

The Question of Sustainability - When Ecotourism Becomes Overtourism: The Example of the Kruger National Park, South Africa

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Abstract: The Kruger National Park is the largest protected area in South Africa. The park was opened to tourists in 1927 at a time when private automobiles were becoming a feature of South African cities. Since 1927 there has been a 67,879-fold increase in tourists until 2019. The current number of tourists is 1.8 million exceeds that of any other savannah, wildlife-based national park in Africa by at least four-fold and poses the danger of overtourism. The total number of tourists that can be accommodated by accommodation within the Kruger National Park is 7400, which is high for an African national park. The paper examines historic tourist trends and the regional concentration of tourist facilities within the park. Due to its accessibility, the southern region, which comprises 21.9% of the park, receives 73.9% of tourists and has 32.9% of the 2,562-kilometre road network and 49.8% of tourist beds. A survey of members of a social media group found that 90.9% believe the southern region is overdeveloped. Open Safari Vehicles (OSVs) could be part of an Alternative Transportation Programme (ATP) as they transport an average of 5.9 tourists, compared to an average of 2.4 tourists per private automobile. A survey was conducted on the same social media site to ascertain attitudes towards OSVs, which now account for 16.7% of the park's tourists. A total of 1,320 responses were recorded and 29.24% believed that OSV drivers have no regard for other park users, while others regarded these vehicles as an important contribution to park conservation and management.

Keywords: African national parks, ecotourism, Kruger National Park, overtourism

1. Introduction

The Kruger National Park is the largest protected area in South Africa. The park also attracts 1.8 million tourists annually and is in some ways a contradiction – South Africa's largest and most famous national park is also a major tourist attraction which includes 27 accommodation nodes, 24 concession lodges and 2,562 kilometres of all-weather tourist roads. In pre-pandemic years, tourist numbers were increasing at between six and seven percent per annum, which would result in a doubling of tourists to 3.6 million within 12 years.

Do such large numbers of tourists, and a concentration mainly in the southern region of the park, represent a crossing of the boundary between ecotourism and overtourism? Since the Kruger National Park was first opened to the public in 1927, there has been a 67,879-fold increase in tourists in the 94 years until 2019. A continued increase in tourists, and pressures for additional tourist infrastructure, could have an adverse impact on the natural environment.

2. Problem statement and research question

This paper addresses the following problems:

- The Kruger National Park currently attracts 1.8 million tourists per annum, which is the highest number of tourists to any wildlife-based, savanna national park in Africa.
- With tourists increasing at between 6% to 7% per year, the danger exists that ecotourism is being replaced by overtourism.
- An increase in tourists has an environmental impact in a semi-arid environment, results in negative publicity and is not ultimately sustainable.

The paper investigates the following research questions:

- 1. What is the historic pattern of tourist accommodation development and the spatial spread of tourist accommodation within the park?
- 2. Are there practical, workable alternatives to the self-drive mode of park visitation which has become entrenched amongst tourists since 1927?

3. Literature review

The IUCN defines a national park as a Category II protected area. The primary objective of a national park is, "to protect natural biodiversity along with its underlying ecological structure and supporting environmental

processes, and to promote education and recreation.” The provision of tourism facilities therefore has to take place in agreement with the objective of protecting biodiversity (IUCN). It could be argued that these objectives are contradictory and require very skilful decision-making to balance the often conflicting objectives of biodiversity conservation and the demands of tourism.

The first national park was established in the American state of Wyoming in 1872. Jones, Shipley and Ul-Hasan (2017) describe how that the tensions in this “dual mandate” emerged in the United States of America as far back as the 1920s, and that current policies favour resource protection over tourism.

Ansson (1998, 4) argues that many of the lobbyists for the first American national parks were railway owners who saw the creation of national parks as offering opportunities for transporting European tourists to the parks on trains. Park protagonists also realised that tourism development was often a lesser evil than other developments such as water reservoirs. Development of tourist facilities was therefore a core tenet of the national park system from the beginning.

Throughout the world there is increasing tourist pressure on national parks. Tourism, paradoxically, is able to damage the very environments which tourists regard as the most sought after, such as national parks. (May, 1999, 57; Miller *et al*, 2014, 256). Wearing and Neil have previously stated, “to accept increased levels of visitation as the price of support significantly compromises the natural qualities upon which parks are founded” (Wearing and Neil, 1999, 41). Eagles *et al* list nearly 30 negative environmental impacts which result from tourism in protected areas (Eagles *et al*, 2002, 33). Ferreira and Harmse, have argued that as ecotourism is a brand of tourism that is based on environmental sustainability, large concentrations of tourists are considered to be in conflict with this brand of tourism (Ferreira & Harmse, 2014, 20).

