization of the body reflect the demographic structure of South African society. In the past, black men and women occupied the manual and a few semi-skilled positions in the organization but were largely absent from scientific and managerial positions. Within the past five years, the human resources and affirmative action policy of the SANP has attempted to redress this problem. In line with national employment policies, targets have been set for the employment of black people, women, and the disabled across all employment categories.

The new board has taken steps to appoint black leadership to the executive directorate of the SANP in the form of a chief executive and three other directors, two of whom are women. The first black director of the flagship Kruger National Park is among the new appointees. Black people now account for 50 percent of the directorate³¹. Conversely, unskilled and semi-skilled workers are overwhelmingly African and coloured. Women are severely underrepresented in the upper categories, as are Asians in all categories. Changing these dynamics is a significant challenge.

3. Increasing Community Involvement

South African national parks saw surrounding communities as inimical to biodiversity conservation. Neighbours were regarded as potential poachers and competitors for land and water, and their poverty was seen as an embarrassment to tourism. Park officials saw their relationship with neighbours as being predominantly one of policing and maintaining fences between them.

On the other hand, neighbouring communities saw the SANP as usurpers of land,

³¹ Cock, Jacklyn and David Fig (2002), "From Colonial to Community Based Conservation, Environmental Justice and the Transformation of National Parks (1994-1998)", in McDonald, A. David (ed.), *Environmental Justice in South Africa*, Ohio: Ohio University Press.

wildlife, and medicinal resources. Some communities resented the parks for fencing access to water in times of drought when their livestock came under risk. The perennial problem of rogue animals escaping from parks and destroying crops or farm animals was constantly reiterated. Legally, escaped animals were not the responsibility of the SANP but of the provincial conservation authorities who were often not easily accessible. Instead of assuming this responsibility, SANP allowed relations to deteriorate and resentments to fester.

Under pressure from NGOs such as the Group for Environmental Monitoring, whose "People and Parks" program had raised community awareness and challenged the conservation agencies to make better arrangements with neighbours, the SANP began in the mid-1990s to establish a series of community forums linking communities along the borders of the Kruger National Park.

4. Improving Accessibility

This involves improving visitor services and changing the culture of places. In the past Kruger was operated as a highly subsidized tourist playground for whites in general and Afrikaans-speaking civil servants in particular. The management culture was authoritarian. This is especially true of the Kruger National Park where visitors are confined to Cars, public roads, and their camps after sunset. Wilderness trails were introduced very recently and operate on a very limited basis. However, these are being extended, and urban black youth are being given new opportunities to enjoy wilderness experiences through the Imbewu Project, which organizes youth walking trails in the parks³².

The SANP has committed itself to improving the lives of the majority of South Africans, not only through provision of environmental education, recreational opportunities, and wilderness experiences, but also through the provision of economic opportunities to the communities bordering the parks.

5. Tourism and Income Generation

The provision of goods and services in the national parks was traditionally tendered out mainly to larger urban-based and white-owned corporations. One of the key strategic areas for transformation accepted by the board in January 1997 is ensuring that

³² Rothenberg, D.(1995), *Wild Ideas*, Minneapolis: University of Minnesota Press.

such economic opportunities and contracts are open to black entrepreneurs, manufacturers, consultants, and suppliers of goods and services.

In addition there are a number of projects under way which have created partnerships aimed at the economic empowerment of neighboring communities. These include facilitating the establishment of ecotourism ventures, developing markets for the sale of local crafts in the national parks' shops, the training of tour guides to transport local people into parks, the organization of local producers to supply fresh produce to the parks, the creation of cultural groups to perform traditional dances for tourists, facilitating the sustainable use of renewable resources such as wood and grass, and setting up nurseries to ensure that traditional healers are availed of supplies of herbal medicines.

The Skukuza Alliance Arts and Craft Project has created a craft center for them and this in itself has increased sales from R 2,000 to R 40,000 per month, with membership increasing from sixty-nine to four hundred artists by June 1998.

The SANP has traditionally received a significant subsidy. The SANP will probably experience increasing cuts in its annual subsidy, despite the fact that South Africa's national parks are a key drawing card for tourism and foreign exchange. The organization has recognized that it will be expected to pay an increasingly larger share of its. At present, only three national parks: Kruger, Titiskamma, and Cape Peninsula make a profit. However, profit accounts for only 10 percent of the parks operating income³³.

The state subsidy is thus vital to the organization. Yet although the subsidy may seem large "from the point of view of financial self-sufficiency there are few if any national parks systems in the world that rely so little on state support as the SANP".

To overcome this economic situation the board has taken three steps:

1. Instituted organizational restructuring requiring each park to operate as a business unit, with decentralized decision making informed by a three-year Business Plan.
2. Created and filled a new post of Director of Commercial Development and Tourism.
3. Accepted the principle of outsourcing, commercialization, concessioning, and

³³ South African National Park, (1999), *Financial Statement for the Year to Date, January 1999*, Pretoria: South African National Park.

partnering of non-core functions³⁴.

6. The Development of Cultural Resources and Heritage Management

There is a new commitment within the SANP to developing cultural resources and historical sites within the parks. This is a part of the emergence of a new understanding of heritage conservation, which links both cultural and natural heritage. The SANP has begun to realize this commitment by investing in historical, anthropological, and archaeological research. This has involved partnerships between parks-based social ecologists and leading academics and practitioners³⁵. The SANP's cultural heritage programme could contribute towards nation building and the creation of a common society in South Africa based on cultural sensitivity and awareness. This would involve reversing the ethnic particularism and notions of conservationism enshrined under apartheid. The significance of national parks is not limited Simply to their capacity to preserve biodiversity and promote ecotourism.

Since the challenge to create viable, mutually beneficial co-management arrangements is not being met effectively in a number of countries, the urgency for SANP to become an important path breaker in this territory is further underlined. Its striving to be a world-class conservation agency will be significantly undermined if it passes up opportunities to make a cutting-edge contribution to the successful implementation of co-management arrangements with communities which own conservation land³⁶.

Land-Use Patterns and Macro historical Trends in the Central Lowveld: 1900 to the Present

The country's apartheid policies have shaped both Kruger and the other side of the fence. Because the human settlement patterns were strongly controlled by dominant political ideologies, a brief mention of some key events is warranted. From the beginning

³⁴ Msimang, M. (1998), *Submission to the Kumleben Commission on Institutional Arrangement for Nature Conservation in South Africa*, Pretoria: South African National Parks.

³⁵ Dladla, Y. (1999), *Voices, Values and Identities Symposium: Record of the Proceeding, 25-27 August 1998*, Pretoria: South African National Parks.

³⁶ Cock, Jacklyn and David Fig (2002), "From Colonial to Community Based Conservation, Environmental Justice and the Transformation of National Parks (1994-1998)", in Mcdonald, A. David (ed.), *Environment Justice in South Africa*, Ohio: Ohio University Press.

of white settlement in the seventeenth century, South African society was segregated, and after the Union of South Africa in 1910 a number of laws ensured that whites remained politically and economically dominant. By 1945, those that directly affected the central lowveld were the Native Land Act (1913) and the Natives Trust and Land Act (1936), which stipulated that Africans (the majority) had legal tenure only in designated regions, totaling some 13 percent of South Africa. Additionally, various laws excluded Africans from the political process and allowed the government to intervene in African agricultural production³⁷.

In 1948, the apartheid policies of the National Party Government introduced a more effectively enforced racist ideology. These policies exalted Afrikaner nationalism and entrenched ethnic segregation by establishing homelands (Bantustans). These ethnically defined areas were facilitated by the Promotion of Bantu Self-Government Act of 1959 and a plethora of other apartheid laws that forced Africans to live in the homelands. Large-scale forced removals occurred, mainly from elsewhere in the Transvaal province, creating overcrowded and impoverished areas in which investment and development were negligible. The homelands became dumping grounds for what the state regarded as surplus Africans who were not engaged in active service to the white-controlled economy as migrant labour³⁸.

During this period of colonial expansion, Stevenson-Hamilton removed some 2,500 Africans from the Sabie Game Reserve, although this practice was later reversed in the Singwitsi Reserve, where residents were encouraged to seek employment as rangers and labourers. In 1939, many Africans left Kruger when veterinary authorities, against the protests of Stevenson-Hamilton, slaughtered their livestock to prevent the spread of disease³⁹.

Since 1994, a number of land claims in Kruger have been gazetted, and the well-known Makuleke land claim was successful. However, democratic changes have also

³⁷ de Wet, C. (1995), *Moving together , Drifting apart : Betterment Planning and Villagisation in a South African Homeland*, Johannesburg : Witwatersrand University.

³⁸ Fischer, A. (1988), "Whose development? The Politics of Development and the development of Politics in South Africa" in E. Boonzaaier & J. Sharp (eds.), *South African Key Words: the uses and abuses of political concepts*, Cape Town: David Phillip.

³⁹ Carruthers, J. (1995), *The Kruger National Park: A social and political history*, Pietermaritzburg: University of Natal Press.

prompted moves by communities to enter conservation partnerships with Kruger. The Mdluli land settlement in southwestern Kruger has resulted in a joint tourism venture, and in the area known as the Mariyeta corridor that adjoins the northeastern Kruger boundary, eight communities have explored the option of adding communal land to Kruger for use as an ecotourism opportunity. Although the latter initiative has been thwarted to date by extra-Kruger politics, all these cases point to possibilities for partnerships between Kruger and its neighbours.

The fence line of Kruger dramatically embodies the historical segregationist political and economic policies. On one side there are densely populated, underdeveloped, impoverished landscapes and population and on the other side are largely unaffected systems, generating economic profits. The experience of forced removals, in some cases from conservation areas, and the decreasing autonomy over their own futures has shaped the attitudes of the rural communities of the central lowveld toward Kruger. These sentiments, mirrored in people-park relations in many protected areas throughout Africa, have shaped expectations under the changed SANP factors in the newly democratic South Africa⁴⁰.

Impact of Tourism on Conservation:

The positive effects of wildlife tourism result first of all from the fact that - contrary to most other wildlife utilisation - it does not imply any danger of depletion of the resource or extirpation of species. Furthermore, infrastructural development and institution of management structures, both necessary for successful development of wildlife areas for tourist use, are highly beneficial to their conservation. They contribute to the identification and administrative "existence" of designated conservation areas and, most important, are indispensable for their protection against agricultural infiltration and illegal hunting. Although national parks tourism does not always produce significant direct returns, it often gives a political justification for defending conservation areas against ever increasing pressures for land, and it engenders research and education programmes. Outside conservation areas, on private, communal or forestlands, wildlife

⁴⁰ Hulme, D. and M. W. Murphree (2001), *African Wildlife and Livelihood: the Promise and Performance of Community Conservation*, oxford, U.K.: James Curry.

based-tourism in the form of safaris or sports hunting may also prove to be the most appropriate form of land use or an important economical complement to other uses. Any wildlife tourism also has a significant positive effect in educating overseas visitors in ecology and nature conservation.

Possible indirect negative effects of tourism can best be avoided at the planning stage. Planning must also provide for social amenities for local personnel and sufficient waste disposal facilities. The development of tourism without consideration and integration of the interests of the local rural population bears the danger of rendering the locals hostile to conservation efforts.

To prevent direct negative effects of tourism on the ecology of the conservation area, the numbers, activities and movements of the visiting tourists need to be carefully controlled. They have to be compatible with the ecology of the particular area, which implies good ecological knowledge on the part of management. It should always be remembered that tourism is only a secondary aspect of the management of conservation areas and must not compromise the primary goal of conserving biodiversity⁴¹.

Wildlife in the national parks tends to be much less affected by pollution than in areas outside park boundaries. Although occasionally occurring within parks, due to increased numbers of animals and lack of fencing, a generally lower rate of speed on park roads and an awareness of the presence of animals tend to mitigate the danger.

In time, it is hoped that restoration can lead to an increasingly natural landscape in the parks. The primary cause of disappearance of wildlife today is loss of habitat. Consequently, the main value of national parks to wildlife is protection of that habitat. Unfortunately, the scenic mountains, canyons, and deserts which make up much of the National Park System, and which are relatively poor economically, are not often the best wildlife habitat. The richest habitats for wildlife are often the places which are agricultural land, homes, and cities. The expansion of national parks or other protected landscapes into ecologically diverse areas, and the tying together of networks of protected lands, national parks, state parks, national forests, wildlife refuges including

⁴¹ Roth, H. Harald and Gunter Merz (1997), *Wildlife Resources- A Global Account of Economic Use*, Berlin Heidelberg: Springer-Verlag.

private land, may give the best hope for wildlife in the future⁴².

General principle

Protected Natural Areas

The establishment of protected natural areas intended to provide for the conservation of biotic communities or wild species in surrounding or adjacent areas, but without adequate attention to the interactions between people and the natural environment, can have adverse effects on local economies or cultures. To provide for long term positive interactions, the following guidelines are potentially useful⁴³ ..

1. Use of local knowledge
2. Local involvement with planning of protected areas
3. Local involvement with management and conservation
4. Use of protected areas to safeguard native cultures
5. Economic benefits
6. Planning and development of surrounding areas

Kruger National Park: From Fences and Guns to Community Involvement and Ecotourism

The movement toward change in South Africa's national and provincial parks, though not always apparent to outsiders, began in earnest in 1990 with the legalization of the African National Congress (ANC) and the freeing of Nelson Mandela. These momentous events sent shivers of anxiety through the National Parks Board's headquarters in Pretoria and its 4,000 park employees, many of whom feared the ANC would dismantle the organization and open the parks to black settlement. This didn't happen, however, for two main reasons. First, South Africa's new leadership recognized the park system as a national asset and a source of hard-currency tourism revenue. Second, the National Parks Board (now called South African National Parks, or SANP), began to reform the organization from top to bottom.

⁴² O'Brien, R. Bob (1999), *Our National Parks and the Search for Sustainability*, U.S.:University of Texas Press.

⁴³ Lucas, P.H.C.(1984), "How Protected Areas Can Help Meet Society's Evolving Needs", in McNeely A. Jeffrey & Miller R. Kenton (eds.), *National Parks, Conservation & Development, The Role of Protected Areas in Sustaining Society*, Gland, International Union for Conservation Nature and Natural Resources.



Pic. IV.1 Ranthambhore Park's Staff Busy in Providing the Tickets to the Canters



Pic. IV.2 Kruger Park's Staff in their Proper Uniform with the Tourist

The demands of the communities are very genuine, including the three most pressing problems: (1) the communities' lack of resources, including water, wood, and food; (2) the killing of cattle by wild animals; and (3) land claims within the park⁴⁴.

Members of the Venda and Tsonga communities, forcibly removed in the 1960s and 1980s so that Kruger could be extended to the Limpopo River, demanded restitution. The South African military, which had occupied this border zone to keep out Zimbabwean guerrillas and refugees, wanted to continue using the corridor for military training and pay compensation to local communities rather than permit them to move back. The displaced Tsonga and Venda people were divided in their response, with some villages opposed and others viewing mining as a potential economic boon in their arid savanna area. One group, the Makuleke, had been forcibly relocated from the Limpopo valley. With the support of an ecotourism consultant, a lawyer, a developer, and some German government funds, the Makuleke proposed to regain ownership of the land but leave it in the park and to build and operate a lodge in a partnership between the local community and the private sector.

The prospecting was taking place on land just outside the park but still within the territory from which the Makuleke had been removed. Although environmentalists and park officials immediately warned that mining would irrefutably ruin the land, the mining company promised to follow strict environmental guidelines and to create 2,000 jobs. In contrast, the Makuleke's proposed lodge was slated to create only 33 jobs, but, its supporters argued, the ecotourism project would generate income long after the mining company had closed down.

In March 1998, the SANP Board and the Makuleke community signed a historic agreement, hailed as a win-win situation, whereby the community agreed not to move back into the park and instead will commonage with SANP any new low-impact tourism developments.

