

# Tourists' feelings and behaviours in crowded areas of the Kruger National Park's southern section

**Author:**Peet van der Merwe<sup>1</sup> **Affiliation:**

<sup>1</sup>School of Tourism Management, Faculty of Economic and Management Sciences, North-West University, Potchefstroom, South Africa

**Corresponding author:**

Peet van der Merwe,  
peet.vandermerwe@nwu.ac.za

**Dates:**

Received: 28 Feb. 2023

Accepted: 08 Sept. 2023

Published: 16 Oct. 2023

**How to cite this article:**

Van der Merwe, P., 2023, 'Tourists' feelings and behaviours in crowded areas of the Kruger National Park's southern section', *Koedoe* 65(1), a1762.  
<https://doi.org/10.4102/koedoe.v65i1.1762>

**Copyright:**

© 2023. The Authors.  
Licensee: AOSIS. This work is licensed under the Creative Commons Attribution License.

The Kruger National Park (KNP), South Africa, has reached a stage where crowding has become a challenge and feasible solutions must be found. Previous research found that visitors believe that the park's southern section tends to experience crowding in specific areas, for example, at wildlife sightings, day visitor areas and picnic sites as well as eating and drinking areas (restaurants). This research aimed to determine the feelings and behaviours of tourists in these crowded areas in the southern section of the KNP. Qualitative research was conducted during the school holidays in December 2022 and the Christmas peak period. The sample population comprised overnight and day visitors (older than 18 years) to the park. Twenty-three interviews were conducted at various places. The research found that tourists experiencing crowding in the park have multiple feelings and behaviours. Some may feel overwhelmed or frustrated by the crowds, whereas others may be excited, anticipating something interesting to see.

**Contribution to conservation:** Visitors might be negatively impacted at crowded places in the park, resulting in negative perceptions among tourists and perhaps fewer visitors. This could have indirect implications for conservation efforts, as fewer tourists to the park will result in less funding for the park's management.

**Keywords:** crowded areas; wildlife tourism; behaviour; Kruger National Park; natural area tourism; tourists behaviour.

## Introduction

Tourism management in protected areas requires a sophisticated management strategy (Ballantyne et al. 2017). This is also the case with the Kruger National Park (KNP) in South Africa, as some areas in the park have reached a stage where crowding has become a problem and is therefore a challenge for sustainable management of the park. Kruger National Park is divided into four management regions (Figure 1). Based on the research conducted by Ferreira and Harmse (2014), the southern region of the KNP has reached its visitor carrying capacity because of an increase in day-visitor numbers, which has led to congestion of tourist traffic, specifically over weekends, public holidays and school holidays.

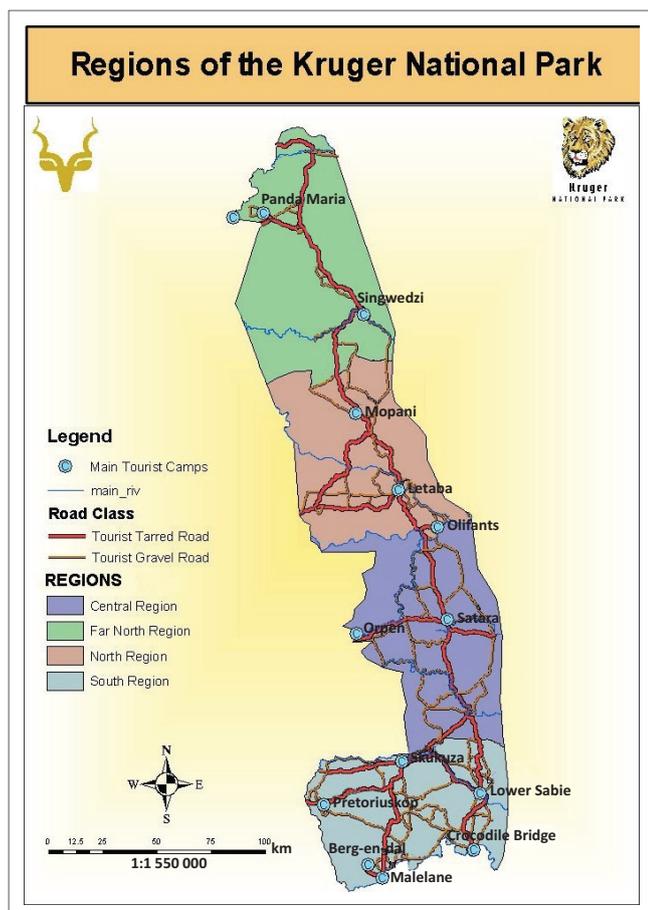
This seems to be a long-lasting and increasing problem, as work conducted by Ferreira and Harmse (1999) indicates that the park's social capacity, the ability of visitors to engage in and manage social interactions (e.g. game drives) effectively is threatened. Ferreira and Harmse (2014) further state that the current mechanisms used by the KNP management to prevent crowding have not been successful. These mechanisms include limiting the size of the rest camps, requiring reservations in advance for overnight spaces, capping the numbers of overnight and day visitors, establishing a restrictive vehicle-to-road ratio, implementing a zoning system for infrastructure development and developing picnic facilities for day visitors away from the rest camps. Research conducted by Brett (2018) on tourism in the KNP found that 90.9% of participants believe that the southern region is currently crowded. Crowded areas identified in the southern region of the park include, for example, wildlife sightings, where vehicles cluster together to see some of the iconic species such as lion, leopard and elephant, and day visitor areas, where day visitors crowd together to use the facilities and picnic areas within the park where people can stop to relax, eat and drink and buy needed supplies (Ballantyne et al. 2017; Brett 2018; Slabbert 2022). This research aims to determine the feelings and behaviours of tourists in these crowded areas in the southern section of the KNP. The information can assist management in implementing renewed mechanisms to manage crowding.

## Background to the study area

The KNP was proclaimed in 1926 as South Africa's first national park, with the first visitor accommodation constructed in 1928 (Joubert 1990). Over the years, the KNP has become

**Read online:**

Scan this QR code with your smart phone or mobile device to read online.

