Journal of Outdoor Recreation and Tourism 29 (2020) 100276

Contents lists available at ScienceDirect

Journal of Outdoor Recreation and Tourism

journal homepage: http://www.elsevier.com/locate/jort

Tourism as a tool for nature conservation? Conflicting interests between renewable energy projects and wilderness protection in Iceland

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ARTICLE INFO

Keywords:
Nature based tourism
Environmental ethics
Renewable energy

ABSTRACT

Nature consistently has the highest score when international tourists are asked which factor was most influential when deciding to travel to Iceland. When probed further, references are most often made to wanting to experience wilderness, and what is perceived as pristine and unspoiled nature. Domestically, the importance of pristine nature for international tourism has been used by nature conservationists when opposing specific energy projects, especially in the highlands. Results from several surveys, however, give mixed messages about if and how human structures negatively impact tourist experience in wilderness areas. The aim of this research is to explore the tension and conflicting interests between nature conservation, tourism and energy projects in Icelandic wilderness areas. Public discourses about new energy projects are examined, using critical discourse analysis to tease out dominant ideas and underlying assumptions about the relationship between tourism, nature conservation and energy projects. This analysis is compared with results from several recent surveys focusing on how tourists experience nature both in places where no energy structures are in sights and in places close to hydropower or geothermal plants and associated infrastructure. The findings challenge the common assumption that the construction of power plants in wilderness areas will automatically decrease the economic value of the area for tourism. Nevertheless, when viewed through the lens of more eco-centric environmental ethics, rather than purely focusing on economic value, the argument can be made that energy related structures in wilderness areas do indeed decrease the value of the area for tourism, not necessarily from an economic point of view but rather in the form of lost opportunities for the travelers to experience the deep, transformative connection to nature that the raw, untouched wilderness has the capacity to elicit.

Management implications

The question planners and policy makers are faced with is if and how nature-based tourism and the development of the energy sector can co-exist in the Icelandic highlands without the presence of one sector negatively affecting the other. Based on the results from this research we highlight the following points as relevant for management:

- Energy related structures in Icelandic wilderness areas do not automatically decrease the economic value of an area for tourism. Examples exists of the successful co-existence of power plants and flourishing nature-based tourism.
- Quantitative surveys about tourist satisfaction are not useful to capture the value of raw, untouched wilderness areas for deep transformative experiences based on eco-centric values. There is a need for more qualitative research to gain a deeper understanding of the transformative potential of tourism in remote, wilderness areas that are still relatively untouched by human influence.

1. Introduction

Since beautiful nature, healthy wildlife and authentic culture are all considered important features for attracting tourists to a destination, tourism is often used as a justification for why nature conservation may be a more attractive option than extractive industries from a sustainable development perspective (Leung, Spencely, Hvenegaard & Buckley, 2018). In this sense, tourism is seen as an opportunity to provide a balance between competing goals of maintaining the natural qualities of

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https://doi.org/10.1016/j.jort.2019.100276
Received 21 December 2018; Received in revised form 16 December 2019; Accepted 23 December 2019
Available online 14 January 2020

an area and maximizing socio-economic benefits (Heslinga, Groote, & Vanclay, 2017).

In Iceland, tourism has been the most rapidly increasing economic sector in recent years. International tourist arrivals have more than quadrupled between 2010 (500,000 visitors) and 2018 (2.3 million visitors) (Icelandic Tourist Board, n.d.). This sudden increase has boosted the economy and helped unwind some of the negative consequences of the 2008 financial crisis. In 2014, tourism had surpassed the two more traditional sectors of fisheries and energy in terms of foreign earnings, making it the single most important export earner (Sutherland & Stacey, 2017).

This increase in tourism has at times been used as a justification for prioritizing nature conversation over harnessing energy, particularly in the heated public debates that have taken place about various energy projects. Iceland prides itself of being a leader in harnessing renewable energy. According to information from the National Energy Authority, about 85 percent of primary energy use was from renewable energy in 2014. Geothermal energy is used for space heating and all electricity is produced by either hydropower (71 percent) or geothermal energy (29 percent) (National Energy Authority, 2015). This high share of renewables is clearly positive in the light of global threats of climate change, since it reduces the need for the burning of fossil fuels. That does not mean, however, that the energy production is without negative environmental impacts. Both hydropower plants and geothermal power stations influence their local surroundings and can have various negative environmental impacts. Furthermore, since many of the best places for power production are in the highlands or other places that have traditionally been free of human structures, they can spoil the feeling of pristine nature, so highly praised by those marketing the country as a tourist destination.

Those in favor of nature conservation have often argued that in the long run protecting the pristine nature of Iceland could end up being more valuable from an economic point of view than damming every river or harnessing all geothermal sites, since tourists from all over the world are increasingly attracted to the kind of untouched nature still available in Iceland (Jóhannesdóttir, 2015). In the age of Anthropocene, places in nature that have not been transformed by humans are becoming more and more rare and Iceland is one of the last places in Europe with vast areas of wilderness. Karlsdóttir (2013) emphasizes that this fact makes nature conservation in Iceland not only a local issue but also a global one. Icelandic nature, its landscape and ecosystems are of concerns for others, and the need to protect it is therefore just as much an international issue as a local question. Research shows that the majority of tourists that travel into the central Icelandic highlands do so to experience stillness and solitude, or at least to get away from crowds (Sæþórsdóttir, 2010). Access to unspoiled nature, Karlsdóttir argues, is essential for people's emotional and spiritual well-being. Furthermore, she states, that tourism can indeed be positive from an environmental point of view if it is based on environmental awareness and managed accordingly (Karlsdóttir, 2013).

Both the public sector and the business industry (including both tourism and the energy sector) use ideas about purity and unspoiled nature as branding strategies when promoting Iceland abroad (Gremaud, 2014; Huijbens, 2011). Power projects in wilderness areas, especially in the Icelandic highlands, can threaten this image. The increasing demand for renewable energy worldwide, however, has increased the pressure to build more power plants. Foreign investors have turned to Iceland in search of cheap electricity for energy intensive industries, creating opportunities for rural development in places that have been experiencing economic decline (Sæþórsdóttir and Hall, 2019).

