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A responsible framework for managing wildlife watching tourism: The case of seal watching in Iceland

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ABSTRACT

This conceptual paper develops a framework that addresses the need to manage human-wildlife interactions in Arctic settings to ensure positive outcomes for wildlife, local people, and visitors. We argue that managers tasked with meeting these needs should do so in a cultural context where ethical frameworks are guided by sustainable and responsible management practices, however, these strategies are often absent in the literature. By reviewing current literature that investigates theoretical and practical understandings of wildlife watching management we build a methodological foundation for approaching wildlife watching management and identify the need for future management actions that include participation of multiple stakeholder groups. Taking a systems thinking approach we build a case for implementation of our Ethical Management Framework (EMF). Application of the framework is exemplified through a case study of seal watching management in Iceland. Our new framework can be applied in a wider range of wildlife tourism settings worldwide.

1. Introduction

Wildlife watching as a tourism activity has potential to stimulate the local economy within rural communities and facilitate a stronger awareness of wildlife conservation amongst tourists and stakeholders (Higginbottom, 2004; Sekercioglu, 2002). It also has potential to negatively impact the welfare and ecology of wildlife populations (Granquist and Sigurjonsdottir, 2014; Ziegler et al., 2012). Wildlife tourism managers are tasked with the demands of developing tourism management plans that meet the needs of the local community and tourists, while also minimizing negative impacts on wildlife (Granquist & Nilsson, 2013, 2016).

Although management plans often focus on minimizing negative impacts of tourism, responsible management strategies guided by ethical frameworks are often absent in the wildlife tourism literature (Burns, 2015a, 2015b). Involving local communities assists managers to understand their needs and to gain public support for wildlife tourism development plans (Scheyvens, 1999; Sebele, 2010). However, little is known of what the concept of sustainability means for local communities. Studies show that community participation in developing sustainability indicators helps managers to construct the concept of sustainability for the community (Mascarenhas et al., 2014; Reed et al., 2006); however, studies on hearing local voices to understand how sustainability and responsibility in tourism is perceived or understood are limited. Hearing local voices further empowers community development, underlines the importance of local knowledge and culture, and enhances social capacity (Moscardo, 2011).

In Iceland, where nature is the main attraction for tourists, management plans for wildlife watching activities are scarce and the need to develop evidence-based management is pressing. Visitors to Iceland believe that nature conservation should be improved and the majority of Icelanders (75%) feel that the negative effects tourists have on nature are too high (Óladóttir, 2018). The demand for wildlife watching tourism has increased in Iceland and visitor interest in seal watching tourism has recently grown (Aquino and Burns, 2021). Seal watching activities revolve around the two breeding seal species in Iceland; harbour seals (*Phoca vitulina*) and grey seals (Halichoerus grypus). Harbour seals are easily accessible to visitors in several areas, through land and boat based seal watching activities. Grey seals normally haul out in more remote areas, but can sometimes be spotted in harbour seal

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colonies. Negative impacts due to anthropogenic disturbance have frequently been reported for various seal species, both at the individual and population level. Visitor activities, such as frequent visits of seal colonies during sensitive periods, approaching the animals too closely, and making loud noises or vivid movements, may lead to disturbance of seals. Disturbance may result in alteration of natural behaviours and changes in distribution of seal populations, which in turn can affect the fitness of the animals (Cassini et al., 2004; Granquist and Sigurjónsdóttir, 2014). Anthropogenic disturbance may be particularly problematic for threatened species (Johnson and Lavigne, 1999; Kovacs et al., 2012). The current conservation status of the Icelandic harbour seal population is Critically Endangered and the grey seal population is Vulnerable according to the Icelandic red list for threatened populations (Granquist and Hauksson, 2019a; Granquist and Hauksson, 2019b; Icelandic Institute of Natural History, 2019.). This further underlining the urgent need to develop effective management approaches to facilitate responsible seal watching in Iceland.

The purpose of this conceptual paper is to address the need to manage human-wildlife interactions in tourism settings to optimize positive outcomes for all stakeholders: wildlife, local communities, and visitors. We investigate theoretical and practical understandings of wildlife watching management to build a methodological foundation for addressing ethically responsible strategies and develop a more ethical framework. Using this framework, we examine seal watching tourism in Iceland as a case study to identify the need for future management actions, which can ultimately devise a plan applicable for responsible seal watching in particular, as well as for wildlife watching activities for other areas in Iceland and elsewhere.

In the following sections we discuss the philosophical underpinnings of wildlife tourism and how they have guided—either directly or indirectly—wildlife management. Building from an understanding that humans are not separate from their environment (Ingold, 2002), we discuss visitor behaviour with regards to its consequences for both community and natural livelihoods. Next, we describe the differences between the concepts of sustainability and responsibility to draw linkages with local stakeholder involvement, tourism managers, and responsible tourism management practices. Social representations theory is explored as a tool to understand community perception of tourism impacts and management development. Building a methodological foundation for addressing ethically responsible strategies we take a systems thinking approach and discuss the Community Capitals Framework to propose a new Ethical Management Framework (EMF) with the purpose of addressing the need to manage human-wildlife interactions. Next, we describe the case study—seal watching management in Iceland—and apply our framework to this setting. The paper concludes with a discussion and suggestions for 'next steps' in Iceland. However, our new framework can be applied in a wider range of wildlife tourism settings worldwide.

2. Philosophical principles of responsible wildlife tourism management

Philosophical principles guide wildlife tourism management, whether purposefully or not, and anthropocentrism has largely dominated how management actions are devised (Burns et al., 2011; Dobson, 2006). Anthropocentrism is a human centred view of reality in relation to the natural world. Fennell (2020, p. 160) describes anthropocentrism as a belief "that nature can be conceived only from the perspective of human values. Humans, therefore, determine the form and function of nature within human society." These values guide, either directly or indirectly, human choices or preferences (Lincoln and Guba, 1985).

Anthropocentric management is often focused on understanding visitor types and experience to maximize visitor and host satisfaction with less attention given to the natural environment. A call to move away from this management style means embracing other philosophical principles, such as biocentrism and ecocentrism. Fennell (2020) describes biocentrism as anthropocentrism's antithesis. The biocentric paradigm views all living beings (sentient or non-sentient) as having moral standing and that humans have direct moral duties to them. In comparison, an ecocentric paradigm focuses attention holistically on the environment, of which humans are members (James, 2015). We argue that management actions of wildlife tourism based in nature should focus on policies and strategies within an ecocentric value system. While biocentrism also has merit to assist with away from human centred values, ecocentrism's holistic focus on the environment helps to recognise not just the value of the animal but also of its habitat in management actions. Burns et al. (2011) propose seven principles outlining how this could be achieved with the final principle requiring that managers reflect on their own ethical stances. Thus, to move forward within the construct of sustainability requires re-examining the fundamental conceptual assumptions of how wildlife tourism has been managed (Bertella, 2018).