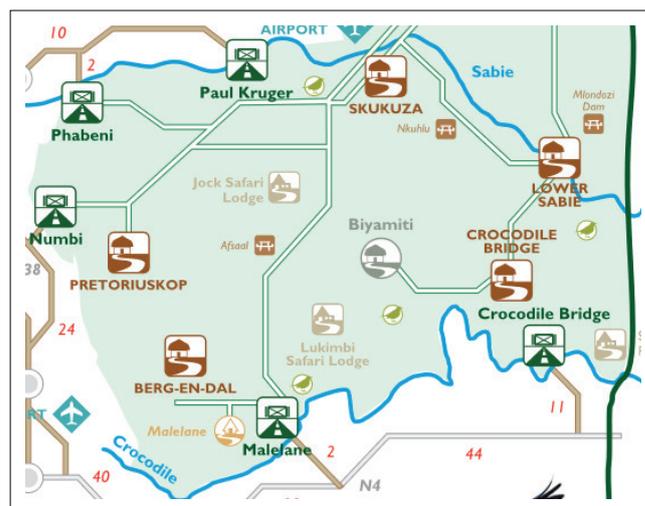


Source: Adapted from South African Kruger National Park, 2023a, *Regions map*, viewed n.d., from [https://www.sanparks.org/images/parks/kruger/conservation/scientific/maps/map\\_images/Regions.jpgf](https://www.sanparks.org/images/parks/kruger/conservation/scientific/maps/map_images/Regions.jpgf)

FIGURE 1: Regions of Kruger National Park.

Africa's most visited national park (Brett 2018). Since 1927, tourist numbers (visitors) have increased from 27 to 1.833 million in the 2019–2020 season (Slabbert 2022), with an average annual increase percentage of 6%. It is predicted that by 2029, visitor numbers could double to 3.65 million (Brett 2018), leading to severe crowding if not correctly managed. These numbers were predicted before the coronavirus disease 2019 (COVID-19) pandemic; the latest statistics for visitor numbers to the KNP for April 2022 to March 2023 are 1.6 million, only 200 000 short of pre-COVID-19 times (Slabbert 2023). Therefore, 3.65 million visitors might be a realistic projection for future visitor numbers in the KNP.

Since 1961, accommodation facilities have increased from 14 camps (nodes) to 27 camps (nodes), totalling 4 179 beds and 1896 visitors in campsites in 2018. In addition, there are 1047 beds available in the 24 privately owned and operated concession lodges within the park, using their own safari vehicles (SANParks 2018). The road network in the park accounts for 883 km of tarred roads and 1679 km of gravel roads, totalling 2562 km (SANParks 2018). The southern region (section) (Figure 2) of the park hosts 47.7% of visitor accommodation and 32.9% of visitor routes, which accounts for 21.9% of the park's area (Dennis & Brett 2000). Brett (2018)



Source: South African Kruger National Park, 2023b, *Directional map*, viewed 18 August 2023, from <https://www.sanparks.org/assets/docs/e-brochures/kruger-map.pdf>

FIGURE 2: Southern section of the Kruger National Park.

revealed that 90.9% of visitors to the southern section of the KNP experience crowding.

## Visitor crowding

Tourism products in protected areas have a specific social carrying capacity for tourists. This refers to the relationship between the visitors' (tourists') experience and the quality and quantity of their interaction with other visitors to the same recreation site or, in this instance, the wildlife viewing site (Ferreira & Harmse 1999). Outdoor recreation managers first used the term 'carrying capacity' in the early 1960s to determine the maximum number of visitors that could use a recreational area without destroying its essential qualities (Ferreira & Harmse 1999). Ferreira and Harmse assert that this concept is fundamental within an African national park's context, where the tourism potential is in danger of being over-exploited.

Middleton and Hawkins (1998) defined tourism carrying capacity (TCC) as 'the level of human activity an area can accommodate without the area deteriorating, the resident community being adversely affected, or the quality of visitors' experience declining'.

Various dimensions influence crowding perception, but three substantial factors have been found in this regard:

- Firstly, situational characteristics of the environment (e.g., in the case of this study, the KNP)
- Secondly, characteristics of other tourists present (e.g., different cultures, nationalities, values and backgrounds)
- Thirdly, the personal characteristics of the individual (e.g., age, gender, getting angry quickly and peaceful) (Stokols 1972; Stokols et al. 1973; Westover 1989, as cited in Neuts & Nijkamp 2011).

## Characteristics of the environment

The first characteristic that influences the experience of crowding at a destination is the number of visitors and therefore, in the case of the KNP, the number of people at a

site. The second characteristic is the availability of resources (the number of picnic areas, roads and space at a sighting) and the accessibility of these resources (Arnberger & Haider 2007; Shelby, Vaske & Heberlein 1989), for example access to the restaurant with a limited seating area or insufficient parking space for vehicles. The last characteristic is the importance of the destination type, namely a national park versus a beach or cultural site. A given number of encounters will generate stronger feelings of crowdedness in remote destinations than in more popular tourist locations such as the Table Mountain Aerial Cableway in Cape Town (Neuts & Nijkamp 2011). Eder and Arnberger's (2012) findings can be compared to those of Neuts and Nijkamp, who conducted work in an urban national park and determined that visitors with higher place attachment and prior experience were more sensitive to crowding.

### Characteristics of others present

This deals with the social situation of the destination. Chiemi and Pearce (2007) highlight the importance of the origin of other tourists compared with one's own nationality or culture, for example, some cultures do not mind crowded areas, whereas others do not like it at all. If this behaviour does not coincide with one's norms and values, it might lead to conflict and irritation (Jacob & Schreyer 1980). Vaske and Donnelly (2002) state that the number of contacts, frequency and place of contact between people (Lee & Graefe 2003; Patterson & Hammitt 1990; Vaske et al. 1996) is more important than the user level. Kalish and Klaphake's (2007) research on crowding in Hallig Hoohe National Park, Germany, found that those travelling as part of an organised group tend not to mind higher user density.

### Personal characteristics

This relates to the socio-demographic variables, motivations, emotions (feelings) and individual expectations (Neuts & Nijkamp 2011). As noticed by Bauer (2003) and Gillis, Richard and Hagan (1986), the nationality of tourists can be an essential explanation for experiencing places being overcrowded. In addition to nationality, gender and length of stay, motivations and expectations are seen to be explanatory variables in the perception of crowding (Lee & Graefe 2003), with expectations being closely related to past experiences, as frequent visitors can base their expectations on more accurate information, resulting in a heightened feeling of control and predictability (Hui & Bateson 1991; Kearsley & Coughlan 1999).