This tension between the need to protect nature and the wish to use renewable energy sources to boost local economic development reached new heights at the turn of the century, when plans to build a 690 MW hydropower plant in East Iceland materialized. The Kárahnjúkar Hydropower project was constructed as a part of a joint initiative of the American corporation Alcoa and Landsvirkjun (the national energy company of Iceland) (Newson, 2010). The project involved damming two glacial rivers, creating a 57 km^2 large reservoir, producing electricity for Aloca's aluminum smelter built in the small community of Reyðarfjörður (Landsvirkjun, n.d.). The construction of the Kárahnjúkar power plant sparked a heated social debate and divided the nation between those that wanted to preserve the wilderness areas and those that put more emphasis of creating new economic opportunities for rural, marginalized communities (Gremaud, 2014; Jóhannesdóttir, 2015).

Partly as a consequence of the widespread social conflict around the Kárahnjúkar project, the government launched a new master plan, titled The Master Plan for Nature Protection and Energy Utilization. The Master Plan is a tool designed to reconcile the competing interests of energy utilization and nature conservation at the early planning stages. The Master Plan was launched in 1999 and is still ongoing. The first phase was completed in 2003, the second phase lasted until end of 2012, the third phase was from 2013 to 2017 and the fourth phase will be ongoing until 2021. The results from each phase are in the form of categorization of selected proposals for energy projects, where each proposal falls into one of the following three groups: utilization, waiting (more information needed) and protection. A special taskforce, composed of experts, is appointed for each phase and this task force produces initial results that the government then takes into the parliament, with or without adjustments, in the form of a draft parliamentary resolution (Verkefnisstjórn rammáætlunar, n.d.).[2] Just as was the case with the Kárahnjúkar Hydropower project, the results from the second and third phase of the Master Plan created some heated social debates, demonstrating a tension between conflicting values related to nature conservation and utilization of resources (as can be seen in the analysis in 4.2 and 4.3).

With the preceding discussion in mind, this paper explores the relationship between tourism, nature conservation and energy projects. More specifically, we examine the common assumption that the construction of energy projects in wilderness areas will decrease the economic value of those areas for tourism and ask if and how nature-based tourism and the development of the energy sector can co-exist in the Icelandic highlands.

2. Theoretical framing

The argument where increased tourism is used as an economic justification for preserving wilderness areas, rather than directly utilizing the natural resources of the area through extractive industries such as power plants, rests on completely different values than when nature is protected based on more eco-centric values. This brings us to the role of environmental ethics in public policy and how underlying values, implicit in our western dominant world view, can shape decisions about the management of natural resources. The relationship between humans and nature is of special relevance in this context.

Coming from a background of anthropology, Escobar (1999) identifies three different ways of conceptualizing nature and the relationship between humans and nature: capitalist, organic and techno. The first one, he argues, is the one we know best in the western world and emerged in post-Renaissance Europe in the late 18th century. The most fundamental feature of this conceptualization is the separation of man from nature. In the capitalistic system, nature is viewed as a commodity and natural resources are exploited according to rationalist economic principles. There is great emphasis on expert knowledge, facts and figures. A defining feature of the second one (organic) is the understanding that nature and society are not separated, but rather humans are part of nature. This understanding calls for a more eco-centric approach towards nature and natural resources and opens the idea that nature can have an intrinsic value, independent of its value for humans. The third

[2] General information about the Master Plan can be found both in Icelandic and English on the project's website: http://www.ramma.is/.

conceptualization Escobar introduces is looking at nature through the lens of techno science, exploring if new technologies will alter current structures of human nature interactions (Escobar, 1999).

The tension between these different understandings of the relationship between humans and nature is relevant in the Icelandic context. Although awareness is increasing about the danger of unconstrained use of natural resources, stakeholders and interest groups often disagree about the best solutions to avoid human induced ecological disasters. This disagreement originates not only in conflicting interests but can also be based on different ethics.

In his review of environmental ethics and how they relate to tourism, Holden (2018) refers to three types of environmental ethics: libertarian extensionism, eco-holism and the conservation ethic. The first two are based on eco-centric views about human-nature relations but differ in the sense that while libertarian extensionism is based on the idea of extending the rights of humans to exist to other forms of life as well as objects in nature, eco-holism is more concerned with the biosphere, protecting ecosystems and recognizing the inter-connectedness of life. In both cases, however, the intrinsic value of nature is emphasized, irrespective of its potential instrumental value for humans. The third type of environmental ethics, conservation ethics, emphasizes ecological conservation for human welfare. According to Holden, conservation ethics should be categorized as "weak" environmental ethics since it fails to explicitly acknowledge the intrinsic value of nature, only focusing on how nature can be of value and use for humans. In this sense, conservation ethics rest on the same understanding as the value framework that has resulted in overexploitation, i.e. humans are separate from nature and nature is viewed merely as a resource for humans to take advantage of. Yet (or perhaps for that reason), conservation ethics is what underpins most contemporary interpretations of sustainable development and the associated environmental policies and practices (Holden, 2018).

Holden suggests that in order to develop stronger environmental ethics that recognizes the intrinsic value of nature, we need citizens that possess ecological virtue, meaning a belief system that results in people feeling good about themselves when they act for the benefit of nature and bad when they do not. Other tourism scholars, concerned with environmental ethics, have written along similar lines, emphasizing the importance of eco-centric ethical principles in wildlife management that not only provide a more authentic visitor experience of nature but can also aid in the long-term survival of wildlife (Burns, Macbeth, & Moore, 2011).

Holden (2018) wonders about the potential of tourism as a way for people to develop emotional relationships with nature that will in turn lead to a stronger environmental ethics and calls for more qualitative research, such as phenomenological research, to provide more in-depth understanding of how tourist contact with nature can influence the emotional attachment the traveler feels towards the environment and their relationship with the natural world (Holden, 2018).

One example of the type of phenomenological research Holden calls for, and is of relevance for this research, is an ethnographic study carried out in Iceland to explore how people interact with nature in the context of nature-based tourism (Ólafsdóttir, 2008; 2013). In this case the researcher participated in two British-based organized tours to the Icelandic highlands - a jeep tour and a backpacking hiking trip – which was followed up with interviews with the participants in the two tours after they had returned home. The study revealed that the most moving moments participants experienced where based on deep connections with nature from an eco-centric stance, when people felt at one with nature. Those moments seemed easier to access for those traveling on foot, although it also depended on the person itself and his or her readiness to feel this connection (Ólafsdóttir, 2008). One conclusion Olafsdottir draws from her research relevant for public policy is the importance of protecting the wild, raw and untouched characteristics of nature, since these are the types of landscapes most likely to elicit a deep connection that not only leads to joyous peace but has the potential to transform how we relate to the world around us (Olafsdottir, 2013). Researchers in Australia reached a similar conclusion in their qualitative, interview-based research on what fosters awe-inspiring experiences in nature-based tourism destination. Their study was conducted in the remote, unique Kimberly region in north-western Australia and a key insight of their research was that maintaining the wilderness qualities of the area seems central to awe-inspiring experiences (Pearce, Strickland-Munro, & Moore, 2016).