Edgell (2015, 29) makes the point that the principles of sustainable tourism are often difficult to operationalise in developing countries, where governments may be tempted to allow additional tourism infrastructure within a protected area if it is generating an income.

Spenceley and Snyman (2017) provide a detailed account of the issues pertaining to the provision of tourism facilities within protected areas in a special issue of the *Tourism and Hospitality Research* journal. A renowned scholar in the field, McCool (2009) argues that sustainable tourism in protected areas requires a number of trade-offs between two goals: (1) protection of the key values that form the foundation of conservation and (2) allowing tourists to experience and enjoy those values. McCool argues that these trade-offs occur within a context of a lack of consensus within society concerning the objectives of the protected area, and also a lack of scientific data on the relationships between cause and effect.

Manning *et al* (2014, 346, 347) argue that transportation and national parks are inextricably linked and transportation cannot be separated from the question of tourist carrying capacity. Of importance is the fact that transportation, apart from its environmental impacts, has a major impact on the quality of the tourist’s experience. The researchers propose that national park transportation should be designed to comply with set management objectives and should not be merely demand driven (Manning *et al*, 2014, 351).

Daigle (2008, 58, 59) describes the adoption of the Alternative Transportation Program (ATP) in the national parks of the United States of America. As part of the initiative, the National Park Service formed partnerships with outside organisations, such as the Ford Motor Company, to provide innovative transportation alternatives. Daigle (2008, 60, 61) summarises the lessons learned from the programme to include: the private automobile cannot always be the primary mode of transportation, a park’s resources are the attraction and not the transport system, existing infrastructure is often at or beyond capacity, and increasing numbers of tourists require complex and integrated transportation solutions.

4. Study area

The Kruger National Park is the largest protected area in South Africa and was the first national park established by the South African Parliament in 1926. The Kruger National Park is also the most visited wildlife-based, savanna national park in Africa and a key economic resource in north-eastern South Africa, a region where the park has become the cornerstone of the tourism industry.

Poverty and unemployment are persistent social problems in this semi-arid region of South Africa, as they are throughout the continent. Tourism accounts for 5.97% of the GDP of Mpumalanga province, where the southern half of the park is situated, or twice the national average for South Africa (Saayman & Saayman, 2006, 77). It is therefore tempting for government to regard the Kruger National Park as a valuable financial resource.

5. Historical context of the Kruger National Park

The first government game reserves were established in South Africa from 1894. The Sabi Game Reserve, the 4600-km² southern extent of the current national park, was proclaimed in 1898 by President Paul Kruger. The Sabi Game Reserve was the largest game reserve established by the Kruger government (Carruthers, 1995, 19, 27). But as there was no evidence of any conservation ethic amongst the general public, and no successful tradition of wildlife protection amongst white settlers, the accepted view was that the game reserves would eventually be re-opened for trophy hunting once wildlife populations had recovered (Stevenson-Hamilton, 1937, 115). After more than two decades, during which time the purpose of the game reserve was contested territory, the Kruger National Park became the first national park established by the South African Parliament (Stevenson-Hamilton, 1937, 214).

The proclamation of the Kruger National Park in 1926 was fortuitous for politicians as it soon became a powerful and unifying icon which served a useful political purpose. Conservation was presented as a moral crusade, and the park became a powerful, “feel good” symbol which unified Afrikaners and English settlers in a country where deep divisions and animosity existed after the South African War of 1899 – 1901 (Carruthers, 1995, 59, 62, 65, 80, 89; Büscher, 2016, 116). However, in accordance with the political philosophy of the time, no consideration was given to indigenous Africans as potential visitors (Carruthers, 1995, 99, 100).

The Kruger National Park soon began to provide affordable and subsidised holidays for urban whites. As many urban residents had only recently moved to South Africa’s cities, and had cultural memories deeply embedded in the African wilderness, the concept of a national park was readily accepted and a sub-culture, complete with norms and behaviours, developed around a visit to the Kruger National Park (Carruthers, 1995, 86, 87; Carruthers, 1997, 129). As the park met a number of symbolic and psychological needs amongst urban whites, its popularity grew rapidly and South African tourists far out-numbered foreign tourists.