We propose that an ecocentric paradigm entails interdisciplinary and inter-sectoral research and knowledge that builds responsible management actions with the understanding that humans are integrally connected with their environment and that human action has direct consequences for both community and natural livelihoods. Building from the understanding that negative impacts due to visitor activities may impact the distribution and behaviour of seals, as seen in our case study (Granquist and Sigurjonsdottir, 2014), management actions should focus on changing visitor behaviour for the protection of wildlife thus serving to develop an ecocentric focus.

In the tourism research literature the concept of sustainability is defined as the "capacity for continuance" (Sharpley, 2000, p. 7), but also criticised as "an abstract noun lacking definition—it does not mean much" (Goodwin, 2016, p. 255) and a "catchphrase" (Zimmermann, 2018, p. 333). Butler argues that ambiguity of the term sustainable, which he defines as to "sustain," leads to misunderstandings in the conceptualization of sustainable tourism (Butler, 1999, p. 11). The ambivalent definition places tourism research and development into a context where individual values and values systems should be incorporated (Zimmerman, 2018) in order for managers to fully understand sustainability from the local perspective. Weak global consensus on a definition has led to misinterpretation and abuse of the concept of sustainability, with many arguing that this leads to businesses in the tourism industry 'appropriating' themselves as sustainable for greenwashing reasons (Seraphin and Vo, 2020). This further adds to conflict between academics, industry, and government in policy development for the protection of wildlife within the framework of tourism management. For example, Font (2017, p. 1) argues that the potential meaningful impact of intersectorial dialog is challenged because the "ill-defined concept of sustainability" does not outline the need for behaviour changes or address misunderstandings and consequences of unsustainable behaviour. There is, however, consensus on the three-pillar elements—economic, environmental, social--cultural—which set the foundation of the definition of sustainable tourism as:

Tourism which is developed and maintained in an area in such a manner and at such a scale that is remains viable over an infinite period while safeguarding the Earth's life-support system on which the welfare of current and future generations depends (Fennell and Cooper, 2020, p. 26).

We argue that this definition offers a better advantage for intersectorial and interdisciplinary dialog that may help policy development to address the consequences of unsustainable behaviour.

Definitions of responsibility and responsible tourism also lack consensus. Chettiparamb and Kokkranikal (2012, p. 302), for example, argue that the terms can mean "anything." Others say that definitions depend on research agenda and philosophical worldview (Mihalic, 2016). Most, however, acknowledge that these concepts are important to consider in the tourism industry (Tay et al., 2016).

Goodwin (2016) defines responsible tourism in several ways: as

accountability, "taking responsibility for making the consumption and production of tourism more sustainable" (p. 1); as empowerment, "recognizing that tourism is what we make of it" (p. 5); as action, "responsible tourism places the emphasis on what individuals and groups do" (p. 17); and as a movement, "responsible tourism is about everyone involved taking responsibility for making tourism more sustainable" (p. 38). While the three-pillar elements—economic, environmental, social-cultural—define sustainable tourism, the concept of responsible tourism encompasses accountability, empowerment, action, and movement. Therefore, steps towards responsible tourism management practices based on the foundations of sustainability must include stakeholder involvement at every level.

3. Towards more sustainable and responsible management practices

Local stakeholder involvement in wildlife tourism development plans are important for insuring equality while also reducing chances of marginalization. Participatory planning for wildlife tourism management has potential to improve management efficiency, integrate local knowledge, and build trust and capacity among stakeholder groups (Flannery et al., 2018). Furthermore, outcomes of local stakeholder involvement may make management actions more adaptive to changes taking into account changing community socio-ecological needs (Stone and Nyaupane, 2017b). Involvement of local stakeholders also helps to outline what responsible tourism means for their community (Tay et al., 2016); while taking into consideration attitudes and values of sustainability (Burns, 2004). For example, protected areas were historically seen as imposing economic hardship on rural communities when land was set aside for the protection of wildlife and thus not used for agriculture (Sanderson, 2005). Exploring the meaning of sustainability and responsible tourism for a community is important to increase transparency, cooperation, and to minimise misunderstandings and resentment. Developing an ethical framework that incorporates responsible management strategies will help guide managers to begin a discourse with stakeholder groups—both at the local and national level.

Development of an ecocentric paradigm in wildlife management entails building on past research and local knowledge to move towards responsible management actions. These management actions and policies are specifically formulated in the local area and have potential to develop actions and policies in national and international arenas. With this aim, wildlife management actions should focus on working with local residents to help develop awareness of how communities can protect their natural assets. To do this, managers must first understand local stakeholders' perceptions of sustainability and responsibility; and their understanding of what types of actions are needed for ethical management. In the next section, social representations theory is explored as a tool to better understand stakeholder perception of tourism impacts and management development across different stakeholder groups.

3.1. Social representations theory

Social representations theory (SRT) examines social reality and social life by observing interactions between individuals and their social or cultural world (Pearce et al., 1996). Defined as "what people mean as they engage in the task of making sense of the world in which they live and communicate with others about it" (Jovchelovitch, 2001, p. 170), SRT takes into consideration that the construction of meaning is engaged through socially shared knowledge that exists in everyday thought, feelings and actions. These meanings are linked together in a network of values, understandings, and actions of a concept. Through the use of a shared system of meaning these social representations form the base of how people socially construct and comprehend their world (Lai et al., 2017; O'Connor, 2017).

The value of SRT for wildlife tourism management lies in the fact that it can enhance understanding of how new meanings and values are constructed as social knowledge while also acknowledging that different social groups (including industrial, academic, and governmental sectors) already have a complex system for constructing their understanding of a particular concept (Howarth, 2006); leading to many different ways of understanding certain concepts. For example, from a community development perspective, a national park designation may have negative connotations because of the fear of land acquisition and loss of land rights. What could be seen or understood as a community benefit, such as natural parks and greenspaces, could be interpreted negatively given the local community's history or understanding of a particular concept. Similarly, the terms sustainability and responsibility could have varying meanings among different stakeholder groups, such as tourism operators, visitors, wildlife managers, and academics. Through the process of condensing meanings into social understanding, the process of managers working closely with local stakeholders to define what responsible tourism means in the context of wildlife tourism for the community may lead to a sense of local ownership of the concept and a better sense of stewardship of nature. Additionally, the involvement of different stakeholders when exploring the benefits of wildlife protection on community assets importantly increases awareness, transparency, citizenship and community empowerment, and places emphasis on local identity and distinctiveness.

