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Exploring Stakeholder perspectives in protected areas and gateway communities: the case of aviation tourism growth in the Alaska Range

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ABSTRACT

As the primary method of accessing the south side of the Alaska Range, aviation plays a critical role in providing visitor access to some of the most spectacular regions of Denali National Park and Preserve. In recent years, flightseeing and glacier-landing tourism in Denali has grown considerably, bringing with it several benefits, impacts, and challenges being felt both within the national park and in the gateway community of Talkeetna, Alaska. This paper seeks to integrate sustainable tourism planning, stakeholder perspectives, and national park management using Talkeetna and Denali as a case study. Specifically, this research uses qualitative methods to document stakeholder-identified impacts of the growth in aviation tourism and considers local perspectives of tourism planning and management challenges. Results indicate that the impacts of growth in aviation tourism are being felt both within and outside the boundaries of the national park, demonstrating the need to consider the broader context of the complex tourism system affected by growth in aviation in the region. Findings also reveal that local stakeholders perceive several administrative challenges affecting the ability of the National Park Service to effectively manage impacts of aviation tourism, offering important insight into regional-scale tourism administration and potential future park management decisions.

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Protected areas; sustainable tourism; community tourism; alpine tourism; national parks; gateway communities

Introduction

Around the world, parks and protected areas play an integral role in sustainable nature-based tourism, providing long-term protection of natural landscapes and safeguarding tourism resources including scenic beauty, healthy wildlife populations, and natural sounds (Bushell & Eagles, 2006; Leung et al., 2018). As the global demand for nature-based tourism grows, protected areas, and the local communities acting as gateways into these landscapes, are increasingly being sought out by visitors as some of the most popular attractions for travel and tourism. Protected areas and the tourism they generate have thus become topics of major social, economic, and environmental importance (Kuenzi & McNeely, 2008; UNWTO & UNDP, 2017). In the United States, national parks specifically account for a sizeable portion of nature-based tourism, collectively receiving over 327.5 million visitors in 2019 and driving significant growth in commercial tourism and small-business development in local communities adjacent to parks (Cullinane Thomas & Koontz, 2020). National parks and the gateway communities that host park visitors are, in turn, strongly affected by nature-

based tourism in both positive and negative ways (Dunning, 2005; Fredman, 2004; Stoker et al., 2020). The complex nature of tourism in protected areas therefore requires informed management and planning processes that work toward sustainable tourism development and include voices from various stakeholder groups beyond protected areas managers (McCool, 2009).

The need to engage local communities in protected areas management is increasingly recognized as an important component of conservation of natural resources and is understood to be critical for the successful management of tourism within parks (Haukeland, 2011; Wilson et al., 2018). Given the unique nature of tourism in each national park across the U.S. and the world, there appears to be no one-size-fits-all approach for sustainably managing tourism in protected areas; instead, local social, environmental, and political contexts must shape management styles (Imran et al., 2014; Poudel et al., 2016). Case studies examining commercial tourism industries or ventures operating within and around national parks are therefore critical representations not only of specific cases of tourism

development in parks, but of opportunities to understand best management practices to protect parks and support the gateway communities that host these tourism enterprises and visitors to the region. Specifically, local stakeholder perspectives, attitudes, and opinions regarding tourism and protected areas are critical to inform sustainable management of rising visitation to national parks (Eagles & McCool, 2002).

The concept of stakeholder participation in governance processes first emerged in the literature with Freeman's work on stakeholder theory in the early 1980s (Freeman, 1984). As part of stakeholder theory, Freeman (1984) broadly defined a stakeholder as 'any group or individual who can affect or is affected by the achievement of the organizations objectives' (p. 46). As stakeholder theory permeated into fields beyond business management and public administration, it quickly took hold in tourism research and is now considered an important component of understanding sustainable tourism development from a local perspective (Byrd, 2007). According to the early scholars who adopted stakeholder theory in tourism research, the support of stakeholders, especially local citizens, community leaders, and business owners, is one of the keys to the success of sustainable tourism development in a community (Gunn, 1994). Recommendations for tourism planning and administration have accordingly moved away from a top-down management approach toward a collaborative process focused on including various tourism stakeholders (Wilson et al., 2018). However, as Byrd (2007) describes, 'the type and extent of stakeholder involvement will greatly depend on time, available resources, and leadership' (p. 11). It

is therefore necessary to understand the local and regional dynamics that affect stakeholder involvement in tourism development on a case-by-case basis.

Accordingly, this paper explores the complexities arising within Denali National Park and Preserve (DENA) and the gateway community of Talkeetna, Alaska (AK), specifically concerning the growing flightseeing and glacier landing tourism industry in the region. Given the dramatic nature of changes taking place in the aviation tourism industry in DENA and ongoing management planning processes to address impacts of aviation within the park, we examine the experiences of local tourism stakeholders and to document their perspectives of tourism growth and impacts (NPS, 2006). Specifically, we address the following research questions:

1. How do stakeholders describe the impacts of growth in aviation tourism in the Alaska Range and in the gateway community of Talkeetna?
2. What do stakeholders perceive to be the most important challenges in sustainably managing aviation tourism growth in Denali National Park and Preserve?

Tourism & sustainable development

The rapid growth of tourism and tourist demand for immersive nature experiences is greatly affecting visitation to national parks and protected areas around the world (Markowski et al., 2019; Oleśniewicz et al., 2020). As nature-based tourism grows, national park managers in the United States, as with many jurisdictions, are challenged with finding a balance between two often competing goals: preserving natural resources and providing access for visitors (Dangi & Gribb, 2018; Jones et al., 2017; Weber et al., 2019; Wolf et al., 2019). This dual mandate of the NPS becomes especially challenging when considering the development of tourism products and enterprises in protected areas, as increased tourism often brings unwanted and unintended consequences to the natural environment, as well as to local gateway communities (Ferreira & Harmse, 2014; Howe et al., 1997; McCool, 2009).