Land under Individual Tenure:

Kruger is not surrounded solely by communal lands. Approximately one-third of the central lowveld is under individual tenure (real or corporate), mostly devoted to

⁴⁴ Honey, Martha (1999), *Ecotourism and Sustainable Development- Who owns Paradise?*, Washington DC: Island Press.

ecotourism and conservation since the conversion from farming in the last four decades. After the consolidation of the South African Republic north of the Vaal River in the 1860s, large farms (>1,500 ha) were sold or allocated to whites by the Boer government as military or civic rewards. Because of malaria, horse sickness, and tsetse fly, much of the private or state land was used only in the safe winter months for grazing or hunting. Speculation in land by whites, particularly after the discovery of minerals elsewhere in the country, was common practice⁴⁵. Stevenson-Hamilton expanded the Sabi Game Reserve (which consisted only of a small area between the Sabie and Crocodile rivers) into the central lowveld between 1903 and 1926 by leasing a band of private farms between the Sabie and Olifants rivers. Some of the private farms were incorporated into Kruger by expropriation, exchange, or sale, and others were excised from it⁴⁶.

By the mid-1950s, the success of Kruger as a tourist venture, improved malarial controls, growing conservation awareness, and marginal profitability of commercial farming in the region catalyzed the establishment of private game reserves. The first private game reserve consortium was the Sabi-Sand Wildtuin, created from a number of the excised farms. The conservation area later expanded with the addition of private reserves, such as Timbavati and Klaserie. This trend has accelerated in the last two decades, which have seen the transformation of most cattle farms in the central lowveld to game and conservation enterprises, offering a variety of ecotourism operations. In many cases, this has been driven mainly by economic imperatives, including declining subsidies for cattle farming and the growing national and international tourism markets, in which South Africa is a favoured destination. To maximize economies of scale, both economically and ecologically, and particularly to accommodate the "big five" species as a tourist drawcard, many of these ventures are increasingly turning to share block or cooperative schemes (e.g., encouraging traversing rights on each others' properties). Although this merits further attention, Kruger appears to have exerted a strong nursery

⁴⁵ Fischer, A. (1988), "Whose development? The Politics of Development and the development of Politics in South Africa" in E. Boonzaier & J. Sharp (eds.), *South African Key Words: the uses and abuses of political concepts*, Cape Town: David Phillip.

⁴⁶ Harries, P. (1989), Exclusion, "Classification and Internal Colonialism: the Emergence of Ethnicity among the Tsonga-speakers of South Africa", in L. Vail (ed.), *The Creation of Tribalism in Southern Africa*, Berkeley: University of California Press.

effect by attracting similar land use along parts of its borders⁴⁷.

Increasing collaboration to extend the boundaries outward, at least with other established or potential conservation ventures, is seen in a number of initiatives. The fence between Kruger and some of its neighbors was dropped in 1994. More recently, this has taken an international dimension with the proclamation of a Transfrontier Conservation Area, linking Kruger with protected areas in Mozambique and Zimbabwe. If these are successful-and the Greater Limpopo National Park has already been formally approved. Kruger will have additional rural neighbours in Zimbabwe and Mozambique. Furthermore, the Kruger to Canyons Biosphere Reserve, which straddles the central lowveld, is another example of this wider vision. It is intended to facilitate sustainable development that secures the well being of the environment and people of the area⁴⁸. This transforming social footprint in the lowveld has had a range of impacts on natural resources of the region. The contrasting histories of woodlands and freshwater resources, in particular, provide examples of emerging future trends⁴⁹.

South Africa's Ecotourism Scorecard

Most tourism within South Africa was domestic, predominantly run by the white minority; South Africa was a net exporter of tourists; and most investment in tourism was with national capital. The commitment to genuine ecotourism is one of the outgrowths of the antiapartheid struggle. Whereas elsewhere, ecotourism evolved out of environmental movements, in South Africa it has deep roots in the struggle against white minority rule and for a broad-based democracy committed to economic and racial equality and social justice. Ecotourism is seen as a tool for social change, and its principles fit the objectives of the Reconstruction and Development Program (RDP), Nelson Mandela's first blueprint for development.

Today, a broad swath of South African society, including government and park officials,

⁴⁷ Pollard, Sharon et al. (2003), "Beyond the Fence: People and the Lowveld Landscape", in Toit Johan T.Du, et al. (eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*, Washington, DC: Island Press.

⁴⁸ Newenham, J. (1982), *Kruger to Canyons Biosphere Initiative*, Application to UNESCO.

⁴⁹ Pollard, Sharon et al. (2003), "Beyond the Fence: People and the Lowveld Landscape", in Toit Johan T.Du, et al. (eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*, Washington, DC: Island Press.

the national tourism agency, dozens of NGOs, academics, consultants, environmentalists, journalists, community organizers, rural activists, and private tour operators, developers, and investors, are involved in ecotourism experiments and initiatives. All this adds up to giving South Africa a high rating on the ecotourism scorecard which,

1. Involves travel to natural destination.
2. Minimizes impact.
3. Builds Environmental awareness.
4. Provides direct financial benefits for conservation.
5. Provides financial benefits and empowerment for local people.
6. Respects local culture.
7. Supports human rights and democratic movements⁵⁰.

It is evident from the South African experience, that route tourism offers a promising potential vehicle for local economic development in many small towns and rural areas. Nevertheless, the uneven distribution of the benefits of such route tourism initiatives needs to be carefully considered.

Tourism and Local Economic Development in South Africa

During the 1990s, however, a number of non-traditional tourism places in South Africa have also been undertaking new initiatives to promote tourism development. Often, these newer initiatives are linked to necessity and situations of economic crisis, as the decline of a traditional economic base precipitates the search for new sources of employment.

Since 1999, there has been growing support from central government for a range of local tourism-led LED initiatives, particularly linked to goals of job creation and poverty alleviation in South Africa. Under the Local Economic Development Fund (LEDF), a novel initiative providing targeted funding to encourage bottom-up community economic development and foster entrepreneurship, many local tourism projects have secured financing. Within this central government scheme, financial support is offered to

⁵⁰ Honey, Martha (1999), *Ecotourism and Sustainable Development- Who owns Paradise?* Washington, DC: Island Press.

locally proposed projects, which are selected through an annual open competition⁵¹.

In the case of South Africa, the majority of LED initiatives launched since 1994 have focused on the attraction of new manufacturing investment, the retention of existing industrial enterprises, or support for new small medium or micro-enterprises in the manufacturing sector. But a growing number of localities, from large cities to small towns, are beginning to undertake pro-active interventions for LED using tourism as the lead economic sector. This expansion of local level tourism initiatives is inseparable from the essential stagnation of South Africa's manufacturing economy, in terms of new job creation, and the corresponding search for new sectoral drivers for job creation and economic growth, not least including tourism. Against this background, an increasing number of the partnerships for LED that are formed between local stakeholders in the private sector, local government and communities are focusing on the economic potential of tourism.

Tourism Development in the KNP

Kruger's appeal as a tourist destination is enormous, and it is a major driver of economic development in the region. This, together with its annual net income, has led to Kruger being perceived as the goose that lays the golden egg. Economic and political pressures to increase revenue generation, attract more visitors, provide benefits to neighbouring communities, and become more accessible often are juxtaposed to maintenance of attraction integrity and long-term sustainability of economic and environmental parameters⁵². Tourism development is commonly regarded as an economic stimulus but carries with it impacts and environmental costs that constrain activities and may result in degradation of the resource base on which tourism is centered. Sustainable operations must do more than merely stem and mitigate negative impacts; critical links between tourist numbers, thresholds of use, and environmental impacts must be considered and understood.

Tourism and its role as revenue generator were entrenched in Kruger in 1926. The opening of Skukuza, Satara, and Pretoriuskop camps in 1928 followed the winter

⁵¹ Rogerson, M. Christian (2004), "Tourism and Uneven Local Economic Development: The experience of Route Tourism In South Africa", in Rogerson, M. Christian & Visser Gustav (eds.), *Tourism and Development Issues in Contemporary South Africa*, Pretoria: African Institute of South Africa.

⁵² Ferreira, S.L.A., and A.C. Harmse (1999), "The Social carrying capacity of the Kruger National Park, South Africa: Policy and Practices", *Tourism Geographies* 1: 325-342.

opening of the Pretoriuskop section for day trips in 1927. Hot water provision was considered in 1933 only after long debates over whether this constituted an unnecessary luxury, and pit latrines were replaced by waterborne sewerage systems in 1961. Since 1926, tourism has increased dramatically, with peak figures reaching almost 1 million visitors per annum in 1997-1998. Facilities and infrastructure have expanded, and services and experiences have diversified in accordance with the National Parks Act (No. 57 of 1976, as amended), which provides for sustained use of national parks "for the benefit and enjoyment of visitors," a provision that has been debated over time⁵³.

Throughout Kruger's history park managers have expressed concern that tourist pressures were approaching capacity levels, including issues of traffic congestion, over-use of facilities, and impacts on visitor enjoyment. Peripheral development and social carrying capacity principles were first considered in the 1940s, aimed at siting new developments close to boundaries and avoiding enlargement of centrally located camps. Tourist number control strategies were amended over time and included limiting camp size, developing advance booking systems, limiting overnight and day visitor numbers, implementing vehicle: road length ratios, and zoning Kruger for development and use⁵⁴.

Dealing with Tourism in KNP

An annotated list of visitor-influenced wildlife impacts in Kruger points toward some effects on the structural, functional, and compositional aspects of biodiversity. Although less than 3 percent of Kruger is directly disturbed by infrastructure, the overall impact of tourism activities on all aspects of biodiversity is poorly understood and often is not recognized explicitly.

Developmental and revenue generation forces increasingly threaten the greater sense of place in Kruger. Added pressures around the borders impinge on this conservation area, effectively reducing the non-impacted core area and the distribution of wilderness attributes sought by visitors. A zoning system alone will not provide a holistic

⁵³ Braack, L.E.O., and C. Marais (1997), *Contribution towards a policy on tourism in the KNP*, In Vol. 8. Policy proposals regarding issues relating to biodiversity maintenance, maintenance of wilderness qualities, and provision of human benefits, A revision of parts of the management plan for the Kruger National Park, Skukuza: South African National Park.

⁵⁴ Freitag, Stefanie et al. (2003), "Anthropogenic Influences at the Ecosystem Level", In Toit Johan T.Du. et al.(eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*, Washington, DC: Island Press.

approach to the protection of tourism qualities therefore an integrated environmental management approach is needed. Kruger must consolidate a balanced plan to guide further development, combining societal values, biodiversity conservation, precautionary principles, and sustainable development.

There were no vehicles in Kruger in 1926, and the Selati railway, pack donkeys, and horses were used for transportation. The need for roads accompanied increasing management requirements and the advent of tourism, with the first car tracks opened in 1928 and the first road tarred in 1961. Since then, the road network (including firebreaks, management roads, and airstrips) has expanded to 7,926 kilometers, dramatically increasing between 1956 and 1970⁵⁵.

Before 2000, roads and firebreaks divided Kruger into 456 blocks, averaging 4,164 hectares. Road decommissioning has resulted in an increased block size, with three or four old blocks now constituting new bum units. However, not all roads have the same ecological impact, and fragmentation levels may become meaningful only if considered in light of specific policies (e.g., fire policy) or road type. All areas of Kruger have been developed with roughly the same density of roads since 1969. However, if main paved roads are considered to have the highest impact, the southern area has been affected longest and has the highest fragmentation levels.

Kruger would benefit from development of an overall framework on road impacts and road ecology research, designed to better quantify and understand these effects, particularly with ongoing pressure to build more roads and tracks in concession areas.

Economic Benefits of Reserves:

The present economic efficiency of the Kruger National Park, economically the most important reserve in South Africa, with that of the area if it were to be converted to agricultural use. Annual income of families employed in the park was estimated at R50 million (US\$ 11.1 million), about three times as high as the gross margin which could be expected from unimproved (dryland) farming after expending R 15 million (US\$ 3.3 million) on bush clearing. Investment of R 400 million (US\$ 119 million) on infra-

⁵⁵ Frietag, Ronaldson et al. (2001), "Wilderness, Wilderness Quality management and recreational opportunities zoning within the Kruger National Park, South Africa" in Watson A. (ed.), *Science and Stewardship to Protect and Sustain Wilderness Values* Proceedings of the 7th World Wilderness Congress Symposium 2001, Port Elizabeth, South Africa .

structure would make it possible to generate a gross margin of R60 million/year (US\$ 13.3 million) from improved farming. However, incurring this capital expenditure over a four year period would attain a negative internal rate of return of about -2%. They conclude that the present use of Kruger is at least as economically efficient as converting the area to agriculture and that the park has other additional benefits to the national economy as well as many unquantified indirect benefits⁵⁶.

Functional Relationship Between Protected and Agriculture Areas in South Africa: Game Reserves and Parks:

In southern Africa as elsewhere on the continent, the spectacular wildlife assemblage tended to distract attention from other natural resources and conservation policy became largely focussed on game. Metropolitan Britishers interests from 1860 until at least 1914 were mainly concerned with encouraging the "mania for game reserves if the ex-hunter and species protectionists" in the African colonies. In South Africa too, the late 19th and early 20th centuries saw the establishment of the forerunners of several of the major present-day game parks and reserves. While British sentiment may have influenced the proclamation of the first reserves in the Colony of Natal, it was the Volksraad's decision to create those in the Transvaal. The scenic beauty of the northern Drakensberg appears to have motivated the proclamation of the Royal Natal National Park in 1916.

The number of reserves in South Africa grew slowly although the total area of the nature reserve estate was increased substantially by the addition of a few very large sanctuaries in the decade 1925 to 1935. Interactions between the main large, old protected areas and surrounding land have thus evolved over a considerable period. In the past 25 years there has been a surge of new proclamations bringing the total number of reserves in South Africa to 582 with an area of some 7.2 million hectares. Almost half of this area (46%) is taken up by the five reserves larger than 100,000 ha; 413 (71 %) are smaller than 5,000 ha and they account for only 7% of the total reserved area.

Private land formally associated with public parks has the additional advantages of improved opportunities for game viewing and hunting. Communally held land in

⁵⁶ Bigalke, R.C. (2001), "functional Relationship Between Protected and Africultural Areas in South Africa and Namibia" in Prins, H.T. Herber (eds.), *Wildlife Conservation by Sustainable Use*, Boston / London: Kluwer Academic Publishers.

South Africa is generally densely populated and has little potential for wildlife utilisation except where reserves have been specially created and stocked. Instead conservation agencies have sought to facilitate access of tribal people living around reserves to a range of natural resources, markets for handicrafts and employment⁵⁷.

The Economics of Wildlife Tourism In Africa

It generating large revenues for governments; wildlife tourism makes significant contributions to other national economic goals such as foreign exchange earnings and employment creation. It supports a range of private entrepreneurs, both in the tourism sector and in secondary and support industries. In recent years, the participation of the private sector in wildlife tourism and its use on private and communal lands in Africa has increased rapidly.

The profitability of wildlife for landholders is of particular concern for wildlife conservation. Because much of the wildlife in East and southern Africa lies on private and communal lands, its conservation depends on the activities of these landholders and to what extent they are compatible with wildlife. It is widely assumed that because wildlife tourism generates high profits, it will be an attractive land use option for landholders and wildlife will be conserved.

It is argued that looking just at overall profitability presents an overly simplistic view of the economics of wildlife tourism for landholders. The deciding factors in whether landholders take up wildlife tourism and conserve the wildlife on their lands are the extent to which they themselves reap the benefits of tourism, and how far these profits are competitive with alternative land use options, most importantly crops and livestock. By looking range of examples in East and Southern Africa, the wider economic and policy factors have, by limiting the wildlife tourism income available to landholders and inadequately compensating them for other productive land uses foregone, discriminated against wildlife based land uses. It concludes that unless more effort is made to increase the share of wildlife tourism profits accruing to landholders through better revenue sharing arrangements, business partnerships, increased training

⁵⁷Earnshaw, Allan and Lucy Emerton (2001), "The economics of Wildlife Tourism: Theory and Reality for Landholders in Africa", in Prins, H.T. Herber (eds.), *Wildlife Conservation by Sustainable Use*, Boston / London: Kluwer Academic Publishers.

and credit, and the discontinuing of policy distortions in the agricultural and wildlife sectors, in particular subsidies to agricultural inputs and research, and restrictions on private wildlife use and management, the returns to tourism for landholders will never be enough to convince them to maintain wildlife on their lands.