The understanding of sustainable tourism is subjective and value laden (Moscardo and Murphy, 2014); and is understood differently both at local (community) and international (tourism) levels. Research that focuses on community understanding of the meaning and value of sustainable and responsible tourism is limited. Since the 1980s, academics have been constructing, and re-constructing, the understanding of the concept of sustainability and responsibility in tourism management and development. The use of external experts, with the assumption that academics share the same scientific view or objectives across disciplines and geographies, has ignored other stakeholders and local residents' voices in the development of sustainable tourism rules and guidelines (Moscardo and Murphy, 2014). Academic construction of a concept may differ from the general population; that is, academics review research conducted by their peers; while practitioners, politicians, and tourists rely on information portrayed in the media and discussed among other networks (Aquino and Andereck, 2018). Therefore, understanding of a concept is constructed through social, political, and professional networks, further diverging contextualization of these concepts amongst different stakeholder groups (Becken, 2016). Clear definitions of, and distinctions between, the concepts of sustainable and responsible tourism are needed to decrease conflict and confusion. SRT may help managers comprehend different understandings of particular concepts, making them more effective in communicating across different stakeholder groups.

4. Understanding the complexity of wildlife tourism management qthmtam

One of the greatest challenges of managing wildlife tourism is the complexity of the phenomenon. To address this, researchers and managers must look at management actions holistically. Failing to understand wildlife tourism in a complex system is failing to fully understand the breadth and depth of what wildlife tourism is. It is important not to ignore social and environmental justice issues that are critical to understanding sustainability and how community livelihoods are dependent on the ethical management of natural areas—for example, issues such as exclusion and non-participation of particular groups in management decisions or actions. Efficiency in predicting and solving management problems entails seeing wildlife tourism and the consequences of its management actions (both positive and negative) in a system. This perspective gives managers the tools to better cope with a variety of challenges. It is impossible, as well as unethical and irresponsible, to ignore the potential effects of environmental management

actions on local communities (both human and wildlife) and/or exclude the planning process from other stakeholder groups. Exclusion and non-participation in management, either deliberate or not, are issues of power and inequality and lead to local distrust and resentment of management actions (Flannery et al., 2018). In this section we discuss an existing framework relevant to wildlife tourism management, and responsible and sustainable management practices where attempts have been made to include all important stakeholder groups to facilitate a system approach when managing wildlife tourism.

Community Capitals Framework (CCF) is used in the tourism literature to analyse and interpret community and economic development efforts from a systems perspective, emphasising assets with a focus on investments (Emery and Flora, 2006) based on the principals of social justice and can predict community resiliency (Magis, 2010). Although the CCF originated in the area of community development, it has been used in tourism to show the linkages between each capital's assets. CCF is a commonly used approach that helps highlight a broader set of measures based on an underlying conceptual foundation. Using CCF as an approach allows managers to see how various sectors of the community are changing in response to development strategies (Phillips and Pittman, 2015). In our case, we use CCF to see how a more ethical practices of seal watching tourism management are changing in response to this particular development strategy.

The seven types of capital included within the CCF are: natural, cultural, human, social, political, financial, and built (for a definition of each see Flora et al., 2004). As one capital is increased it affects other capitals making it more resilient to decline and creating a 'spiraling-up' effect (Emery and Flora 2006). In other words, as one asset is strengthened within the community, it is more likely that other assets will be gained. Likewise, if an asset is weakened then other assets may also be weakened. A community in decline will have assets experiencing a loss, which may affect all capitals leading to community sense of lost hope, whereas spiraling-up represents a process by which assets gained increase the likelihood that other assets will also be gained (Gutierrez-Montes et al., 2009). This spiraling-up or down effect that Emery and Flora (2006) observed was explained by the theory of cumulative causation. In other words, as a community loses assets other assets will experience a loss through system effects. Additionally, as a community gains assets it will attract other assets.

Community Capitals Framework is also used in the tourism literature to explore ecotourism influences and changes in community needs and how this, in turn, affects the development of protected areas (Stone and Nyaupane, 2017a) and to further understand management practices and linkages (Stone and Nyaupane, 2017b) and resiliency (Magis, 2010). A systems thinking approach could provide a context for wildlife managers to develop management in a responsible manner, incorporating the aforementioned three-pillar elements of sustainability. For example, CCF shows how communities are organized and recognizes local knowledge and traditions as assets while framing these management practices in a social context. In this context, it is more inclusive of all stakeholders incorporating marginalised communities or groups who are often left out in determining management strategies. Rural communities that incorporate the use of integrated strategies for tourism development are more likely to promote sustainability and empower local people (Cawley, 2017).

Understanding linkages between different stakeholder groups and their activities within the social, cultural, economic, and environmental assets of a community enables a holistic conceptualization of tourism as a product and highlights the significance of place and embeddedness (Saxena and Ilbery, 2008). Similarly we argue that managers should avoid drawing rigid and artificial boundaries around particular academic disciplines. Knowledge is, therefore, "enacted in multiple version through various practices and performances across within different knowledge communities" (Ren et al., 2010, p. 886). In such a system approach, knowledge derived from all these many actors can be combined to obtain trans-disciplinary and interdisciplinary knowledge to inform how to reduce negative impacts on wildlife, and facilitate positive experiences of tourists and the local community.

4.1. *Visitors' behaviour in nature and their wiliness to protect it*

Visitors are not always knowledgeable about appropriate behaviour for wildlife watching (Nilsson, 2012) and may not intend to disturb wildlife (Granquist and Sigurjonsdottir, 2014). However, they are likely to support the inclusion of conservation information as part of their experience, indicating a desire to know how to minimise their environmental impacts (Ballantyne et al., 2009). Empirical testing suggests that teleological information, where the background and reason for the provided information is explained, is more effective than ontological information in terms of modifying tourist behaviour to reduce impacts on wildlife (Marschall et al., 2017). A better understanding of wildlife in general has been shown to lead to emotional connections to nature (McIntosh and Wright, 2017) and may reduce potential negative impacts on wildlife and improve the tourism experience (Granquist and Nilsson, 2013).