The importance of wilderness areas as sites for deep personal reflection is also stressed by philosopher Skúlason (2005), in his writings about the transformative power of Askja, a volcano located in the Icelandic highlands. Skúlason writes about how meditating at the edge of the volcano, and the strong connection he felt to nature there, deeply impacted him. For him, Askja symbolized an objective reality, independent of human existence, and this created a very different experience than dwelling in the more man-made environments of urban areas. Again, a raw wilderness area seems to facilitate the experience of an individual human being to feel at one with nature and his observation of the environment through an eco-centric lens opens up some space within for deep reflection.

These are only a few examples, but a variety of research results from around the world indicate that when given the choice, people interested in nature-based tourism tend to prefer nature where there are fewer signs of human structure rather than environments and landscapes that are heavily influenced by human development, including noise from human activities (Mace, Bell, Loomis and Haas, 2003; Benfield, Bell, Troup, & Sodertrom, 2010; Vittersø, Chipeniuk, Skår and Vistad, 2004).

With this discussion about human-nature relationships and environmental ethics in mind we now turn back to the Icelandic case and the tension between energy projects, tourism and nature conservation in the Icelandic highlands.

3. Materials and methods

This research relies on data from two different types of sources of information. First, public discourses about new energy projects were examined by reviewing parliamentary discussions about selected energy developments in Althingi, the Icelandic parliament. Second, results from studies focusing on tourism experiences and attitudes towards energy structures in wilderness areas were reviewed.

The parliamentary discussions that were chosen were the three discussion rounds[3] preceding the legislation about the Kárahnjúkar power project in 2002 (Act 38/2002) as well as the discussion rounds related to parliamentary resolutions for the second and third phase of the Master Plan for Nature Protection and Energy Utilization that took place in Althingi in the years 2012 (Resolution 13/14/2012) and 2016/2017 (Draft resolution, case 145. during the 2016–2017 parliamentary assembly), respectively.[4] Transcribed version of these discussions, along with associated documents such as comments from stakeholders, are easily accessible at the website of Althingi ([dataset] Althingi, n.d.). Once all discussion rounds and associated documents had been copied, they produced around 2300 pages of data, including 400 pages of transcribed discussions in the parliament and 1900 pages of comments from stakeholders.

The discussions on these selected energy projects were examined using critical discourse analysis (CDA) to tease out dominant ideas and underlying assumptions about the relationship between tourism, nature conservation and energy projects. CDA is a type of discourse analysis in which the focus is on how social power, dominance and inequality are enacted, reproduced, and resisted by text and talk in public discourses

[3] Legislations and resolutions need to go through three discussion rounds in Althingi before they can be voted on.

[4] The text of all parliamentary legislations, resolutions and draft resolutions can be found on the website of Althingi (Althingi, n.d.).

(van Dijk, 2001). Since parliamentary discussions are often used as a platform for debates about political ideologies and value systems, analysis of discussion rounds can be useful to understand how dominant discourses for a given time are shaping public policy on specific topics. Given the high volume of data, the method used to analyze the discussion rounds was to first skim through the material and then search specifically for tourism related themes. By using the "find" function in word and for pdf files, terms such as "tourism", "tourist" and "national park" were used to hone into those parts of the discussions were the linkages between energy developments, nature conservation and tourism were debated. These sections were highlighted and read carefully with the aim of identifying themes, patterns and the underlying values that were driving the debates.

The results from the discourse analysis were then used to reflect on the findings from recent surveys focusing on tourist experiences in wilderness areas where energy projects have been proposed or have already been constructed. These surveys were initiated by the ministries responsible for the Master Plan for Nature Protection and Energy Utilization and energy companies, but these institutes contracted tourism researchers at the University of Iceland, Holar University College and the Icelandic Tourism Research Centre to carry out the data collection and statistical analysis.

The key surveys that were reviewed for this paper are presented in the four following reports: 1) Report on tourist attitudes towards some proposed power projects in the third phase of the master plan (Sæþórsdóttir, Stefánsdóttir, & Stefánsson, 2015), 2) Report on the impact of Blanda power station on tourist experiences (Sæþórsdóttir, Guðmundsdóttir, & Stefánsson, 2016), 3) Report on the attitudes of tourists to power plants in the Hengill region (Huijbens, Halapi, & Aðalsteinsdóttir, 2018) and 4) Report on the impact of Krafla power plant on tourist experience (Ingólfsdóttir, Gunnarsdóttir, Víkingsdóttir, & Posmitnaya, 2018).

The first report explores the attitudes of tourists visiting wilderness areas free of human structures related to energy development towards such structures whereas the three other reports examine how existing structures such as power plants, transmission lines etc. impact tourist experiences on those places. The first report is a summary report of results from a survey conducted at seven different sites. Information from the summary report is drawn from individual reports that were produced for each site. Since the purpose of this article is to compare answers between different site for two specific questions, we rely on the summary report that compares the results, rather than citing separately each of the seven reports. We do, however, cite peer reviewed papers that have been written using the data in the seven reports, when appropriate, especially in the discussions (section 5).

The reason for why those surveys were chosen was because they were conducted specifically with the aim of using the results to feed into ongoing policy processes related to the Master Plan. The first surveys were conducted as part of data collection for the third phase of the Master Plan whereas the surveys that took place in areas where power plants already exist were carried out at the initiative of the energy companies themselves, largely as a reaction to the results from the surveys done for the Master Plan. This also means that the list of question was almost identical in all surveys, since the idea from the beginning was to use the data to compare results from different sites.

Fig. 1 shows the location of the sites where the surveys were conducted and Table 1 provides a list of the sites, along with information about the number of answers collected in each place.

The vast majority of the respondents in the surveys were international tourists, with the exception of Tröllladyngja, where close to 79 percent of those that answered were Icelandic tourists. In all other sites the share of Icelanders was less than one third and in three geothermal sites (Blanda, Seltún and Krafla) more than 90 percent were international tourists.

4. Results

In this section results from the discourse analysis conducted on the parliamentary discussions will be presented. Findings from the selected surveys will then be compared and the insights from the discourse analysis will be used to reflect on those findings.

