

Balancing Conservation Management and Tourism Development With Wilderness Stewardship in the Kruger National Park, South Africa

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Abstract—The Kruger National Park (KNP) faces greatly amplified problems than was the case in the early 1900s when the KNP was established. Areas surrounding the park have experienced a human population explosion with a rapid expansion of farming areas and rural settlements. In the 1970s the KNP was fenced. Ecologically the KNP became an island and previous regional animal movements were restricted to within its boundaries. A network of management roads was established and the KNP worked to keep the poaching onslaught at bay. However, the KNP may have succeeded in conserving its animal populations, but it has also paid a heavy price in the process – a loss of wilderness qualities.

Introduction

Protected area managers and scientists in the Kruger National Park (KNP), with its 2 million ha (4,942,108 acres) of bush-clad savannah, face greatly amplified challenges than was the case in the early 1900s when the KNP was established. The areas surrounding the KNP experienced a human population explosion during the past three decades, causing a rapid expansion of farming areas and rural settlements, and subsequently land uses that are largely conflicting with protected area management.

In the 1970s the boundary of KNP was fenced to control wildlife diseases and to protect the neighboring areas from damage-causing animals, as well as to prevent animal movement into the war-ridden Mozambique. Ecologically the KNP became an island and previous regional animal movements were restricted to within its boundaries. A network of management roads was established and artificial water was subsequently provided through boreholes and dams to supplement sources no longer available to animals.

Commercial poaching, especially for bushmeat, ivory and rhino horn, increased to such an extent that wildlife populations in many protected areas in Africa were nearly decimated. The KNP managed to keep the poaching onslaught at bay largely due to its effective and well-trained ranger contingent, extensive network of management roads and its capacity to use intelligence to track organized poachers. The

network of roads was created to be able to manage fires and also to provide access for management purposes.

To make the KNP available to the public and to help finance its conservation mandate, 16 rest camps containing approximately 5,000 beds and a well-maintained set of tourist roads have been developed. Numbers of tourists to the KNP grew to more than 1.2 million in 2004.

The KNP may have succeeded in its tourism endeavors and conserving its animal populations from the poaching onslaught, but it has also paid a price in the process. The price it paid was diminished wilderness qualities. This paper describes the process and thinking followed to regain some of those wilderness qualities.

New Legislation and New Opportunities

Wilderness protection has recently been included in the new Protected Areas Act (Act 57 of 2003) of South Africa. This provides the first opportunity for national parks to legally protect wilderness areas within national parks. Wilderness in the act is defined as “. . . an area designated . . . for the purpose of retaining an intrinsically wild appearance and character, or capable of being restored to such and which is undeveloped and roadless, without permanent improvements or human habitation.”

The purpose of designating wilderness status to an area is described as follows in the act:

- (a) to protect and maintain the natural character of the environment, biodiversity, associated natural and cultural resources and the provision of environmental goods and services;
- (b) to provide outstanding opportunities for solitude; and
- (c) to control access which, if allowed, may only be by non-mechanized means.

The restoration option that is stated in the act presented a challenge to take a 100- to 200-year vision and consolidate wilderness in the KNP by closing down management roads, but still maintain the ability to combat the increasing poaching onslaught and maintain the integrity of the area.

Methods

A rezoning process was initiated to consolidate existing wilderness areas in the KNP, reduce management roads to the absolute minimum, and officially proclaim wilderness areas under the new legislation. This formed part of a wider

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process whereby a generic zoning system (Conservation Development Framework) for use in all national parks has been developed (Briton and others 2004, internal report on file at SANParks, Pretoria, South Africa).

The existing Geographic Information System (GIS) infrastructure data of the KNP (including camps, roads, and concession areas) were used (MacFadyen and others 2004, internal report on file at Kruger National Park) in a Distance Analysis (ArcView 3.2a with Spatial Analyst 2.0).

Using previous zoning systems (Braack 1997, internal report on file at Kruger National Park; Venter and others 1997, internal report on file at Kruger National Park.) the KNP's management road network was revised according to the area integrity management requirements of each region or ranger section. The process included workshops with rangers of the different sections in the KNP. Roads were subsequently classified according to the level of associated disturbance and assigned an appropriate buffer distance to ensure the integrity of surrounding natural areas.

The following buffers were applied on both sides of roads:

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| • Tarred tourist roads | 2 km (1.24 miles) |
| • Graveled tourist roads | 1 km (.62 miles) |
| • Graveled management roads | 500 m (1,640 ft) |
| • Tourist track | 200 m (656 ft) |
| • Management patrol track | 100 m (328 ft) |

As the poaching problem is a constant one and will probably be with us forever, the aim of this exercise was to close down and rehabilitate as many roads as possible and downgrade others from annually graded firebreaks to tracks for patrol purposes only, but to still retain the necessary anti-poaching and general management maneuverability.