6. Self-drive as the dominant mode for tourist entry

The proclamation of the Kruger National Park in the 1920s coincided with the beginning of the industrialisation of South Africa and the advent of the private automobile amongst a recently urbanised white minority. In contrast to many African countries, where national parks were positioned to mainly attract foreign tourists, for the Kruger National Park the private automobile and not guided safaris became the dominant mode of tourist transportation. This was in contrast to the establishment of national parks in East African countries, where the existence of an urbanised white middle class was less of a demographic. East African national parks in Kenya, Tanzania and Uganda, as well as national parks in Zambia, Malawi and Botswana, were not crisscrossed with roads accessible by means of private sedan cars. National park authorities in these countries did not establish tourist accommodation at the scale that it was provided in the Kruger National Park, and tourist accommodation became the domain of the private sector (Curry-Lindahl and Harroy, 1972, 48, 53, 59, 64, 68, 70, 79, 81, 87). In sharp contrast to the dominant pattern in East African tourist destinations, the tourist infrastructure in the Kruger National Park catered for self-drive tourists and the road network was systematically extended to cover the entire national park.

7. Development of tourist infrastructure

The first tourists visited the Kruger National Park in 1927 when a total of 27 were recorded for the year. In 1928 tourists increased to 650 and by 1929 tourists had increased to 2500, from the initial 27 only two years previously (SANParks, 2020). By 1930 a total of 5000 tourists were recorded.

A limited budget of £10,000 for 1927 left no surplus to construct tourist accommodation, although government did provide a grant for road construction (Stevenson-Hamilton, 1937, 223, 224). The first three “rest huts” were constructed in 1928 in three ranger posts, and in 1929 an additional 14 huts were completed (Joubert, 1990, 2). Tourist roads were constructed by staff to follow the straightest routes between ranger posts, and by the

end of 1929 a total of 617 km of roads had been constructed (Joubert, 1990,12). In 1948 it was possible to travel from Malelane on the southern border to Pafuri on the far northern border.

Since the 1920s there has been a significant increase both in the number of rest camps and the number of tourists beds. In 1961 the park had 10 rest camps and 4 small camps. At present there are 27 accommodation nodes consisting of 12 large rest camps, two small rest camps, five bushveld camps, two bush lodges, two camping camps, two overnight hides, a former ranger's house and one tented camp. Other tourist infrastructure includes 17 picnic sites, 11 game-viewing hides, 9 entrance gates and 2 border posts. The total number of tourist beds is high for an African national park at 4,483 and camping sites can accommodate an additional 1,896 visitors.

Since 2002, a total of 24 concession lodges, which are aimed at the top-end of the tourist market, have added an additional 1,047 beds. The Kruger National Park can therefore accommodate approximately 7,400 overnight tourists. Despite the high number of tourist beds, 78% of the 1.8 million tourists are still day visitors.

8. Growth in tourist numbers since 1927

Tourist numbers have continued to grow since 1927, and between 1927 and 2019 there has been a 67,879-fold increase in tourists. In the years for which detailed visitor statistics are available, visitor numbers have exhibited a sustained increase. In only 21 years from 1927 to 2020 did tourist numbers decrease on the previous year's figures. These declines usually coincided with economic recession (SANParks, 2020). Tourists doubled between 1934 and 1947, between 1947 and 1954, between 1954 and 1963 and again from 1963 to 1973. The park's staff often could not keep up with the increase in tourists and had to adopt temporary solutions such as erecting rows of amy tents. In 1963 a total of 200,000 tourists were recorded and in 1984 tourists had more than doubled to 500,000. In 2002 tourists exceeded one million for the first time.

Tourist arrivals could double from the current 1.8 million within 12 years. In four of the last eight pre-pandemic years, the annual rate of increase exceeded 6% per annum. At a 6% rate of increase, tourist numbers will double to 3.65 million by 2034. There are national parks in Africa which receive more tourists, but these national parks do not offer wildlife-viewing as the primary attraction. Although the Kruger National Park receives approximately four times as many tourists as any equivalent African national park, within the park there is a concentration in the southern region. This is due to the elongated shape of the park (Figure 1), and tourist perceptions that the northern half is further from the main South African cities.