Previous findings have suggested a relationship between the type of tourists and the likely effectiveness of management strategies. As an example, visitors' relationship to nature and their willingness to protect the environment can be predicted based on biospheric values—defined by Stern and Dietz (1994, p.70) as a value orientation in which "people judge phenomena on the basis of costs or benefits to ecosystems or the biosphere." Burns et al. (2011) acknowledge that an ecocentric form of management ethics may work more effectively with some visitor types than others. Furthermore, visitor relationships with nature and their interest in protecting the environment can be predicted based on biospheric values—as opposed to having a high egocentric value being concerned mainly with one's own personal benefits—and interests in nature-based tourism activities (Öqvist, 2016; Stern and Dietz, 1994; Stern et al., 1998). Hence, biospheric values may be linked to the level of acceptance for responsible management of wildlife tourism and managers can use this information to develop management actions that best guide visitor behaviour by adjusting actions based on visitor type.

5. Building a methodological framework for addressing ethically responsible strategies

Our Ethical Management Framework (EMF) (Fig. 1) is shown as a bi-directional spiral flow and uses Mihalic's (2016) proposed Triple-A model which sees the understanding of responsibility and sustainability in three phases: awareness, agenda, and action. This recognizes that tourism industry, government, locals, and the academic community should all be involved in developing management strategies. These stakeholders are all likely to have different levels of awareness of wildlife management action needed (i.e. from unawareness to comprehensive understanding) and wildlife managers and other stakeholders may have different agendas based on their understanding of the concepts of sustainability and responsibility. It is important to understand the different levels because a lack of attention to any one may create a breakdown in management actions and support for management plans. In applying the Community Capitals Framework to the EMF, the spiral movement of the EMF paints a clear picture of how management actions can be transformative (or breakdown) while accounting for changes in types of tourists (from biospheric to egocentric or vice versa), different philosophical views between managers and other stakeholder groups (such as anthropocentric vs ecocentric), changing community needs, and how each of these linkages interacts with each other. Wildlife tourism managers should be aware of social networks that link local actors and purposefully seek out partnerships that will co-create equitable management actions that promote and protect the economic, social, cultural, natural, and human resources of the natural environment in which they occur. Having established the EMF, we will discuss this proposed framework for managing wildlife tourism in relation to a case

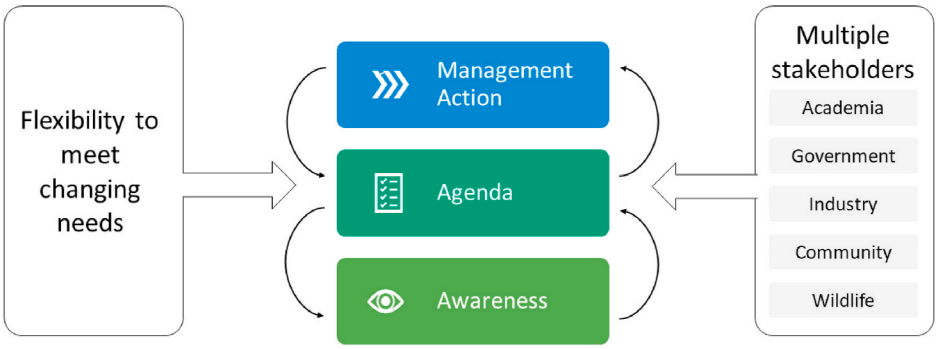

Fig. 1. The design of the Ethical Management Framework (EMF) offers flexibility to deal with challenges and accommodate perspectives of multiple stakeholder groups.

study of seal watching in Iceland. This demonstrates how the EMF can be applied.

6. Seal watching management in Iceland—a case study

6.1. Tourism in Iceland and on the Vatnsnes Peninsula

Prior to the Covid-19 pandemic, tourism became one of the most important industries in Iceland. Tourist arrivals in Iceland grew from approximately 459,000 tourists in 2010 to 2 million in 2019 (Icelandic Tourist Board, 2020). Recent media and tourism industry focus is on how to manage the number of tourists responsibly. Concerns have been voiced by locals, tourism operators, and within academia about the potential effect on landscapes, seascapes and wildlife (Helgadóttir et al., 2019). The debate about concepts such as overtourism (Jóhannesson and Lund 2019) and carrying capacity (UNWTO, 1981) acknowledges that the capacity for geographic and social coping has been reached in areas experiencing unsustainably high tourism numbers. The response to these concerns has been a call for investigation into understanding and responsibly managing tourism to work towards the goal of sustainability.

Tourism is often framed as a tool for developing and revitalising rural economies and for rural communities struggling with the economic downturn of traditional industries such as fisheries, as is the case in much of Iceland (Aquino and Burns, 2021). However, intra-community conflicts often arise over the competing interests of different resource sectors (Warner, 2000). Without adequate plans, monitoring and control, natural resources can be irrevocably damaged.

Similar to many rural areas in Iceland, tourist numbers to the Vatnsnes Peninsula increase rapidly each year (Burns, 2018; Aquino and Burns, 2021). As tourism demand increases, so do the associated impacts. Watching harbour seals is a key draw to the Peninsula and has stimulated the local economy (Aquino and Kloes, 2020). The need for a responsible management plan for seal watching at this destination is crucial to conserve fragile habitat and sensitive wildlife populations (e.g. Kovacs and Innes, 1990; Johnson and Lavigne, 1999; Granquist and Sigurjónsdóttir, 2014), while securing visitor and local satisfaction (Granquist and Nilsson, 2013).

Although seal watching has started to evolve in other areas of Iceland, the Vatnsnes Peninsula remains the main seal watching area in the country. The Icelandic Seal Center (ISC) in Hvammstangi aims to simultaneously promote the development of tourism in the region and the transfer of knowledge between the scientific community and society to develop environmental policy. It achieves this through research in natural and social sciences, collaboration with operators and entrepreneurs, and informing tourists about responsible seal watching methods and viewing locations. Thus, it is both research and practiced based cooperating, for example, with landowners at several public land-based seal watching locations on Vatnsnes which are accessible by car. A seal watching boat operates from Hvammstangi during the summer months in close cooperation with the ISC. Despite lack of an official seal watching management plan, the local community have a history of initiating preliminary management at a grassroots level, beginning with the establishment of the ISC (Burns 2018). More recently, a provisional code of conduct and limited interpretive signs were developed. This demonstrates a local desire for more effective management.

6.2. Seals and tourism impacts

As previously mentioned, anthropogenic disturbance can affect wildlife in various ways. It can cause physiological stress leading to effects such as increased stress hormones and increased heart rate (Barja et al., 2007). Disturbance can also affect behaviour and distribution patterns and, for example, cause wildlife to attend less to their young, subsequently leading to decreased reproductive success and ultimately decrease in overall fitness (e.g., Kovacs and Innes, 1990). Although disturbance due to seal watching tourism has previously been explored (Boren et al., 2002; Newsome and Rodger, 2007) and it is known that tourism may have impeding impacts on threatened pinniped species (Kovacs et al., 2012), research results specifically for harbour seals are limited. A few studies have investigated the effect of boat-based harbour seal watching (e.g. Henry and Hammill, 2001; Jansen et al., 2010; Hoover-Miller, 2013). However, research about the effects of land-based watching of harbour seals is almost non-existent (see Granquist and Sigurjónsdóttir, 2014), placing the need for further research highly relevant not only to the Icelandic situation but also internationally.