The Distribution of Wildlife Tourism Benefits

A range of players are involved in wildlife tourism, including tour operators, hotel owners, safari companies and travel agents. Landholders in wildlife areas are rarely engaged in these businesses. Even when the overall profits from wildlife tourism are high, only a small proportion goes to landholders themselves. Landholders have been involved in wildlife tourism enterprises generally only as employees or as the recipients of limited revenue sharing, ground rents or levies rather than as full owners or operators. The bulk of the profits from wildlife tourism have tended to accrue to large commercial operators or to the state. A major reason for the marginalisation of landholders is that they lack access to the finance, training and market knowledge necessary to engage in wildlife tourism as owner-operators. Little has been done in terms of credit and training support to enable landholders to increase their share of wildlife tourism profits.

A range of possible mechanisms exists through which landholders can generate direct income from wildlife tourism apart from direct ownership. In addition to owning and operating wildlife tourism enterprises, landholders can gain revenues from leasing land to tourism operators, charging levies and engaging in tourism-related employment and industry⁵⁸.

Research on the Development of Kruger

The main research projects were management oriented, and monitoring programs were implemented to measure the effect of management strategies. For the first time specific management policies were drafted, initially related to fire management, water provisioning, and predator control. The research section started collecting baseline information on the vegetation, geology, and soils and systematically cataloging species⁵⁹.

In 1954 veld-burning experiments began, as did the development of an extensive

⁵⁸ Allan, Earnshaw & Lucky Emerton (2001), "The Economics of Wild life Tourism: Theory and reality for Landholders in Africa", in Prins, H. T. Herber et al. (eds.), *Wildlife Conservation by Sustainable Use*, Boston / London: Kluwer Academic Publishers.

⁵⁹ Joubert, S.C.J. (1986), *Masterplan for the Management of the Kruger National Park*, Vol.1-6, Unpublished Document, Skukuza Archives, Kruger National Park.

network of firebreak roads, which eventually divided the park into more than 400 burn blocks. A rotational burning regime was introduced, but by 1992 a strong wilderness lobby managed to change this rotational fire strategy to a natural one in which managers hoped lightning would drive ignitions. The use of fire for management purposes has been debated for many decades, and the park's burning policy is still being updated⁶⁰.

A key person in this era was Dr. Uys de Villiers ("Tol") Pienaar, who established the reference museum in Skukuza and started cataloging plant, fish, reptile, mammal, amphibian, insect, and bird diversity in Kruger. Dr. Pienaar also played a leading role in research on chemical capture and immobilization of wild animals⁶¹.

South African Politics and Their Role in Wildlife Tourism

In 1948, the National Party won the general election and stayed in power until 1994. The Party enforced grand apartheid (separation) policies and created independent "states" (homelands) for black people. The South African National Parks, as a parastatal institution, followed these policies. Black people were used mostly as labourers and not promoted into higher positions. Tourist accommodation facilities were also segregated, and blacks were encouraged to visit Manyeleti Game Reserve, an inferior nature reserve in the Gazankulu homeland designated for black people.

Racial discrimination against blacks, segregation policies forcing them into unsustainable ethnic homelands, second-rate education, and very limited access to national parks all meant that no sense of ownership for national parks was built among black South Africans. This physical and psychological separation from the natural environment is a challenge that present park managers have to address as a matter of urgency. For black South Africans this was a sad chapter in the history of conservation⁶².

⁶⁰ Biggs, H.C. and A.L.F. Potgieter (1999), "Over view of the fire Management Policy of the Kruger National Park", *Koedoe*, 42: 101-110.

⁶¹ Pienaar, U. de V. (1963), "The large Mammals of the Kruger National Park: Their Distribution and Present-day Status", *Koedoe*, 6: 1-37.

⁶² Mabunda, David et al. (2003), "The Kruger National Park: A Century of Management and Research", in Toit Johan T.Du. et al. (eds.), *The Kruger Experience- Ecology and Management of Savanna Heterogeneity*, Washington, DC: Island Press.

Comparison of two parks in terms of general information through Photo Exhibition



Pic. IV.3 Photo exhibition at the entrance of the Ranthambhore Park Entrance



Pic. IV.4 Photo exhibition at the Steveson Hamilton Library at Skukuza in the Kruger National Park



Pic. IV.5 Handicraft and Arts Showroom Outside the Ranthambhore National Park



Pic. IV. 6 The Skukuza Alliance Arts and Craft inside the Kruger Park

Comparison of Kruger National Park with Ranthambhore National Park

Threats to Ranthambhore National Park

Overwhelmed by the seriousness of the problem global strategies were formulated urging people and governments all over the world to practise sustainable living. And under these compelling factors Government of India took several steps to workout its own conservation guidelines and action plan and also created legislative and administrative machinery to put these plans into action. The establishment of a network of protected areas through out the country became a priority item on the agenda of the National Wildlife Action Plan, 1983. As one of the major steps towards conserving the rich natural heritage, especially the biodiversity, envisaged in this plan, India has expanded its protected area (PA) network from 10 national parks and 127 sanctuaries in 1970 covering 25000 sq. km. to 73 national parks and 417 sanctuaries in 1993 extending over 1,40,200 sq. kms. This is roughly 4.6 % of the total geographic area of the country. The required representation of protected areas in the 10 biogeographic zones (Trans-Himalayan, Himalayan, Desert, Semi-Arid, Western Ghats, Deccan Peninsula, Gangetic Plain, North-East India, Islands and Coasts) is yet to be achieved by the respective state governments⁶³.

The national target suggested by protected area network plan is to have at least 5.6 per cent of the geographic area under the PAs network. This is essential in order to ensure that isolated population of species in our small PAs have a chance to survive through the connecting corridors of the network. The small size of India's PAs is not by choice but under compulsion as the rising demographic pressures and prevailing land use situation does not permit creation of large PAs in our country. Such small PAs are often ecologically not viable if these do not have connecting links with adjacent PAs for facilitating movement of larger species of fauna and genetic continuity between isolated population of plant and animal species through continuous distribution. The average size of PAs in India is only 220 sq. kms.

There are about 500 national parks and sanctuaries in India, covering around 4.3 per cent of its territory. These areas are today the hub of what little is left of the country's

⁶³ Kumar, Suhas (2002), "Wildlife Tourism in India: Need to Tread with Care", in Sharma B.D. (eds.), *Indian Wildlife – Threats and Preservation*, New Delhi: Anmol Publications Pvt. Ltd.

natural habitats and wildlife. They are home to some of India's indigenous communities, and also repositories of some of the country's most valuable forest products, minerals and other resources, which our rapidly expanding industrial-urban economy needs.

A national survey done in the late 1980s in India revealed that 69 per cent of the surveyed PAs had human population living inside, and 64 per cent had community rights, leases, or concessions inside them⁶⁴.

Existing Legal Framework

The depletion of India's wildlife, as also the hardships faced by the people dependent on natural resources, is due to:

- Reduction of wildlife habitats.
- Increasing biotic pressure (human and cattle).
- Increasing demand on resources (lifestyles).
- Implementation of conflicting natural resources policies and law.

The problem is therefore also a result of conflicts between resource use laws and resource conservation laws, with the former often overriding the latter; Conflicts between rights granted or settled (of the local people) under laws (under the Constitution, Forest Act, Easement Act, etc.) and the recent needs for conservation. These provide the ground for litigation and Lacuna in the Wild Life (Protection) Act 1972, or its improper or incomplete application or administration⁶⁵.

Local People Around the Park

The laws which safeguarding the rights of the local people, also including their rights over the resources. In this context we shall limit ourselves to laws applicable to the tribals since the majority of those residing in national parks and sanctuaries are tribals.

First there are Constitutional Rights: Art 19(1) (Right to reside), Art 244(1) Entry 5 (Fifth Schedule), Art. 242 (2) and 275 [(1) (2)] Entry 3 (Sixth Schedule) create right to occupancy but not right over the resources. Besides these, Art 14 (Right to equality and Art. 21 Right to life and livelihood including environment) can also be read as protecting

⁶⁴ Saloni, Suri (1996), "People's Involvement in Protected Areas: Experiences from Abroad and Lessons for India", in Kothari, Ashish et al. (eds.), *People and Protected Areas- Towards Participatory Conservation in India*, New Delhi: Sage Publications.

⁶⁵ Singh, Chhatrapati (1996), "Legal Policy for India's National Parks and Sanctuaries", in Kothari, Ashish et al. (eds.)(1996), *People and Protected Areas- Towards Participatory Conservation in India*, New Delhi: Sage Publications.

the right of the tribals and other forest dwellers. These constitutional and statutory rights provide grounds for litigation as well as entitlements for the local people. There are various procedural problems; only the most important substantive issues are mentioned:

1. Wildlife and forest are in the Concurrent List of the constitution. This implies that the states have the powers to change their policy/law concerning wild habitats or sanctuaries. The amendment to the Wild Life (Protection) Act now provides that the states can change the boundaries by passing a resolution by the state legislature through a simple sitting majority. This has allowed various/government such as Gujarat and Orissa, to denotify sanctuaries and alter their boundaries in ways that have destroyed the habitats of wildlife.
2. The settlement of rights of the local people, under Section 24(2)(c) of the Wild Life (Protection) Act, has not been made in most sanctuaries as yet. This creates a major problem in the determination of occupancy or resource rights the indigenous people.
3. Section 18 of the Wild Life Protection Act 1972 defines the sanctuaries as forest lands. Subsequent amendments to the Act have deleted the words 'forest lands'.
4. The conservation practice and plans are operating with various terms which have no legal definitions, such as 'protected / areas', 'tiger reserves', 'biospheres', and 'buffer zones'. These create numerous problems⁶⁶.

In the course of time, local communities have developed their own mechanisms of handling sustainably the resources that are available to them. However, development in some form or another has touched even the remote corners of the earth. Market forces of varying intensities are working within different societies in both rural and urban areas. Local communities are often torn between the desire to benefit from these forces, and their hesitation to give up their traditional lifestyles. On the other hand this traditional way of life seems threatened by the development wave.

Partnerships between local human communities and PAs management agencies can help to counter commercial threats but conservationists have not easily accepted such a partnership. Some of them believe that a strong legislation supported by vigorous law

⁶⁶ Singh, Chhatrapati (1996), "Legal Policy for India's Parks and Sanctuaries" in Kothari, Ashish et al. (eds.), *People and Protected Areas- Towards Participatory Conservation in India*, New Delhi: Sage Publications.

enforcement is the best option for long-term conservation. Community rights activists have, on the other hand, often argued that only local communities can conserve habitat. The truth is probably somewhere in between, for top down conservation programmes are failing increasingly, while experience has shown that the local people, like others, are also likely to misuse privileges.

PA managers have also seen the need to change their perceptions during this process of change. Earlier the main task of PA managers was policing and the local people were seen as management problems. But now these views are slowly changing and the PA manager and the local people are beginning to move hand in hand realizing that they share an ultimate common goal: that of conservation of the natural habitat⁶⁷.

Relationship Between People and Wildlife

Villages like Sherpur and khilchipur, which are situated near to the park gate, have less interaction with the wild animals due to permanent boundary in the form of wall. But villages, which have an access to the park and where the boundary does not exist, have an interaction with the wild beast. Conflict of interests between communities and wildlife bound to lead very close to the forests. Attacks on domestic animals are either by tigers or leopards. There have been cases, which also seem rather unbelievable. In village Mei, for example, a leopard raided a farmer's enclosure two nights in a row and killed 49 goats. After a long delay of nearly two years, the farmer finally received a meagre compensation of Rs. 4,900, i.e. one hundred rupees per goat. The other serious problem is that of crop raiding by wild ungulates. The extent of the damage caused by these animals is sizeable, ranging from 30 to 60 per cent⁶⁸.

It is not as if all these occurrences are a recent phenomenon; these incidents happened even before Project Tiger. But it is only recently that wildlife attacks have emerged as a problem. Earlier it was felt that the Nilgai took their share from people's fields. While cattle took its share from the Nilgai's forest, thereby keeping a balance. This

⁶⁷ Saloni, Suri (1996), "People's Involvement in Protected Areas: Experiences from Abroad and Lessons for India" in Kothari Ashish et al (eds). *People and Protected Areas- Towards Participatory*

balance has now been broken as the cattle are now no longer free to graze on the forest whereas the Nilgai still graze in their fields.

The other reason why it has turned into a conflict is the helplessness the communities feel. Till now, the Forest Department had no clear rules for compensation for the, death of a domestic animal caused by wild animal attack. Even now it is still not easy to get compensation. This is the reason why the farmers report only the death of economically valuable animals. When it comes to crop raids, people have really no alternative but to keep watch, freezing through the nights. The Forest Department does not compensate for crop damage nor is there any scheme for crop insurance. Farmers can no longer employ Mogias or professional hunters to guard their fields. A few of them make use of fireworks in their fields to scare away animals but a majority of them personally guard the fields, with only strung-up *cheela* leaves hanging on the fence.

People and Park Management Relationship

Ranthambhore's survival depends on; perhaps the most serious is the extent of misinformation, distrust and alienation among the communities of the belt. Very few of the villagers who are directly affected by the abrupt cutting off from resources are aware of the ecological reasons for creating the national park. The other problem is people's belief that the park authorities want to extort money from villagers who have no other option for fuelwood or fodder. The park officials on their part do not make that extra bit of effort needed to make the relationship peaceful and constructive. During the monsoons, the situation becomes particularly tense, with each accusing the other for the destruction of the forest.⁶⁹

The changed relationship of the people living around the park with the forests was brought about almost overnight and in a manner, which left little room for readjustment for the people concerned. This has engendered problems, which have taken the form of conflicts and struggle. Apart from the damage being caused to the forest 'through grazing and tree cutting, the situation has degenerated into frequent conflicts, sometimes marked

⁶⁹ Desai, Kiran et al. (1996), "Joint Management of Ranthambhore National Park", in Kothari, Ashish et al. (eds.), *People and Protected Areas- Towards Participatory Conservation in India*, New Delhi: Sage Publications.

with serious violence, between the park management and people. Some people, as a justifiable concept, does not accept protection by the management, at least legally as well as socially.

Since 1976, 12 villages inside the PA were moved out, their inhabitants resettled in two villages named Kailashpuri and Gopalpura, many miles away from the prime forests. More than three villages still remain within the park boundary. Each family of the resettled villages was given more land than it had owned in its original village. Both the new villages were also given community land. They were given school buildings, wells and community pump sets. Out of the 40 odd villages in the vicinity of the Park forests, about 30 villages are said to be 'problem' villages, which means that they are entirely or partially dependent on the forests of the Park for their firewood and fodder requirements. Their own resources are private farmland, mostly small holdings, cattle and goats, and community land ⁷⁰.

The present attitudes of the Ranthambhore management personnel, of the political leadership and of the people can be derived from the basic assumption underlying the protection measures being taken to save forests and wildlife. In Ranthambhore, as elsewhere, the initial perception and hence the tackling of the situation as a law and order problem has had a self-fulfilling property: today it is becoming a 'full-fledged law and order problem'⁷¹.

Whatever degradation has taken place in the Ranthambhore area is mainly due to six reasons:

1. Legal cutting practiced before the seventies, especially the contracts, to cut trees to make charcoal;
2. Illicit felling by unscrupulous elements in connivance with some of the forest personnel;
3. Cutting of trees by villagers themselves, to sell or gift to relatives;
4. Increased pressure for fuelwood, small timber and continuing grazing pressure without people themselves protecting or caring for what they perceive as government forests.

⁷⁰ Desai, Kiran et al. (1996), "Joint Management of Ranthambhore National Park", in Kothari, Ashish et al. (eds.), *People and Protected Areas- Towards Participatory Conservation in India*, New Delhi: Sage Publications.