9. Unequal geographic spread of tourists

The southern region, which offers easy access to two of the largest cities in South Africa, receives a disproportionate percentage of tourists (Figure 2). The 6 entrance gates in the southern region, which comprises 21.9% of the park land area, receive 73.9% of the 1.8 million annual tourists. This region also has 32.9% of the 2,562-kilometre road network and 49.8% of tourist beds.

When day visitors and Open Safari Vehicle (OSV) entrants are added to the concentration of tourist accommodation, this results in high visitor densities in the southern region which exceed those of most other African national parks. The Kruger National Park is currently the only savanna national park in Africa, and which offers a visitor experience based primarily on wildlife viewing, which receives more than 500,000 visitors per annum. The Serengeti National Park in Tanzania received 472,705 tourists in 2019 (Statista, 2020). Recent statistics are not available, but by contrast Tsavo National Park in Kenya received 367,000 visitors in 2011 of which 221,000 were foreign tourists. However, total tourists declined to 108,000 tourists by 2015 (Nyaga, 2016; Institute of Economic Affairs, 2016).

Overtourism is considered to be incompatible with the ecotourism brand and increasing tourist numbers require a suite of services (Ferreira & Harmse, 2014, 20). Ferreira and Van Zyl have termed the sourcing out of the park's restaurants to South African fast-food chains as the "McDonaldization of casual dining in the park" (Ferreira & Van Zyl, 2016, 39).

Taking the increasing numbers of tourists and tourist facilities into account, for park managers and researchers a key question is whether the majority of tourists consider the Kruger National Park to be over developed. From photographic records of the roads in the southern region, it is apparent that wildlife species such as lions have been causing traffic congestion since the 1940s (Figures 3 and 4). Although tourist numbers have doubled since

2001/2002, there has not been the same doubling of tourist roads. During peak holiday times, the roads are carrying a high volume of tourist traffic.

10. Continuing pressure for additional tourist infrastructure

Despite the fact that the southern region, which is 21.9% of the park area and already contains 49.8% of tourist beds, SANParks is developing two lodges and a luxury train in Skukuza, which will add 550 to SANParks' beds, or 26%, to a region that is already carrying considerable tourist volumes (Ferreira & Harmse, 2014, 26). The 32-bed Kruger Shalati "Train on a Bridge" was recently opened on the old railway bridge at Skukuza (Caldeira, 2019).

In 2017 at the officiating ceremony of the 256-bed Skukuza Safari Lodge, which is the first of this type of accommodation in the park, the responsible minister quoted figures which suggested that the Kruger National Park does not have a visitor crowding problem. At the launch of a R269 million (\$17.2 million) hotel development, the Minister of Environmental Affairs stated, "the current development footprint in the Kruger National Park, comprising of tourist facilities, staff housing, tourist roads, support infrastructure and management roads, currently constitutes 6,285 ha or 0.3% to the total of 2,000,00" (Steyn, 2017).

The minister stated that the concentration of 1.8 million tourists is confined to only 0.327% of the park. If the IUCN standard of 10% was adopted, this would equate to 55 million tourists per year. As a comparison, the most visited national park in the United States of America, Great Smoky Mountains National Park, received 12.5 million tourists in 2019 (Hetter, 2020).

Is there a danger in the Kruger National Park of the "Mallorca syndrome," where concentrations of tourists destroy the very attributes which attracted them to the tourist destination in the first instance? Crowding during peak holiday periods is not a new trend in the Kruger National Park, but increasing visitor numbers are resulting in considerable pressure, particularly in the southern region.

To ascertain whether overtourism is a concern amongst tourists, or is just academic- and park manager- angst, a survey of a social media group supports the view that tourist numbers, at least during school holidays, have reached levels where they constitute a definite management problem (Ferreira & Harmse, 2014, 30).

A survey was conducted amongst the 37,100 members, at the time of writing, of a social media group. Members all share common interests, and the site discusses recent developments in the Kruger National Park and also provides advice to members. Permission to conduct the survey was obtained from the site administrator. A total of 255 members responded (Brett, 2018, 17, 18). A total of 51.7% respondents felt that there are too many tourists during school holidays, while a further 38.8% felt that the park receives too many visitors. Only 5% were of the opinion that the park does not receive too many tourists. A total of 308 respondents replied to questions about tourist overcrowding in the southern region and 90.9% believed that the region is carrying too many tourists. Only 5.5% of respondents did not see overtourism as a problem (Brett, 2018, 17).