### Previous research on crowding

This section will first attend to previous work conducted on crowding in the KNP, followed by research conducted on behavioural issues at crowding in other nature-based destinations. One of the first studies found on crowding in the KNP is that of Ferreira and Harmse (1999), who focused on the social carrying capacity of the park. The study revealed that the management policy regarding tourism carrying capacity in 1999 showed early warning signs of tourist congestion. The study aimed to establish a sustainable scale

for tourism development in the park by using the concept of carrying capacity as a planning tool. Their study suggested the following management methods to relieve traffic congestion during the peak season and public holidays in the park: restrictions on coach access to particular roads; declaring certain roads as one-way routes during peak periods; tarring more roads to relieve the congestion on the southern circle roads; building future picnic spots for day visitors away from the camps; and refurbishing specific camps (Satara, Skukuza and Lower Sabie) to create a high-quality product and restrict day visitors to these camps.

In 2014, Ferreira and Harmse conducted a second study on crowding at the KNP. The research aimed to ascertain what has changed in tourism infrastructure, the superstructure and visitor management since 1997. The study was conducted on the large numbers of day visitors, the allocation of access (Wild Cards for local visitors) and the changes in the landscape matrix on the southwestern border of the KNP. Their research found that day-visitor numbers have increased, as did crowding (congestion) of tourist traffic over weekends, public holidays and holidays in the park's southern region, which impacted visitors' wildlife-viewing experience in the region. The study's most important finding was that the park's mechanisms to manage crowding (as mentioned in the introduction) have yet to be implemented successfully in the southern region. This can impact the wildlife experiences of visitors, consequently resulting in unfavourable word-of-mouth reports that will adversely affect future earnings of the park (Ferreira & Harmse 2014).

Ballantyne et al. (2017) conducted a study in the KNP regarding stakeholders' perceptions of, and solutions to, traffic congestion problems in the park's southern region. Solutions to crowding and congestion include booking and entry systems that can reduce congestion at gates, more active and visible traffic control, enforcement of traffic violations, a need to address the use of open safari vehicles (OSV), reducing vehicle numbers and separating OSVs from self-drive visitors by opening new routes.

Brett's (2018) research relooked the development of the KNP in South Africa by giving a systematic layout of the park's development since its establishment. The author concluded that the park's southern region is seen as crowded. The study proposed the following four recommendations to help alleviate the problems caused by an increasing influx of visitors: Firstly, OSVs should be better managed and fewer vehicles carrying a higher number of visitors should be encouraged. Secondly, a park-and-ride system should be introduced, which could include value-adding initiatives such as meals cooked by local people in the bush or allowing drivers to access roads closed to the general public. Thirdly, peripheral developments should be developed. This entails that all new tourism-related products should be on the borders of the park's southern region. Fourthly, regional branding should be encouraged. Here, consideration should be given to the separate branding of the KNP's four regions and the retention of the far northern region as a remote wilderness.

As the focus of this research was to examine behavioural issues in crowded protected areas, the work of Arnberger and Haider (2007) was investigated, as this was the only study that could be found regarding behavioural issues of visitors. The study investigated the influence of place attachment and experience by using history on the perception of depreciative visitor behaviour, recreation impacts and crowding in an urban national park. The results showed that visitors with higher place attachment and previous experience in the park were more sensitive to social and environmental site conditions. Therefore, they might be more affected by crowding.

Social effects (also an area investigated by this research) of visitor crowding and visitors' expectations and satisfaction were researched by Kalisch and Klaphake (2007) in Hallig Hoohe National Park, Germany. They found that the most sensitive visitor group comprised the non-guided day visitors, whereas guided visitors were much more tolerant of crowding. Furthermore, the study found that perceptions of crowding seem to have had only a slight impact on visitor satisfaction.

From the studies investigated, crowding is not unique to the KNP. However, it is alarming that crowding remains a problem in the KNP (results of this study show this) after various studies were conducted with different solutions that were proposed, specifically regarding wildlife sightings. This indicates that a better understanding is required to solve the issues of crowding. This study will be the first to examine visitors' behaviour and feelings in these crowded areas.

### Visitor management in protected areas

At the current rate, it is predicted that the number of visitors to the KNP will double within 11 years; according to Brett (2018), the number could even double by 2029. Balancing the many and often conflicting demands placed on the park will require considerable foresight and skilled management. More effective management of visitors, particularly during peak holiday periods, and innovative solutions to the problems created by visitor crowds remain urgent research priorities. Brett (2018) states that managers of protected areas must balance the need to maintain protected areas and be financially self-sufficient. To provide services that facilitate crowding effectively, managers must understand and incorporate tourist preferences and tolerance levels for infrastructure and activities, as well as use restrictions and other attributes of the park and protected areas (Hearne & Salinas 2002), because visitor management is vital in providing tourists with worthy experiences.

Based on the *Dictionary of Tourism* (Zelenka & Pásková 2012, as cited in Zelenka & Kacetyl 2013:6), visitor management is defined as:

[A] set of managerial techniques and tools used by private and public bodies of tourism (mainly by destination management organisations and in protected areas by their management) for directing visitor flows and visitor behaviour. (Zelenka & Kacetyl 2013:6)

It is part of destination management, mainly in protected areas and destinations that systematically build sustainable tourism.

Visitor management is essential to manage tourism impacts, particularly in national parks where the environment is critical. Customarily, this was carried out by diverting tourists from the so-called 'honey pots' (in this case, overcrowded areas in the southern section of the KNP) or by hardening areas (e.g., resurfacing paths and footpaths) with high visitor numbers (Swarbrooke 1999). Mason (2008) adds that there are two main ways to manage crowding of visitors: firstly, by controlling the number of visitors – either by limiting numbers to match capacity or spreading the number throughout the year – rather than having them concentrated in a focused tourist season. Secondly, by adapting the resources to enable the park to cope with the volume of visitors, thereby becoming less impacted and modifying visitor behaviour in the crowded area.

Visitor management is therefore viewed as the regulating of visitors; such regulation may relate to the prevention of access to specific areas or sites.

## Research methods and design

This study aimed to understand visitors' behaviour and feelings in crowded areas in the KNP. The study followed a causal design (explanatory) (Maree & Van der Westhuizen 2007). A qualitative approach was followed, namely non-probability sampling. In a non-probability sample, individuals are selected based on non-random criteria, and only some individuals have a chance of being included. The form of non-probability sampling used was convenience sampling; the convenience sample consists of the individuals who are most accessible to the researcher (Maree & Pietersen 2007).