In other countries, seal tourism has been conducted for decades and different management actions developed to reduce impacts on seals and maximize local and visitor satisfaction. Examples of these actions are codes of conduct, trained guides, fees to enter areas, and spatial restrictions (e.g., fences). These actions have reached different levels of success. An investigation on existing codes of conduct for seal watching globally found that many codes are not developed based on research findings, which can reduce their effectiveness (Öqvist, 2016). However, working with researchers and landowners on wildlife management may help to increase the value and effectiveness of voluntary codes of conducts.

6.3. The Icelandic harbour seal population and interactions with tourists

The first census of Icelandic harbour seals, in 1980, estimated a population of 33,000 animals. The population then decreased by about half during a ten-year period and has not recovered. According to the newest estimate from 2018, the population is now 9400 animals and considered to fluctuate around a minimum population size (Granquist and Hauksson, 2019b). Consequently, the Icelandic harbour seal population is defined on the national red list for threatened populations as Critically Endangered (Icelandic Institute of Natural History, 2019).

Several factors, such as hunting and entanglement in fishing gear are likely to have affected the population. The effect of anthropogenic disturbance on this population is largely unknown, however clearly, needs to be taken into consideration.

From May until July, harbour seals aggregate on pupping sites and give birth and nurse their pups on land (Granquist and Hauksson, 2016). During this critical period, pups need sufficient nursing time to reach adequate weaning weight (Kovacs and Innes, 1990). At the end of summer, harbour seals mate and aggregate on land again to moult (Granquist and Hauksson, 2016). The main tourist season in Iceland is between May and September (Icelandic Tourist Board, 2020), coinciding with these biologically important periods when the seals are extra vulnerable to disturbance, further underlining the importance of effective management.

Very little literature on interactions between the seal colonies and tourists exists about the local harbour seal colonies on Vatnsnes. Granquist and Sigurjóndóttir's (2014) study indicated that both behaviour and spatial distribution of harbour seals in this region can be affected by land-based seal watching. However, extensive work has not been undertaken in Iceland to develop seal watching management strategies. In the light of the sensitive population status of the harbour seal, the need to rectify this is urgent. Given the recent growth of seal tourism in Iceland and the challenges particular to this region, further research is required to understand how seal tourism operates in this milieu. Most importantly, the findings should inform the management process to ensure that this form of tourism is undertaken responsibly and remains sustainable; for local people, tourists, and wildlife.

6.4. *Applying the theory in practice*

Applying our Ethical Management Framework to the case of seal watching tourism on Vatnsnes Peninsula, we argue that stakeholder involvement should occur at every phase. Each phase progression should be a spiral moving up and down to show how trends and community needs changes over time. Our framework acknowledges that the process of coevolution of knowledge involves both reflexivity in interdisciplinary research, industry, and local knowledge. It enables Iceland's seal watching management to be described within an understanding of responsible (appropriate action) and sustainable (theory) management actions. For example, through trans-disciplinary and interdisciplinary research, we know that the conservation status of the Icelandic harbour seal population is Critically Endangered and the grey seal population is Vulnerable, that visitors to Iceland are increasingly interested in seal watching experiences (Burns, 2018; Burns et al., 2018), and that tourism can negatively impact the seals (Granquist and Sigurjonsdottir, 2014).

Current progress towards responsible seal watching tourism management in Iceland is in the awareness phase. This is the case for management of all wildlife tourism in the country. Further evidence-based wildlife watching management in Iceland must be added to Iceland's agenda to develop a strategy for future research and responsible management actions. Developing an Icelandic management plan for wildlife watching that pushes away from anthropocentrism towards a more ethical ecocentrism approach should be considered. Stakeholders should lead implementation of a sustainable action phase for management of wildlife tourism.

7. Moving forward with an Ethical Management Framework

We built an Ethical Management Framework (EMF) for managing wildlife tourism by reviewing current literature that investigates theoretical and practical understandings of this field and through the use of an Icelandic seal watching case study. The framework may help to guide the use of ethical practices for managing the human-wildlife interactions in alternate settings. Wildlife tourism involves numerous stakeholders, thus necessitating the use of knowledge and practices from both the social and natural sciences when formulating management strategies. It requires a systems thinking approach that incorporates interdisciplinary and inter-sectorial research and knowledge set on a foundation of environmental philosophy. We argue that management actions must also include participation of multiple stakeholder groups. For example, wildlife tourism development has potential to affect both the local ecology and local community livelihoods (Stone and Nyaupane, 2017b) and managers should look at wildlife tourism management from a systems perspective; examining how specific management actions may affect other areas (Emery and Flora, 2006). From this perspective, managers can facilitate better understanding of the critical role wildlife has among other community capitals, making specific management actions more effective and increasing the likelihood of community support.

We adopt aspects of the Community Capitals Framework to create an Ethical Management Framework with a bi-directional spiral flow. Next, through a case study of seal watching management in Iceland, we exemplify how our EMF can be successfully implemented. The EMF can help managers to predict potential conflicts, such as different levels of awareness of management actions needed among stakeholder groups and that these stakeholders may have different types of agendas based on their understanding of the concepts of sustainability and responsibility. The movement of the EFM allows for flexibility and accounts for changes in types of tourists, different philosophical views between stakeholder groups, and changing community needs. It thus assists managers to be more responsive to challenges.

Understanding the concepts of responsibility and sustainability within a cultural and historical perspective is essential to understanding what these concepts mean for residents. For example, a proposal for the establishment of a national park in the central highlands of Iceland (Umhverfis-og auðlindaráðuneytið, 2019) was recently cause for some alarm for residences in the rural countryside. Chambers and Carothers (2017, p. 78) found that "when natural resource users are disengaged from governance processes, and when local concerns are not addressed, the legitimacy of the governance system is devalued–therefore threatening not only the long-term sustainability of the resource but violating principles of equity and human rights as well." Such effects from top-down policies underline the need for culturally appropriate and equitable management actions with success measured in community livelihoods as well as biological indicators.