11. Open Safari Vehicles (OSVs) as a component of an Alternative Transportation Programme (ATP)

There are more than 200 lodges adjoining the park and many of these lodges conduct guided visits to the park as it is the tourism cornerstone of the region. The majority of these tourists have been transported for the past 20 years on OSVs. This form of transport is increasing in importance. In the 2019/2020 financial year, OSVs accounted for 16.7% of the 1,829,316 tourists, or 306,430 tourists. This represents an increase from 2017 when OSVs accounted for 13.5% of tourists. It represents a doubling in 6 years since the 2013/2014 year when 148,732 tourists were carried by OSVs. The number of OSV-borne tourists is therefore increasing at twice the normal annual rate of tourist increase.

As a mode of tourist transportation, OSVs offer certain advantages over private automobiles and could form an important component of an ATP. Statistics for the past 20 years indicate that the average OSV carries 5.9 tourists and a driver, compared to the average of 2.4 tourists in a private automobile. The average occupancy for OSVs is therefore twice as high as for private automobiles and could be used to reduce traffic volumes.

A survey of attitudes towards OSVs was conducted amongst the members of the same social media group and a total of 1,320 responses were recorded (Table 1), as the poll design allowed for more than one response per

respondent. Considerable comment was elicited by the survey and respondents were able to add questions to the survey form. Although previously there has been considerable opposition to OSVs on the site, in this survey many respondents also recorded positive aspects. Opposition to OSVs from other visitors was mainly due to the behaviour of certain drivers at sightings of predators and Big Five species, and the fact that many OSVs are in radio contact and soon congregate at a sighting. Although there have been previous complaints, only 1.2% of responses opposed OSVs. However, it is significant that 29% of responses believed that OSV drivers do not consider the rights of other park users. This view was balanced by nearly 20% of responses who believed that OSV drivers are similar to private automobile owners, as some are good and some are bad.

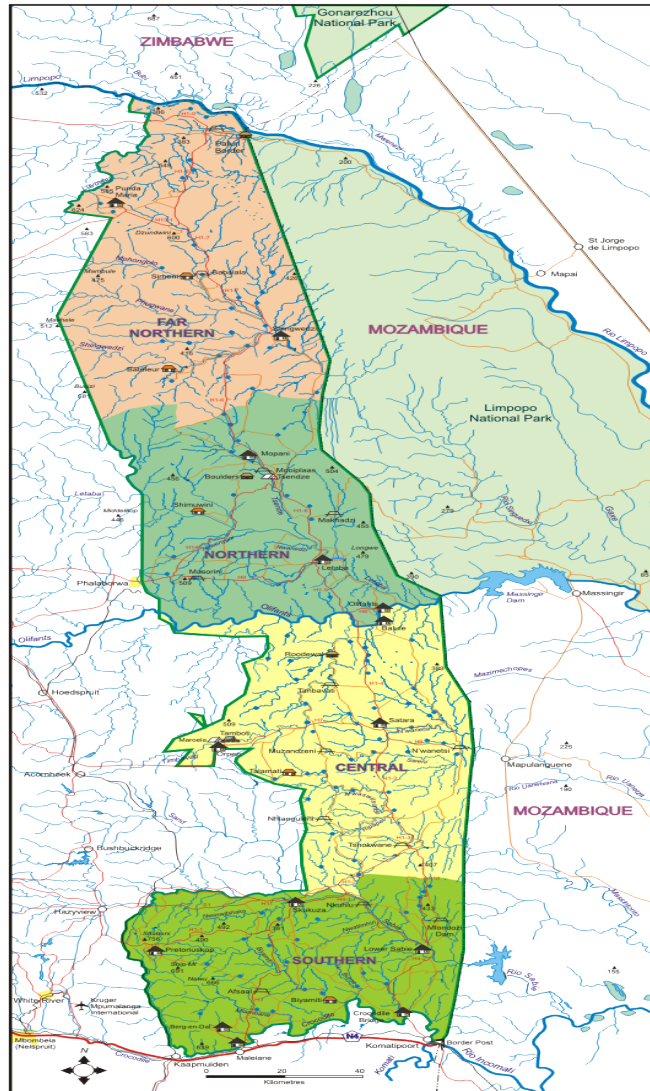


Figure 1: Map indicating the 4 management regions of the Kruger National Park

As OSVs offer a viable option for park managers as part of an ATP, as the average vehicle carries 5.9 passengers, it is important to note that only 0.83% of responses stated that there should be enforcement of a minimum number of passengers carried by OSVs. Statistics indicate that 86.2% of OSV entrants are entering the park through only six entrance gates in the southern region, and it is significant that only 1.29% of responses commented on the need to enforce OSV quotas at the entrance gates. During peak holiday periods, when there is traffic congestion on many of the main roads, a management option would be to close certain roads to all traffic apart from OSVs. SANParks operates 20-seat trucks for conducted drives and this is a future option as part of an ATP. However, only 0.38% of responses agreed with this proposal.

