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Running Wild: Environmental Attitudes of Long-Distance Runners in the Icelandic Highlands

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An increasing number of sports events are taking place in wilderness and mountain areas. The Laugavegur Ultra Marathon (LUM) is one such event. It follows the 55-km (34.2-mile) route of the Laugavegur trail in the southern Icelandic highlands. The trail has been selected as one of the world's most scenic long-distance hiking trails by many of the world's leading travel media. This paper focuses on LUM runners' attitudes toward environmental issues to identify their values as a group and to examine whether there are different attitudes between Icelandic and international runners. An online survey was distributed to all participants finishing the race in 2018, a total of 553 runners; the response rate was 45.2%. The results reveal that most runners participating in LUM were running for their own personal goals and challenges, using the trail's wilderness setting as a driver to reach their target. As a group, the runners had relatively ecocentric orientations. With regard to environmental values, however, there was a large difference between Icelandic and international runners. The Icelandic runners significantly favored anthropocentric orientations, preferring more infrastructure and services along the route, compared with international runners, who preferred the wild character of the route. When it comes to planning sports events in natural settings, such as mountain marathons in wilderness areas, it is important to raise the environmental awareness of both users and event organizers. Moreover, to sustain the wilderness character of the trail, it is beneficial to attract more runners who have an ecocentric view.

Keywords: *mountain ultramarathon; nature trail running; wilderness; sport event; environmental values; tourism management; Laugavegur trail; Iceland.*

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Introduction

Long-distance mountain running has become increasingly popular over recent decades. Before the COVID-19 pandemic, a significant number of people were regularly traveling around the world to take part in running events in new and exotic locations. This development is likely to resume once the pandemic is over. The Laugavegur Ultra Marathon (LUM) is one such event and one of Iceland's oldest ultramarathon mountain events, dating back to 1997 (Sæþórsdóttir and Lund 2008). The marathon takes place along the Laugavegur hiking trail, which winds through unique wilderness in the southern Icelandic highlands. Its popularity has increased significantly during the last decade following the growing interest in outdoor recreation as well as a massive increase in international tourists visiting Iceland (ITB 2021). In recent years, the trail has been selected as one of the world's best long-distance hiking trails by National Geographic (Schnitzspahn 2017), Local Adventurer (n.d.), and Road Affair (Gilmore 2021), as well as one of Europe's best by Fodor's Travel (Alpert and Moye 2020).

Running on trails in mountain and wilderness areas is challenging and provides participants and spectators with the opportunity to enjoy natural and pristine landscapes. Many trail runners also view nature as a valuable resource for their own wellbeing (MacBride-Stewart 2019). Trail running is defined by the International Trail Running Association (ITRA n.d.) as a pedestrian race in a natural environment on a properly marked route that has less than 20% paving or asphalt. Competitors should ideally be self-sufficient or semi-self-sufficient and respect sporting ethics, loyalty, solidarity, and the environment. Much research (eg Agrusa et al 2007; Wicker et al 2012; Brewer and Freeman 2015; Duglio and Beltramo 2017) has shown that sporting events, such as trail running, are a good marketing tool for tourism development and thus likely to contribute to increased visitation and have a positive economic impact. However, an increasing number of studies (eg Newsome et al 2012; Ng et al 2018) show considerable negative environmental impacts of sporting events, such as trampling of soil and vegetation adjacent to the trails, trail degradation, transportation of exotic plant species, and the production of waste and litter. Newsome et al (2011, 2012) emphasize that negative environmental impacts of competitive sporting events in natural areas are even worse, since such events often involve large numbers of participants, spectators, and support staff. Moreover, racers concentrate on winning or completing the race as quickly as possible, which might limit their environmental awareness and cause even higher trampling damage to the soil and surrounding vegetation or the production of informal tracks (Newsome 2014). This is supported by Ng et al (2018), who revealed a significantly higher intensity and rate of trail impacts by an organized running event compared with