As the challenges of balancing competing interests in nature-based tourism and national park management become more pronounced, sustainable tourism development has gained momentum in theory and practice in the context of protected areas (Dangi & Gribb, 2018). The term *sustainable development* was first coined in the Brundtland Report, which called for development 'that meets the needs of the present without compromising the ability of future generations to meet

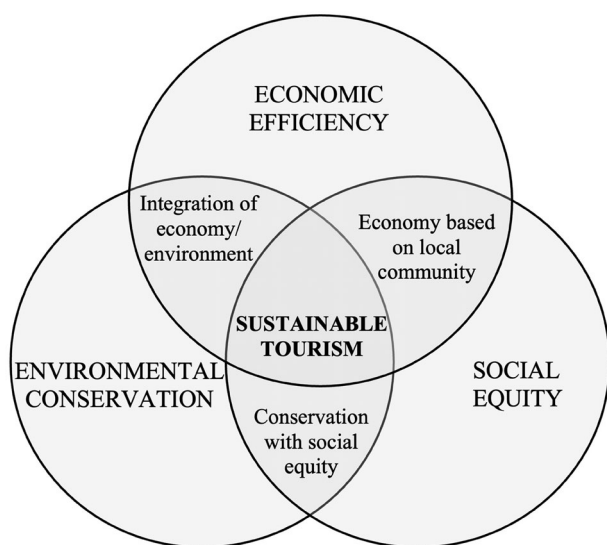


Figure 1. General model for sustainable tourism. Adapted from Sanagustín Fons & Fierro (2011).

their own needs' (WCED, 1987, p. 43). Not long after the concept of sustainable development took hold throughout the world, sustainable tourism arose as a highly sought-after standard of tourism success whose theoretical, practical, and philosophical underpinnings have been explored extensively in academia (Bramwell & Lane, 2011; Butler, 1999; MacKenzie & Gannon, 2019; Ruhanen et al., 2015; Sharpley, 2003). Specifically, sustainable tourism development considers the environmental, economic, and socio-cultural aspects of tourism development (Figure 1) and seeks to balance these three dimensions within an entire tourism system to secure its long-term sustainability (UNWTO & UNDP, 2017). Over the years, concern for sustainable tourism development has arisen from the growing realization that uncontrolled growth in the tourism sector may have significant negative social, economic, and environmental impacts at both a local and global scale. Accordingly, over the last few decades, the concept of sustainable tourism development has become almost universally accepted as a politically attractive and industry-approved approach to tourism development (Sharpley, 2003; Zolfani et al., 2015). (Figure 2)

Over the years, tourism researchers have moved from seeking to define and establish the theoretical foundation of sustainable tourism development toward holistically considering practical applications of sustainable development principles in real life tourism settings. This evolution in the field has come, in turn, with the recognition of complex intersections of the socio-cultural, economic, environmental, and political characteristics of tourism (Bramwell & Lane, 2011; Ruhanen et al., 2015). Instrumental to this shift in thinking on sustainable tourism development were theoretical and empirical contributions throughout the 1990s arguing that sustainable tourism planning should happen as an integrated system with a focus on long-term community involvement in planning and management processes (Butler, 1999; Inskeep, 1991). This important development within the field of tourism planning and management has been studied across various tourism settings but appears to be especially pertinent within nature-based tourism systems, including tourism destinations positioned around protected areas (Jamal & Stronza, 2009; Mellon & Bramwell, 2016; Winter et al., 2019). With researchers' and managers' understandings of sustainable tourism development maturing, the acknowledgement of the central role of local stakeholders in tourism planning is now considered a critical piece of successful protected areas management. As Eagles and McCool (2002) describe: 'Planning for tourism in parks and protected areas cannot be conducted in isolation

of local communities located in or adjacent to those areas. The linkages between parks and communities are simply too strong to ignore in such planning' (p. 94). Indeed, authors and park practitioners are increasingly recognizing that tourism in park settings is a dynamic phenomenon constantly experiencing new challenges, and that local contexts are critical to the success of predicting, responding to, and managing challenges as they arise. This was explored in detail by Byrd (2007) who investigated how stakeholder theory can be applied to the concept of sustainable tourism development. He concludes that community planners and destination managers must consider all stakeholders in the community for sustainable tourism to be effective. A strong understanding of local perceptions of tourism impacts therefore holds the potential to inform the ongoing debate on how best to develop and manage tourism in parks.

Despite the recognition of the complex and important interrelationship between protected areas, gateway communities, and tourism, there has long been a divide in the way researchers and managers approach the study and administration of tourism in national parks. In North America specifically, there is a tendency to focus on outdoor recreation planning in place of tourism planning in national park research and management (Blahna et al., 2020). While the two planning styles share similarities, there are important distinctions with real management implications. Whereas outdoor recreation focuses on leisure experiences and recreation in outdoor settings, nature-based tourism is a broader concept that emphasizes the connections and market interactions among various actors involved in the delivery of tourism services, products, and experiences (Cervený et al., 2020). In the context of national parks, classic outdoor recreation management is hyper-localized and focuses on visitor experiences immediate to the national park and directly influenced by NPS policies and structures (Leung et al., 2018). Meanwhile, nature-based tourism management in park settings considers the regional, national, and international contexts of tourism in and surrounding a national park, situating visitors in the broader systems within which they are traveling (Eagles & McCool, 2002; Puhakka & Saarinen, 2013). It has therefore been posited that by focusing national park research and management on outdoor recreation as opposed to considering broader tourism systems, park managers may be overlooking important conditions and prospects for more proactive and informed land management and sustainable tourism development (Cervený et al., 2020).