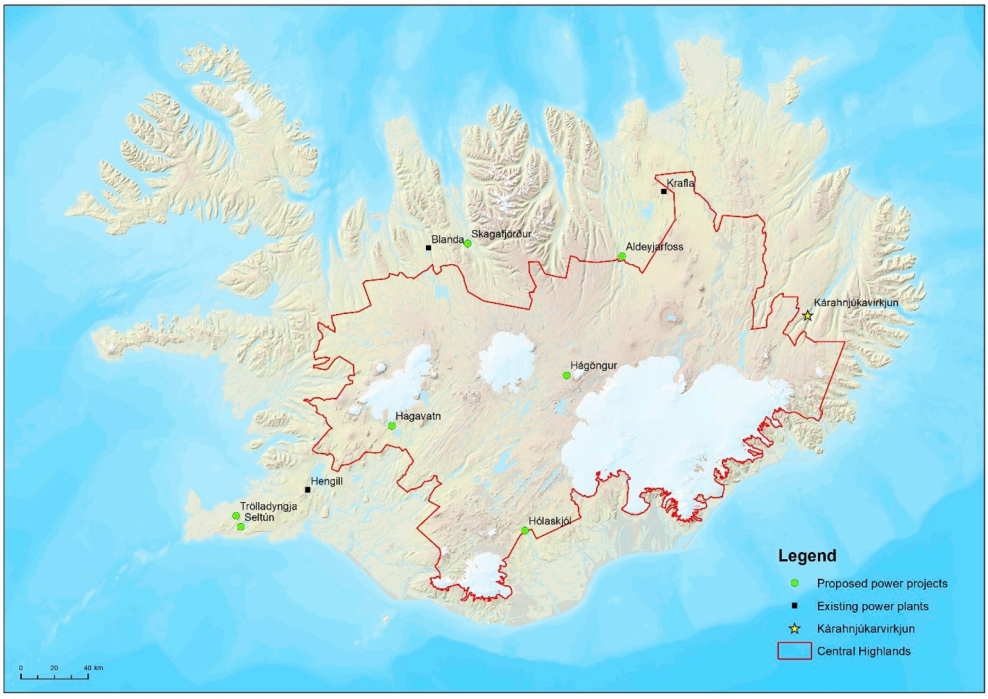

Fig. 1. Map of Iceland illustrating the area defined as the Icelandic highlands and with dots showing the location of the Kárahnjúkar hydropower project and the proposed and existing power projects discussed in the surveys focusing on tourist experiences and attitudes.

Table 1
Overview of sites where surveys were conducted.

Name of site	Date	Answers	Int'n Tourists	Status
Aldeyjarfoss	Summer 2015	338	88.6%	Proposed power plant
Hagavatn	Summer 2015	94	65.9%	Proposed power plant
Nýidalur	Summer 2015	88	77.9%	Proposed power plant
Hólaskjól	Summer 2015	442	87.4%	Proposed power plant
Seltún	Summer 2015	751	94%	Proposed power plant
Skagafjörður	Summer 2015	230	81.5%	Proposed power plant
Trölladyngja	Summer 2015	132	21.1%	Proposed power plant
Blanda	Summer 2016	1078	90.8%	Existing hydro plant
Krafla	Summer 2017	1208	97.9%	Existing geothermal plant
Hengill	Summer 2017	1135	78,7%	Existing geothermal plant

4.1. The Kárahnjúkar debate

The Kárahnjúkar debate marked a shift in public discussion about nature conservation in Iceland. When the parliamentary discussions about the Kárahnjúkar power project took place in 2002, the project had already been heavily debated domestically for 2–3 years and numerous public protests had taken place against the project. These protests continued after the legislation was passed and launched a wider movement aimed at protecting Icelandic wilderness areas from large scale industries (Krater & Rose, 2009).

The discussions in the parliament were, of course, colored by the conflicting values expressed in public forums by various stakeholders as well as the general public. The three rounds of discussions all took place in the first half of 2002 (February, March and April). At the time, the government in power was more towards the right and was composed of two parties; the Independence Party and the Progressive Party. The opposition parties were the Left Greens, who were clearly opposed to the Kárahnjúkar project, and the Social Democrats who were more conflicted on the issue with some of their parliamentarians supporting it and others opposing.

Although the debate revolved around the competing goals of rural development and nature conservation, tourism was introduced into the debate by those opposing the project as an alternative economic activity in rural areas. The Left Greens, in particular, were criticized for being impractical, not recognizing the need for rural development in declining communities in East Iceland. They responded to this criticism by both questioning the economic benefits of the power project and by proposing a national park in the Icelandic highlands as an alternative. A large national park, they claimed, could become world renowned and bring in as much income as all potential income from the dam and the associated aluminum smelter. "Tourism is growing, and we need to take it seriously", one of them stated and another one emphasized the need to build up infrastructure for tourism in East Iceland. The Left Greens repeatedly referred to what would be lost if travelers could not move around the highlands anymore without human structures everywhere and in their mind the building of the power plant would clearly reduce the value of the area for tourism.

The parties in power responded by arguing that power plants were in fact good for tourism. The building of new power plants in the past had facilitated access to remote areas and opened the highlands for tourists. Some parliamentarians referred to examples from other countries where power projects and tourism co-existed and others talked about the Blue Lagoon, one of the most popular tourist sites in Iceland that was originally formed from waste water from a nearby power plant. The counterarguments regarding how power plants could be good for tourism never received much attention, though. The main arguments were still focused on that the power project and the aluminum smelter were needed for rural development.

One reason for why tourism, although often mentioned in the debate, never became a major factor, was that during the debate about the Kárahnjúkar project tourism was still a minor sector compared to the energy sector. Thus, the focus was mainly on the potential of tourism in the future. Ten years later, when the parliamentary discussions about the second phase of the Master Plan took place, tourism was rapidly growing and by the time the third phase was discussed tourism had already passed the energy sector in terms of its contribution to foreign earnings. Thus, it should not come as a surprise that references to tourism are more frequent in those more recent discussions than what was the case in 2002 (See 4.3, Table 2 for timeline, showing which years discussions rounds took place and the number of international tourists during these different periods).