hiking. They also showed a longer-lasting impact with respect to changed trail morphometry, trail degradation, and changed physical properties of soil. When racing is in the wild, it may be expected that these effects will be greater, since wilderness areas are especially sensitive, as they are the most pristine and natural of all environments (Nash 2001). Wilderness quality is usually evaluated by 2 key concepts: naturalness and remoteness. These have been combined into the wilderness continuum by Hall (1992). For some, wilderness travel involves both a physical and a mental challenge, with a certain degree of thrill or even risk. It thereby helps fulfill the psychological desire to experience a challenging or even frightening adventure (Cater 2006). Many researchers (eg Hall 1992; Sæþórsdóttir and Hall 2021), furthermore, stress solitude as an important part of the wilderness experience, thus making wilderness areas sensitive to crowding.

The increased pressure placed on the Laugavegur trail, its ecosystems, and its facilities during the LUM race is thus likely to increase environmental impact along the trail. Additionally, increased visitation heightens the demand for improved infrastructure and services, which in turn affects both the hikers' and the runners' overall experience of the wilderness. In the long run, this could attract visitors with different attitudes toward nature, reducing the wilderness quality of the area (Sæþórsdóttir 2013; Ólafsdóttir and Haraldsson 2019). Environmental attitudes are determined and shaped by individuals' values (Papagiannakis and Lioukas 2012; Schultz and Zelezny 1999), which, according to Rossi et al (2015), are deep-rooted principles that influence people's behavior and perceptions. According to the motives underlying environmental attitudes, environmental values are often divided into the socially constructed clusters of *ecocentric*, those who value nature for its own sake, and *anthropocentric*, those who value nature because of material or physical benefits it can provide for humans (Gagnon and Barton 1994; Rossi et al 2015). Therefore, increased knowledge and understanding of participants' environmental values in running events in mountain and wild areas is of critical importance for managing such events in a sustainable manner.

This paper aims to investigate trail runners' attitudes toward environmental issues in the Icelandic wilderness by (1) assessing their motivation and satisfaction with the run, (2) analyzing their perception of environmental issues during the run, and (3) identifying what environmental values they hold as a group. Foreign runners are a new target for tourism in Iceland, and this sector is growing rapidly, with an increasing number of mountain marathons. As such, this paper also examines whether the attitudes of Icelandic and international runners are aligned or whether these 2 groups have different attitudes toward the wilderness environment.