Results

The fragmentation of Kruger before the exercise is considerable (MacFadyen and others 2004, internal report on file at Kruger National Park) and the consolidation process was found to significantly alter the situation:

- 59 percent of the KNP was closer than 1 km (.62 miles) from infrastructure (including rest camps, power lines, tourist roads, and management roads).
- As a result of the road system, Kruger was divided into 481 blocks.
- Patches with wilderness potential, (for example, patches further than 1 km [0.62 miles] from a road), had an average size of 5,728 ha (14,154 acres).
- 290 of these patches were smaller than 1,000 ha (2,471 acres) and only five were bigger than 10,000 ha (24,711 acres).
- During the consolidation process 1,523 km (946 miles) of management roads were earmarked for closure.
- After the consolidation process, the number of blocks decreased from 481 to 162.
- The average size of blocks increased from 5,728 (14,154 acres) to 15,200 ha (37,560 acres).
- Only five of these blocks are now smaller than 1,000 ha (2,471 acres) and 39 are bigger than 10,000 ha (24,711 acres).

Discussion

In the past, the existing and projected future levels of ecotourism and other development was not seen to pose a real threat to the conservation goals of the park. This belief was based on the fact that less than 4 percent of the surface area of the KNP was physically disturbed by developments. The assumption was made that impacts related to such developments were limited to the immediate vicinity of the developments. The present study, however, indicates that there are indeed also significant aesthetic impacts associated with these kinds of developments.

Freitag-Ronaldson and others (2003) presented a list of tourism and management related biophysical and aesthetic impacts experienced in the KNP. Although these impacts are usually considered to be limited and localized and not presenting a real threat to the KNP ecosystem as a whole, they are the cause of a feeling that the KNP is trammelled.

A clear distinction is made in the KNP between "wilderness areas or zones" and "wilderness qualities" in an effort to overcome the problem of different perceptions of wilderness as expressed by different people. Wilderness zones refer to specific designated areas that are set aside for special protection according to the new legislation and that comply with the definition described above. Wilderness qualities refer to the experience that one will be subjected to in any zone or area in the KNP, including but not exclusive to wilderness zones. This experience will vary from one person to the next. Wilderness zones will normally offer the best quality wilderness experience, whereas rest camps and roads do so at a lesser extent but much better than developed areas outside the KNP. The following description may enlighten the different interpretations of the two terms as used in the KNP.

Wilderness Zones

There was a time when the whole world was wilderness, according to our present definition, with a few pockets of human habitation (forming an integral part of the wilderness). Today this situation has changed and it is the other way round. Very few pockets of true wilderness areas remain in a sea of development and they are shrinking by the day as technology increases. At first it was a challenge to conquer wilderness—now it has become an obligation to protect it. A few decades ago some people that lived in the most remote areas possible would not even understand the notion of wilderness—it was part of their everyday lives.

Thus, there is a trend, especially in developed countries to set aside and legalize wilderness zones, areas deemed to have an intrinsic right to existence and conservation with no or limited disturbance by humans. In the KNP such areas are set aside for the following reasons:

- 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 zones. The very high and growing popularity of tourism products in the KNP that offer this kind of experience is proof that it is indeed a growing need.

- To keep options open for future generations of people. Once an area has been trammelled and scarred by development, it blots out other options, or use that is wilderness dependent. The irreversibility of permanent developments means that mistakes made during the development also become largely irreversible.

Such pristine wilderness areas have therefore been included in the spectrum of zones proposed for use in South African national parks (Briton and others 2004). Whereas these “minimum-impact” zones are motivated essentially by biodiversity conservation and recreational opportunity it affords to a segment of society (especially the ‘back-to-basics’ or ‘return-to-roots’ nature lovers), the ethical/moral justification for at least some such areas should not be forgotten (bequest to future generations).

Wilderness Qualities or Wildness

People do not visit conservation areas simply to see wildlife, which could be viewed at less cost in smaller nature reserves and zoological and botanical gardens. Although often not consciously realized, 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 that for convenience sake can be termed ‘wilderness qualities.’

Wilderness qualities or wildness is therefore based on human perception. The range of perceptions about wilderness is about as wide as the wide range of humans in the human race. For one person it is an incredible wilderness experience to enter the KNP on a road without fences flanking it and sleeping over in one of the restcamps. For the more experienced protected area visitor this kind of activity is far too sophisticated and they prefer to “get away from it all.”

Even within the confines of a restcamp, for example, certain wilderness qualities can be achieved by sensitive and appropriate landscaping, building material and building styles, noise management, and a variety of other means, all amplified by the proximity of undisturbed natural bush and wildlife adjoining such a camp. Some people, again, would shun relatively sophisticated camps in favor of rugged and primitive tented camps and walking trails.

Wilderness qualities are the intangible spiritual and experiential aspects associated with protection areas that are the primary attractants for people visiting the KNP, and these qualities should therefore be maximized and managed. A range of differing intensities of such wilderness qualities can be offered to satisfy the needs of different people, and this can be achieved through managing different zones in different ways to achieve differing degrees of wilderness experience.

As a national park, the KNP has a responsibility to provide for this wide range of needs as well as it possibly can. 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 impacts of mass tourism on biodiversity and wilderness qualities are still not well understood in the context of the KNP, and research in this regard is seriously needed.

Reference

- Freitag-Ronaldson, Stefanie, Kalwa, R. H.: Badenhorst, J.C.; Erasmus, J. P.; Venter, F. J.; Nel, F. J. 2003. Wilderness, wilderness quality management, and recreational opportunities zoning within Kruger National Park, South Africa. In: Watson, Alan; Sproull, Janet, comps. Seventh World Wilderness Congress symposium: science and stewardship to protect and sustain wilderness values; 2001 November 2–8; Port Elizabeth, South Africa. Proc. RMRS-P-27. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station: 39–49.