⁷¹ Kothari, Ashish et al. (eds.) (1996), *People and Protected Areas- Towards Participatory Conservation in India*, New Delhi: Sage Publications.

5. Revenge cutting, when villagers wanted to hit back at the government for penalising them, or for violently punishing them; and,
6. Mining in the past.

There is an attempt to harness local people's knowledge, initiative and capacities for the management of the forest ecosystem. The management of the protected areas should involve a vast number of people in decision making and decision implementation. The people should recognise not just as consumers but also as forest protectors. This changes the profile of the people not only in the eyes of the forest officials but also in their own eyes. To create opportunities for channelising local community stakes into effective protection systems. The feeling of alienation from the people should be removed and brings back to them the thought that the national park or the sanctuary is a habitat which belongs to them and therefore, is to be cared for⁷².

The Status of Tourism Management in Protected Areas:

A careful scrutiny of the PAs, which have gained reputation as wildlife tourist spots, reveals that most of them are tiger reserve and have featured as tourist attraction even when they were not legally designated as park or sanctuaries. It was the traditional recreational use of these areas by people who either came for sport hunting earlier or for totally recreational purposes. Such tourism continued and has increased with the popularity of the parks within and outside India. Management of tourism was initiated later and therefore grew in an unsystematic manner without the benefit of initial long term planning.

Considering the large number of Indian and a smaller segment of foreign tourists visiting protected areas the staff and infrastructure for management of tourism is inadequate. Infrastructure, staff and facility to address the major objective of creating nature conservation awareness among visitors are in an incipient stage. In most other PAs very little has been done to streamline tourism management. Most of them either do not encourage tourism or allow unmanaged tourism to continue⁷³.

The grim situation resulting from the biotic pressure on these PAs alongside lack

⁷²Desai, Kiran et al. (1996), "Joint Management of Ranthambhore National Park", in Kothari, Ashish et al. (eds.), *People and Protected Areas- Towards Participatory Conservation in India*, New Delhi: Sage Publications.

⁷³ Kumar, Suhas (2002), "Wildlife Tourism in India: Need to Tread with Care", in Sharma B.D. (ed.), *Indian Wildlife – Threats and Preservation*, New Delhi: Anmol Publications Pvt. Ltd.

of staff infrastructural and financial supports have made the managers reluctant to invite further problems usually associated with tourism. This is one of the ironies for the underdevelopment of our national parks.

Zonation of the Park

Even within a single PAs varying management categories may be desirable. This approach is decades old, but such zonation is done in full consultation with the local communities, taking in to account their own existing practices and beliefs. Building of appropriate partnerships between states and local bodies requires new legislation, policies, institutional linkages and processes. This is the challenge before India's conservationists. Certainly models from elsewhere cannot be adopted and applied unmodified to India, but we can nevertheless draw upon their experiences.

National Parks are meant to be havens of tranquility and peace. Unfortunately, they are often venues of conflict of interests, usually involving clashes between protection of wildlife and ecosystems on one hand, and local people's needs on the other hand. Given the difficulty, complexity and variety of conflict situations that occur in parks, there is no general approach that can guarantee a satisfactory outcome. The answer often is that each situation will require a specifically tailored approach that recognises and adjusts according to the cultural, legal and social context and to the particular dynamics of the conflict⁷⁴.

The designation of parks and reserves was very confused throughout the region where the general trend had been towards 'upgrading' game reserves to national parks.

Each reserve was then divided into a number of zones of permissible use, in terms of the policy document defining how each reserve and the zones into which it was divided was to be managed. These zones usually included:

- i) 'Special Conservation Areas' of limited size for scientific or conservation purposes where public and even staff access was strictly prescribed.
- ii) 'Wilderness areas', large areas where development and numbers of visitors were strictly limited, but visitors enjoyed the maximum freedom of action commensurate with preserving the quality of an area.

⁷⁴ Saloni, Suri (1996), "People's Involvement in Protected Areas: Experiences from Abroad and Lessons for India" in Kothari, Ashish et al. (eds.), *People and Protected Areas- Towards Participatory Conservation in India*, New Delhi: Sage Publications.

iii) 'Wild areas', often large areas in which public use was facilitated for a greater number of visitors, through the provision of paths and roads, but where visitors had less freedom of action.

iv) 'Development areas', of limited size for permanent buildings for staff and management facilities and visitor amenities ⁷⁵.

Private entrepreneurs interested in tourism industry must strive for sustainable wildlife tourism, because if it is not sustainable it may lead to collapse of the wildlife tourism business itself ⁷⁶. Considering the small size of Indian protected areas as well as the socio-economic and cultural aspects of local people, land use such as development of tourist complexes and facilities, outside protected areas must be strictly regulated. This is also necessary from the point of view of protecting the marginal land of local people, which may be seriously threatened due to unrestricted growth tourist facilities outside the boundaries of PAs.

Wildlife Conservation and Management in India

Wildlife conservation is frequently regarded as the antithesis to economic development, and to many preservation means denial of maximum exploitation of natural resources. Enlargement of our political and economical climate would also have a profound effect on the conservation of wildlife. In fact, conservation envisages not only protection of the existing populations of wildlife and their habitats, but also the breeding and farming of rare animals as well as the establishment of zoos, national parks and gardens⁷⁷.

Policy on wildlife management which could be described as a conflict between the preservationist and conservationist viewpoint. A practical preservationist's point of view is that in the long term wildlife will only have a place in protected areas, offering different forms of protection ranging from fencing to patrolling by armed rangers. The conservationist would say, wildlife is dependent on the attitude of the people living with

⁷⁵ Child, Graham (2004), "Growth of Modern Nature Conservation in Southern Africa", in Child, Brian (ed.), *Parks in transition: biodiversity, Rural Development and the Bottom Line*, IUCN, London: Earthscan Publishers.

⁷⁶ Kumar, Suhas (2002), "Wildlife Tourism in India: Need to Tread with Care", in Sharma, B.D. (ed.), *Indian Wildlife – Threats and Preservation*, New Delhi: Anmol Publications Pvt. Ltd.

⁷⁷ Sharma, B.D. (2002), "Wildlife Conservation and Management in India", in Sharma, B.D. (ed.), *Indian Wildlife – Threats and Preservation*, New Delhi: Anmol Publications Pvt. Ltd.

it. Protected areas are too small by themselves and need dispersal areas or buffer zones. In these areas one has to come to a form of land use management in which the way of life of people and their livestock becomes integrated with wildlife management. Wildlife in the dispersal areas has to become a natural resource of direct benefit to people, just like grass, trees and livestock. Once wildlife has become integrated into people's way of life, the protected areas will be well protected at minimal costs and the wildlife will have a habitat larger than the confines of the protected areas necessary for its long-term survival. Dispersal areas for wildlife can only work if there are financial attractions for the landholder and/or the entrepreneur in the tourist business to maintain and manage this special character of mixed land use⁷⁸.

Wild life is an integral part of the land and must share in the various forms or land utilization, but it must be recognised that many land uses take precedence over Wildlife management. Nevertheless, wild life can legitimately demand a place even in settled agricultural tracts. The situation which is found in America and even in South Africa, of land being developed and managed for the production of a wild life crop for commercial purposes, need not concern us for the present. At the most this aspect of the question poses itself only in our managed areas, i.e. the Government reserved and protected forests. In India, the main impact of wild life is on the cultivated areas and on the grazing lands, particularly the former and it is here that the contradictions that exist must be resolved⁷⁹.

The majority of India's people live in villages and small towns within easy reach of the countryside and to them the gradual, almost unnoticed, passing away of something which is the very warp and woof of India's culture will be an irremediable loss, both aesthetically and culturally as well as from more material angles involving the well-being of crops and animals.

Wildlife (Protection) Act, 1972: Impetus to National Parks

However, the Act of 1972 gave a great impetus to the further growth and development of national parks in the country. In 1970, before the passing of the Wildlife

⁷⁸ Kumar, Suhas (2002), "Wildlife Tourism in India: Need to Tread with Care", in Sharma, B.D. (ed.), *Indian Wildlife – Threats and Preservation*, New Delhi: Anmol Publications Pvt. Ltd.

⁷⁹ Stracey, P. D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture, Dept of Agriculture, Faridabad: Government of India Press.

(Protection) Act, India had 10 national parks and 127 sanctuaries comprising 25,000 sq. km. of area. By the end of 1980, the number of national parks and sanctuaries increased 23 to 221, covering 2.3 per cent of the total geographical area. In 1984, their number further increased 24 to 229 including 19 national parks. In 1989, the number of national parks swelled 25 to 24 and of wildlife sanctuaries to 372, covering in all 11 million hectares or 3.3 per cent of total geographical area. In 1991, the protected network comprised 26; 70 national parks and 412 sanctuaries, covering 4.5 per cent of total geographical area. It is proposed²⁷ to be increased in number so as to cover 4.6 per cent of country's land area. Despite all shortcomings and mismanagement of wildlife heritage, India's national parks and sanctuaries justly deserve a place in the world's national park system.

It is said that India had a large population of about 40,000 tigers at the turn of the century. However, the 1972 tiger census conducted on all-India basis for the first time, revealed a noose dive in the tiger population, which dropped to 1,872 tigers only. The tenth general assembly of the International Union for Conservation of Nature and Natural Resources (ICUN) also met in New Delhi in 1969 and urged upon the Government of India to provide full legal and administrative protection to tiger. Consequently, an administrative moratorium on shooting of all wild animals and birds was imposed for a period of three years in addition to an indefinite ban on shooting of endangered species including the tiger. Thereafter, soon followed the enactment of the Wildlife (Protection) Act, 1972, which finally put the tiger in the list of protected species and made its hunting and killing a cognizable offence⁸⁰.

Management of National Parks

The first essential for sanctuaries and parks is the preservation of the environment, for its destruction means disappearance of the wild life within it. Whether this can be ensured even when exploitation of the forest itself is going on is a moot question. There are exponents of the view that there should be no exploitation in a sanctuary whatever and certainly the most successful from the public's point of view, sanctuaries in India are those where there is no forest exploitation. Under existing circumstances, however, there seems no alternative but to accept the position in regard to exploitation where it exists but there should be no introduction of this disturbing factor in sanctuaries where it does not exist at present.

The next principle in the constitution and management of sanctuaries and national

⁸⁰ Dhyani, S. N. (1994), *Wildlife Management*, Jaipur and New Delhi: Rawat Publications.

parks is that they should be made accessible to the public, who should be given every facility to enjoy the experience of seeing wildlife at close quarters and completely free from fear of men. Such facilities will include rest houses, fully equipped with all that is required for persons visiting the areas, roads and paths for entering the areas and means of viewing the animals, such as motor vehicles, elephants, look-out towers and hides. All these are necessary to encourage tourism and to foster the interest of the public in wild life and its preservation.

Protection of the borders and surrounds of sanctuaries and national parks is an important requirement, both in the interests of game which strays outside and of the non-disturbance of the wild life within the areas." On the latter, *i.e.*, the degree of non-disturbance depends the possibility of viewing wild life properly and for this the creation of buffer-belts against cultivation, grazing and shooting and hunting of all kinds, is necessary⁸¹.

It is difficult to pinpoint the commencement of public use of parks in southern Africa, as it was an insidious process in a land where, historically, there has been a strong tradition of outdoor recreation. Tracing the appearance and growth of nature based tourism and the use of parks for this purpose should reward research and would benefit from careful documentation. Facilities grew up around this use, which later came to be regulated to preserve the quality of the experience it was providing for more and more people. The pattern in game reserves in remote wilderness was a bit different because of their remoteness and because from the outset access was regulated. It was not until after World War II that tourism to national parks and similar reserves developed rapidly.

Four caveat for sensitive management of wildlife tourism:

1. It needs to be sensitive to the scale and type of tourism, and the effects upon local cultures.
2. Income from tourism needs to filter down to the local people whose lands and interests are affected.
3. Where tourism occurs in protected areas, the goals of P A management must be furthered by the economic gains of tourism.

⁸¹ Stracey, P. D. (1964), *Wildlife in India: Its Conservation and Control*, Ministry of food and Agriculture, Dept of Agriculture, Faridabad: Government of India Press.

4. In developing countries, wildlife tourism should be accessible to visitors from a wide range of economic status and not restricted to the rich or foreign.

There may be other reasons why a policy of limited development will be difficult to maintain:

Local employment

Limited development is likely to provide limited employment opportunities for locals. Local support for conservation could decline as a result.

Local economy

In remote regions it is commonly the case that local suppliers cannot dependably provide the quality goods and services which wealthier tourists expect. Under these circumstances, materials and provisions will be bought from the nearest urban centre and only a tiny proportion of tourism revenue is likely to reach the local economy. Alternatively where a determined effort is made to 'buy local' the result can be inflated prices or commodity shortages for the local residents.

Local perceptions

Although the support of local residents is particularly important for protected areas, the interest and support of the wider public also needs to be fostered. In many developing countries, PA admission charges for nationals are often a fraction of those, which foreigners have to pay; otherwise few nationals would be able to afford to visit⁸².

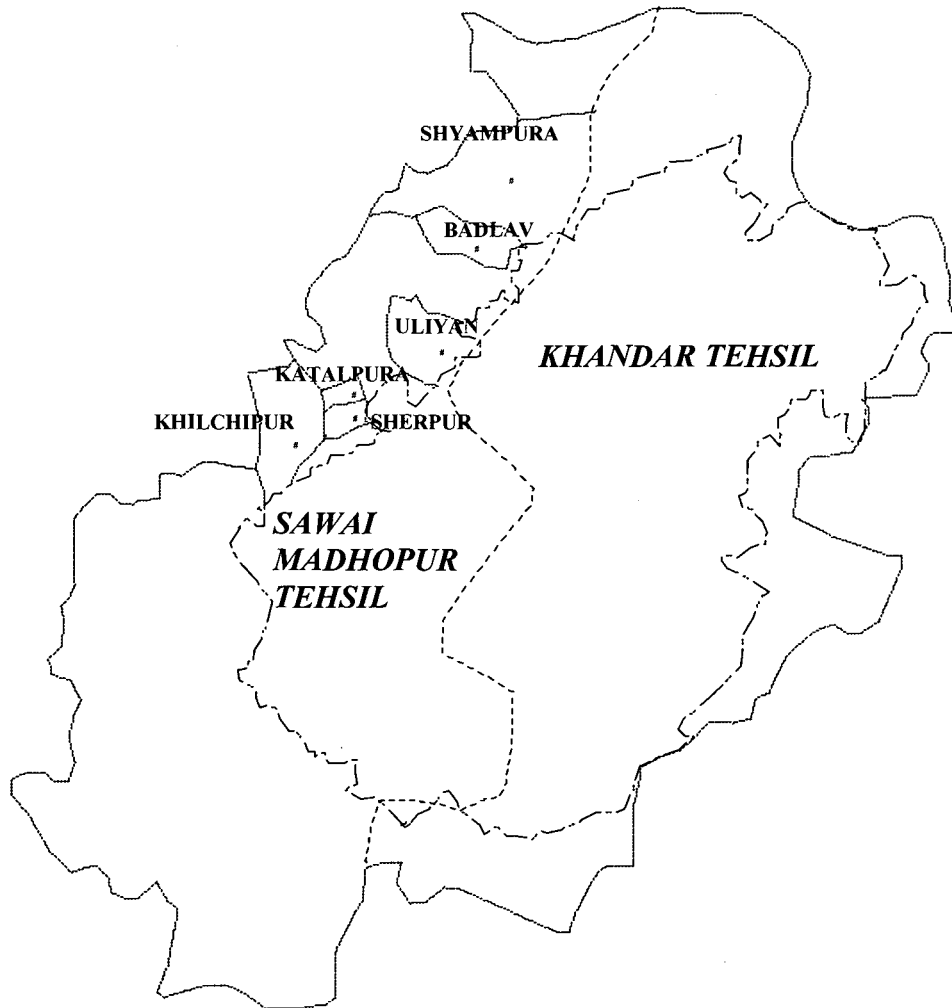
Tourism: Its Impact on Wildlife


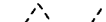


Till 1970, no serious attempt was made to exploit tourism potentialities in national parks and sanctuaries. But the enactment of Wildlife (Protection) Act, 1972 was significant step in the encouragement of tourism. Before this law wildlife tourism was disorganised and haphazard. The tourists were not enthusiastic to visit the forest knowing that poachers and other elements might have wiped out or driven away the wild animals. After enforcement of the new measures; a little improvement in situation of infrastructures through financial aid by central government the tourism began to develop. They were not only encouraged for seeing wild animals and natural flora, wildlife tourism has made people more conscious of nature conservation. Though it has also been alleged that tourism has led to the degradation of fauna of sanctuaries and parks, but guided wildlife tourism can never lead to degradation of wildlife sanctuaries and parks.