The research was conducted during the school holidays in December 2022 and the peak period of the Christmas season. The sample population comprised overnight and day visitors (older than 18 years) to the park. The research was mainly conducted in two of the largest rest camps in the southern section, namely Berg-en-Dal and Skukuza. Two picnic areas were included: the day visitors' site at Skukuza, and Afsaal, a picnic area with a restaurant. Twenty-three interviews were conducted at the Berg-en-Dal Rest Camp 10, 4 at the Afsaal Picnic Site and 9 at the Skukuza Rest Camp. The research population included day and overnight visitors to the park's southern section. Although a saturation point was reached at interviewee number 16, the researchers continued interviewing seven more participants. No new responses to the questions emerged. The saturation point is defined as the point at which participant interviews cease to provide additional or novel information and insights to the researcher (Maree & Pietersen 2007).

Typical questions covered participants' characteristics (e.g., average number of visits and days spent in the park), their views on what they see as crowded areas and type of

behaviour in crowded areas. A digital recording device was used to record all the interviews, after which the recorded interviews were carefully transcribed. The data were analysed using Creswell and Creswell's (2018) six-step approach:

- Organising and preparing data. All the questions were typed out as they had been asked during the interviews; forthwith, the questions, as well as the interviewees' responses, were transcribed.
- Reading through all the data. The researchers read through every interviewee's answer to each question.
- Assigning codes to the main themes that emerged from these responses. Two overarching approaches to thematic analysis can be used, namely inductive and deductive. The researchers identified specific themes arising from the specific questions.
- Applying the coding process to describe the setting or people and ascribing themes for analysis. Once the researchers identified the main themes, it was analysed to determine their significance.
- By using advanced summary, the items and themes that were represented in the qualitative narrative were summarised, with the researchers making conclusions from the data and the themes that had been raised.
- Drawing meaning from the data through data interpretation, from which the researchers reached a decision and were able to make recommendations.

## Ethical considerations

The study was approved by the Faculty of Economic Management Sciences ethics community at North-West University (Ethics number NWU-01872-22-A4). The study was also approved by the scientific committee of SANParks, with the following project number CRO/2022/11.

The following considerations were taken into account to ensure that the data were collected ethically:

- SANParks must provide access to the KNP to conduct interviews. This was received.
- The study did not target any vulnerable groups and targeted only adult participants (18 years of age and older).
- The interview guide was accompanied by a cover letter that states the purpose of the research, informed consent details, length of the interview and copyright details.
- Responses stayed anonymised and were treated as confidential, with the results presented in aggregates (the group results must be presented as a whole) and not at an individual level.
- Participants were reassured that there would be no attempt to capture data they do not voluntarily provide such as e-mail addresses, internet protocol (IP) addresses or other captured information.

## Results

### Participants' characteristics

Twenty participants were overnight visitors and three were day visitors. Regarding the number of visits per year by the

overnight visitors, it was found that they visit the park an average of 2.44 times a year and stay an average of 16 days in the park. Participant 7 had the most extended stay, namely 90 days, followed by Participant 4, who stayed for 38 days. The shortest stay was 2 days (Participants 5 and 7). Regarding the day visitors, it was found that they visit the park at least 17 times a year, with Participants 14 and 15 indicating 30 times and 20 times per year, respectively. They stay for only 1 day (day visitors). Of the 23 participants interviewed, only one was an international visitor (Participant 6). The participant indicated that she used to live in South Africa but had emigrated to Australia 20 years ago.

Most of the participants reside in Gauteng (10), followed by Mpumalanga (8), with two participants from KwaZulu-Natal and one participant each from the Western Cape, North-West province and Australia (international), respectively.

Considering whether participants visited other national parks in South Africa, 16 participants indicated that they did ('yes'), six said 'no' and two said 'rarely'. Most participants indicated their preferred accommodation type as camping (10 participants), followed by chalets (7 participants). Participant 1 stated camping, depending on the length of stay; if it is longer, the visitor prefers to stay in a chalet. Participants 11, 14, 20 and 23 indicated camping and chalets. Participant 15, a day visitor, said they chose to stay outside the park.

### Motivation for tourists visiting the southern region of the park

From the data analysis, the following main themes (motivations) emerged: proximity, wildlife, availability, attributes and tradition (Table 1).

**TABLE 1:** Motives for visiting the Kruger National Park.

Response from participants	Sub-themes	Themes
'I have family in Nelspruit (Mbombela), therefore I am staying in this area'. (P2)	Staying in the area	Theme 1: Accessibility
'Easy to access from KwaZulu-Natal'. (P3)	Easy access	
'Closest to get in[to] the park'. (P1)	Closest	
'Family, Polokwane'. (P5)	Family	
'Quick access and good facilities close by, like golf course'. (P8)	Quick access	Theme 2: Wildlife
'The closest entry from where we live (Marloth Park)'. (P11)	Closest entry	
'You're guaranteed to see wildlife like leopards and lions'. (16)	Guaranteed to see wildlife	
'The park has scenic beauty and an abundance of wildlife'. (P4)	Abundance of wildlife	Theme 3: Availability
'More game at this part of the park'. (P7)	More game	
'The best area for sightings'. (P9)	Area for sightings	Theme 4: Attributes
'The only place with availability and affordability'. (P6)	Availability and affordability	
'Other places in the park were full (Satara)'. (P17)	Park was full	
'Bring kids to come and see Kruger National Park and South Africa'. (P6)	Bring kids	Theme 4: Attributes
'I like this side, it is beautiful. Good picnic areas'. (P18)	Good picnic sites	
'I Like Berg-en-Dal, lots of shade and trees'. (P10)	Lots of shade	

The first theme, the *accessibility* to the southern region, emerged from the responses of numerous participants who indicated that they have family in this area, which is why they visit the southern region (as stated by Participant 2: 'I have family in Nelspruit [Mbombela], therefore I am staying in this area', and that it is easily accessible from their place of origin, this is supported by participant 3 statement that '[It is] easy to access from KwaZulu-Natal'. For the second theme, *wildlife*, the participants felt that this section of the park has more wildlife and a wider variety as well as more predators, as Participant 16 indicated that 'one is guaranteed to see wildlife like leopards and lions'. *Availability* was the third theme identified, as participants indicated that this was the only region (rest camps) where they could find accommodation. Participant 17 said that 'other places in the park were full'. The fourth theme identified was the *attributes*. This refers to reasonable accommodation, shaded trees to camp under, scenic beauty, good facilities and good picnic areas. Participant 10 said, 'I like Berg-en-Dal, lots of shade and trees'. The last theme was that it had become a *tradition*. The participants indicated that they always visit this part of the park and it has become a tradition, as Participant 12 said that 'it has been a tradition, is coming to the park for 40 years'.