While there has been important literature broadly connecting national park and tourism management

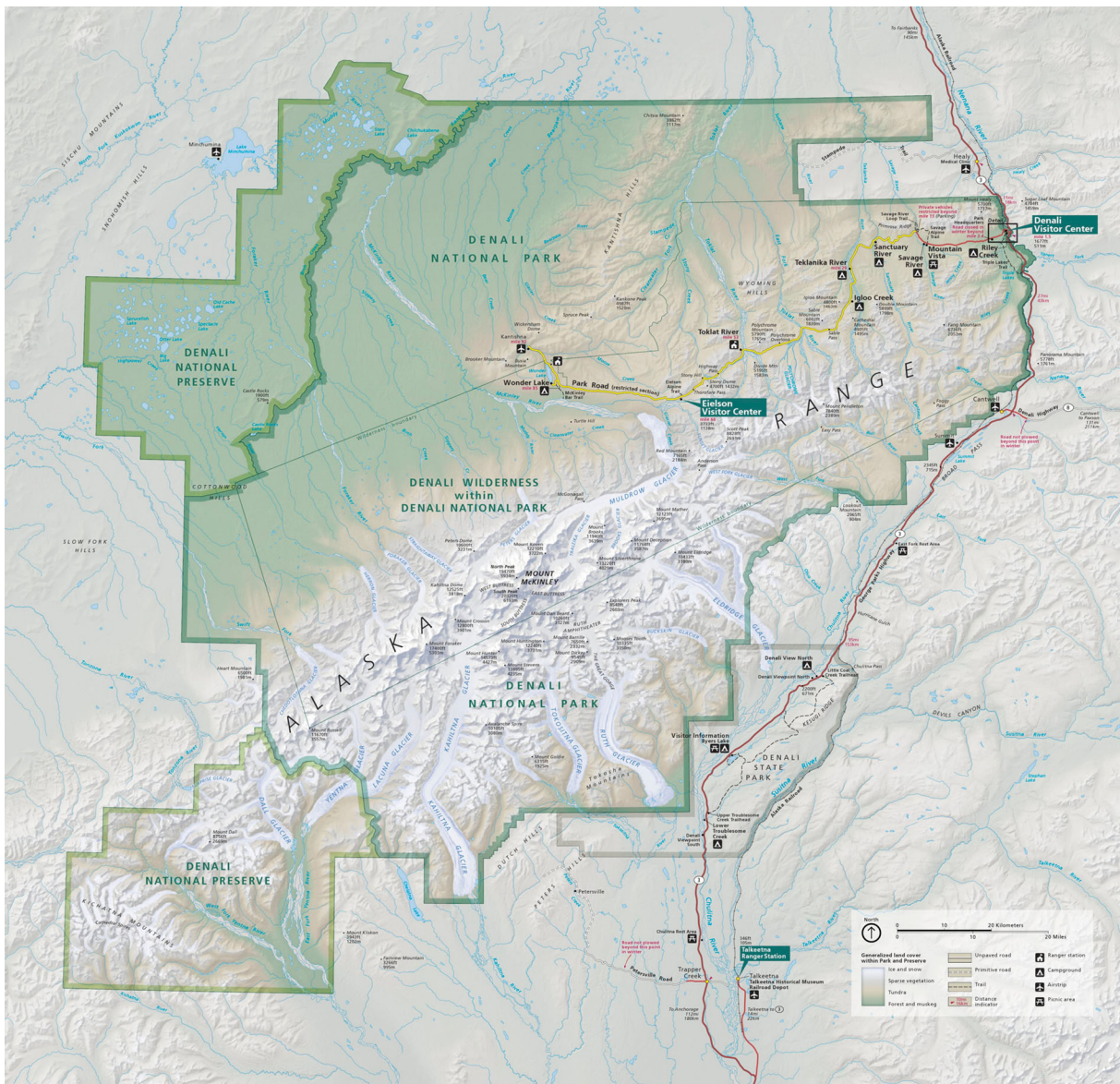


Figure 2. Backcountry glaciers and landing portals in Denali National Park and Preserve (NPS, 2006, p.39).

published in the twenty-first century, much of the case-study based research with specific park management implications has remained either focused on outdoor recreation within parks or about tourism planning adjacent to parks (Eagles & McCool, 2002; Haukeland, 2011). Accordingly, there has been an increasing call for better integration of tourism planning and park planning, inclusion of tourism operators in national park management, and for national park managers to embrace their role as tourism providers in ways that will result in better regional economic, environmental, and social outcomes (Cervený et al., 2020; Leung et al., 2018). Responding to this call, this study uses the case of Talkeetna and Denali National Park and Preserve to better understand local experiences of aviation tourism

impacts within a national park and its gateway community, increasing our understanding of how stakeholders perceive management challenges for sustainable tourism development within the park.

Setting: Talkeetna, AK and Denali National Park and Preserve

Alaska's national parks stand as strong examples of the immense growth in nature-based tourism and protected areas visitation throughout the last 40 years. The most visited national park in Alaska, Denali National Park and Preserve, has seen a steady increase in visitation from just over 200,000 visitors in 1980 to over 600,000 in 2019 (NPS, 2020). Attracted to the state by its

scenery, wildlife, glaciers, and other natural attributes, tourists to Alaska are often motivated to visit national parks, and the Denali region has long stood as an important attraction for visitors to Alaska as it contains one of the largest uninterrupted wilderness landscapes in the country (Cervený, 2008; Fix et al., 2013; NPS, 2006).