Laugavegur trail

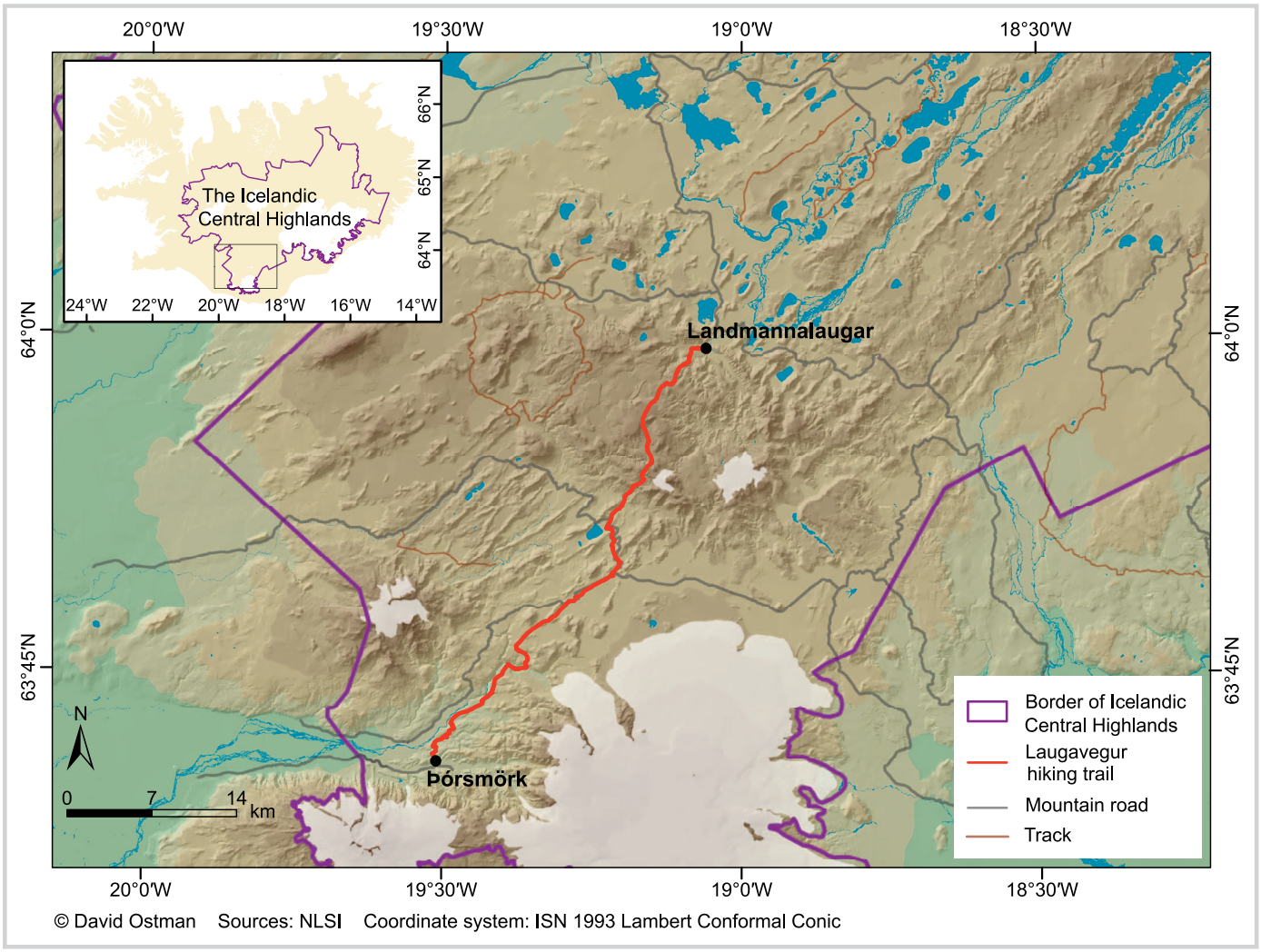
Iceland has a land area of 103,000 km^2, which extends approximately from latitude 63°23′ to 66°32′N and longitude 13°30′ to 24°32′W. More than one third lies above 600 masl and less than a quarter below 200 masl (NLSI 2017). The country is sparsely populated, with a total of 364,134 inhabitants (Statistics Iceland 2020), most of whom live along the coastline, leaving the interior highlands an uninhabited wilderness. In 1999, a regional plan was made for the central highlands, partly to preserve its wilderness (Sæþórsdóttir and Ólafsdóttir 2017; Ólafsdóttir and Sæþórsdóttir 2020a). The Laugavegur trail is located in the southern part of the central highlands. It stretches over 55 km (34.2 miles) between 2 popular destinations, Landmannalaugar in the north and þórsmörk in the south (Figure 1). The LUM race starts in Landmannalaugar at 550 masl. The first part of the run is mostly uphill and reaches its highest point of approximately 1100 masl just south of Landmannalaugar. The race ends in þórsmörk at approximately 200 masl. The trail is situated in Iceland's active volcanic rift zones, passing through a challenging landscape with little visible evidence of human influence except the marked trail and a few mountain huts. The landscape is characterized by diverse geology sculptured by colorful rhyolite and basaltic mountains mixed with black lava fields, lakes, geothermal areas, glaciers, glaciofluvial plains, and glacier rivers (Figure 2). The vegetation cover is sparse in the higher elevations, dominated by mosses, moss heath, and various types of lichens, but increases toward þórsmörk, which is dominated by birch woodlands. A recent study (Heimisdóttir et al 2019: 267) showed that many hikers feel insecure when passing through this harsh environment, and perceive the landscape as being alien and "on the edge of real life."