Exploring the meaning of sustainability and responsibility from a community perspective and addressing local concerns is important in increasing transparency, further cooperation between government and residence, and to minimise misunderstandings, marginalization, and resentment. Social representation of the meaning of suitability and responsibility adds to this social-historical context and helps managers understand community needs and wants towards wildlife tourism management. This is important when working with marginalised communities or those with fewer opportunities for agency in determining management practices that could potentially affect their future community livelihoods. Additionally, if managers work closely with local stakeholders, they also help foster a sense of local identity with wildlife and natural habitats (Aquino and Kloes, 2020; Aquino and Burns, 2021).

This conceptual paper has highlighted several potential problems and conflicts of which managers should be cognizant. These include misunderstanding due to differing understandings of what sustainability and responsibility mean, and challenges in moving from anthropocentric management practices towards an ecocentrism agenda. Potential conflicts may also arise because of tourists at wildlife tourism venues holding different values (i.e., biocentric vs. egocentric). Furthermore, the potential for community mistrust or fear of management practices that may affect their future livelihoods is also a challenge.

The spiral design of the EMF offers flexibility to deal with these challenges and accommodate perspectives of multiple stakeholder groups. As a next step we invite others to test the proposed EMF in empirical studies across a wider range of wildlife tourism settings beyond the seal watching case described here.

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References

Aquino, J.F., Kloes, G.M.H., 2020. Neolocalism, Revitalization, and Rural Tourism Development. In: Ingram, L.J., Slocum, S.L., Cavaliere, C.T. (Eds.), Neolocalism And Tourism: Understanding A Global Movement (Goodfellow Publishers).

Aquino, J.F., Burns, G.L., 2021. Creative Tourism: The Path to a Resilient Rural Icelandic Community. Creative Tourism in Smaller Communities: Place, Culture, and Local Representation. University of Calgary Press, Calgary. Retrieved from. http://hdl.handle.net/1880/113280.

Aquino, J.F., Andereck, K., 2018. Volunteer tourists' perceptions of their impacts on marginalized communities. J. Sustain. Tourism 26 (11), 1967–1983. https://doi.org/10.1080/09669582.2018.1526295.

Ballantyne, R., Packer, J., Hughes, K., 2009. Tourists' support for conservation messages and sustainable management practices in wildlife tourism experiences. Tourism Manag. 30 (5), 658–664. https://doi.org/10.1016/j.tourman.2008.11.003.

Barja, I., Silván, G., Rosellini, S., Pineiro, A., Gonzalez-Gil, A., Camacho, L., Illera, J.C., 2007. Stress physiological responses to tourist pressure in a wild population of European pine marten. J. Steroid Biochem. Mol. Biol. 104, 136–142.

Becken, S., 2016. Peak Oil: a hidden issue? Social representations of professional tourism perspectives. J. Sustain. Tour. 9582 (March), 1–21. https://doi.org/10.1080/09669582.2015.1042484.

Bertella, G., 2018. Sustainability in wildlife tourism: challenging the assumptions and imagining alternatives. Tour. Rev. https://doi.org/10.1108/TR-11-2017-0166. TR-11-2017-0166.

Boren, L., Gemmell, N., Barton, K., 2002. Tourist disturbance on New Zealand Fur seals Arctocephalus Forsteri. Australian Mammal. 24, 85–95.

Burns, G.L., 2004. The Host Community and Wildlife Tourism. In: Higginbottom, K. (Ed.), Wildlife Tourism: Impacts, Management and Planning. Common Ground Publishing Pty Ltd.

Burns, G.L., 2015a. Animals as Tourism Objects: ethically refocusing relationships between tourists and wildlife. In: Markwell, K. (Ed.), Animals and Tourism: Understanding Diverse Relationships, pp. 44–59 (Channel View Publications).

Burns, G.L., 2015b. Ethics in Tourism. In: Hall, C.M., Gossling, S., Scott, D. (Eds.), The Routledge Handbook of Tourism and Sustainability. Routledge, pp. 117–126 (Chapter 8).

Burns, G.L., 2018. Seal Watching Tourism as a Resource for Community Development in Iceland. In: Lew, A.A., Cheer, J. (Eds.), Tourism Resilience and Adaptation to Environmental Change. Routledge Advances in Tourism Series, pp. 69–85. Searching for Resilience.

Burns, G.L., Moore, S., Macbeth, J., 2011. Should dingoes die? Principles for engaging ecocentric ethics in wildlife tourism management. J. Ecotourism 10 (3), 179–196.

Burns, G.L., Öqvist, E.L., Angerbjörn, A., Granquist, S., 2018. When the Wildlife You Watch Becomes the Food You Eat: Exploring Moral and Ethical Dilemmas when Consumptive and Non-consumptive Tourism Merge. In: Kline, C. (Ed.), Animals As Food: Ethical Implications For Tourism.

Butler, R.W., 1999. Sustainable tourism: a state of the art review. Tourism Geogr. 1 (1), 7–25.

Cassini, M.H., Szteren, D., Fernández-Juricic, E., 2004. Fence effects on the behavioural responses of South American Fur seals to tourist approaches. J. Ethol. 22 (2), 127–133. https://doi.org/10.1007/s10164-003-0112-0.

Cawley, M., 2017. A strategic approach to protecting the sustainability of a natural heritage and tourism resource: the River Moy, Ireland. Bulletin de La Société Géographique de Liége 69 (2), 53–62.

Chettiparamb, A., Kokkranikal, J., 2012. Responsible tourism and sustainability: the case of kumarakom in Kerala, India. J. Policy Res. Tour. Leis. Events 4 (3), 302–326. https://doi.org/10.1080/19407963.2012.711088. Retrieved from.

Dobson, J., 2006. Sharks, wildlife tourism, and state regulation. Tourism Mar. Environ. 3 (1), 15–23.

Emery, M., Flora, C., 2006. Spiraling-up: mapping community transformation with community capitals framework. Community Dev. 37 (1), 19–35. https://doi.org/10.1080/15575330609490152.

Fennell, D.A., 2020. Ecotourism, fifth ed. Routledge, New York.

Fennell, D.A., Cooper, C., 2020. Sustainable Tourism: Principles, Contexts and Practices. Channel View Publications, Bristol. https://doi.org/10.21832/FENNEL7666.

Flannery, W., Healy, N., Luna, M., 2018. Exclusion and non-participation in marine spatial planning. Mar. Pol. 88 (May 2017), 32–40. https://doi.org/10.1016/j.marpol.2017.11.001.

Flora, C., Flora, J., Fey, S., 2004. Rural Communities: Legacy and Change, second ed. Westview Press, Bolder, CO.

Font, X., 2017. What meaning for sustainability? Creating tourism impacts in a slippery policy context. J. Policy Res. Tour. Leis. Events 9 (2), 209–215. https://doi.org/10.1080/19407963.2016.1258514.