4.2. The second phase of the master plan

The second phase of the Master Plan was discussed in the parliament in 2012, one decade after the debate about Kárahnjúkar project. In this phase 67 proposed power projects were assessed. By this time the power had shifted to the left, with the two parties that were earlier in opposition (Left Greens and the Social Democrats) forming the government. In the parliamentary resolution put forward by the then minister for environment, who belonged to the Left Greens, some of the projects that the task force had suggested to classify as utilization (meaning that the energy company should be allowed to explore the options further), were moved to a waiting group (which meant more data needed to be collected before the project was further categorized).

While the opposition parties, stakeholders in the energy sector and some members of the public criticized the government for deviating

Table 2
Research data & tourist arrivals. Overview of when discussion rounds and surveys too place and puts them in context with the number of international tourists entering the country each year. Information about the numbers of international tourists is from the data base of the Icelandic Tourism Board (n.d.).

Timeline	Discussion Rounds	Surveys on Tourism Experiences	International Tourists
2002	Legislation about Káranhjúkar Power Plant Project, 3 discussion rounds		277,900
2003–2011: International tourists arrivals increase from 320,000 to 565,611			
2012	Resolution about 2nd phase of the Master Plan, 3 discussion rounds		672,773
2013			807,349
2014			998,600
2015		Surveys on tourism experiences in 7 sites for proposed power projects	1,289,100
2016	Resolution about 3rd phase of the Master Plan, 1st discussion round	Survey on tourism experiences at Blanda (hydropower plant)	1,792,060
2017	Resolution about 3rd phase of the Master Plan, 2nd discussion	Survey on tourism experiences at Krafla & Hengill (geothermal power plants)	2,224,603
2018			2,343,773

from expert advice due to their emphasis on nature conservation, the vast majority of comments from the public and from stakeholder in the tourism sector felt the government did not take bold enough steps and that more areas should fall into the protection group. Mass e-mails were sent pressuring parliamentarians to move some proposed projects from utilization to either waiting or protection due to the nature conservation value of the relevant areas. Tourism was one of the most common reason given for why it was important to conserve the area. For example, close to one hundred similar letters arrived from individuals, requesting that proposed power projects in the Reykjanes Peninsula would be moved from utilization to protection, all referring to the increasing number of tourists visiting the area. The letters pointed at the importance of conserving wilderness areas close to urban areas, both for recreational purposes and due to their value for international tourists.

4.3. The third phase of the master plan

The third phase of the Master Plan included evaluation of 82 proposed power projects, 18 that were categorized in the utilization group, 38 in waiting and 26 in protection. This time the government decided to use the suggestions from the expert committee without any changes in the parliamentary resolution they put forward. The parliamentary resolution was first introduced to the parliament in 2016, when the Independence Party and the Progressive Party were back in power, but was put on hold since elections were held, unexpectedly, in the fall of 2016 and a new government took over in January 2017. The new minister for environment brought the resolution unchanged back to the parliament, but again unexpected elections and a change in governments stopped the process and the resolution was never passed. Despite this political turmoil, the resolution went through two discussion rounds in the parliament, one in 2016 and another one in 2017, with the associated inputs from stakeholders. At this point the tourism sector was rapidly expanding and was turning into an important economic force.

In this phase, results from tourism surveys conducted specifically for the Master Plan (Sæþórsdóttir et al., 2015) were among the data the expert task force relied on when evaluating the conservation value of areas where the different proposed power projects were to be located. Again, there were heated debates between those that favored conservation and those that were more interested in increasing renewable energy production and again tourism was frequently used as a justification by those that emphasized the importance of conservation. Some parliamentarians wanted to reconsider the categorization of power projects that were suggested for the utilization group and were located within the boundaries of a proposed national park covering the vast majority of the Icelandic highlands and this claim was supported by comments from many stakeholders in the tourism industry.

A new aspect of the debate, however, emerged in the discussion rounds about the third phase of the Master Plan, where stakeholders in the energy sector criticized the weight the tourist surveys were given when categorizing power projects, questioning both the methodology, interpretation of results and the weight of those results in the final evaluation of power projects. Some complained that examples of successful co-existence of power plants and tourism in many places were ignored and one stakeholder in the energy sector pointed at the negative environmental impacts of tourism due to the increase in greenhouse gas emissions associated with international flights.

When these parliamentary discussions are viewed together, one can detect two competing discourses about the impact of power plants on nature-based tourism. On one hand many assume that a power project in a wilderness area will clearly decrease the economic value of the area for tourism. On the other hand, there are those that argue that tourism and energy projects can easily co-exist in the same area and that power plant can even in some cases be beneficial for tourism. The former assumption, however, seems to be more dominant in the public discourses and this was clearly demonstrated in the third phase of the Master Plan, when the importance of an area for tourism decreased the likelihood of a power project to be categorized in the utilization group.

4.4. Survey results

This increasing emphasis on tourism in the evaluation process elicited strong reaction from the energy companies, who were not only critical of the results, but some also initiated their own studies to examine the experiences and views of tourists in areas where power plants already existed. These include surveys done at Blanda (a hydropower plant in northwest Iceland), at Krafla (a geothermal power plant in northeast Iceland) and at Hengill (a geothermal area in southeast Iceland where geothermal power plants already exist). The surveys initiated by the energy companies relied on a very similar list of questions as was used in the research conducted for the Master Plan and thus provide basis for comparison of tourist attitudes and how they experience nature in areas with and without power plants.

We now turn to the four reports that summarize the results from those surveys, both the ones done in seven areas where some of the proposed power projects evaluated in the third phase of the Master Plan were to be located, and the three surveys initiated by the energy companies in Blanda, Krafla and Hengill.

The surveys - although not completely identical - all shared many of the same questions, that focused on tourism experiences in the area they were located in and their views of current and proposed energy projects close by as well as more generally in the country.

When comparing the results of the surveys for the purposes of this article, we zoomed in on two sets of broad questions, one asking about the importance of wilderness and pristine nature for the respondents and the other one inquiring about their overall satisfaction with the visit and the nature in the area. As illustrated in Figs. 2 and 3, the overwhelming majority of tourists (more than 80 percent) visit the area to experience wilderness and/or unspoiled nature and even larger share (more than 90 percent) felt that this was indeed part of the attraction of the area they were visiting. Although there are some variations in answers depending on location, overall one cannot see less interest in wilderness among those visiting areas where power plants exist, nor are they less likely to feel that wilderness is part of the attraction of the area.

The same trend can be detected in the two questions of the survey where tourists were asked about their satisfaction with their stay and satisfaction with nature in the area. Figs. 4 and 5 demonstrate that more than 80 percent are either satisfied or very satisfied with their stay and a slightly higher share is satisfied or very satisfied with the nature in the area, regardless of if the tourists are located in an area with a power plant or not.