### Areas in the park where tourists experience crowding

Participants were asked to identify areas in the park's southern section where they experienced crowding. The following places, where there are sightings especially leopards and lions and, to some extent, elephants were mentioned: Lower Sabie restaurant; Skukuza Rest Camp; Lower Sabie Rest Camp; roads; Afsaal Picnic Site; Crocodile Bridge entrance; reception at Skukuza; bathrooms at camping areas in Skukuza and Berg-en-Dal; camping area in Berg-en-Dal Rest Camp; anything south of Satara Rest Camp and entrance gates to Skukuza and Malelane Rest Camps. This falls in line with the work of Brett (2018) and Ballantyne et al. (2017), in which it was indicated that crowded regions in the southern section of the park include wildlife sightings, day visitor areas and areas where people can stop to relax, eat and drink and buy needed supplies.

### Feelings of tourists towards crowding

The next aspect that the researchers wanted to understand better was how crowded areas make visitors feel. As seen from the results (Table 2), most of the feelings revealed were about wildlife sightings. Therefore, it was necessary to determine the feelings that tourists experience in crowded areas. The areas where crowding was studied in the park's southern section were picnic areas with restaurants, picnic areas without restaurants, campsites, ablution facilities at campsites, parking at camps or camping areas and wildlife sightings, where three scenarios were given, namely where there were fewer than five vehicles, between five and ten vehicles and ten plus vehicles (Ballantyne et al. 2017; Moore 2022; Slabbert 2022).

**TABLE 2:** Feelings of all participants grouped into different themes.

Sub-themes	Themes
'Made me angry' (P10) (P1) (P17)(P23) 'Was upset' (P13) 'Annoyed' (P9) (P4) (P15) 'Frustrated' (P23) (P21) (P7, 15) (P3) (14) 'Cross' (P1) 'Gives me a headache' (P23)	Theme 1: Belligerent
'Was chilled' (P7, 9) 'Was fine, not angry' (P1) 'Just the way [it] is' (P6) 'Just what I expected' (P7) 'Feeling is OK' (P3) 'Sit by and be patient' (P20)	Theme 2: Content
'Excited (that there is something to see)' (P13) 'Jealous; I want to see the animals' (P14)	Theme 3: Expectations
'Was disappointed' (P8) (P15) (P18)	Theme 4: Disappointment

The first identified theme was *belligerent*, meaning 'feeling angry or upset' (Macmillan Dictionary 2023). Words that participants used are 'frustrated', 'angry', 'annoyed', 'upset', 'cross', 'negative' and 'give me a headache'. Participant 12 felt 'frustrated with people that do not stay by the rules'. Participant 13 said, 'Cannot do anything, cannot get through, makes one frustrated'. This was also the theme with the most responses and it could therefore be viewed as important. The research of Kim and Yoon (2020) regarding the feelings of tourists at crowded tourist destinations revealed that visitors predominantly feel anger when areas are crowded. It confirms the current finding of this research and can be seen as a general feeling of tourists when they are in crowded tourist areas.

The second theme identified was *content*, meaning a state of tranquillity or quietness about a situation (Merriam-Webster Dictionary 2023); this cannot be better explained than in the words of Participant 6, 'just the way it is'. Participant 1 said, 'I am fine, not angry. Depend on the sighting; if leopard or lion'. This was the theme with the second-largest number of participants.

The third theme identified was *expectations*. This is best explained by the words of Participant 14: 'Jealous, I want to see the animals'. The words of Participant 13 were, '[I was] excited that there was something to see'. This finding is unexpected and new to the researchers, as one would expect the first identified theme (*belligerent*) in the research as a possible theme but not *expectations*. The research indicates that some participants are excited when they arrive at a crowded area, because that suggests there might be some fascinating wildlife or sought-after game such as lions, leopards or elephants to see; they therefore do not mind the crowds at the sighting.

The last theme identified is *disappointment*, which means defeated in expectation or hope (Merriam-Webster Dictionary 2023), as stated by Participant 18, 'I know there is something but not sure I will see it'. This finding shows that some visitors do not mind the crowding but are more concerned that they will not see the animals other visitors see because of the crowded number of vehicles at the sighting.

## Behaviour of tourists in crowded areas

The following section determined the behaviour of visitors in crowded areas by asking why they stayed or left the crowded area. Crowding at park facilities such as picnic sites and restaurants revealed one theme: *to eat*.

### Why do participants stay in crowded areas?

Theme 1, *to eat and use facilities*, clearly indicated that people stayed to eat at restaurants and shops (Table 3), as stated by Participant 17: 'I wanted to eat and drink something'. Participant 3: 'We had to eat'. From this, it is evident that people will stay at crowded places such as restaurants and shops because they have no other option as, most of the time, there is a limited number of places where one can eat or buy supplies in the rest camps of the parks. Therefore, if tourist numbers are high, the availability of facilities becomes difficult.

Crowding at wildlife sightings revealed three different themes, namely: (1) to see nature; (2) traffic congestion and (3) content. Theme 1: *To see nature*. Evidently, visitors are in the park to see animals; therefore, they stayed and did not leave the crowded sighting area. Participants 5 and 15 said: 'Here to view wildlife'. Most of the responses were sorted under theme 2, namely *traffic congestion*. This means they could not move through, as the road was blocked at the sighting because of all the vehicles there. Participant 20 said: '[I] had no choice and couldn't get through'. Participant 15 said that they 'had nowhere to go, was boxed in'. Several participants indicated that people do not adhere to traffic rules and regulations of the park at sightings. Visitors drive off the road, park on the wrong side of the road and do not park straight in the road. As stated by Participant 18, 'People stop skew in the road, do not adhere to the rules'. Participant 22 said: '[They] need to tell people how to behave, need to enforce rules'. Research conducted by Ballantyne et al. (2017) confirmed this type of bad behaviour by visitors in the park.

**TABLE 3:** Behaviour of tourists in crowded areas: Staying in crowded areas.

Participants' response to staying in crowded areas	Sub-themes	Themes
<b>Crowding at rest camps:</b>		
'Waiting for food, had to stay, but in the end, don't want to come anymore'. (P10)	Needed to make use of restaurants or shops and facilities.	Theme 1: To eat
'We had to eat'. (P3, 9, 15, 17)		
'Had to wait, wanted something here (food)'. (P21)		
'Had to go to the toilet'. (P13)		
<b>Crowding at wildlife sightings:</b>		
'Here to view animals, do not see them every day'. (P5, 6, 17)	View animals The Big Five See wildlife	Theme 1: To see nature
'I am here to view animals'. (P5, 18)		
'If the Big Five, we will stay'. (P18, 23)		
'Wanted to see wildlife'. (P11, 13, 20, 21)		
'I could not leave (boxed in)'. (P15)	Could not leave	Theme 2: Traffic congestion
'I could not leave'. (P1, 3, 6, 7, 17, 19, 20)	Boxed in	
'Was the first at the sighting (wanted to leave later but could not leave, was boxed in)'. (P12)		
'Do not mind (it is what it is)'. (P2)	Don't mind	Theme 3: Content
'It is part of the trip; we accept it'. (P16)	We accept it	

Their study stated that to address congestion (crowding) at sightings, park management must enforce vehicle behaviour rules around animal sightings.