⁸² Bolton, M. (1997), "Loving them and Leaving them: Wildlife and Ecotourism", in Bolton, M. (ed.), *Conservation and Use of Wildlife Resources*, Chapman and Hall, Cambridge: Cambridge University Press.

Map II.3

RANTHAMBHORE NATIONAL PARK AND NEAR BY VILLAGES



-  SURVEYED VILLAGES
-  TEHSIL BOUNDARY
-  SANCTURY BOUNDARY
-  VILLAGE BOUNDARY

Note: Map Not to Scale

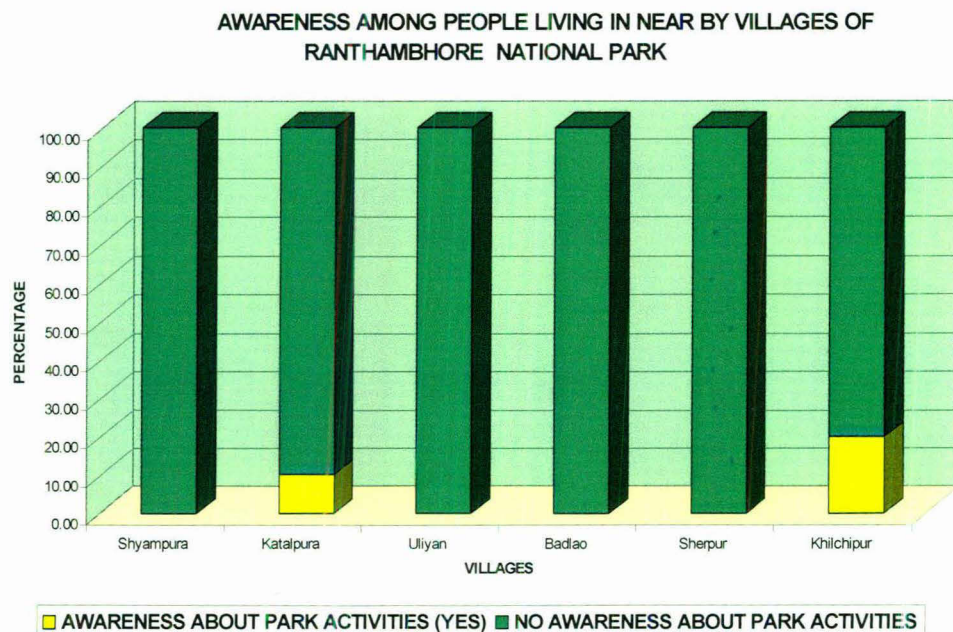
Based on Sharma, H. S. (2000), *Ranthambhore Sanctuary: Dilemma of Eco-development*, New Delhi: Concept Publishing Company

However, the wildlife tourism could not grow substantially in India. In the case of some of the national parks, like Corbett, Kanha, Sariska, Periyar and Palamu the number of visitors have been increased. Our wildlife tourism constitutes hardly 5 to 10 per cent foreign tourists. Reasons behind this may be lack of infrastructure like all season roads-hotel accommodations-vehicles and lack of properly trained guides. Public consciousness and enthusiasm about wildlife are not grown to the levels, which can boost wildlife tourism and revenue⁸³.

Primary survey around Ranthambhore National Park

To find out a better picture of area around Ranthambhore, a primary survey has been done in the month of April 2006. The numbers of respondent in this survey were 254. On the basis on these primary data, a simple methodology has been used to find out the final in the form of diagrams and tables. The appendices has attached at the end of the thesis. Six villages which are situated along the boundary of park has been surveyed i.e. Shyampura, Khilchipur, Uliyan, Badlao, Sherpur and Katalpura.

Fig. IV.1

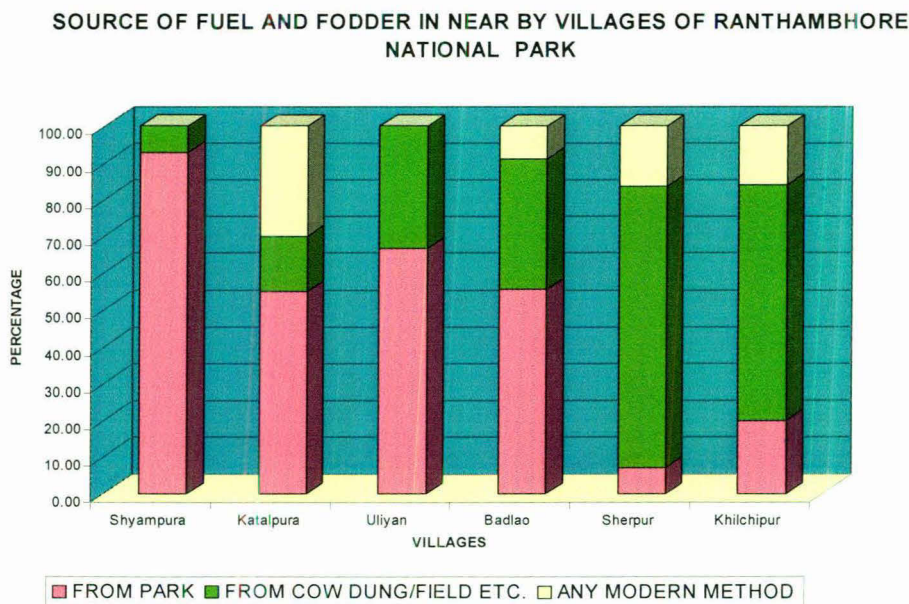


Based on Primary survey

⁸³ Hosetti, B.B. (1997), *Concept in wildlife Management*, Delhi: Daya Publishing House.

Most of the villages around the park are unaware about the parks activities. Specially those which are near to the park around the radius of 3 to 4 km are aware. Sherpur and Khilchipur are the two villages, which are very near to the park entrance gate that is why people of these villages are bit conscious about the policies and management of the park. It's hard to distinguish the boundary of Khilchipur and Sherpur; both have a population of about 16,000 people. After Khilchipur, Katalpura is the village near to the park gate, which comes after Khilchipur as far as the awareness, is concerned. As one goes away from the park, gate the involvement and the awareness of park activities decline.

Fig. IV.2

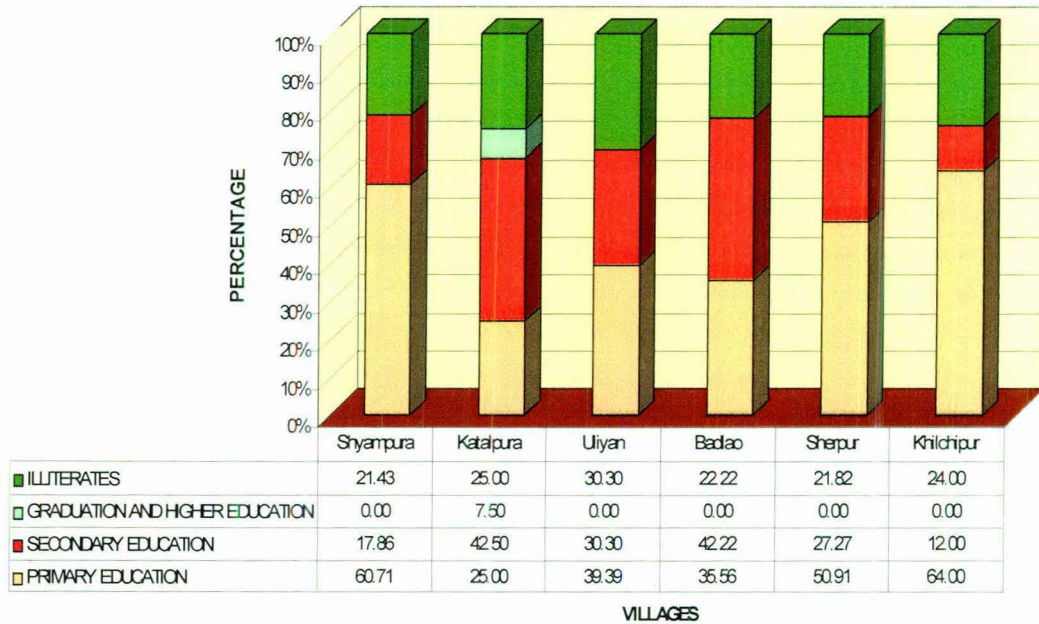


Based on Primary Survey

People still depend on the parks for their fuels. Villages far from the park gate and also where the park boundary is absent, people get fodder and fuel from inside the park. Sherpur near to the park have less dependency on the park due to boundary of the park, on the other hand Shyampura, which is far away from the park gate, has much more dependency on park for fodder and fuel.

Fig. IV.3

STANDARD OF EDUCATION IN NEAR BY VILLAGES OF RANTHAMBORE NATIONAL PARK



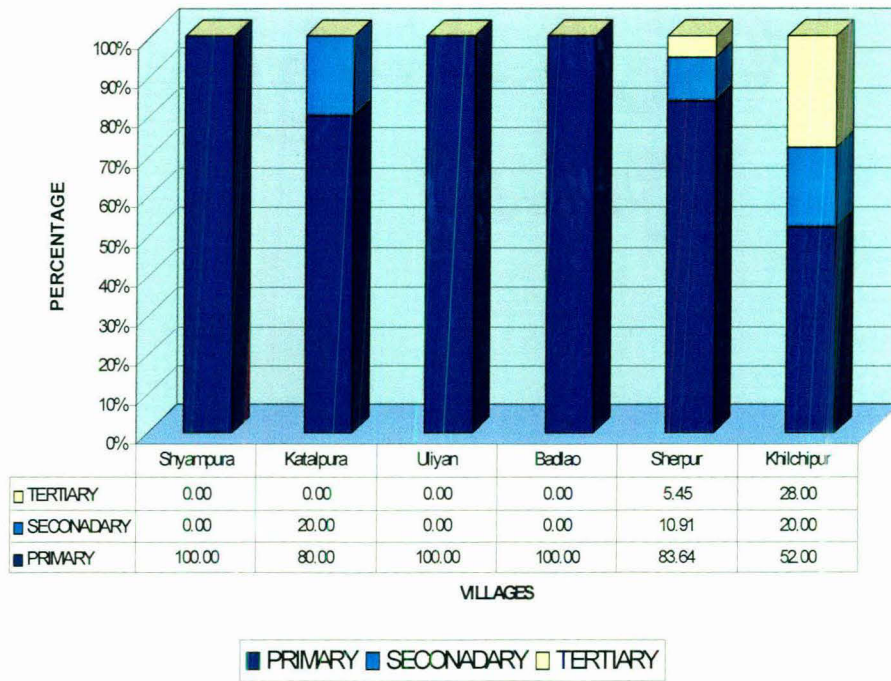
PRIMARY EDUCATION SECONDARY EDUCATION GRADUATION AND HIGHER EDUCATION ILLITERATES

Based on Primary Survey

If we look at the over all picture of the education around villages of the RNP, we found that the level of literacy is very low. Most of the people have studied upto primary level. The awareness about the parks activities comes through the education. But the people of these villages either have primary level education or illiterate. Till 2003, there was only one school upto metric level but after that it became a secondary level school in Shepur. This is the only village where children from other villages come to get education. In Katalpura, where the level of education is bit high as compared to the other villages, other wise most of the villages are in a very pathetic condition of education.

Fig. IV.4

ECONOMIC ACTIVITIES OF PEOPLE IN NEAR BY VILLAGES OF RANTHAMBHORE NATIONAL PARK

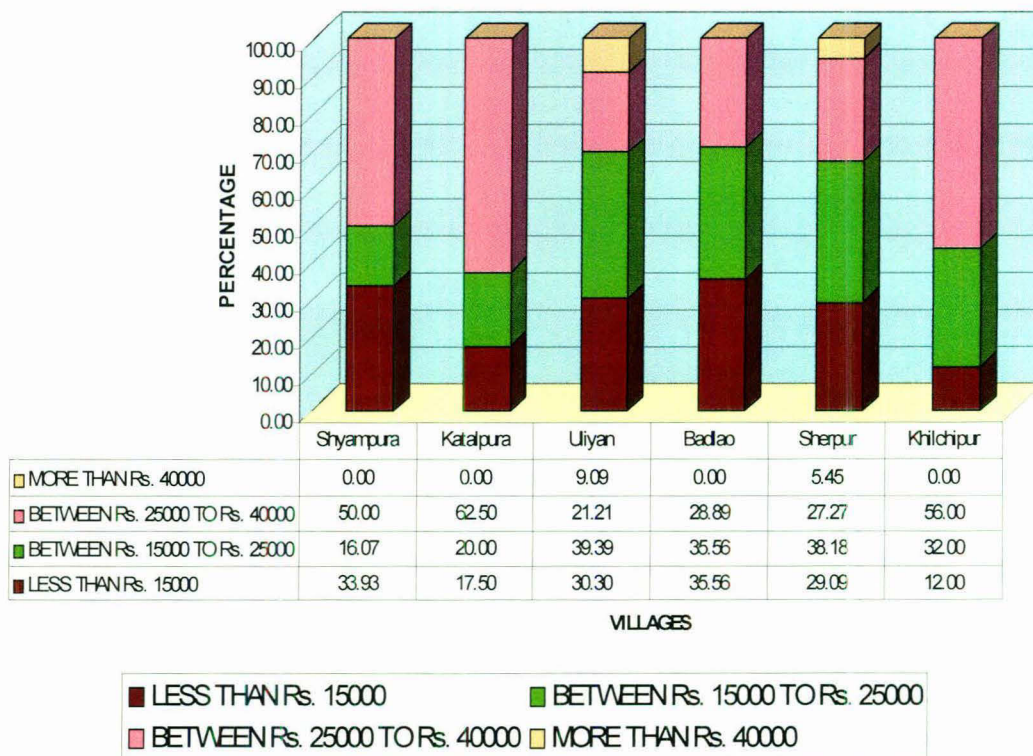


Based on Primary Survey

Sherpur and Khilchipur are the only two villages where people are engaged in all the three activities of occupation. Next come the Katalpura where people are engaged in primary and secondary activities. Rest of the surveyed villages have primary activities. As we move away from the main gate of the park the involvement of people in other activities reduced drastically. Most of the people are engaged in agricultural and livestock activities; these two are the main source of their livelihood. There is no involvement of the villagers in any kind of the activities around the park whether its hotel, motel and some handicraft work. The main source of their livelihood is livestock. Some women are also involved in handicraft work but that is not meant for the tourist point of view. It goes to the main city like Jaipur.