In fact, the site that has the highest score in terms of satisfaction with nature is Krafla, one of the sites with existing geothermal plant. In other words, the energy related infrastructure related to the geothermal plant did not seem to negatively impact tourist satisfaction with the nature in the area.

These results are puzzling, given the common assumption that power plants are likely to decrease the economic value of an area for tourism since the human structures would make nature less attractive for visitors.

We now turn to discussions about how these findings fit into the ethical framework introduced in an earlier section, as well as how they compare to some other research results focusing on the impact of power projects on tourism.

5. Discussions

The assumption that energy projects in the highlands will decrease the economic value of the region for tourism is an underlying theme in the parliamentary discussion. This assumption, which clearly rests on the type of environmental ethics that Holden identifies as conservation ethics (focusing on nature conservation for human welfare, rather than a more eco-centric based environmental ethics), is also echoed in some

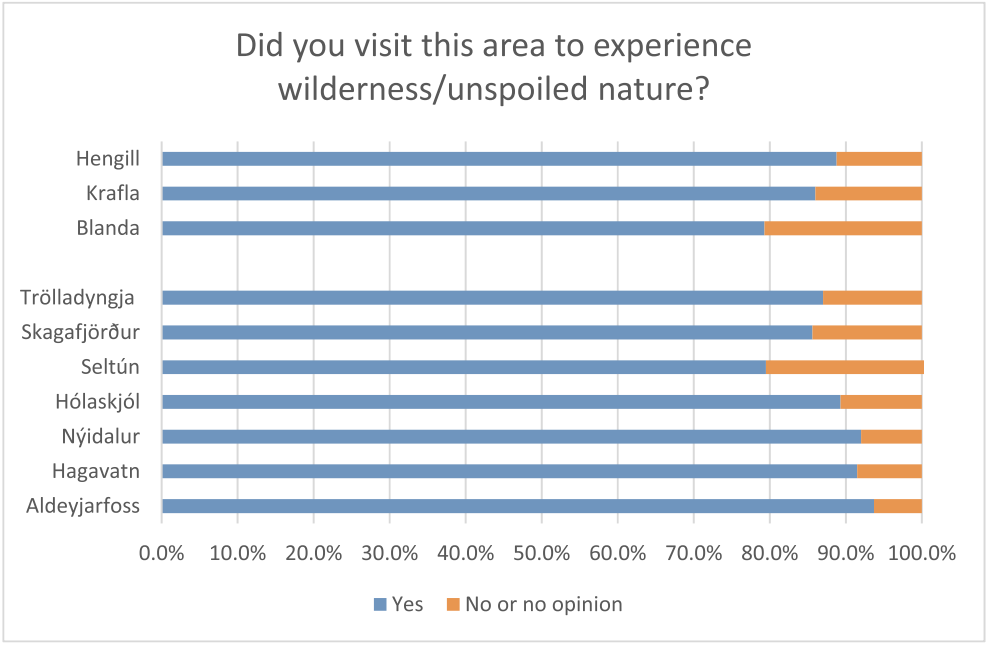

Fig. 2. The importance of wilderness. The three top rows are the sites where power plants were already existing, but the bottom seven are sites where power projects have been proposed but not yet built at the time when the survey was conducted.

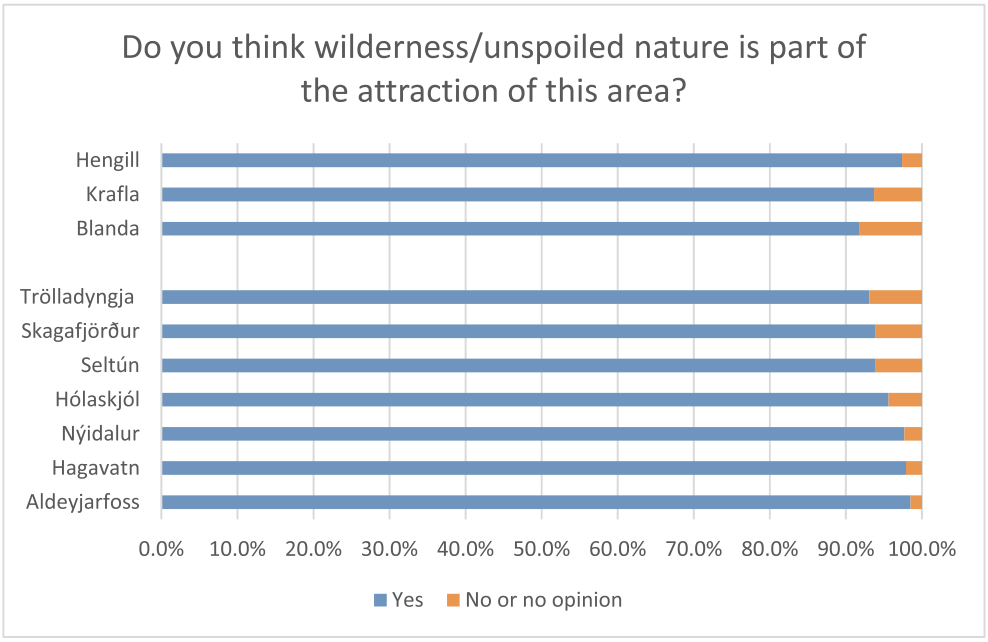

Fig. 3. The relevance of wilderness. The three top rows are the sites where power plants were already existing, but the bottom seven are sites where power projects have been proposed but not yet built at the time when the survey was conducted.

research findings where the expectations of tourists as well as views of tourism stakeholders are examined.