Table 1: Opinions on OSV entrants surveyed on a social media platform dedicated to the Kruger National Park

Poll statement	No. of responses	% of total
Negative statements		
OSV drivers have no regard for other park users and only want to please their customers	386	29.24
I am opposed to OSVs	16	1.21
Absolutely no two-way radios allowed between OSVs	43	3.26
There should be a limit on how many are allowed in at each gate per day and the limit shouldn't be too high	17	1.29
There should be a minimum number of passengers in an OSV. I have seen quite a few with only 2 passengers	11	0.83
OSV drivers are trying to make a living, they are not on holiday. However, as visitors they should abide by rules and regulations too	49	3.71
Good sightings improve OSV gratuities. Would you pay a minimum set gratuity per person over and above the fees asked?	10	0.76
This poll will only cause division. We are all there because we love Kruger and the animals	20	1.52
Positive statements		
It is not OSVs that are the problem, but ineffective enforcement of park rules and regulations	156	11.82
1/6 of all Kruger visitors are transported on OSVs. This is good park planning as it keeps lodge development outside of the park	70	5.30
OSVs are an important management option as they carry twice as many visitors on average compared to private cars	71	5.38
OSVs are important to Kruger and conservation	43	3.26
I am in favour of OSVs	28	2.12
OSVs are like private cars. Some are good and some are bad.	261	19.77
Have you ever gone on a OSV for a morning or evening drive	87	6.59
Do you feel there is a sense of entitlement felt by self-drive vehicles	28	2.12
OSVs are good for the park and especially in the south. More people on an OSV and less cars on the road	19	1.44
During peak periods, such as Easter, busy roads such as the Lower Sabie Road should be closed to all traffic except for OSVs	5	0.38
	1320	100.00

12. The limits to growth

There are geographic constraints which prevent the even spread of tourists throughout the Kruger National Park. Although the northern camps are located between 26 and 87 kilometres further away from the cities of Johannesburg and Pretoria than the most popular southern entrance gates are, there is a perception amongst the visiting public that the northern region is remote. As it receives a lower rainfall and is covered by mopane scrubveld, there is also the widespread perception that wildlife concentrations are lower in the northern half of the Kruger National Park. An analysis of camp occupancy rates shows a definite decline from the unit occupancy rates between the southern region and the far northern region. The rest camps in the southern region have a unit occupancy rate of from 77.5% to 94% compared to 55.9% to 71% in the far north.

Given the distances from Gauteng cities, and visitor perceptions that there is less wildlife to be seen in the northern and far northern regions, it is impractical to develop the northern half of the park as an alternative destination to the southern and central regions. This is acknowledged in the latest management plan, which states, "Kruger North does not have a potential to generate income comparable with that of the South" (SANParks, 2018, 39).