Goodwin, H., 2016. Responsible Tourism: Using Tourism for Sustainable Development, second ed. Goodfellow Publishers, Oxford.

Granquist, S.M., Hauksson, E., 2019a. Aerial Census of the Icelandic Grey Seal (Halichoerus Grypus) Population in 2017: Pup Production, Population Estimate, Trends and Current Status Marine and Freshwater Research Institution HV 2019-02. Reykjavik. 19pp.

Granquist, S.M., Hauksson, E., 2019b. Population estimate, trends and current status of the Icelandic harbour seal (Phoca vitulina) population in 2018. Marine and Freshwater Research Institution, HV 2019-36. Reykjavík 2019, 22.

Granquist, S., Hauksson, E., 2016. Seasonal, meterological, tidal and diurnal effects on haul-out patterns of harbour seals (*Phoca vitulina*) in Iceland. Polar Biol. 39 (12), 2347–2359.

Granquist, S.M., Nilsson, P.Å., 2013. The Wild North: Network Cooperation for Sustainable Tourism in Fragil Marine Environment in the Arctic Region. In: Müller, D.K., Lundmark, L., Lemelin, R.H. (Eds.), New Issues in Polar Tourism: Communities, Environment, Politics, pp. 123–132. https://doi.org/10.1007/978-94-007-5884-1. Springer Science & Business Media.

Granquist, S.M., Sigurjonsdottir, H., 2014. The effect of land based seal watching tourism on the haul-out behaviour of harbour seals (Phoca vitulina) in Iceland. Appl. Anim. Behav. Sci. 156, 85–93. https://doi.org/10.1016/j.applanim.2014.04.004.

Gutierrez-Montes, I., Emery, M., Fernandez-Baca, E., 2009. The sustainable livelihoods approach and the community capitals framework: the importance of system-level approaches to community change efforts. Community Dev. 40 (2), 106–113. https://doi.org/10.1080/15575330903011785.

Helgadóttir, G., Einarsdóttir, A.V., Burns, G.L., Gunnarsdóttir, G.þ., Matthíasdóttir, J.M. E., 2019. Social sustainability of tourism in Iceland: a qualitative inquiry. Scand. J. Hospit. Tourism 19 (4/5). https://doi.org/10.1080/15022250.2019.1696699.

Henry, E., Hammill, M.O., 2001. Impact of small boats on the haulout activity of harbour seals (*Phoca vitulina*) in Métis Bay, Saint Lawrence Estuary, Québec, Canada. Aquat. Mamm. 27, 140–148.

Higginbottom, K., 2004. Wildlife Tourism: an Introduction. In: Higginbottom, K. (Ed.), Wildlife Tourism: Impacts, Management and Planning, pp. 1–14 (Common Ground Publishing Pty Ltd).

Hoover-Miller, A., Bishop, A., Prewitt, J., Conlon, S., Jezierski, C., Armato, P., 2013. Efficacy of voluntary mitigation in reducing harbour seal disturbance. J. Wildl. Manag. 77, 689–700.

Howarth, C., 2006. A social representation is not a quiet thing: exploring the critical potential of social representations theory. Br. J. Soc. Psychol. https://doi.org/10.1348/014466605X43777. Wiley Online Library.

Icelandic Institute of Natural History, 2019. Retrieved 3 December 2019. https://www.ni.is/midlun/utgafa/valistar/spendyr/valistispendyra.

Icelandic Tourist Board, 2020. Retrieved from. https://www.ferdamalastofa.is/is/tolur-og-utgafur/fjoldi-ferdamanna/heildarfjoldi-erlendra-ferdamanna.

Ingold, T., 2002. Culture and the Perception of the Environment. In: Croll, E., Parkin, D. (Eds.), Bush Base: Forest Farm. Culture, Environment and Development. Routledge, pp. 39–56. https://doi.org/10.4324/9780203036129. London, Taylor & Francis e-Library.

James, S.P., 2015. Environmental Philosophy: an Introduction. Cambridge: (Polity Press<x>).

Jansen, J.K., Boveng, P.L., Dahle, S.P., Bengtson, J.L., 2010. Reaction of harbor seals to cruise ships. J. Wildl. Manag. 74, 1186–1194.

Jóhannesson, G.T., Lund, K.A., 2019. Beyond Overtourism: Studying the Entanglements of Society and Tourism in Iceland. In: Milano, C., Cheer, J.M., Novelli, M. (Eds.), Overtourism: Excesses, Discontents and Measures in Travel and Tourism, pp. 91–106 (Abingdon: CABI).

Johnson, M.W., Lavigne, D.M., 1999. Mass tourism and the Mediterranean Monk Seal-the role of mass tourism in decline and possible future extinction of Europe's most endangered marine mammal, Monachus Monachus. Monachus Guard. 2, 31–60.

Jovchelovitch, S., 2001. Social Representations, Public Life, and Social Construction [online]. In Representations of the Social. LSE Research Online, London, pp. 165–182. Retrieved from http://eprints.lse.ac.uk/2649.

Kovacs, K.M., Innes, S., 1990. The impacts of tourism on harp seals (*Phoca groenlandica*) in the golf of st. Lawrence, Canada. Appl. Anim. Behav. Sci. 26, 15–26.

Kovacs, K.M., Aguilar, A., Aurioles, D., Burkanov, V., Campagna, C., Gales, N., Gelatt, T., Goldsworthy, S.D., Goodman, S.J., Hofmeyr, G.J.G., Härkönen, T., Lowry, L., Lydersen, C., Schipper, J., Sipilä, T., Southwell, C., Stuart, S., Thompson, D., Trillmich, F., 2012. Global threats to pinnipeds. Mar. Mamm. Sci. 28, 414–436.

Lai, P.H., Morrison-Saunders, A., Grimstad, S., 2017. Operating small tourism firms in rural destinations: a social representations approach to examining how small tourism firms cope with non-tourism induced changes. Tourism Manag. 58, 164–174. https://doi.org/10.1016/j.tourman.2016.10.017.

Lincoln, Y.S., Guba, E.G., 1985. Naturalistic Inquiry. SAGE Publications, Inc, Newbury Park, CA.

Magis, K., 2010. Community resilience: an indicator of social sustainability. Soc. Nat. Resour. 23 (5), 401–416. https://doi.org/10.1080/08941920903305674.

Marschall, S., Granquist, S.M., Burns, G.L., 2017. Interpretation in wildlife tourism: assessing the effectiveness of signage on visitor behaviour at a seal watching site in Iceland. J. Outdoor Recr. Tour. 17 (March 2016), 11–19. https://doi.org/10.1016/j.jort.2016.11.001.