Fig. IV.5

ANNUAL INCOME OF THE FAMILY IN THE NEAR BY VILLAGES OF THE RANTHAMBHORE NATIONAL PARK

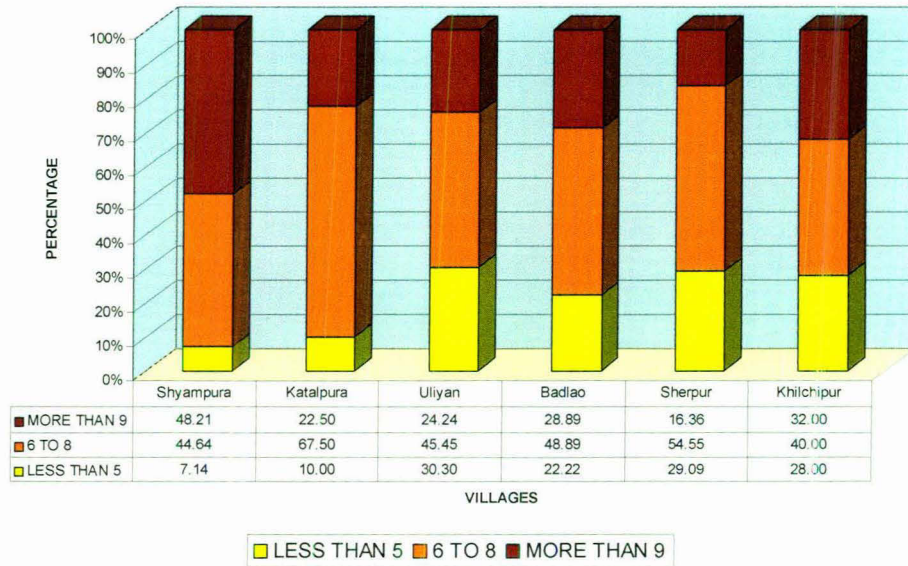


Based on Primary Survey

People are living in a very pathetic situation. Most of the villagers have a low level of income. Since they don't have any other source of income except agriculture and livestock. Very few people live in the villages specially the older one and females. Young people are willing to stay in cities for earning. Lacks of industrial sector are responsible for that not only in the park area but also in Sawai Madhopur district as a whole.

Fig. IV.6

FAMILY SIZE IN THE NEAR BY VILLAGES OF RANTHAMBHORE NATIONAL PARK

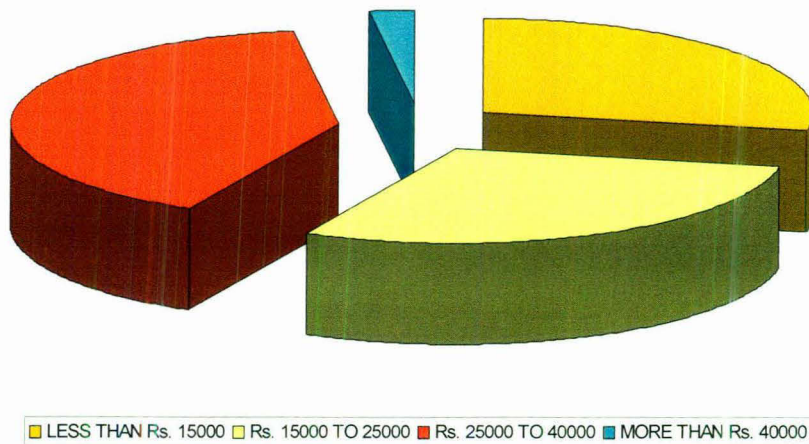


Based on Primary Survey

Due to migration of the young labour force to the cities, family size is small in these villages. Most of the families come under the 6 to 8 group categories. Katalpura, Sherpur and Badlao come under this category, which shows the maximum concentration.

Fig. IV.7

ANNUAL INCOME OF THE FAMILY IN NEAR BY VILLAGES OF RANTHAMBHORE NATIONAL PARK

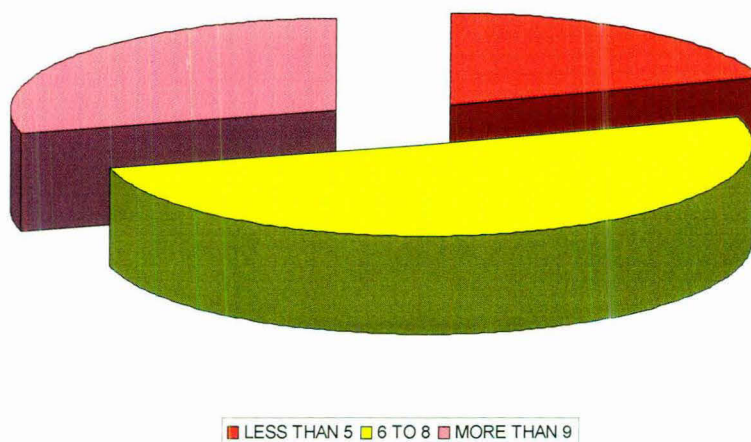


Based on Primary Survey

As the pie diagram shows, the level of income is very low around the park area. Their dependency on monsoon for the agriculture, failure of crops, damages caused by the wild animals and losses of livestock by wild attack are the main causes for the low-income generation.

Fig. IV.8

FAMILY SIZE IN NEAR BY VILLAGES OF RANTHAMBHORE NATIONAL PARK

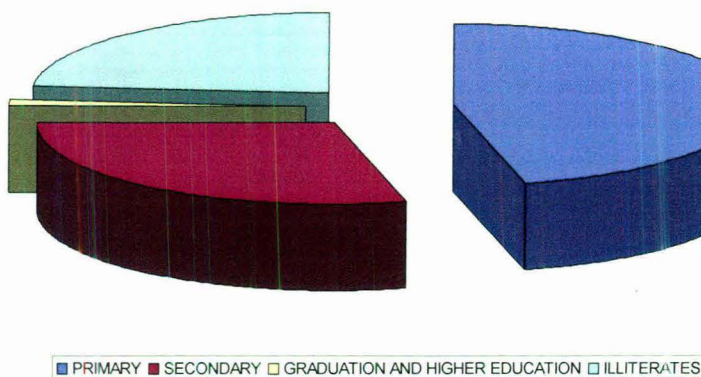


Based on Primary Survey

The over all family size of the surveyed villages comes under the second category i.e. 6 to 8. Again the economic criteria are responsible to keep the family size in small number.

Fig. IV.9

EDUCATIONAL STANDARD OF EDUCATION IN NEAR BY VILLAGES OF RANTHAMBHORE NATIONAL PARK

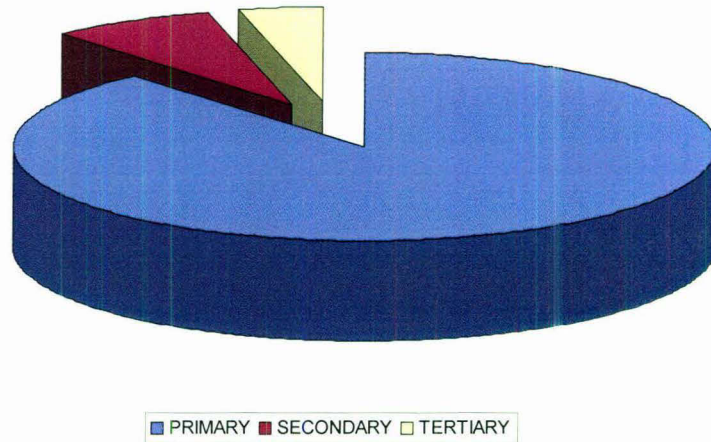


Based on Primary Survey

Most of the villagers come under the primary education category. There is only one higher secondary school in Sherpur. Till 2003 it was up to secondary level. Student from the near villages come to this school for their study. Lack of education is also responsible for their underdevelopment.

Fig. IV.10

ECONOMIC ACTIVITIES IN NEAR BY VILLAGES OF RANTHAMBHORE NATIONAL PARK

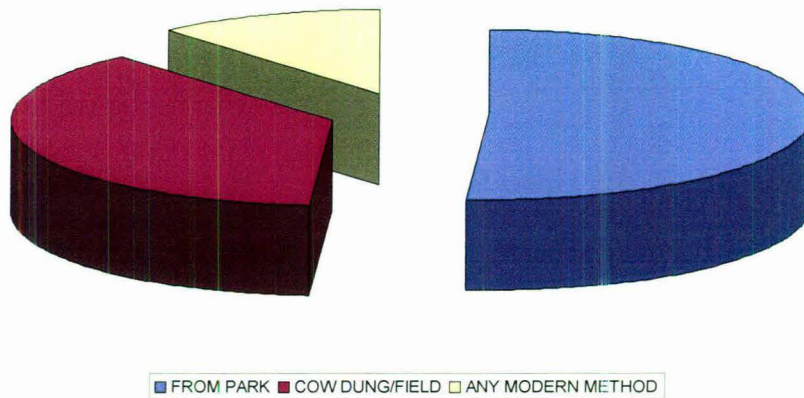


Based on Primary Survey

People are engaged in primary activities, as there is no option for them. Low level of education keeps them away from any skillful job.

Fig. IV.11

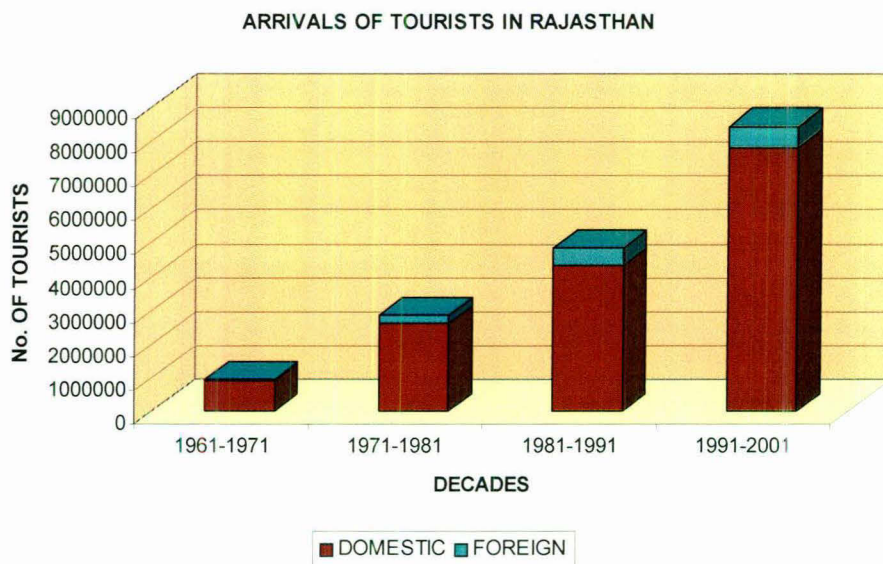
SOURCES OF FUEL AND FODDER IN NEAR BY VILLAGES OF RANTHAMBHORE NATIONAL PARK



Based on Primary Survey

As far the fuel and fodder is concerned villagers are still dependent on the parks. Where the boundary is available they have a less chance to get fodder but in those villages where the boundary does not exist, people used to go to inside the park for the fodder as well as for livestock grazing.

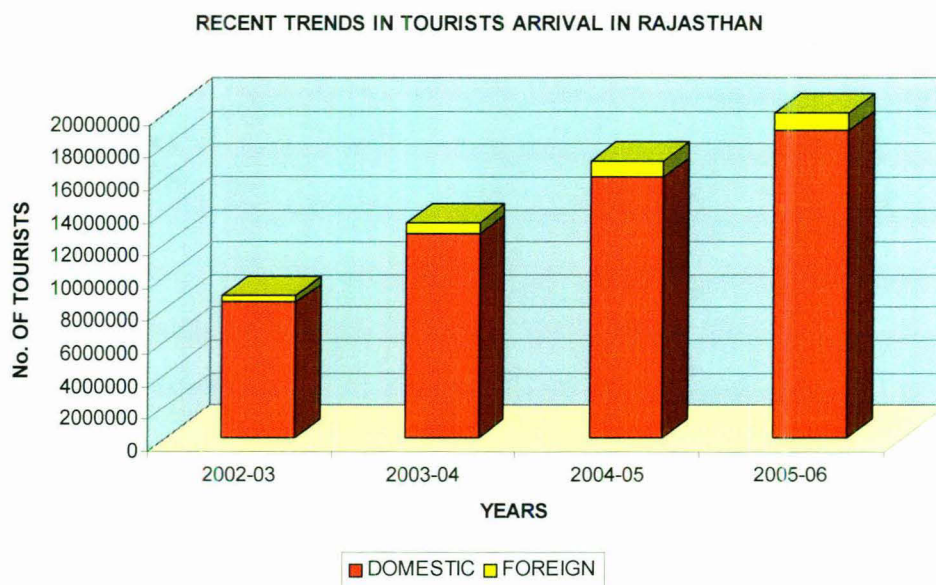
Fig. IV.12



Based on Primary Survey

There is a constant increase in tourist arrivals in Rajasthan. Domestic as well as foreign tourist increase in each decade. This is what the trend shown by this diagram.

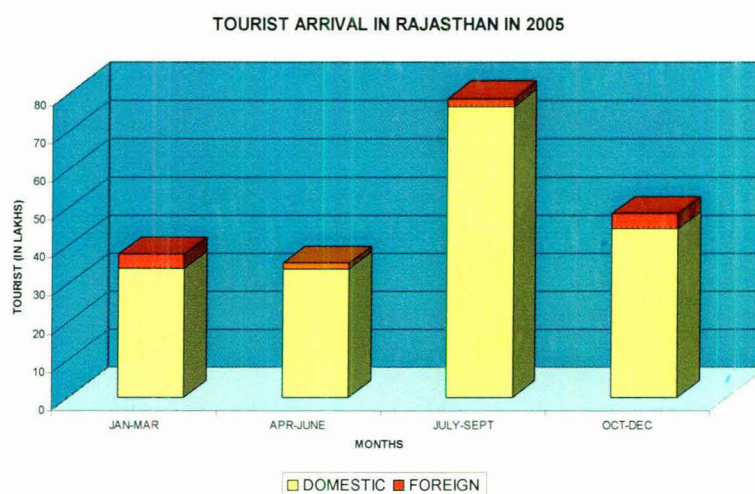
Fig. IV.13



Based on Primary Survey

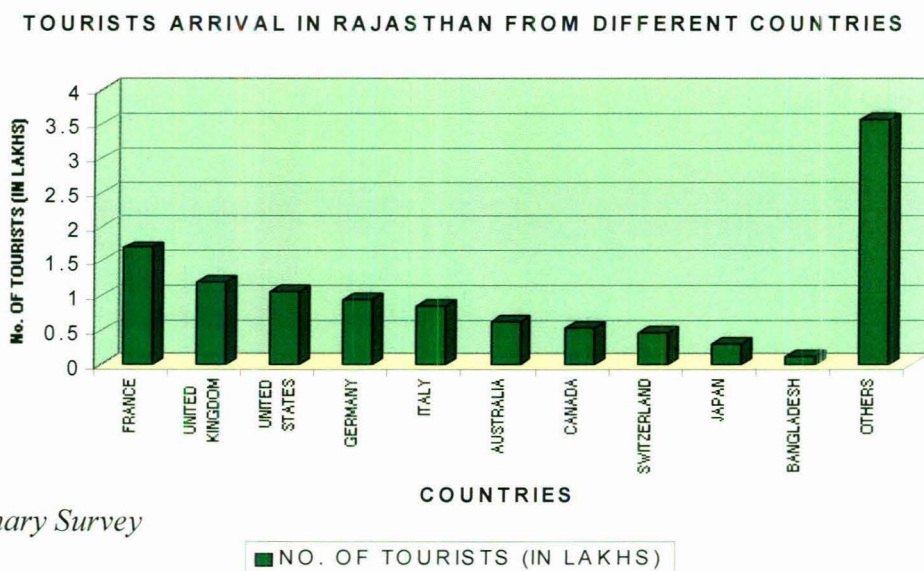
If one look at the graph, there is a continuous increase in tourist arrival by each year. The diagram below shows the arrival of tourist in the year of 2005. Especially in the month of July and September, this is due to the vacation time in India, as far as foreigners are concerned they prefer to come in the winter. Bulk of these foreigners comes from France and United Kingdom. This is the best time for them to visit India.