The large increase in nature-based tourism in the Denali region has driven widespread economic stimulation in surrounding communities: according to a NPS report by Cullinane Thomas and Koontz (2020), in 2019, visitors to DENA spent an estimated \$613 million in local gateway communities, supporting over 7,490 jobs, \$288 million in labour income, and \$874 million in economic output in local gateway communities surrounding the national park. As visitation to DENA has increased, the scope of the aviation tourism and air-taxi industry in the region has likewise grown and changed considerably. Once serving primarily mountaineers, hunters, fishers, and private landowners in the Denali region, aviation operators have shifted their focus to provide day-use visitors unique tourism experiences, primarily in the form of scenic flights in the national park (Watson et al., 2008). With aviation tourism continuing to grow, NPS staff, visitors to these backcountry areas, and local tourism operators have expressed concerns about the implications of this growth for safety, quality of visitor experiences, and aircraft impacts to natural sounds and wilderness experiences (NPS, 2006).

The small community of Talkeetna, AK is the hub for aviation tourism in the Denali region and is home to

the majority of concession-holding air-taxi operators permitted to land within the boundaries of DENA. The community acts as a unique gateway to the national park: despite being several hours' drive from the official national park entrance, Talkeetna serves as the entrance to the south side of the park, where park visitation is facilitated through aviation. Approximately 90% of access to the glacier landing portals in the Alaska Range originates from the Talkeetna Airport (Watson et al., 2008), making community residents important stakeholders in not only the aviation tourism industry in DENA, but also in park management decisions regarding the backcountry glacier portals.

Methods

We use case study research design and exploratory qualitative methods as tools that can provide important insight into real-world phenomena and offer rich local understandings of complex issues (Patton, 2002; Rubin & Rubin, 2005; Zegre et al., 2012). In order to amplify stakeholder voices and ground results in local perspectives and experiences, we used in-depth semi-structured interviews with stakeholders as the primary source of data for this project (Rubin & Rubin, 2005; Wilson et al., 2018). We defined stakeholders as residents of Talkeetna or individuals with a detailed familiarity and interest in the local aviation tourism industry, the glacier landing portals in DENA, or the tourism industry in Talkeetna. Purposive and snowball sampling were used to select respondents for this study to ensure that individuals interviewed encompassed various relevant stakeholder attributes in the region (Bennett & Elman, 2006). Purposive sampling, a method in which individuals that are especially knowledgeable about or experienced with a subject are identified as respondents, is a technique widely used in qualitative research for the selection of information-rich cases, allowing for the most effective use of limited resources (Creswell, 2014; Patton, 2002). For this study, we sought informants who represented the views of the National Park Service, the mountaineering community in the Alaska Range, the community of Talkeetna, and the aviation tourism industry in the Denali region. Snowball sampling, meanwhile, is a technique in which informants identify additional potential interviewees, allowing for well-rounded representation of community stakeholders while leaving flexibility to uncover additional information and perspectives throughout the research (Creswell, 2014). Snowball sampling was used to identify several additional interviewees.

When conducting semi-structured interviews, we drew questions from an interview guide developed for this study that ensured all interviews were linked to our

Table 1. Stakeholder attributes of qualitative interviewees.

Interview pseudonym	Stakeholder attributes			
	NPS	Mountaineering community	Talkeetna community	Aviation tourism industry
Joseph	X	X		
Steven				X
Jack		X	X	
Harvey			X	X
Elizabeth			X	
Christian		X		
Alan		X		
Scott		X	X	X
Daniel			X	X
Victor				X
Ken			X	X
Katherine			X	X
Eva	X		X	
Jacqueline		X	X	X
Andy	X			
Sylvia	X			
Claire		X	X	X
Jennifer	X		X	
Richard			X	
Liam	X	X	X	X
Robert				X
Jocelyn	X		X	

research questions while also providing opportunities to deviate from the interview instrument to accommodate different stakeholder attributes and areas of expertise (Bennett & Elman, 2006). Interview questions prompted respondents to share their perspectives of the impacts of aviation in the park and the local community, the nature of changes they have observed within the flightseeing tourism industry, and the current tourism conditions in the region. In total, we conducted 22 interviews with stakeholders from across the aviation tourism industry in Talkeetna and assigned them pseudonyms to protect anonymity (Table 1). Interviews were generally in-depth, lasting more than 40-minutes each (Creswell, 2014) and were conducted over the telephone to comply with COVID-19 remote research requirements. Interviews were audio recorded and transcribed using an online transcription software, then cleaned and checked for accuracy during the first cycle of coding.

Our data analysis was comprised of several coding cycles of interview data triangulated by evidence derived from document analysis (Creswell, 2014). We began with in vivo coding to become acquainted with participant perspectives and actions and used participant language from the interviews to build codes during first-cycle coding (Saldaña, 2016). We then used thematic analysis, namely the identification and analysis of emerging patterns in the codes, to construct and organize relevant themes and subthemes. Thematic analysis was selected given its utility in providing a rich and detailed, yet complex account of data (Braun & Clarke, 2006). The identified themes and subthemes make up the units of analysis for this research. In subsequent re-readings of the transcripts, we became increasingly familiar with the data and explored meanings associated with emerging themes from the interviews. We then cross-referenced interview results with external sources including historical documents, library archives, and public media for validation (Bowen, 2009).

Table 2. Emerging themes and subthemes of the impacts of aviation tourism growth in Talkeetna and DENA.