5.1. The value of nature for tourism

A study based on 85 face-to-face interviews with tourists at four destinations in the Icelandic Highlands in 2011 revealed that the majority of the tourists were against the proposed power plants in the areas they were traveling in. The main reason they gave was that the visual impact of the structures associated with energy production would mean the area would no longer be untouched and this would negatively influence their wilderness experience (Sæþórsdóttir and Saarinen, 2016). Similarly, the results from a quantitative study conducted in seven nature-based tourism locations indicates that the tourists are generally negative towards human structures related to power plants, especially in the Highlands. Transmission lines are considered the least desirable infrastructure and according to the survey, they would have a negative effect on the interest of the majority of the tourists traveling in the area to visit again in the future (Sæþórsdóttir and Stefánsson, 2017). One of the seven sites in the quantitative survey was Skagafjörður, located in north Iceland, the location of some proposed hydropower projects. In addition to the survey examining tourist attitudes, research

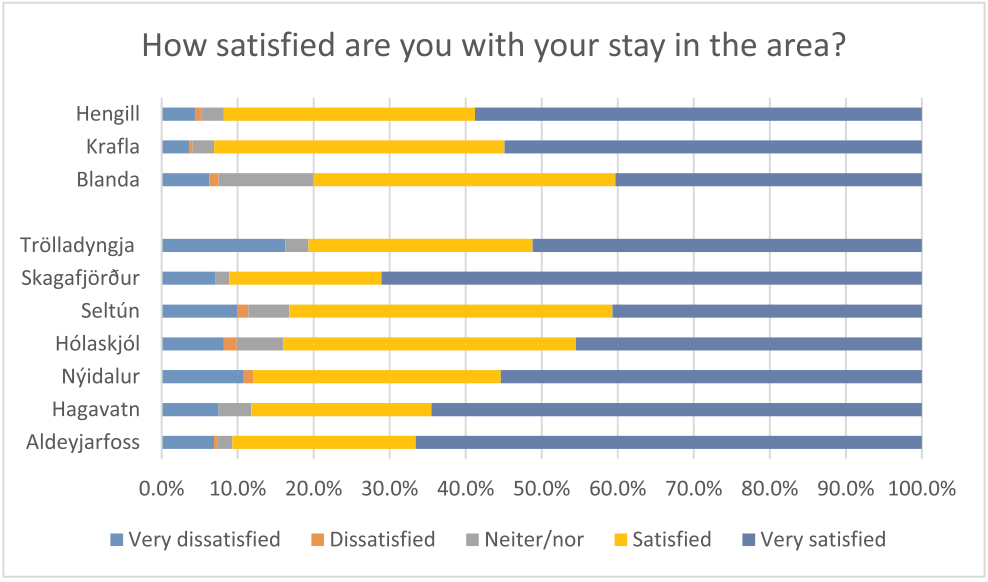

Fig. 4. Satisfaction with stay. The three top rows are the sites where power plants were already existing, but the bottom seven are sites where power projects have been proposed but not yet built at the time when the survey was conducted.

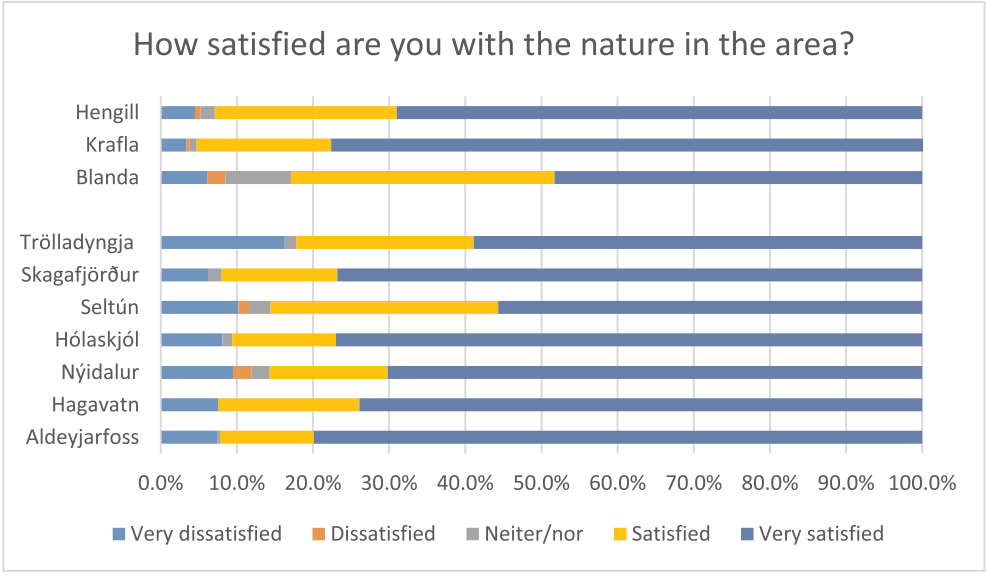

Fig. 5. Satisfaction with nature. The three top rows are the sites where power plants were already existing, but the bottom seven are sites where power projects have proposed but not yet built at the time when the survey was conducted.

at this site also included interviews with tourism operators. Although their views were more varied than among the tourists, based on their type of business and distance from the proposed development site, most of them worried that the power plant, if constructed, would negatively impact tourism in the area (Burns & Haraldsdóttir, 2018). Another interview study with tourism operators in six areas of Iceland, also indicated concern among representatives of the tourism industry although some also referred to examples of sites where tourism and power plants happily co-exists. Those interviewed mentioned that energy production in wilderness areas could damage Iceland's image as a tourist destination and power plants could decrease the value of nature for tourism (Sæþórsdóttir and Stefánsson, 2017).

5.2. New information challenge assumption

Broadly speaking, these results – that are mostly based on research on sites where power projects have been proposed but do not yet exist – support the assumption that power plants will decrease the economic value of wilderness areas for tourism. The more recent research, however, where tourists are asked a similar set of questions in wilderness where power plant already exists, challenges this assumption. As already explained, the tourists at those sites (Blanda, Krafla and Hengill) seemed equally pleased with their experience of nature as was the case with those tourists that were asked the same questions at sites where no energy related human structures were present. In an article about the results from the survey at Blanda, the authors discuss various possible explanations for why the power plant does not seem to negatively impact tourism experience. The design of the power plant could be a factor. Also, the landscape is homogenous and does not have some major attractions, like a waterfall that is visually affected by the plant. Finally, it is possible that different types of tourists visit sites where power plants exist and those that are searching for unspoiled nature avoid those areas

and rather go to other places, where no energy related infrastructure exists (Sæþórsdóttir and Hall, 2018).

Staying with the assumption that power plants decrease the economic value of an area for tourism, then number of tourists and their spending habits would be more important factors than the types of tourists visiting the sites. In the case of Krafla, the number of tourists visiting the site has been increasing rapidly, from 50,000 visitors in 2001 to close to 200,000 visitors in 2017, indicating that Krafla – in spite of the structures and sounds associated with the geothermal power plant - continues to be a site that attracts tourists and helps to ensure that the surrounding area gets their share of the overall increase in tourism in Iceland (Ingólfsdóttir et al., 2018).