The Laugavegur trail is one of Iceland's oldest and most popular long-distance hiking routes. It dates back to the late 1970s, when signal poles were set up between Landmannalaugar and þórsmörk passing by several mountain huts to lead hikers between them (Ólafsdóttir and Runnström 2013). The trail design was primarily based on "the easiest way to go" and often it followed old sheep tracks. After 1990, the trail grew in popularity among Icelanders, and also among international visitors after the turn of the millennium in 2000. Following the volcanic eruption of the nearby Eyjafjallajökull in 2010, the number of people hiking the trail dropped. After that, the number of hikers grew steadily until 2017, when over 15,000 people hiked the trail between July and September. This number dropped below 12,000 in 2018 and 2019 and to around 5000 in 2020 (personal communication, Ólafsson and þórhallsdóttir, 2 July 2021). Given the international attention that the Laugavegur trail gained in the years prior to the COVID-19 pandemic, the booming global trend in outdoor recreation and adventure tourism, and the exponential growth in mountain running and mountain marathons, it is likely that this number will increase significantly within the next decade. The number of runners participating in the LUM has grown 10-fold since it began in 1997. Over the past decade, the number of participants who finished the LUM race increased by over 1000%, from 49 participants in 1997 to 553 in 2018 (LUM 2018).

Data collection and analysis

To investigate the runners' attitudes toward environmental issues in the LUM, an online survey was designed in cooperation with the event organizers. It was distributed by the organizers to all participants finishing the race in 2018, a total of 553 runners, on 24 July, 10 days after the race. A reminder was sent out on 31 July and again on 7 August. A

FIGURE 1 The Laugavegur hiking trail, the venue of the LUM. The trail stretches over 55 km from Landmannalaugar in the north to Þórsmörk in the south.



total of 250 fully answered questionnaires were returned, or 45.2%. The questionnaire used was semistructured, containing a mixture of questions with codified answers and open-ended questions to allow the runners to record the points which they felt were the most relevant (Dixon and Leach 1978; McLafferty 2010). Besides demographic information, the questionnaire consisted of 14 questions that can be divided into 4 major categories. The first one dealt with general information, asking about participants' previous experiences of long-distance mountain runs. The second focused on the runners' motivation for participating in this particular run. The third part dealt with the runners' satisfaction with the trail's wild and natural environment, its condition, and the services provided. The fourth and last part focused on the runners' attitude toward the environment. It asked about the runners' perceived environmental impacts, such as litter along the trail, vegetational damage, trail erosion, informal trails, whether they had any particular concerns about the natural environment surrounding the Laugavegur trail, and what they considered to be the major environmental impact of mountain runs like the LUM. They were also asked to suggest ways of increasing the environmental sustainability of the LUM. In order to identify what environmental values were held by the trail runners as a group, the participants were asked to give their opinion on 13 statements regarding some common environmental and sustainability issues. This was based on a value scale obtained from Rossi et al (2015) that aims to reflect respondents in terms of anthropocentric and ecocentric orientation. The scale was modified to better fit Icelandic conditions and the aims of this research.

SPSS statistics software was used for statistical data analysis. The demographics of the runners, the length of their stay in Iceland, previous participation, satisfaction, motivation, and perceived impacts were analyzed using descriptive statistics. The runners' environmental values were assessed using a 5-point Likert scale, where 1 = strongly disagree and 5 = strongly agree, represented a scale ranging from anthropocentric (=1) to ecocentric (=5) (Rossi et al 2015). For comparison of the total environmental values, the scores of certain items were reversed, then all items were summed up and divided by their number. Simple linear regression tests were conducted to identify how environmental values affected the runners' perceived environmental impacts and satisfaction with the run. The open-ended questions were analyzed using inductive coding (Strauss and Corbin 1998). Hence, all individual

FIGURE 2 Runners participating in the LUM. (Photograph: Anna Dóra Sæþórsdóttir)

responses were recorded, then grouped, and categories were identified.