Fig. IV.14



Based on Primary Survey

Fig. IV.15

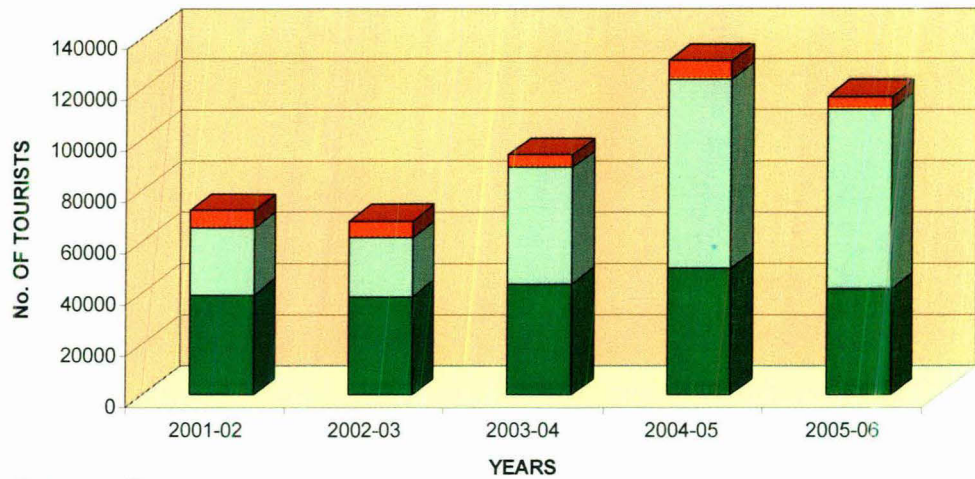


Based on Primary Survey

These two diagrams show the overall situation of tourist in Rajasthan and Ranthambhore National Park. The domestic tourist arrival is more or less constant but there is a fluctuation in foreign tourist arrival. There is a reduction in the arrival of tourist in 2002-03 this is due to the WTC attack but after that there is a constant increase in the tourist arrival.

Fig. IV.16

RECENT TRENDS OF TOURISTS ARRIVAL IN RANTHAMBHORE NATIONAL PARK

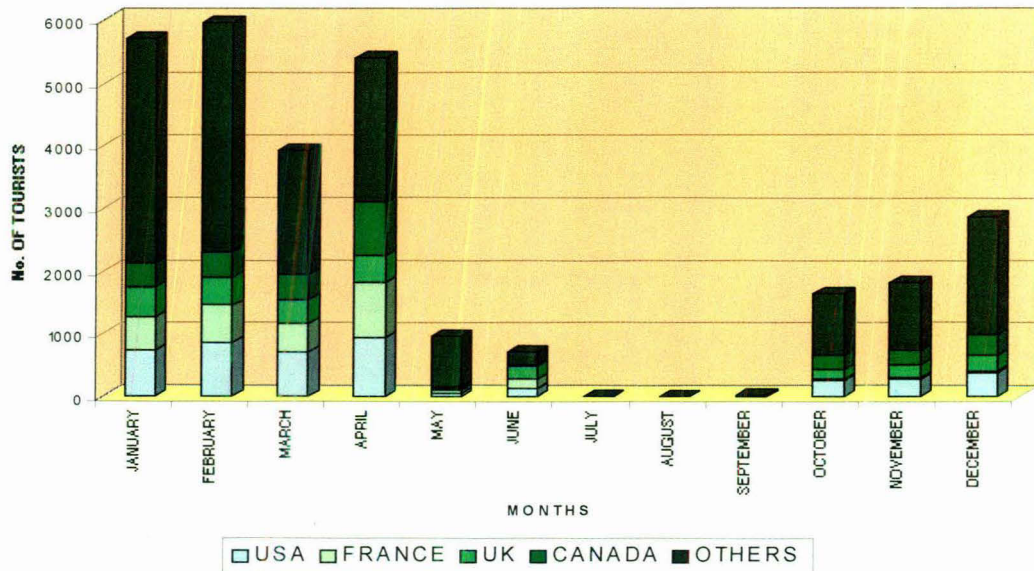


Based on Primary Survey



Fig. IV.17

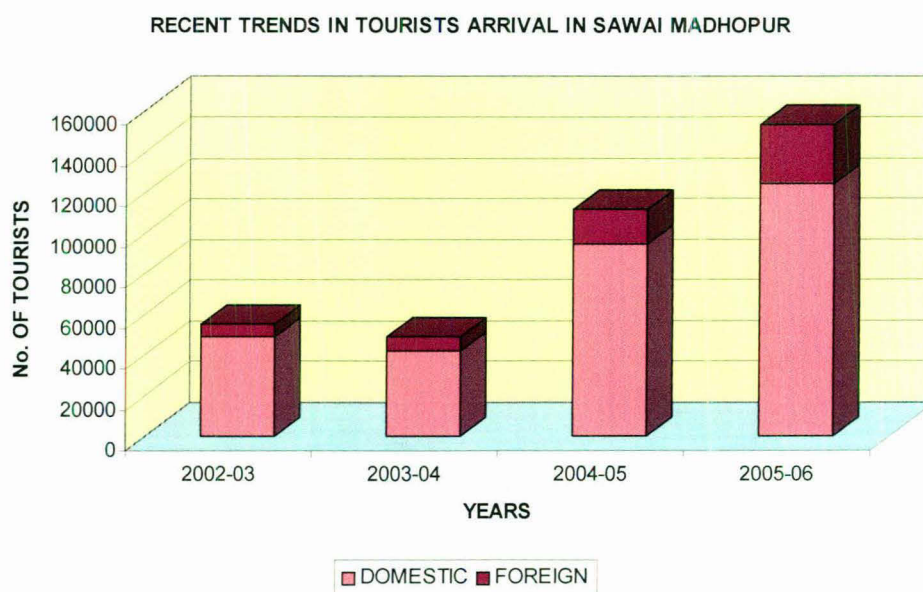
ARRIVAL OF TOURISTS FROM DIFFERENT COUNTRIES IN RANTHAMBHORE NATIONAL PARK IN 2005



Based on Primary Survey

Foreign tourist generally arrive in RNP during the winter period. Most of them belong to the USA, France, UK, and Canada. Their duration of stay is also long. Most of them prefer to stay until they saw the tiger. Due to the proximity of Delhi, most of the foreign tourists visit the park, if not possible to stay long, they stay a day and then move to other places of Rajasthan.

Fig. IV.18



Based on Primary Survey

The increase in domestic and foreign tourist can be seen through this diagram. There is a constant increase in tourist except in the domestic one in the year 2003-04. On the other hand the foreign tourist show the constant rise in the graph.

As far as Kruger is concerned, the South African government and NGO's are working there for the development of the local people. Makuleke is a very good example, who not only got the land claims but also involved in the park activities like operating lodge within park in a partnership with Local community and Private sector. In Ranthambhore, the villages are still inside the parks (Kathuli, Paadla, Indala and Moordungri) though the officials denied the presence of any such villages. Local people involvement is almost nil in the park activities. Lack of education and awareness of park policies keep them away from these activities.

The basic problems like lack of water, wood and food and killing of cattle by wild animals are much more in existence in RNP as compare to KNP. Though some NGO's are working there in Ranthambhore for the local development but the pace is very slow. Fateh Public School and Ranthambhore Sewika (hospital) has earlier been open with the aim to provide education to local's but only few can go there to get education due to high charges of fees. Local peoples willing to go to Government hospital instead of Ranthambhore Sewika because of excessive charges.

Eco development Committee (EDC) that was formed in 1993 is doing good enough for the locals by providing them Gas stoves, clothes and cattle too. They also provide short terms loan to them. The NGO's which were open in the beginning with the aim for the development of the local people now making money for themselves. The state government is not taking any step for the development of this area. The policies are there but only on the papers. A lot of money came in the form of aid and donations from the development of this park and locals but goes in vain.

The lack of permanent parks boundary in Ranthambhore is still prevalent for the killing of cattle by the wild animals and destroying the fields by the herbivorous animals. Such type of problem too exists in Kruger but not in same intensity as in Ranthambhore. These both parks are like the two different poles. There is a need for lot of efforts and planning to make Ranthambhore a world-renowned national park.

Chapter V

Conclusion

The establishment of parks and reserves has proved a key means of protecting genetic diversity, and of protecting species from extinction. It is in this area of species extinction that the issue of moral principle is particularly relevant. The involvement of human beings in evolution has brought many species to extinction.

As far as Kruger is concerned, it is generally accepted in Africa that research in national parks is essential for their conservation and management. But at present, not every country can afford to equip its national parks with full-time scientists and laboratories like Kruger. In the field of ecological research in African national parks, South Africa comes after Tanzania and Kenya. For developing countries, like India that must utilize their natural resources in a manner, which contributes to the national revenue, tourism is obviously of great importance for government appreciation of the vital role national parks play in the national economy. Of course, income from tourism is far from being the only asset a national park represents. In Africa, the economic potential of national parks and nature reserves, based upon tourism and recreational revenue, is often much greater than to India.

The upkeep of protected areas does, however, represent a substantial outlay, especially for developing countries. To recoup these costs many countries promote tourism in National Parks. Such a move not only recognizes the desire of people everywhere to seek solitude and contact with nature, but also offers them a chance to be acquainted with the natural heritage which they will hand on to future generations.

The national parks and nature reserves of the world have been instrumental in the evolution toward an ecological understanding of the environment. They have had a much greater impact on human thought than has hitherto been recognized. This emphasizes the value of national parks as reference areas. In the development of environmental understanding, the nature reserves of Africa have played an important role, specially the Kruger National Park, due to their ecological complexity and diversity of species. These reserves show clearly the inter-relation between organisms and habitats within an ecosystem.

Tourism activity in a National Park or any other protected area can serve as a self-financing mechanism and hence as a tool of conservation. This will only be possible

however, if the level, type and management of tourism are appropriate and, in particular, the "carrying capacity" of the area is respected.

To create for the needs of visitors, infrastructure in the form of roads, bridges, camps, picnic sites, sewerage works, refuse dumps and a variety of other facilities need to be provided. Over a period of many decades, successive generations of managers and Park caretakers have debated the extent and limits to which the Kruger National Park should be made available to visitors, without detracting from the essential qualities, which make the Park so appealing.

Interest in nature, wildlife and the environment as part of the tourism experience is growing rapidly. Travelling to a 'natural' site because of the amenity and recreational value derived from contact with the natural world will increasingly form a part, if not the primary focus, of many tourism products in future. However, very much of the growth, even in well planned Ecotourism products, is far from sustainable, because 'open access' to so called 'renewable' natural sites can lead to both economic and environmental inefficiency.

'Private' parks tend to be more financially independent, creating the need for self sufficiency from the start, coupled with higher entrance fees. Like Kruger where one has to pay 400 Rands for the park entrance fee as compared to the Ranthambhore's 210 Rupees for the entrance fee.

It is evident from talking to the people from the villages surrounding the park (RNP) that not only do they feel largely excluded from the park's benefits but they are actually prejudiced by its existence. Many communities surrounding the park not as a romantic wilderness, but as a region where wild animals emerge to trample and destroy the few crops they have managed to grow. Protected areas have allowed wildlife populations to expand to a level where, in order to survive, animals must raid the fields of farmers on the edges of the park.

Involving local communities in the project, both in terms of wildlife conservation and of receiving direct benefits from tourism revenues, should avoid many of the conflicts which have been seen when they feel largely excluded, Tourism can encourage development of better basic services such as water, sewage and electricity, not just for the tourists but also for the local community. Creation of jobs, both directly in the delivery of

the tourism 'product' and indirectly in related 'service' industries - agriculture, fisheries, crafts etc. will aid economic development generally within the community, General improvement of the local environment by extending the principles of effective environmental management beyond the tourism industry, will provide better living conditions for local communities, This can be financed partly through the cost savings which such management procedures generate and partly through increased revenues derived from the greater economic activity.

Effective policies for wildlife sites which include a combination of establishing appropriate ownership, targeting of realistic regulations and application of creative economic instruments, would be expected to generate sufficient funds to conserve the natural resources on which future sustainable tourism will depend and in the long term, ensure an improvement in local living standards.

The interactions between national parks and neighbouring communities through Management Plan Committee and the five community forums adjacent to the Kruger National Park. These forums incorporate as many role players as possible, including tribal authorities, youth leaders, and educationalists, other conservation bodies village development committees, NGOs, and government departments. They deal with issues such as water problems, problems of marauding livestock, employment, and other economic opportunities. In all, ten national parks now have community forum operating in adjacent communities.

The alienation of people and wildlife continue. Local communities must participate in the management of wildlife resources; any benefits accrued from good management must be equitably shared with the communities. Moreover, because population in most African countries has increased more than since the precolonial days, no other approach to conservation is realistic.

In South Africa today, local communities are involved in wildlife tourism in a wide variety of ways. These range from entitlement to empowerment models and from passive to more active engagement. They include rent or bed night payments made by the ecolodge or private reserve to the local communities; employment; training and education programs; co-management or co-ownership arrangements between communities and private companies; provision of social services (schools, clinics, wells) and infrastructure

(roads, electricity, pumped water); and the purchase of local produce, charcoal and handicrafts.

In light of the growing importance of tourism within the global economy, it is evident that tourism-led initiatives for Local Economic Development (LED) are of growing importance in both developed and developing countries. Related activities and small industries such as agriculture and handicraft, should also be encouraged to adopt environmentally sound strategies such that they too practice adequate protection of natural resources and at the same time provide local raw materials for servicing the increased tourist trade.

Normally there is more conflict between wildlife and farm and crop production than between wildlife and forestry or livestock production because wildlife tend to consume and damage the crops. Thus, herbivorous wildlife is almost universally considered to be undesirable by those people engaged in farming, and the implementation of control measures to reduce the threat by wildlife is just as important as measures to increase wildlife. Avoiding crop production in close proximity to wildlife ranges and cover is one possible way of decreasing conflict, but it is not infallible.

The commitment, dedication and the sacrifices the locals made to build this world-renowned park, can be applauded by citizens of South Africa and indeed the world. The efforts and sacrifices of all the people who created this magnificent park, not least the historically deprived black communities. There are many challenges to face, above all building a broader constituency for conservation among all South Africans, not just the affluent. This goal must be balanced with immediate needs and aspirations of neighboring communities.

As Kruger moves into a new era and seeks reintegration into the broader socio-economic, ecological, and political landscape, one of the biggest challenges it faces, like many African parks, is the social issue. Among other factors, the persistent influences of politics, economics, and conservation ethics in the last 100 years have acted in concert to produce a heterogeneous and dynamic lowveld landscape. Across the fence, the disparities in access to and responsibilities for land and water, coupled with the alienation of lowveld communities from Kruger and its conservation philosophies, are stark. At the same time, South Africa boasts a network of national parks and tourism is generating

important revenue, yet biodiversity is at risk. This makes the integration of Kruger and the areas beyond the fence all the more compelling.

In Africa unlike India, most of the population are meat eaters and game animals are hunted vigorously, they are being a vastly greater number and variety of the latter than in India. Subsistence is, moreover, not so heavily dependent on agriculture as in India, the meat of domestic animals forming a substantial part of the diet of the people. Agriculture is, however, not more than marginal in both cases in Africa because large tracts are often too dry for cereal cultivation and more suited to the rearing of livestock, in India because of the greater pressure on the land, the generally impoverished soil and the antiquated agricultural techniques.

Governments must make more efforts to improve the quality of their national parks. As tourism increases, they must establish strict and enforceable policies as a defense against outside pressures. It is very important to increase the general "infatuation" for national parks. Tourists are apt to seek in national parks unfavorable types of recreation which, perhaps, they could find elsewhere, and do not have a special interest for unspoiled nature and the possibilities to observe priceless species of rare scenes.

It is mandatory that national parks have efficient information and interpretation service centers for visitors. A full range of information material should be maintained at RNP.

It is also recommended that, however desirable, it is probably not financially or practically feasible to remove any of the currently existing village from the core areas of the RNP and relocate them to the periphery of the Park. A policy of Peripheral Development should nevertheless be followed for any projected new future village, and areas for such development are suggested in an accompanying map.

Conserving the variety and value of wildlife in the context of comprehensive environmental management at tourist destinations, will provide a resource for well-managed, 'sustainable' tourism development. This in turn will generate employment in an industry, which can be regarded as a viable alternative to other activities, which endanger or deplete natural resources.