Regardless of the explanation of why, the results from the surveys discussed in the four reports demonstrate that the tourists visiting the three sites where power plants already exists seem equally satisfied with nature in the area they are visiting as those that visited the seven sites where power projects are proposed but do not yet exist. The results indicate that using natural areas for other industries, alongside nature-based tourism will not automatically decrease the economic value of the area of tourism, especially if the area is carefully managed. On the contrary, tourism and other commercial activities can in many cases coexist. In Finland, for example, commercial forestry and nature-based tourism were found to be able to coexist in the same area with good planning and management actions that take visual quality and recreational values of the environment into account (Tyrväinen, Silvennoinen, & Hallikainen, 2017). Just like in the Icelandic case, however, the example from Finland does not give us a comparison between how the experience would have been without the additional commercial activities and if this has influenced how deeply the tourists were able to connect with their surroundings.

5.3. The importance of eco-centric ethics

These results did not go unnoticed by those in favor of building more power plants, who referred to the result from Blanda[5] in the parliamentary debate about the third phase of the Master Plan.

This brings up the question of how effective it is to refer to the economic value of untouched nature for tourism, if the end goal is nature conservation. As discussed in the section about results, those opposing the Kárahnjúkar project were often criticized for being too emotional and not practical enough. Jóhannesdóttir (2015) points out that in the Icelandic debate about power plants and nature conservation, those in favor of conservation have been encouraged to use the language of the economic value of tourism. Arguments based on eco-centric environmental ethics did not reach the ears of those in favor of more power plants in the Highlands so those lobbying for nature conservation turned to tourism as an economic argument for why wilderness areas should be protected (Jóhannesdóttir, 2015). But if the economic argument that power plants in the Highlands will decrease the value of wilderness areas for tourism does not hold, does that mean that power plants and tourism can happily co-exist in all places? Do the numerous quantitative surveys and the less frequent interview studies sufficiently grasp the value of the untouched wilderness and what might be lost if these areas will be transformed with infrastructure related to energy production?

These questions point us back to the importance of eco-centric values and the potential of tourism to facilitate transformative nature-based experiences that will encourage deep personal reflection and strong connection to nature. This type of experience is what Skúlason (2005) felt at Askja and Holden (2018) considers necessary in order to develop the kind of emotional relationship with nature that will encourage more people to possess what he calls 'ecological virtue' (meaning they will be more willing to engage in an environmentally friendly behavior that will benefit nature). The tourists visiting sites next to power plants, who answered questions about how important wilderness is to them and how satisfied they are with nature in the area they are visiting, did not necessarily know what the area looked and felt like before the human structures were there. Most of the visitors are international tourists, many living in densely populated areas and might never have encountered an area completely free from visible human influence. The area might look wilder and more unspoiled than what they are used to from their home countries, even with the power plant there, so only those who knew the area before can feel the difference. In other words, the visitor might not realize what he is missing with the power plant being there.

[5] The results from Krafla and Hengill were not available yet at the time.

5.4. Limitations of study

We recognize that the relationship between nature conservation, energy sector and tourism is complex and multilayered and there are many aspects we have not discussed. Tourism on its own can be a threat to nature conservation, with associated infrastructure. One Icelandic study, for example, found that improved accessibility to protected areas affected visitor perceptions, satisfaction and preferences and influenced their behavior. Tourists tend to spend less time in easily accessible areas and improved accessibility increases the demand for the development of further infrastructure, needed to cope with the environmental pressure from tourists (Tverijonaite, Ólafsdóttir, & Thorsteinsson, 2018).

Nevertheless, we felt that focusing on the relationship between the economic value of a wilderness area for tourism and how the human alteration of such an area for the purposes of energy production could influence this value, was worthy of special attention. We have pointed out that empirical data (surveys on tourist experiences) do not necessarily support the dominant assumption in Icelandic political discourse, that energy projects in the Icelandic highlands will decrease the economic value of the area for tourism. As long as the focus is only on the economic value, energy companies might successfully use the results from the surveys conducted on sites where power plants already exist to lobby for more power projects in wilderness areas, including in the unique Icelandic highlands. There is, however, another type of value that could be lost, relating to the depth of experience these tourists might have.

6. Conclusion

The analysis in the Icelandic case study challenge the assumption, dominant in domestic political discourses, that energy related structures in Icelandic wilderness areas will reduce their economic value for tourism. Even if tourists visiting wilderness free of energy related infrastructure express that a proposed energy project would negatively influence their experience in the region, results from surveys conducted at sites where power plants already exist give a different picture. In fact, tourists seemed equally satisfied with nature at those sites as at the sites where no power plants existed.

If tourists continue to visit the area after the construction of a new power plant and their satisfaction with the surrounding nature remains at the same level as before, this does seem to indicate that power plants and tourism can in fact happily co-exists, at least from the economic point of view. This does not mean, however, that there is no value lost when power plants are constructed in pristine nature in wilderness areas. The tourists, especially those coming from far away places, see the area as it is but are not aware of what might have been lost. Furthermore, quantitative surveys and/or short face-to-face interviews only scratch the surface of how tourists experience a site.

As Holden emphasis, more research of qualitative nature, where tourism experience is examined in more depth than what is possible in a survey or a short onsite interview, is needed to gain a deeper understanding of the kind of experience raw unspoiled nature can create and the transformative potential of such experiences. The phenomenological research conducted by Ólafsdóttir (2008; 2013) illustrated how the

moments where travelers in the Highlands had experiences where they felt at one with nature, being a small part of a larger whole, were the most moving memories of their trips. So even if the findings from the surveys on sites where power plants already exist challenge the common assumption that the construction of power plants in wilderness areas will automatically decrease the economic value of the area for tourism, this does not mean these structures have no impact.

When viewed through the lens of more eco-centric environmental ethics, rather than purely focusing on economic value, the argument can be made that energy related structures in wilderness areas do indeed decrease the value of the area for tourism, not necessarily from an economic point of view but rather in the form of lost opportunities for the travelers to experience the deep, transformative connection to nature that the raw, untouched wilderness has the capacity to elicit.

CRediT author statement

Auður H. Ingólfsdóttir and Guðrún ûóra Gunnarsdóttir jointly worked on the conceptualization and methodology of the article. Auður H. Ingólfsdóttir did most of the research and analysis, wrote the first draft and took the lead on revising the article for resubmission. Guðrún ûóra Gunnarsdóttir was in a supervising and supportive role, reading drafts, providing additional references, editing and discussing all critical points that came up in the process.

Acknowledgements

We would like to thank Steinunn Elva Gunnarsdóttir who produced the map presented in Fig. 1.

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