Results

Runners' motivation and satisfaction

Of the 250 completed questionnaires returned, 138 were answered by Icelanders (55%) and 112 by international visitors (45%). Most of the international respondents were from northern Europe (18.4%), North America (15.6%), or southern Europe (7.6%). Of the participants, 60% were male and 40% female, which was fairly consistent with the proportion of runners finishing the race, 64% male and 36% female. A large majority (84.9%) of the international respondents stated that the LUM race was the main reason for their visit to Iceland. Those who stated that the race was not the main reason for their visit spent more time in Iceland than those who traveled only to participate in the run. This is especially true for participants from Europe, who when traveling for other reasons stayed twice as long as those only traveling to participate in the run. A large majority of the international runners (87.5%) were participating in the LUM for the first time, compared with about half (51.8%) of the Icelandic runners. The majority of the runners had participated in a similar mountain run before: 78.6% of the international runners and 58.5% of the Icelandic runners.

The results reveal that a large majority of both international (99.1%) and Icelandic (96.4%) respondents considered wilderness to be a part of the route's attraction. The respondents' main motivation for participating in the LUM, however, was first and foremost to challenge themselves. When they were asked about their reasons for participating in this particular run and to rank their motivations by importance, more than half (54.4%) stated a challenge or personal goal to be their primary motivation. The Icelandic landscape was also an important motivation factor, while nature, referring to the phenomena of the physical world or natural environment, and wilderness mattered comparably less (Table 1). When looking only at the main motivation (first ranking) and how it differed between the Icelandic and international runners, a personal goal or challenge remained the main motivation for the native runners, but the Icelandic landscape was the main motivation for the foreign runners. There was also a notable difference between Icelandic and international runners when asked about what they considered to be most important in runs like the LUM. Good organization stood out as the most important aspect for the majority of Icelandic runners (54.4%), while the majority of the international runners (55.4%) considered nature to be most important.

TABLE 1 Runners' major motivation for participating in the LUM.

Motivation	Rank (%)				
	1	2	3	4	5
Challenge/personal goal	54.4	12.0	8.8	6.0	8.4
The Icelandic landscape	24.0	21.6	11.6	25.2	7.2
Pleasure	11.6	28.8	18.4	11.2	10.4
Nature	8.0	23.2	34.8	15.6	4.0
Wilderness	2.0	10.8	15.2	11.2	35.6

TABLE 2 The importance of environmental and sustainable issues according to the trail runners participating in the LUM (mean value based on 5-point Likert scale, 1 = strongly disagree, 5 = strongly agree).

Value statement	International runners		Icelandic runners	
	Mean	SD	Mean	SD
1. Native plants and untouched nature are beautiful	4.76	0.448	4.63	0.746
2. Seeing wild birds and animals in nature gives me a magical feeling	4.50	0.726	4.42	0.872
3. More infrastructure along the Laugavegur trail would negatively affect my experience of the run*	4.31	0.930	3.85	1.113
4. I consider the wild character and tough terrain to be the major challenge of the LUM trail	4.11	1.003	3.90	0.900
5. Hotels should not be built at the end and/or beginning of the Laugavegur trail	3.98	1.375	3.65	1.412
6. I would pay more taxes to protect nature*	3.94	1.026	3.33	1.214
7. Nature conservation limits the potential of nature runs like the LUM*	2.66	1.350	1.75	0.860
8. Running and/or riding bikes in nature is fun—a few damaged plants won't matter*	2.48	1.136	3.08	1.121
9. If humans do not manage nature, it becomes a threat*	2.29	1.432	1.78	1.065
10 More and better infrastructure and services are needed along the Laugavegur trail	2.06	1.061	1.94	0.933
11. Only humans have value for their own sake	2.01	1.294	1.93	1.085
12. Picking wildflowers and small rocks causes no harm in the long run*	1.98	1.124	2.59	1.170
13. The value of an ecosystem only depends on what it does for humans*	1.84	1.263	2.38	1.264

Note: Statements 1–6 reflect ecocentric views, statement 7 reflects both ecocentric and anthropocentric views to some extent, and statements 8–13 reflect anthropocentric views.
* Significant difference between Icelandic and international runners ($P < 0.05$).