Theme 3, *at peace*, means that participants were relaxed and at ease in the crowded areas at sightings. Participant 16 said 'it is part of the trip; we accept it', and Participant 2 said that they 'do not mind, it is what it is'. This shows that some tourists tolerate crowding, as they expect this behaviour.

### Why did participants leave?

None of the participants gave any reasons regarding crowding at facilities. The first identified theme for leaving crowded areas at wildlife sightings was 'seen it all', followed by 'uninteresting' and the last theme was 'unviewable' (Table 4). Theme 1, *seen it all*, refers to the fact that tourists have seen all the wildlife they wanted to see and are no longer interested in seeing it again. This is explained by Participant 7, who 'have seen many other things'. The second theme, *uninteresting wildlife*, refers to the animals where crowding occurs as not interesting for tourists; this usually refers to animals such as the common antelope species. As Participant 1 indicated, '[It] depends on sighting; if leopard and lion I'll stay', and Participant 6, 'Yes, that's the place to go, where there are lions and not uninteresting animals'. The last theme is *unviewable*. This refers to the fact that people cannot see the animal, as vehicles block their view. This is explained by Participant 6: 'I'll stay if I can see'.

## Discussion

This research confirms previous results that crowding is an ongoing challenge in the KNP (Ballantyne et al. 2017; Brett 2018; Ferreira & Harmse 1999, 2014). This study identified three main areas of crowding: the entrance gates in the south, rest camps (specifically Skukuza) and wildlife sightings of popular species such as the Big Five.

### Entrance gates

Ballantyne et al. (2017) identified various mechanisms to manage congestion (crowding) at entrances gates, for example, creating a new online booking system to speed up vehicle entry into the park; providing three different queueing areas at gates

**TABLE 4:** Behaviour of tourists in crowded areas: Leaving crowded areas.

Participants' response to leaving crowded areas	Sub-themes	Themes
'Have seen many other sightings'. (P7)	Seen other sightings	Theme 1: Seen it all
'No need to stay. We have seen everything'. (P19)		
'If not excited sighting, I will leave'. (P15)	Not excited Depends on sighting Where there are lions	Theme 2: Uninteresting wildlife
'Depends on the sighting; if leopard and lion, I'll stay'. (P1)		
'Yes, that's the place to go, where there are lions and not uninteresting animals'. (P16)		
'If I cannot see, [I] will turn around'. (P21)	Cannot see If I can see	Theme 3: Unviewable
'I'll stay if I can see'. (P6)		

(one for day-visiting self-drivers, one for open safari vehicles and one for overnight visitors); providing regular, ongoing 'service quality' training for gate reception staff and preventing vehicles from using the park for transit purposes. Still, this problem of crowding exists and needs thoughtful attention from the KNP management to implement the solutions.

### Skukuza rest camp

A significant number of participants from this research indicated that the restaurants in Skukuza were critical areas where crowding was experienced. The research is the first to identify the Skukuza restaurants as problematic regarding crowding. There are currently two restaurants, Cattle Baron and The Station Restaurant (South African National Parks 2023a). The problem here is that people need to eat and have no other alternative than to wait to be seated, especially day visitors. This is difficult to manage, as people migrate through the park to different areas and rest camps; therefore, no one knows how many will arrive at restaurants and rest camps' communal areas. The most plausible solution is to improve service in order to streamline the time people must wait to be served or to implement a pre-booking system (develop a booking application) where only people with reservations can enter the restaurants.

### Wildlife sightings

An interesting finding is that some visitors are willing to accept the crowding at wildlife sightings, because they know that it often indicates that there is something particularly interesting or valuable to see, for example, predators or some of the Big Five (elephant, rhino, lion, leopard and buffalo). This could add to the excitement of the experience and allow visitors to see sought-after species. Therefore, some visitors' behaviour is to join crowded wildlife sightings. The research also revealed that crowding rarely occurs at sightings of common species such as kudu, eland and impala. One of Ballantyne et al.'s (2017) recommendations is to reframe visitor expectations from just seeing the Big Five to experiencing the whole Kruger environment. This research agrees with Ballantyne et al.'s view that the focus should be on more than just the Big Five. To change these circumstances, marketing and branding conducted by SANParks should focus on the KNP as a tourism destination and omit the Big Five theme. This can be done by emphasising its accommodation facilities, restaurants and other existing sites such as geological and archaeological areas. Zelenka and Kacetl (2013) state that visitor flows could be optimised by influencing the tourists' activities and behaviour in relation to the area, which may decrease crowded areas significantly.

An additional aspect is that the behaviour of tourists at wildlife sightings contributes to the crowded wildlife sightings dilemma. For example, visitors do not follow road traffic regulations (e.g., stopping on the right side of the road) and therefore obstruct other visitors, which could create hazardous situations and impede traffic flow; this notion was confirmed

by Ballantyne et al. (2017) and Brett (2018). Additionally, when visitors linger for a long time at a sighting or do not move to allow others to see, it can create a bottleneck and limit the number of people who can enjoy the experience. It is essential for visitors to be aware of the impact of their behaviour and to act responsibly and respectfully when visiting wildlife areas.

A possible solution is for management at the park to consider developing a code of conduct that people must sign to indicate that they pledge to adhere to the rules and regulations. The idea of a code of conduct is supported by the research of Mason (2005). It is recommended that this signed code of conduct be displayed in visitors' vehicles by putting up a small window display with a specific number located on it to prove that they have signed the pledge. Visitors might then be more cautious, as they could be reported to management by sending the allocated number to a call centre. Park management can incentivise visitors who did sign the code of conduct. Adding more signage in the park regarding rules, behaviour at sightings and traffic regulations could also reduce crowding. This would serve as a constant reminder of the rules and regulations. Educating visitors about behaviour at crowded sightings is therefore crucial.