Category	Theme	Sub-themes
Impacts	Noise	Noise in Talkeetna Noise in DENA
	Over-crowding	Crowding in the air and on the South Side glaciers Congestion in Talkeetna
	Conflict and Disagreement	Pressure on community infrastructure Disagreement between Talkeetna residents Competition between aviation operations
	Economic Conditions	Conflict between recreationists Economic growth in Talkeetna
		Increased cost to operate Air Services Increased reliance on Package Tourism

Findings

Thematic analysis of semi-structured interviews revealed important stakeholder perspectives of impacts in and around DENA, especially pertaining to the economic, socio-cultural, and environmental sustainability of growth in the aviation tourism industry (Table 2). Informants expressed various concerns about the impacts that the growth in aviation tourism was having in both Talkeetna and in the backcountry of DENA, but also identified numerous important aspects of the industry for the cultural and economic well-being of the community. The following section explores the ways in which stakeholders constructed and described the impacts of aviation tourism in the Denali region (Research Question 1), as well as what they perceive to be the barriers and challenges to management of the industry into the future (Research Question 2).

Impacts of growth in aviation tourism

In this section, we explore how stakeholders describe the impacts of growth in aviation tourism in the Alaska Range and in the gateway community of Talkeetna. We describe four dominant themes: noise, over-crowding, conflict and disagreement, and changing economic conditions.

Noise

One of the most common impacts identified by interviewees was the noise generated from the growth in aviation tourism in the Denali region. Many stakeholders expressed that noise was an impact that has become more acute in recent years, both in the community of Talkeetna and in the national park. Generally, interviewees agreed that DENA is becoming louder due to an increase in flightseeing and glacier landing tourism, and that this noise is problematic for various users in the Alaska Range. As one Denali climbing guide and NPS staff member describes:

The noise could be anything from this distant hum, almost imperceptible, to being very, very loud ... loud enough that you cannot converse to a person that's more than 20 feet from you. (Joseph)

Noting that many park users in the Alaska Range are seeking wilderness experiences or escape from the noise of everyday life, some interviewees indicated that they found the interruption of anthropogenic noise in such an immense wilderness environment to be jarring and inappropriate. Another interviewee, Jack (climbing guide and Talkeetna community member),

shares that: 'The soundscape is very much impacted by the noise of machinery.'

In addition to the potential effects of noise on climbers on the south side of the Alaska Range, several stakeholders indicated that increased noise is affecting other visitors to DENA, whether or not they are recreating near the glacier landing portals. Specifically, many interviewees mentioned that backcountry hikers accessing remote parts of DENA from the Denali Park Road are also being impacted by aviation noise from aircraft flying overhead. Jack, a climbing guide, expressed that 'If you're hiking the backcountry of Denali, it's probably going to be noisier than hiking in any national park in the lower 48.'

Beyond the impact of noise in the Alaska Range, most interviewees held a further concern of the impact of noise within the community of Talkeetna, largely related to scenic flights bound for the national park. Recalling neighbours who expressed concern about the noise in town, a longtime resident of Talkeetna describes the conditions:

The number of flights was really affecting people who lived on the ground and had constant air traffic over their house. Constant. They didn't have any peace all day long, but you know ... They were close to the airport and there was just no way for the traffic to go far enough away from them because all the traffic was coming and going to the airport, so it just put them right at ground zero. (Eva, NPS staff and Talkeetna community member)

According to many interviewees, the noise has only increased in the last decade. For a number of respondents, the unusual decrease in aviation tourism activity in the Denali region in the summer of 2020 due to the COVID-19 pandemic provided an important comparison of how loud aviation had become in Talkeetna in recent years. A Talkeetna resident explains:

I think that until you get a year like we have this year where [airplane noise] is actually absent, you don't really recognize the impact that it has. Even in town here, outside the park, you can hear the birds again - and on a general day in a tourism-filled summer, there are constant flights out of the airport. It just doesn't stop from 8:30 in the morning until 9:30 at night. (Liam, NPS staff, mountaineer, and community member)

While most interviewees were quick to reference the noise impact that growth in aviation tourism has had, some interviewees claim that noise is an inherent part of life in Talkeetna and for some, is an important cultural component of the community:

Talkeetna is the noisiest little town. You can imagine, between the airplanes flying over, the jet boats, the train coming through ... It's just all part of the charm, I

guess, of our town. You even see that bumper sticker around that says, 'I love airplane noise' - there's a lot of that here. (Richard, Talkeetna community member)

Overall, stakeholders were quick to identify and acknowledge the noise impacts of the aviation tourism industry in the region, although some stakeholders, specifically those from the climbing community and the national parks service, described it as a more serious impact than those working in the aviation tourism industry. Christian, a pilot who has worked in scenic air tourism in Talkeetna describes two differing perspectives on aircraft noise, summarizing some of the conflicting views that emerged in these interviews:

[Airplane noise] is a bit of a contentious issue ... Personally, [airplane noise] never bothered me because I have a strong, personal connection to the aviation world ... For some people that maybe don't have that connection, very loud, very intrusive sounds of airplanes flying over all day every day for most of the summer can get pretty annoying, or at least people describe it as very annoying.

Over-crowding

Interviewees also identified a range of impacts relating to overcrowding and congestion resulting from increased tourism in the region. In DENA, interviewees specifically identified increased congestion in air space and more visitors on glaciers as impacts of aviation tourism growth. Whereas 20 years ago you may not have encountered another airplane in the Alaska range, today 'it's very common when you fly in to begin a climb, or on a flightseeing trip, to see multiple airplanes coming and going and parked on the glacier while you're there' (Jack, climbing guide and Talkeetna community member). However, most interviewees agreed that overcrowding is an indication that more tourists have the unique opportunity to experience the backcountry of Denali, which was generally agreed to be a positive impact of the growth in the industry.