Similarly, an open question addressed whether there was anything that made the runners particularly happy on the route. Most Icelandic respondents mentioned issues related to infrastructure, such as the reception at the drinking stations and the happy and positive attitudes of the staff. The international runners, on the other hand, mentioned the pristine nature and beautiful views. When asked if there was anything that had disappointed them on the route, nearly all participants agreed that there was, in general, nothing that was disappointing.

Environmental perceptions and values held by trail runners

Respondents were generally not aware of any litter along the trail or damage to the vegetation and soil cover that they linked to the effects of the race. As a group, the values of mountain trail runners were closer to being ecocentric than anthropocentric (Table 2). Most respondents, both Icelandic and international, strongly agreed that "native plants and untouched nature are beautiful" and that "seeing wild birds and animals in nature gives [them] a magical feeling." In contrast, the international runners agreed significantly more with the statement that more infrastructure along the Laugavegur trail would negatively affect their experience of the run. The international runners were also significantly more willing to pay taxes to protect nature. With regard to the statement that "nature conservation limits the potential of nature runs," the average score of the international runners was significantly higher compared with that of the natives, meaning that Icelanders disagreed more strongly with the statement. At the same time, foreigners disagreed significantly more with the statement that "a few damaged plants won't matter [as a result of running and/or riding bikes in nature]" and that "picking wildflowers and small rocks causes no harm in the long run." Another significant difference is found with regard to the statement "The value of an ecosystem only depends on what it does for humans." Here, the international runners agreed significantly less, indicating a more anthropocentric view from the Icelandic runners. The results of the simple linear regression reveal, however, that environmental values of mountain trail runners were rather weak predictors of their perception of environmental impacts, $F(1, 78) = 1.662$, $P = 0.201$, with an R^2 of 0.021, as well as of their satisfaction with the route, $F(1, 78) = 4.253$, $P = 0.043$, with an R^2 of 0.052.

When asked in an open question about what runners considered to be the major environmental impact of mountain runs like the LUM, there is a considerable difference between the opinions of international and Icelandic runners. Litter and informal trails were a major concern for international runners. In contrast, Icelandic runners considered that the marathon did not have a big impact in itself and instead thought that the LUM may raise runners' environmental awareness (Table 3). A considerable difference between the opinions of international and Icelandic runners was also apparent in the last open question, focusing on runners' suggestions for increasing the environmental sustainability of the LUM (Table 4). The most frequently mentioned suggestion in both groups was to reduce use of disposable cups and food packaging during the run. For international runners, other pressing issues were to limit the number of runners, minimize infrastructure, and ask people to stay on the trail. Suggestions of Icelandic runners included picking up litter

TABLE 3 Runners' opinions on the environmental impact of the LUM.

Environmental impact	International runners		Icelandic runners	
	%	*n*	%	*n*
Litter	24.1	27	13.0	18
Trail erosion	9.8	11	9.4	13
No big impacts	8.9	10	17.4	24
Informal trails	4.5	5	1.5	2
Traveling to the event	2.7	3	0.0	0
Raised awareness	1.8	2	5.1	7

after the race, having part of the entrance fee set for trail maintenance, asking people not to litter, and increasing the runners' environmental education.

Discussion and conclusions

> *Laugavegur is definitely the MOST beautiful trekking trail I have ever been to. It is more beautiful than Inca trail and much easier to hike too.* (*BlueHero 2017*)

Hikers have been enjoying the scenic landscapes and pristine wilderness along the Laugavegur long-distance trail in the southern Icelandic highlands for the last 40 years. Its increased popularity and international attention during the past few years now attract more diverse users. One group of users is the runners in the LUM. The marathon has been increasing in popularity since it began in 1997, providing its participants with a demanding and exotic experience (Sæþórsdóttir and Lund 2008; Heimisdóttir et al 2019). The results show that, as a sporting event, LUM is a major attraction—a large majority of the international runners traveled to Iceland primarily to participate in this particular race. The results furthermore show that most of the international participants who stayed longer in Iceland had participated in similar mountain marathons elsewhere, indicating the sports event to be a major factor in their decision to visit Iceland.