Visitors at crowded wildlife sightings experienced various feelings, which were revealed for the first time in this research for the KNP. The results identified feelings of frustration, anger and disappointment, as well as feelings of contentment and excitement. Kim and Yoon (2020) identified two feelings (i.e., anger and sympathy) at crowded tourist destinations such as historical sites. These results showed that anger weakens tourists' environmentally responsible behaviour (e.g., driving off the road or speeding), whereas sympathy might strengthen it.

Environmentally responsible behaviour refers to actions by visitors that minimise negative impacts on the environment and promote sustainability (Newsome, Moore & Dowling 2013). This includes a commitment to conserve natural resources, reduce pollution and preserve ecosystems for current and future generations. Some examples of environmentally responsible behaviour are the following: In this research, anger and frustration were expected feelings that tourists feel at crowded sightings, but what was interesting was that some people became excited. The main reason for becoming excited was that there might be some fascinating wildlife to view, as numerous vehicles at a sighting equal the possibility of one of the Big Five. Disappointment was also identified as a feeling that visitors felt at crowded wildlife sightings, mainly because there was a possibility that they would not see what the other visitors saw, as there were too many vehicles and the specific animal might move off before they have had a chance to see it.

## Conclusion

Tourists who visit crowded areas of the southern section of the KNP experience a range of feelings and behaviours. Some may feel overwhelmed or stressed by crowding at sightings

and other identified areas, whereas others become excited, as they know that there is something (lion, leopard, elephant) interesting to see. Some tourists may engage in respectful behaviour towards wildlife and the environment, but others may engage in harmful or disruptive activities, for example, disobeying traffic and park regulations. The conservation implication is that visitors impact areas along the road and the behaviour of wildlife at sightings negatively, thus impacting other visitors' experiences in the park. It is essential for park authorities to educate tourists about appropriate behaviour and to provide adequate resources to manage crowds in order to minimise negative impacts on wildlife, the environment and the tourist experience.

What makes this research different is that it determines the behaviour of tourists in crowded areas and contributes to the body of knowledge in this regard. Previous research (Ballantyne et al. 2017; Brett 2018) only determined which areas in the park experienced crowding and then suggested how to improve the management of these areas. This study can assist park management in developing new visitor management strategies for crowded areas based on visitors' experiences and feelings to improve the visitors' overall experience in the park. Some examples of possible visitor management strategies are:

- Education to visitors: The park can implement educational programmes to raise awareness among visitors about responsible and sustainable visitation practices.
- Time-slot reservations: This entails that visitors can book specific time slots to enter the park or use facilities. This will come in handy at the restaurants of larger rest camps in KNP. This can assist in the spreading of visitation throughout the day, reducing peak-hour crowding.
- Trail design and management: A plausible solution can be to implement one-way loops or separate entry and exit points to minimise congestion.
- Interpretive signage and apps: Addition is fundamental in protected areas and therefore the instalment of interpretive signage along roads and routes and at key points to educate visitors about crowding behaviour can help.
- Honorary rangers and volunteers: Make use of Honorary rangers and volunteers to increase the presence of 'park officials' in KNP as this can deter inappropriate behaviour and ensure compliance with regulations in KNP.
- Incentives for off-peak time visitation: Offer discounted fees or special experiences for visitors who choose to visit during KNP in off-peak times or off-peak hours. This can help balance visitation throughout the year.

## Acknowledgements

The author thanks Dr Liandi Slabbert and Kevin Moore from SANParks and Armand van der Merwe (a North-West University student) for helping with the interviews.

## Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

## Author's contributions

P.v.d.M. is the sole author of this article.

## Funding information

This work was supported by the National Research Foundation.

## Data availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

## Disclaimer

The views and opinions expressed in this article are those of the author and do not necessarily reflect the official policy or position of any affiliated agency of the author.

## References

- Arnberger, A. & Haider, W., 2007, 'A comparison of global and actual measures of perceived crowding of urban forest visitors', *Journal of Leisure Research* 39(4), 668–685. <https://doi.org/10.1080/00222216.2007.11950127>
- Ballantyne, A., Packer, A., Sneddon, R., Moore, K. & Slabbert, L., 2017, *Kruger National Park traffic management study: Stakeholder perceptions of, and solutions to, traffic congestion problems in the south region, SANParks*.
- Bauer, T., 2003, 'Carrying capacity of cultural heritage destinations', in WTO (ed.), *Sustainable tourism resource management*, pp. 113–126, WTO, Madrid.
- Brett, M.R., 2018, 'Tourism in the Kruger National Park: Past development, present determinants and future constraints', *African Journal of Hospitality, Tourism and Leisure* 7(2), 1–28.
- Chiemi, Y. & Pearce, P.L., 2007, 'The influence of appearance and the number of people viewed on tourists' preferences for seeing other tourists', *Journal of Sustainable Tourism* 15(1), 28–43.
- Creswell, J.W. & Creswell, J.D., 2018, *Research design: Qualitative, quantitative & mixed methods approaches*, 5th edn., Sage, London.
- Dennis, N. & Brett, M.R., 2000, *Kruger*, Struik Publishers, Cape Town.
- Eder, R. & Arnberger, A., 2012, 'The influence of place attachment and experience use history on perceived depreciative visitor behavior and crowding in an urban national park', *Environmental Management* 50, 566–580. <https://doi.org/10.1007/s00267-012-9912-8>
- Ferreira, S.L.A. & Harmse, A.C., 1999, 'The social carrying capacity of Kruger National Park, South Africa: Policy and practice', *Tourism Geographies* 1(3), 325–342. <https://doi.org/10.1080/14616689908721325>
- Ferreira, S.L.A. & Harmse, A.C., 2014, 'Kruger National Park: Tourism development and issues around the management of large numbers of tourists', *Journal of Ecotourism* 13(1), 16–34. <https://doi.org/10.1080/14724049.2014.925907>
- Gillis, A.R., Richard, M.A. & Hagan, J., 1986, 'Ethnic susceptibility to crowding: An empirical analysis', *Environment and Behavior* 18(6), 683–706. <https://doi.org/10.1177/0013916586186001>
- Hearne, R.R. & Salinas, Z.M., 2002, 'The use of choice experiments in the analysis of tourist preferences for ecotourism development in Costa Rica', *Journal of Environmental Management* 65(2), 1–11. <https://doi.org/10.1006/jema.2001.0541>
- Hui, M.K. & Bateson, J.E., 1991, 'Perceived control and the effects of crowding and consumer choice on the service experience', *Journal of Consumer Research* 18(2), 174–184. <https://doi.org/10.1086/209250>
- Jacob, G. & Schreyer, R., 1980, 'Conflict in outdoor recreation: A theoretical perspective', *Journal of Leisure Research* 12(4), 368–380. <https://doi.org/10.1080/00222216.1980.11969462>
- Joubert, S.C.J., 1990, 'The history of the development of the Sabie and Shingwedzi Reserves and the Kruger National Park, 1898 to 1946', in transl. J. Stevens, J. U.d.V. Pienaar (ed.), *Neem uit die Verlede*, Ch. 17, South African National Parks, Pretoria.
- Kalisch, D. & Klaphake, A., 2007, 'Visitors' satisfaction and perception of crowding in a German national park: A case study on the island of Hallig Hooge', *For Snow Landscapes Research* 81(1/2), 109–122.
- Kearsley, G. & Coughlan, D., 1999, 'Coping with crowding: Tourist displacement in the New Zealand Backcountry', *Current Issues in Tourism* 2(2–3), 197–210. <https://doi.org/10.1080/13683509908667851>
- Kim, H.R. & Yoon, S.Y., 2020, 'How to help crowded destinations: Tourist anger vs sympathy and role of destination social responsibility', *Sustainability* 12(6), 2358. <https://doi.org/10.3390/su12062358>
- Kruger National Park, 2023a, *Regions map*, viewed n.d., from [https://www.sanparks.org/images/parks/kruger/conservation/scientific/maps/map\\_images/Regions.jpg](https://www.sanparks.org/images/parks/kruger/conservation/scientific/maps/map_images/Regions.jpg)
- Kruger National Park, 2023b, *Directional map*, viewed 18 August 2023, from <https://www.sanparks.org/assets/docs/e-brochures/kruger-map.pdf>.