Meanwhile, interviewees consistently agreed that crowding in Talkeetna has become a critical issue, with overcrowding being an obvious impact of increased tourism in the region. When describing the growth of visitation to Talkeetna, many interviewees identified the pressure that increased tourism is having on town infrastructure including water, sewage, and traffic systems: 'When tourism is at its max, I think everybody would say that where we're over capacity for what on the infrastructure of the town can actually take.' (Liam, NPS staff, mountaineer, and Talkeetna community member) Describing the hectic conditions in Talkeetna at the peak of a tourism season, many interviewees

described the main street in Talkeetna as being ‘comparable to Disney World’, ‘carnival-like’ or ‘completely overwhelming’. For example, one community resident in Talkeetna describes that:

If you asked a lot of long-time residents about tourism, the answer would be that there is definitely too much. A lot of locals don't even come downtown in the summer, it's that busy. And we have a shortage of infrastructure to handle more tourism - bathrooms, trash, parking. (Richard, small business owner in Talkeetna)

Here again, many interviewees took note of the alleviated pressure seen in Talkeetna during the 2020 tourism season given the decrease in international tourism due to the COVID-19 pandemic. As one Talkeetna resident and NPS employee explains:

This year it's been pretty much local tourism and small group tourism, which is to me a more sustainable model. You know, people aren't making money hand over fist, but the bathrooms aren't overwhelmed, the [national] park's not overwhelmed. You can drive down the street. (Liam, NPS staff, mountaineer, and Talkeetna community member)

The overarching sentiment among interviewees regarding crowding is that there are both costs and benefits associated with growth in tourism in Talkeetna and that overcrowding is one consequence being strongly felt at a local scale.

Conflict and disagreement

A number of conflicts and disagreements were believed to be directly affected by the growth in aviation tourism in Talkeetna and DENA, including conflict between mountaineers and flightseeing operations, concession air taxi operators and the NPS, and between community members in Talkeetna. Interviewees generally agreed that tensions had risen over the last decade as the tourism industry has expanded, and that conflicts have surfaced within various facets of the industry. For example, a NPS employee describes pushback from the aviation community about overflight best practices within the park: ‘[Management] is a very contentious issue. People are very, very sensitive to the idea of regulation and being regulated, being controlled and constrained.’ (Andy) Another community member who participated in a joint overflight advisory council describes some of the challenges of coming to an agreement among various stakeholders:

‘I was on the Denali National Park overflights advisory board for many, many years ... We had many interesting meetings, some very good conversations, but we accomplished little - because everything was so controversial ... we tried to resolve so many different issues

and never could because of the controversies that just had seemingly no good answer ... It was just impossible. We never, ever got anywhere.’ (Jack, climbing guide and Talkeetna community member)

While frustration related to the difficulty of coming to agreements was shared by many interviewees, there were others who were cautiously optimistic about the progress that has been made with voluntary measures as the NPS has sought to limit the impact of airplane noise in the national park. Specifically, several stakeholders mentioned the success of voluntary flight measures to fly higher over certain corridors within the park and to keep a further distance from summit of Denali with aircraft.

Another source of conflict identified by some interviewees was the conflicting interactions between mountaineers and flightseeing tourists. Several interviewees indicated that some mountaineers had become frustrated by the incessant aircraft noise overhead, while others felt that tourists ‘bombard the climbers’ both in the Alaska Range and in Talkeetna: ‘The mountaineers were becoming the side show for the people who were sitting in the plane. And so a lot of frustration and hostility started occurring.’ (Eva, NPS staff and Talkeetna community member)

This feeling of conflict and disagreement among various parties was echoed across stakeholders and ranged from clashes within the community of Talkeetna to the backcountry of DENA. Generally, interviewees agreed that as tourism and visitation has grown, disagreements have become more contentious.

Changing economic conditions

A final impact of the growth of aviation tourism frequently reported by stakeholders was the changing economic circumstances within Talkeetna and the aviation tourism industry. Interviewees identified the growth in popularity of aviation tourism as an important driver of revenue for the community, frequently mentioning that the flightseeing and glacier landing tourism has ‘trickled down’ to support other economic activities in the community. One long-time resident describes the changes they have seen in town, attributing much of it to increased tourism:

The growth in flightseeing has just been skyrocketing until this year and everything else in town benefits from that, including the river trips, the eating establishments, we now have a grocery store that the year-round residents in Talkeetna have benefited from ... And that's all directly tied into the vacation draw for flightseeing. (Liam, NPS staff, mountaineer, and Talkeetna community member)

At the same time, there were several unforeseen economic impacts of the growth in flightseeing and glacier landings identified by stakeholders, especially the cost of operating air services today. Several pilots and aviation tourism operators identified dramatic increases in insurance costs to operate air taxis and noted that the costs associated with purchasing and operating new aircraft were significantly higher today than in decades passed. Several stakeholders expressed concerns about the rate and trajectory of growth in the aviation tourism industry, claiming that the economic conditions of the industry are quickly outgrowing the capacity of both the town and the national park, and that an incessant drive for growth in the industry may be hurting the community. A community member in Talkeetna and mountaineering professional explains that:

Now it's big business. [The air taxi operators] have more airplanes, more pilots, more infrastructure, and they are not going to want to reduce their flights, and economically, they can't reduce their flights. They've got too much invested now. (Liam, NPS staff, mountaineer, and Talkeetna community member)

The notion that significant financial capital has been invested into the aviation tourism industry was echoed by numerous stakeholders who expressed support for the industry given its positive impact on economic development within Talkeetna, but also concern over the rate of growth and the dependence of the town on tourism. Several stakeholders expressed that there is mounting economic pressure to continue growing at what many considered to be an unsustainable rate due to the amount of money that has already been invested into the industry. Other community members expressed concerns that the financial benefits of tourism have started to leave the local community with the rise of the package tourism industry: 'Outside businesses are coming in to make money, and it isn't necessarily all staying here within the local community' (Liam, NPS staff, mountaineer, and Talkeetna community member). Specifically, some community stakeholders referenced situations in which large cruise companies provide exclusive accommodation, transportation, and activities, leaving less opportunity for tourist spending to support the local economy.