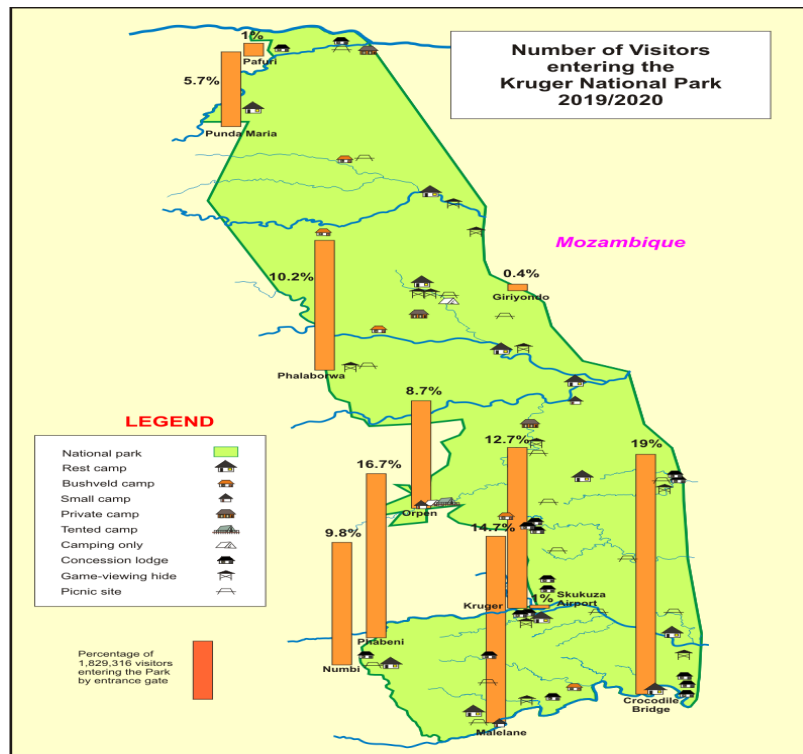


Figure 2: Numbers of tourists arriving at entrance gates in the Kruger National Park for the 2019/2020 year



Source: South African Railways calendar, www.flickr.com/photos/hilton-t/4001704864

Figure 3: Traffic congestion on the road between Skukuza and Lower Sabie in the 1940s



Figure 4: Traffic congestion on the road between Skukuza and Lower Sabie in 2021

Increasing concentrations of tourists in a semi-arid environment will have water and electricity requirements, as well as the need to construct additional tourist infrastructure.

Another factor is increasing negative publicity on social media platforms from leading stakeholders and damage to the park's brand. Recent changes, such as out-sourcing restaurants to South African fast-food chains, received widespread negative responses from key stakeholders (Ferreira and Van Zyl, 2016).

Apart from the growth in tourists, there is political pressure to increase the numbers of black local tourists, who currently account for 35.7% of the South African total, but account for only 8.5% of South African overnight tourists. SANParks, as the organisation which manages national parks, has to generate additional revenue and lessen its reliance on government. The organisation is already able to generate 76% of its budget from tourism and other revenue, which is an impressive achievement.

In the revised 2018 management plan, there was a refinement of proposed future developments and the list has been altered to include one wilderness camp, two platforms, two overnight hides, two picnics sites, two tented camps and two large lodges. The proposed peripheral development at Phalaborwa was not included in the 2011 plan. From the development plan it would appear that SANParks does not plan to continue increasing the number of tourist beds in tandem with increasing tourist numbers.

13. Implication for Kruger National Park management

Although the current number of tourists entering the Kruger National Park is not high compared to certain American national parks, the number is very high for the standards set by nature-based tourism in Africa (World Bank, 2015; Institute of Economic Affairs, 2016). The sub-culture which has developed since 1927, where visitors are at liberty to traverse the park on their own and without a guide, results in a high number of vehicles.

Although it is going to be unpopular amongst key stakeholders, traffic management needs to be implemented along key road during popular holiday periods as part of an integrated ATP. This may require replacing private automobiles with guided drives, and such a management intervention is already in place in American national parks such as Yosemite in California.

Given the mode of tourist visitation which has developed since 1927, as part of an ATP there is a need to educate the public about the advantages of other forms of tourist transportation and the negative environmental impacts produced by the current mode of transport (Daigle, 2008, 62). SANParks could upgrade many management tracks to tourist roads as part of meeting the objectives set in an ATP. This has cost implications, but if roads were kept narrow the environmental impact of upgrading existing tracks would not be considerable.

Another option would be the "game lodge" concept, which is common in East Africa. New tourist accommodation could be sited at waterholes on the periphery of the park and the emphasis would be on observing wildlife that is attracted to the lodge's waterhole.

Electronic word-of-mouth has become increasingly important in the tourism industry, and the Kruger brand is being damaged by negative word-of-mouth in social media sites (Litvin, Goldsmith & Pan, 2008, 461). Apart from environmental degradation, water provision problems and visual pollution, increasing volumes of poorly-managed tourists will damage the reputation of the Kruger National Park.

14. Conclusion

There has to be a finite limit to the number of rest camps and length of roads that a national park can sustain and innovative solutions are needed for managing increasing numbers of tourists. A possible solution would be to re-examine transport options, and further research is needed. Experimentation with different transport models will assist park managers in reducing some of the more adverse impacts of overtourism.

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