Clearly the values embodied in developing the new respect for cultural heritage

are not shared across the institution, and will need to be inscribed much more deeply in the consciousness of all parks officials. The success of wildlife management activities, particularly wildlife utilisation programmes depend to a large extent on the programming of harvest. There are many options open regarding the harvest of wildlife, but there are also many limitations, among which the most prominent are legal, market demand, and seasonal and annual productivity. Wildlife is a renewable natural resource; however, for it to be renewable its management.

Diversification of wildlife-based tourism away from national parks onto other private or communal lands, like countries in Southern Africa have been doing, seems to be another possibility for maximising ecologically acceptable economic returns from wildlife tourism.

The international community has an important role to play in this agenda as well, particularly in terms of technical and financial assistance. Protected areas today are islands within the major ecosystems, which are seriously impaired. Most animals lack adequate forage during certain times of the year. To resolve these problems, science will have to play an increasingly large role in wildlife management. Africa will continue to need to import equipment and technical knowledge from the developed world.

It might be assumed that management of national parks with the intent of preserving natural conditions would necessarily require scientific knowledge adequate to understand populations and distributions of native species and their relation to their environment, and that without such information the parks' natural history is fraught with too many questions, too many unknowns.

The National Park Service would inherit a system of parks operated under policies already in place and designed to enhance public enjoyment. The commitment to accommodating the public through resort-style development would mean increasing involvement with the tourism industry, a persistently influential force in national park affairs as the twentieth century progressed. Management of the parks in the decades before the advent of the National Park Service had created a momentum that the fledgling bureau would not-and could not-withstand. In fact, carrying capacity of a protected area also depends on the management of tourism in the Parks. Poor management may drastically reduce the facility and social carrying capacity of the area and lead to serious

adverse impact on habitat thereby reducing the quality of visitor experience and the physical carrying capacity.

All decision for promoting tourism in a protected area should be taken after assessing the potential and possible ecological impacts of tourism in the area. Protected area manager, representative of the department of tourism, ecologists, NGOs and tourism promoters should be involved in the decision making process.

Local people whose life is going to be affected in both positive and negative manner by tourism development should be informed and their suggestions should also be incorporated in the planning process.

Community-based ecotourism is most likely to be successful on land, which is too arid for subsistence agriculture but will appeal to foreign tourists and hunters. Other necessary ingredients are: large mammals with at least some of the big five; hunting concessions; up-market facilities; limited size to reduce management overheads; and, effective marketing. In South Africa these conditions have been met in reserves created on tribal land and stocked with imported wildlife.

Wildlife tourism is clearly profitable. However, the extent landholders in wildlife areas choose to engage in wildlife-based and wildlife-compatible land uses, such as tourism, depends on far more than overall profitability. High financial returns are a necessary but not sufficient condition for wildlife tourism to be carried out, and for it to act as an incentive for conservation of primary concern are the returns from wildlife tourism to landholders themselves and to what extent the profits they receive adequately compensate for other land uses foregone or diminished by the presence of wildlife. In turn, this depends on a range of institutional, policy and legal measures which support wildlife tourism, affect the profitability of agricultural land uses and ensure the distribution of tourism rents to landholders. Unless these conditions are met and explicitly set in place, pure financial profitability is unlikely to be a sufficient guarantee that tourism will take place or will encourage the conservation of wildlife on private and communal lands.

Over time, accommodation for tourism in the national parks would become truly extensive and have enormous consequences for the parks. Allowing tourists to stay overnight in the parks meant that hotels, restaurants, campgrounds, garbage dumps,

electrical plants, and water and sewage systems would sooner or later be seen as indispensable. The practical necessities for accommodating thousands, then millions, of tourists would increasingly demand park management's attention and seriously affect allocation of funds and staffing.

There should be sufficient means of management and protection in a sanctuary to be upgraded as national park. Before declaring any forest as a national park, it must be confirmed that the area is of sufficient importance and status to deserve the appellation. Administration of such area must be improved and illegalities such as poaching and unauthorised grazing should be eliminated.

The size of the park must be adequate, the boundaries should be well chosen and buffer zones should be prohibited against shooting, grazing and cultivation. Both sanctuaries and national parks may be formed out of reserved or protected forests and wherever forest products extraction is unavoidable, there must be an inner sanctuary or core area where no disturbances should be allowed. Central Government should provide assistance to State governments for the management of sanctuaries as well as for national parks.

As wildlife comes to take its proper place in the economies of many African countries, the time has come to work on the most appropriate methods of ensuring that landholders continue to see it as an economic benefit and not a liability.

In India as yet her wild life has not been able to offer the same attractions as her temples and her ancient monuments, though the potential role of the many sanctuaries that are being developed, with their combination of scenic beauty and wild life, must not be underestimated. Real problem lies in the management and planning of reserves. The original Project Tiger plan envisaged buffer zones around protected core. But so far the project officials have totally failed in preserving the buffer zones.

The reality is that most of India's wild animals are pushed into parks and sanctuaries, which account for barely 4 per cent of country's geographical area. These forest area have also been encroached by villagers. Traditional corridors, which enabled the animals to move from one forest to next, have been cut off. Desirable types of park uses such as sightseeing or walking in natural surroundings should be stressed. The public should be made to understand the significance and value of "their" national parks

and, through information programs, be persuaded to maintain and improve park appearance.

The national parks, nature reserves and other protected areas of the world have most commonly been established without either the advice or consent of the people, most likely to be directly affected by their establishment. Without the support, or at worst acceptance, by these people, the future of any protected area cannot be considered secure, since in their search for the means for their own survival the temptation to take wild land resources from the area, or to encroach upon its boundaries, will tend to be irresistible.

The Indian subcontinent still possesses perhaps the widest wildlife heterogeneity anywhere in the world. Though only 3 to 4 per cent of the forest cover is under protection as National Parks and sanctuaries, it is in these inviolable pockets that the fauna holds out against the odds.

According to National forest Policy there should be at least 33 per cent area of forest in a country. For ecological balance there should be the forest cover of 60 per cent on the hilly mountainous terrain and 20 per cent on plains. In India, we have had 22.3 per cent area under forest cover, but the recent satellite pictures show that we have hardly 10 to 12 per cent forest area. The survey conducted by the Department of Forests, we have 14 per cent of our area under forests. These forests are natural habitat for the wild animals. So the expansion of human activity and shrinking of natural habitat affect the number and variety of wildlife.

Certainly, the ideal for a national park is still in the concept of a national park under public ownership and management and with only non-consumptive uses such as water, soil and forest conservation and public access for recreation, education and inspiration. Those who live within an ecosystem or several adjacent and related ecosystems are dependent on those resources for their existence. Such people must over time learn to live within the ecological limitations of their home area if they are to survive. Although individually they may not have a strongly developed ecological consciousness, culturally they are committed to sustainable ways of life that are essentially sound in ecological terms.

Wild life has certain positive values as well as certain negative values to offer.

Among the positive values may be enumerated the cultural, aesthetic, recreational and economic values as well as certain useful activities, both in the wild state and in captivity. Among the negative values are destruction of property, the potential role of wild life as reservoirs or carriers of disease and predation.

The South African National Parks is at a crossroads. Ahead lies a choice between two visions: one that sees it as important to complete the transformation; and another that rests on alliances with remnants of the old order to block more thoroughgoing change. The new executive leadership charged with the day-to-day management of the organization may find itself caught between the two.

The development of wildlife in Africa must start with the promise that management of a resource includes deriving sustainable benefits for present and future generations. This means accepting that wildlife management must, in general, contribute to the productivity of other forms of land use, such as watershed management, agriculture, forestry, ranching, and fisheries. It must also provide food and other wildlife products, generate local employment opportunities and cash revenue in areas where there are no other sources, and enhance environmental stability. Wildlife management must protect aesthetic, scientific, cultural and recreational values and must conserve the reservoir of genetic resources. All these lofty goals can be achieved effectively over the long term only if the world is committed to increasing the number of well-trained African natural resource managers and researchers.

Wildlife tourism therefore should not be promoted as an economy augmenting machine but as ecologically sustainable activity to promote the cause of conservation. It may be a boom if planned and organised properly at all scales, from the interior most of the protected area to development of tourist facilities outside. This will need the attention and care of government, park management and private entrepreneurs such as tour promoters, hoteliers and tourism operators. If wildlife-tourism goes haywire, it might or might not provide economic benefits to the local people but it certainly would result in disruption of traditional cultural lifestyles.

Premier institutions in the field of conservation such as Wildlife Institute of India, Dehradun, Centre for Environment Education, Ahmedabad, voluntary agencies like WWF-India, etc., tourism department of centre and state governments and the state forest

departments should take joint initiative to organize workshops and seminars for officials and staff of both forest and tourism department as well as private entrepreneurs aiming at promotion of a new work culture and a right attitude towards sustainable tourism in Parks. Local people's cooperative need to be encouraged to manage middle and low income group accommodation, catering, guide services, sale of artifacts and handicrafts, and in organising cultural programmes for visitors.

National Parks belong to the people. Every man, woman and child in the country has, as a heritage, these areas which are set aside forever to give pleasure to present and succeeding generations. Thus, those who use the parks have responsibility to themselves and to others to treat this great heritage with care and respect. Reserves are very important in the country. There are many important things in our life that could become rare. If we do not preserve or protect some of our lands and sea, these will be lost.

The problem in the policy is that to follow a uniform approach to establishment of parks and protected areas but there is no single solution, no uniform approach that works in all places. True, a strict nature preserve must be strictly protected, but there may be as many types of approaches to that protection as there are nations which establish such reserves. And equally, the needs for different types of protected areas may be as diverse as the nations involved. Different countries have different needs, and different ways of determining and attaining their objectives.

A far-sighted approach to these areas and work with the local people is needed to create ecologically sustainable systems of land and resource use. Nature reserves must be seen as parts of those systems, not separate from them. Obviously, people must see the opportunity for economic stability in a context of ecological sustainability before they will take a serious interest in protecting the wild environments of protected areas.

There is a suggestion that all people who live in an area and consider it to be their home must have similar rights and be given equal consideration when planning for nature reserves or other protected areas. Society has yet to come up with a more effective way for conserving natural values than one based on parks and reserves. The future of wildlife tourism may well rest on the success of sustainable wildlife programmes, particularly in developing countries. The success of programme will be judged by their contributions to making life better for local people and for all mankind.

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APPENDICES

Questionnaire

Name of the Village:

Name of the Respondent:

Age: Sex: Male Female.....

Education: Primary.....,Secondary.....,Higher secondary....., Graduate,

Post graduate....., M.phil/Ph.D....., Technical

Number of family members:

Activities: PrimarySecondaryTertiary

Annual income:

How long you have been staying in this village:

Are you involving in the parks activities: Yes..... No.....

Are you aware about the park activities to promote wildlife tourism.....

Do you have land possession inside the park (in past).....if yes (do you get the amount paid by the government).....

From where do you generally get fodder and fuel.....

Do you have livestock

How many times they (livestock) have been attacked by wild animals

Do you get compensation by park authorities.....

Do you avail any program facilitated by Park Authorities.....

APPENDIX: 1
PRIMARY SURVEY BASED ON THE INTERVIEW OF THE RESPONDENTS FROM THE VILLAGES
SITUATED AROUND THE RANTHAMBHORE NATIONAL PARK

Name of the Village	Respondent's Age Group			Annual Income of the Family				Family Size			Park Activities				Source of Fuel/Fodder			Economic Activities			Education			
	Less than 25	25-40	Above 40	Less than 15000	15000 to 25000	25000-40000	Above 40000	Less than 5	6 to 8	More than 9	Involvement		Awareness		Park	Cow Dung	Modern Method	Primary	Secondary	Tertiary	Primary	Secondary	Graduation	Illiterates
											Yes	No	Yes	No										
Shyampura	3	31	22	19	9	28		4	25	27		56		56	52	4		56			34	10		12
Katalpura	7	18	15	7	8	25		4	27	9	7	33	4	36	22	6	12	32	8		10	17	3	10
Uliyan	4	13	16	10	13	7	3	10	15	8		33		33	22	11		33			13	10		10
Badlao	7	19	19	16	16	13		10	22	13	8	37		45	25	16	4	45			16	19		10
Sherpur	10	24	21	16	21	15	3	16	30	9	16	39	0	55	4	42	9	46	6	3	28	15		12
Khilchipur	4	14	7	3	8	14		7	10	8	14	11	5	20	5	16	4	13	5	7	16	3		6
Grand Total	35	119	100	71	75	102	6	51	129	74	45	209	9	245	130	95	29	225	19	10	117	74	3	60

APPENDIX: 2
ARRIVAL OF TOURISTS IN RAJASTHAN (1961-2005)

YEAR	DOMESTIC	FOREIGN	TOTAL
1961-1971	880694	42500	923194
1971-1981	2600407	220440	2820847
1981-1991	4300857	494150	4795007
1991-2001	7757217	608283	8365500

SOURCE: Pragati Pravedan, 2005-06, Tourism Department, Rajasthan

APPENDIX: 3
TOURIST ARRIVAL IN RAJASTHAN FROM DIFFERENT COUNTRIES

COUNTRY	NO. OF TOURISTS (IN LAKHS)
FRANCE	1.69
UNITED KINGDOM	1.2
UNITED STATES	1.05
GERMANY	0.94
ITALY	0.85
AUSTRALIA	0.62
CANADA	0.53
SWITZERLAND	0.46
JAPAN	0.3
BANGLADESH	0.11
OTHERS	3.56

SOURCE: Pragati Pravedan, 2005-06, Tourism Department, Rajasthan

APPENDIX: 4
RECENT TRENDS OF TOURISTS ARRIVAL
IN RAJASTHAN

YEAR	DOMESTIC	FOREIGN
2002-03	8300190	428437
2003-04	12545135	628560
2004-05	16033896	971772
2005-06	18787298	1131164

APPENDIX: 5
RECENT TRENDS OF TOURISTS ARRIVAL
IN SAWAI MADHOPUR

YEAR	DOMESTIC	FOREIGN
2002-03	48632	6185
2003-04	41688	6965
2004-05	93960	17413
2005-06	123685	29098

APPENDIX: 6
RECENT TRENDS OF TOURISTS ARRIVAL
IN RANTHAMBHORE NATIONAL PARK

YEAR	INDIAN	FOREIGN	STUDENTS	TOTAL
2001-02	38950	26167	6801	71918
2002-03	38364	22954	6513	67891
2003-04	43382	45445	5059	93856
2004-05	49267	74264	7263	130794
2005-06	40942	70790	4923	116655

SOURCES: PRAGATI PRATIVEDAN, 2006-06, TOURISM DEPARTMENT, RAJASTHAN

APPENDIX: 7
TOURIST ARRIVALS (IN LAKH) IN RAJASTHAN IN 2005

MONTHS	DOMESTIC	FOREIGN	TOTAL
JAN-MAR	33.86	3.72	37.58
APR-JUNE	33.72	1.5	35.22
JULY-SEPT	76.39	2.04	78.43
OCT-DEC	44.25	4	48.25
TOTAL	187.87	11.31	199.18

SOURCE: Pragati Prativedan, 2005-06, Tourism Department, Rajasthan

APPENDIX: 8
ARRIVAL OF TOURISTS FROM DIFFERENT COUNTRIES IN
RANTHAMBHORE NATIONAL PARK IN 2005

MONTHS	USA	FRANCE	UK	CANADA	OTHERS	TOTAL
JANUARY	730	536	482	381	3559	5670
FEBRUARY	859	592	435	412	3650	5948
MARCH	715	436	398	392	1987	3928
APRIL	928	892	432	849	2285	5386
MAY	58	40	35	10	827	970
JUNE	131	136	212	25	196	710
JULY	0	2	0	0	3	5
AUGUST	3	0	0	0	8	11
SEPTEMBER	2	2	5	5	6	20
OCTOBER	250	25	165	210	987	1637
NOVEMBER	285	29	185	225	1089	1903
DECEMBER	370	31	255	320	1904	2880

SOURCE: Office of Assistant Director, Tourist Reception Centre, Sawai Madhopur, Government of Rajasthan.