Challenges of sustainably managing aviation tourism growth

The second research question in this paper sought to explore what stakeholders perceive to be the most important challenges in sustainably managing aviation

tourism growth in Denali National Park and Preserve. In this section, we consider the general conclusion among interviewees that increasing aviation tourism has become a significant trend in both Talkeetna and DENA and that there are clear costs and benefits to growth in the industry.

When considering park management implications of scenic flight and glacier landing tourism, stakeholders repeatedly commented on the inability of the NPS to regulate airspace. Specifically, interviewees frequently mentioned that while the NPS could impose limits or regulations on glacier landings within DENA, these regulations would do little to address any of the aforementioned impacts of the increase in aviation tourism – especially noise. Many stakeholders made a point of noting that while the vast majority of glacier landings within DENA originate from Talkeetna, there are various flightseeing companies operating from other communities surrounding the park and even coming from as far as Anchorage or Fairbanks, and that these flightseeing tours were also contributing to the noise levels in the park but could not be regulated at the park level. Liam, a Talkeetna resident and NPS employee explains his perspective on the complicated nature of NPS management and authority over the airspace:

[The NPS has] authority to restrict glacial landings but I don't think that that's going to have a huge impact on flightseeing, so that might reduce air traffic a teeny bit, but I think people would just adjust and go fly instead of land [on the glaciers]. So, while I would like to see less noise pollution in this general area, the reality of that is it's a pretty difficult thing to do.

Despite the commonly expressed reservations about the ability of the NPS to control aviation tourism impacts, interviewees repeatedly emphasized the need for cooperation among various groups within the community to find solutions to the complex issues and circumstances arising from rapidly growing tourism. For most stakeholders, success was described as a form of sustainable tourism achievable through compromise amongst conflicting goals.

While the NPS is only one of many stakeholders in aviation tourism operations in DENA, most interviewees agreed that the agency has an important role to play in the aviation tourism industry, alongside other actors, especially the air taxi tourism operators themselves.

I mean, in this case, we are dealing with a national park and the national parks have always had a difficult mandate in protecting the environment and then making it available to the public but to do so, they need to manage it and they need to get ahead of the curve and try to figure out how they're going to manage it into the future... I think the [NPS] really

needs to figure it out before it becomes a major problem. (Jack, climbing guide and Talkeetna community member)

When considering the challenges of managing the growth of aviation tourism, stakeholders identified numerous predicted limits to growth, often speaking of 'stagnation' or a 'forced slow down' of growth in the industry. The most commonly reported predicted limit to growth was visitor thresholds in both in Talkeetna and the backcountry of DENA, with many stakeholders describing a potential 'carrying capacity' on the glaciers and in Talkeetna. Several stakeholders also expressed feelings of needing to 'get ahead of the curve' and to encourage collective management across various stakeholder groups now before the industry is pushed beyond its limits:

'... because it's very hard to go backwards. You know, let's say that we were just talking about 50 flights a day – it's very hard to move the dial back. It's much easier to keep the dial for moving forward with regulations but there's going to be the pushback to move it back to say, 35 flights a day... all hell would break loose. The industry just wouldn't accept it, for good reason, because they've already bought the equipment and put in the infrastructure to support [the higher numbers]. (Jack, climbing guide and Talkeetna community member)

Ultimately, stakeholders tended to agree that there is a balance to be struck and that open and transparent communication amongst the various actors in the industry is required to sustain the success of aviation tourism and visitor conditions within DENA. As one local tourism stakeholder expresses:

It's so nice to see folks get to experience [these glaciers] and I hope it can continue in an acceptable way. I guess I used the word balance a lot in this conversation, but it's up to everybody to work together to figure out that balance, you know, the park service, air taxi companies, the visitors themselves. It has to be sustainable. (Richard, Talkeetna community member)

Discussion

As the primary method of accessing the south side of the Alaska Range, aviation plays a critical role in providing visitor access to some of the most spectacular regions of DENA; however, rapid growth in the aviation tourism industry comes with various impacts and compromises in the Denali region. Because Talkeetna and DENA are rapidly growing destinations facing numerous social, ecological, and economic pressures associated with increases in visitation, aviation tourism in the region stands as an important case study in which

to explore the inclusion of stakeholders in sustainable tourism development. This study therefore helps to contextualize and document the potential unsustainable tourism impacts by exploring what stakeholders perceive to be the effects of aviation tourism growth in the region. Furthermore, this research responds to the call for better integration of tourism planning, park planning, and inclusion of local stakeholders in national park management by documenting stakeholder perspectives of management challenges for sustainable tourism development within the tourism industry.

Our first research question explored what stakeholders describe to be the impacts of growth in aviation tourism in the Alaska Range and the gateway community of Talkeetna. By giving a voice to local community stakeholders, this research responds to the growing call for participation of stakeholders in tourism decision-making, identified as a key component of sustainable tourism (Butler, 1999; Byrd, 2007; Fleischer & Felsenstein, 2000). The meaningful nature of the responses received supports the critical importance of stakeholder inclusion theorized by Byrd (2007) through his integration of stakeholder theory and sustainable tourism development. Results of this study indicate that noise, overcrowding, conflict and disagreement, and economic conditions were the most frequently identified impacts and are some of the most significant perceived effects of tourism growth in the region. These impacts of aviation tourism have been documented elsewhere to various degrees (Kedrowski, 2009; Miller, 1999; Taff et al., 2015; Christensen et al., 2005; Withers & Adema, 2010) and by gathering them from stakeholders here, this study equips local agencies and managers with insight into perceived positive and negative effects of tourism growth that can be used to inform potential management of commercial activities in the Alaska Range. For example, aircraft noise was identified as an impact with negative consequences in both the glacier landing portals and within the community of Talkeetna, particularly for visitors seeking wilderness experiences and for local community members living close to the airport. Interestingly, interviewees indicated that they did not associate increased noise from aircraft with decreased visitor experiences for day-users partaking in glacier landing tours, which is consistent with previous findings on visitor experiences in the Alaska Range (Christensen et al., 2005). These results are also supported by previous findings reporting that Denali mountaineers' perceptions regarding aircraft sounds were generally positive (Taff et al., 2015). Consequently, additional empirical research into various stakeholder perceptions of soundscape conditions in the Alaska

Range and within Talkeetna (e.g. from tourists in Talkeetna, local residents, and other wilderness user groups in the Alaska Range) may provide valuable information for potential future management of flightseeing and glacier landing tourism.