Mascarenhas, A., Nunes, L.M., Ramos, T.B., 2014. Exploring the self-assessment of sustainability indicators by different stakeholders. Ecol. Indicat. 39, 75–83. https://doi.org/10.1016/j.ecolind.2013.12.001.

McIntosh, D., Wright, P.A., 2017. Emotional processing as an important part of the wildlife viewing experience. J. Outdoor Recr. Tour. 18 (June 2015), 1–9. https://doi.org/10.1016/j.jort.2017.01.004.

Mihalic, T., 2016. Sustainable-responsible tourism discourse - towards "responsustable" tourism. J. Clean. Prod. 111, 461–470. https://doi.org/10.1016/j.jclepro.2014.12.062.

Moscardo, G., 2011. Exploring social representations of tourism planning: issues for governance. J. Sustain. Tourism 19 (4–5), 423–436. https://doi.org/10.1080/09669582.2011.558625.

Moscardo, G., Murphy, L., 2014. There is no such thing as sustainable tourism: Re-conceptualizing tourism as a tool for sustainability. Sustainability 6 (5), 2538–2561. https://doi.org/10.3390/su6052538.

Newsome, D., Rodger, K., 2007. Impacts of Tourism on Pinnipeds and Implications for Tourism Management. In: Higham, J., Lück, M. (Eds.), Marine Wildlife and Tourism Management: Insights from the Natural and Social Sciences, pp. 182–205 (Oxfordshire: CABI).

Nilsson, P.-Å., 2012. Tourist background and local acceptance: a case study of tourists in Northern Iceland. Akureyri.

O'Connor, C., 2017. Embodiment and the construction of social knowledge: towards an integration of embodiment and social representations theory. J. Theor. Soc. Behav. 47 (1), 2–24. https://doi.org/10.1111/jtsb.12110.

Óladóttir, O.Þ., 2018. Tourism in Iceland in Figures. Reykjavik. Retrieved from. https://www.ferdamalastofa.is/static/files/ferdamalastofa/talnaefni/tourism-in-iceland-2018_2.pdf.

Öqvist, E., 2016. Tourism, Hunting, Conservation and Managment of Marine Mammals in Iceland. Stockholm University.

Pearce, P.L., Moscardo, G., Ross, G.F., 1996. Tourism Community Relationships. Pergamon, Oxford.

Phillips, R., Pittman, R.H., 2015. Measuring Progress. In: Phillips, R., Pittman, R.H. (Eds.), An Introduction To Community Development, pp. 343–360. New York: Routledge.

Reed, M.S., Fraser, E.D.G., Dougill, A.J., 2006. An adaptive learning process for developing and applying sustainability indicators with local communities. Ecol. Econ. 59 (4), 406–418. https://doi.org/10.1016/j.ecolecon.2005.11.008.

Ren, C., Pritchard, A., Morgan, N., 2010. Constructing tourism research: a critical inquiry. Ann. Tourism Res. 37 (4), 885–904.

Sanderson, S., 2005. Poverty and conservation: the new century's "peasant question?" *World development*, pp. 323–332. https://doi.org/10.1016/j.worlddev.2004.07.016, 33(2 SPEC. ISS.).

Saxena, G., Ilbery, B., 2008. Integrated rural tourism a border case study. Ann. Tourism Res. 35 (1), 233–254. https://doi.org/10.1016/j.annals.2007.07.010.

Scheyvens, R., 1999. Ecotourism and the empowerment of local communities. Tourism Manag. 20 (2), 245–249. https://doi.org/10.1016/S0261-5177(98)00069-7.

Sebele, L.S., 2010. Community-based tourism ventures,benefits and challenges: khama rhino santuary Trust,Central district, bostwana. Tourism Manag.

Sekercioglu, C.H., 2002. Impacts of birdwatching on human and avian communities. Environ. Conserv. 29, 282–289. https://doi.org/10.1017/S0376892902000206, 03.

Seraphin, H., Vo, T., 2020. The international journal of investigating the application of the principles for responsible management education to resort mini-clubs. Int. J. Manag. Educ. 18 (2) https://doi.org/10.1016/j.ijme.2020.100377, 100377.

Sharpley, R., 2000. Tourism and sustainable development: exploring the theoretical divide. J. Sustain. Tourism 8 (1), 1–19.

Stern, P.C., Dietz, T., 1994. The value basis of environmental concern. J. Soc. Issues 50 (3), 65–84. https://doi.org/10.1111/j.1540-4560.1994.tb02420.x.

Stern, P.C., Dietz, T., Guagnano, G.A., 1998. A brief inventory of values. Educ. Psychol. Meas. 58 (6), 984–1001.

Stone, M.T., Nyaupane, G.P., 2017a. Ecotourism influence on community needs and the functions of protected areas: a systems thinking approach. J. Ecotourism 16 (3), 222–246. https://doi.org/10.1080/14724049.2016.1221959.

Stone, M.T., Nyaupane, G.P., 2017b. Protected areas, wildlife-based community tourism and community livelihoods dynamics: spiraling up and down of community capitals. J. Sustain. Tourism 1–18. https://doi.org/10.1080/09669582.2017.1349774.

Tay, K.X., Chan, J.K.L., Vogt, C.A., Mohamed, B., 2016. Comprehending the responsible tourism practices through principles of sustainability: a case of Kinabalu Park. Tourism Manag. Perspect. 18, 34–41. https://doi.org/10.1016/j.tmp.2015.12.018.

Umhverfis- og auðlindaráðuneytið, 2019. Hálendisþjóðgarður–Tillögur og Áherslur þverpólitískrar Nefndar. Retrieved from https://www.stjornarradid.is/lisalib/getfile.aspx?itemid=b3fa873b-15d3-11ea-9453-005056bc4d74. .

UNWTO, 1981. Saturation of tourist destinations: report of the secretary general. World Tour- ism Organization, Madrid.

Warner, M., 2000. Conflict Management in Community-Based Natural Resource Projects: Experiences from Fiji and Papua New Guinea. Working Paper 135. Overseas Development Institute, London.

Ziegler, J., Dearden, P., Rollins, R., 2012. But are tourists satisfied? Importance-performance analysis of the whale shark tourism industry on Isla Holbox, Mexico. Tourism Manag. 33 (3), 692–701. https://doi.org/10.1016/j.tourman.2011.08.004.

Zimmermann, F.M., 2018. Does sustainability (still) matter in tourism (geography). Tourism Geogr. 6688, 1–4. https://doi.org/10.1080/14616688.2018.1434814.