- Lee, H. & Graefe, A.R., 2003, 'Crowding at an arts festival: Extending crowding models to the front country', *Tourism Management* 24(1), 1–11. [https://doi.org/10.1016/S0261-5177\(02\)00036-5](https://doi.org/10.1016/S0261-5177(02)00036-5)
- Macmillan Dictionary, 2023, *Synonyms*, viewed 18 May 2023, from [https://www.macmillandictionary.com/dictionary/british/belligerent\\_1#belligerent\\_1\\_\\_1](https://www.macmillandictionary.com/dictionary/british/belligerent_1#belligerent_1__1).
- Maree, K. & Pietersen, J., 2007, 'Sampling', in K. Maree (ed.), *First steps in research*, pp. 172–180, Pretoria, Van Schaik.
- Maree, K. & Van der Westhuizen, C., 2007, 'The language of research', in K. Maree (ed.), *First steps in research*, pp. 24–44, Pretoria, Van Schaik.
- Mason, P., 2005, 'Visitor management in protected areas: From "hard" to "soft" approaches?', *Current Issues in Tourism* 8(2–3), 181–194. <https://doi.org/10.1080/13683500508668213>
- Merriam-Webster Dictionary, 2023, viewed 25 January 2023, from <https://www.merriam-webster.com/dictionary/belligerent>.
- Middleton, V.C. & Hawkins, R., 1998, *Sustainable tourism: A marketing perspective*, Butterworth-Heinemann, Oxford.
- Moore, K., 2022, Crowding in Kruger National Park. Email correspondence.
- Neuts, B. & Nijkamp, P., 2011, *Crowding perception in a tourist city: A question of preference*, Tinbergen Institute Discussion Paper TI 2011-140/3, Tinbergen Institute, Amsterdam.
- Newsome, D., Moore, S.A. & Dowling, R.K., 2013, *Natural area tourism: Ecology, impacts and management*, 2nd edn., Channel View, Bristol.
- Patterson, M.E. & Hammitt, W.E., 1990, 'Backcountry encounter norms, actual reported encounters, and their relationship to wilderness solitude', *Journal of Leisure Research* 22, 259–275. <https://doi.org/10.1080/00222216.1990.11969829>
- SANParks, 2018, *Kruger National Park: Park management plan*, SANParks, Pretoria.
- Shelby, B., Vaske, J.J. & Heberlein, T.A., 1989, 'Comparative analysis of crowding in multiple locations: Results from fifteen years of research', *Leisure Sciences* 11, 269–291. <https://doi.org/10.1080/01490408909512227>
- Slabbert, L., 2022, Email from Dr Liandi Slabbert, 22 July 2022.
- Slabbert, L., 2023, Visitor numbers to KNP, Telephonic interview, 18 May 2023.
- South African National Parks, 2023a, *Restaurants*, viewed 18 May 2023, from <https://www.sanparks.org/parks/kruger/tourism/restaurants.php>.
- South African National Parks, 2023b, *Kruger National Park*, viewed 18 August 2023, from [https://www.sanparks.org/parks/kruger/conservation/scientific/maps/maps\\_infrastructure.php](https://www.sanparks.org/parks/kruger/conservation/scientific/maps/maps_infrastructure.php).
- Stokols, D., 1972, 'A social-psychological model of human crowding phenomena', *Journal of the American Planning Association* 38(2), 72–83. <https://doi.org/10.1080/01944367208977409>
- Stokols, D., Rall, M., Pinner, B. & Schopler, J., 1973, 'Physical, social, and personal determinants of the perception of crowding', *Environment and Behavior* 5(1), 87–115. <https://doi.org/10.1177/001391657300500106>
- Swarbrooke, J., 1999, *Sustainable tourism management*, CABI Publishers, New York, NY.
- Vaske, J.J. & Donnelly, M.P., 2002, 'Generalizing the encounter–norm–crowding relationship', *Leisure Sciences* 24(3–4), 255–269. <https://doi.org/10.1080/01490400290050718>
- Vaske, J.J., Shelby, B., Graefe, A.R., Heberlein, T.A., 1986, 'Backcountry encounter norms: Theory, method and empirical evidence', *Journal of Leisure Research* 18(3), 137–153. <https://doi.org/10.1080/00222216.1986.11969653>
- Westover, T.N., 1989, 'Perceived crowding in recreational settings: An environment-behavior model', *Environment and Behavior* 21(3), 258–276. <https://doi.org/10.1177/0013916589213002>
- Zelenka, J. & Kacetl, J., 2013, 'Visitor management in protected areas', *Czech Journal of Tourism* 2(1), 5–18. <https://doi.org/10.2478/cjot-2013-0001>
- Zelenka, J. & Pásková, M., 2012, *Výkladový slovník cestovního ruchu (Explanatory tourism dictionary)*, 2nd completely re-written and expanded edn., Linde, Prague.