Crowding and congestion were also identified as important impacts of the increase in tourism in the region in both Talkeetna and in the national park. Specifically, stakeholders indicated that increased tourism in Talkeetna and subsequent pressure on infrastructure could stand as a limit to growth within the aviation tourism industry, and that increased aircraft congestion in the Alaska Range may eventually manifest as a limit to growth for glacier landing tourism in DENA. These results hold significance for park managers involved in the sustainable tourism development process, who should consider not only how crowding within the national park boundary can be managed but should also focus attention on how crowding in the gateway community may ultimately influence the aviation tourism industry as a whole (Frauman & Banks, 2011).

Our second research question sought to understand stakeholder perspectives of potential management challenges for sustainably managing aviation tourism growth in DENA. Results demonstrate that stakeholders perceive a need for organized and transparent management strategies, as well as clear communication that incorporates multiple stakeholder groups from the aviation tourism industry. As such, park managers may consider opportunities to partner with local tourism agencies and aviation tourism stakeholders to integrate national park management and the broader tourism planning taking place in the Denali region (Cerveny et al., 2020). For example, to fully engage local stakeholders, the NPS may consider reinstating the Aircraft Overflights Advisory Council that operated from 2007–2013 (McCool, 2009; NPS, 2016; Withers & Adema, 2010). It is particularly important for park managers to include stakeholders directly involved in offering aviation tourism services in Talkeetna and DENA given the importance of aviation to the community's economy and cultural heritage (Cerveny, 2008; Sanagustín Fons & Fierro, 2011). Finally, stakeholders emphasized challenges arising from the lack of jurisdiction of the NPS in managing the airspace above the national park, suggesting that NPS managers may consider opportunities to facilitate meaningful collaboration between park management, local stakeholders, and the Federal Aviation Association (FAA), who currently controls the airspace, for future aviation tourism management.

Conclusion

In this paper, we addressed two important research questions concerning local stakeholders and sustainable tourism development in the Denali region: 1) How do stakeholders describe the impacts of growth in aviation tourism in the Alaska Range and in the gateway community of Talkeetna? and; 2) What do stakeholders perceive to be the most important challenges in sustainably managing aviation tourism growth in Denali National Park and Preserve? In answering these questions, this research demonstrated the importance of integrating park and gateway community planning and management in the context of sustainable tourism development, highlighting the potential benefits of considering the entirety of a tourism system and including stakeholder perspectives in tourism planning and protected areas management (Agius & Chaperon, 2021; Eagles & McCool, 2002). As evidenced in other literature, a lack of understanding of the community perceptions of tourism growth can leave protected area management agencies unaware of community perspectives of management decisions or of the unintended social, economic, and environmental implications of management decisions that permeate beyond the boundary of a protected area (Cerveny et al., 2020; Mellon & Bramwell, 2016). Therefore, to proactively plan for sustainable tourism and protected areas management, it is critical that park managers continue to further emphasize locally appropriate adaptation and responses to changing tourism trends that affect park visitation and gateway community tourism patterns (Agius & Chaperon, 2021; Eagles & McCool, 2002). Together, these steps can contribute to the increasing need for balance in economic, social, and environmental conditions within a sustainable tourism system.

Findings from this research illustrate a range of opportunities for managers, planners, and decision-makers in Talkeetna and DENA to expand on the work presented here and to help inform future management of aviation tourism in the region. Our results improve understanding of what stakeholders perceive to be the impacts of aviation tourism growth in the Denali region and thus equip agencies and managers with insight into local perceptions of positive and negative effects of tourism growth to inform potential management of commercial activities in the Alaska Range. Future research seeking to integrate stakeholder perspectives of tourism impacts with national park management can build on the case-study presented here by using both qualitative and quantitative approaches to understanding community perspectives of tourism in different social, ecological, and economic settings. In

future studies of this nature, a different approach to stakeholder engagement may prove useful, such as moving from a traditional top-down style of research toward a research style in which stakeholder voices direct research processes (Goebel et al., 2020; Stewart & Draper, 2007). While this paper provides a useful starting point for considering tourism, national parks, and gateway communities in tandem, future research may explore opportunities to integrate these concepts into a cohesive and replicable analytical framework.

As evidenced in the case of Talkeetna and DENA, national park visitation and associated tourism can provide invaluable income and employment opportunities for rural gateway communities and is therefore of critical importance for regional development. At the same time, gateway communities acting as hosts to visitors to national parks endure various complicated and potentially harmful sociocultural and environmental impacts, at times not obvious to those outside of the local community (Cervený et al., 2020; Howe et al., 1997). There is a delicate balance to optimizing tourism growth while protecting visitor experiences in parks and protected areas, community economic needs and objectives, and social conditions within gateway communities. By improving our understanding of the positive and negative impacts associated with tourism growth and local stakeholder perspectives of management challenges, this case study delivers empirical insights into the quickly evolving aviation tourism industry in the region and makes an important contribution to our understanding of the value of considering tourism growth and gateway community planning in tandem.

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Disclosure statement

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