The wilderness setting makes the LUM race unique. A vital part of wilderness experience is self-reliance, but solitude is likewise an important part (Hall 1992; Sæþórsdóttir and Hall 2021). The results reveal that most runners were running for personal goals or challenges, and using their surroundings (nature, landscape) as a driver to achieve their goal. They preferred the trail to be uncrowded. That fits well with the race setting, but is contradicted by the event they were participating in, as there were a few hundred other runners, along with a lot of spectators and supporters. Accordingly, competitive sports events often involve large numbers of participants, spectators, and support staff (eg Newsome et al 2012; Ng et al 2018). Therefore, such events in wilderness areas have much stronger environmental impacts than hiking. Newsome et al (2011) furthermore stress that social impacts, such as crowding, noise, and littering, are inevitable side effects of competitive running events, impacting other visitors who seek to be free from human-caused noise and the visual impact of urban settings. Managing environmental and social impacts of racing events in wilderness areas is thus highly challenging. Such management requires the coordination of the views of those who want to build more infrastructure and better facilities for runners and those who want to maintain the core values of the wilderness: its naturalness and remoteness (eg Lesslie and Taylor 1983; Hall 1992). An important first step in such coordination is an understanding of how users' attitudes shape their behavior in relation to the natural environment. This is supported by many studies (Schultz and Zelezny 1999; Newsome et al 2011; Papagiannakis and Lioukas 2012; Rossi et al 2015; Haraldsson and Ólafsdóttir 2018; Ólafsdóttir et al 2020) that emphasize that environmental impacts are largely governed by users' attitudes toward nature, which in turn are shaped by their values. Understanding users' values is therefore of considerable importance when it comes to planning sports events in natural settings, such as mountain marathons in wilderness areas. By providing services and infrastructure in accordance with the runners' environmental values, the organizers of running events can reduce the negative environmental and social impacts of such events and avoid value conflicts. This also increases participants' satisfaction with the event overall.

TABLE 4 Participants' suggestions for increasing environmental sustainability along the Laugavegur trail.

Suggestion	International runners		Icelandic runners	
	%	*n*	%	*n*
Reduce disposable cups and food packaging	11.6	13	6.5	9
Limit the number of runners	10.7	12	2.2	3
Request people not to litter	2.7	3	2.9	4
Good as it is	2.7	3	0.7	1
Do not increase infrastructure	2.7	3	0.0	0
Request people to stay on the trail	2.7	3	0.0	0
Fee to offset ecological footprint	1.8	2	1.5	2
Alternate routes	1.8	2	0.0	0
Clearly marked/visible garbage bins	1.8	2	0.0	0
Pick up the litter after the race	0.9	1	5.1	7
Environmental education of runners	0.9	1	2.2	3
Part of the entrance fee for trail maintenance	0.0	0	2.9	4
Reduce printed materials	0.0	0	2.2	3

The runners participating in LUM value pristine nature and wilderness, and, as a group, they have orientations that are relatively ecocentric. However, with regards to environmental values, the results reveal a large difference between Icelandic and international runners: the native runners are significantly more anthropocentrically orientated than the foreign runners. International runners favor the wild character of the route, while Icelandic runners would like increased services. This difference in attitudes is further underlined in the suggestions of Icelandic and international runners, respectively, on how to increase the

environmental sustainability of the event, which strongly differ. For international runners, pressing issues are to limit the number of runners, minimize infrastructure, and ask people to stay on the trail, while Icelandic runners stress picking up litter after the race and having part of the entrance fee set for trail maintenance. One explanation for this difference in environmental values may lie in the different expectations of Icelanders, who are familiar with the local landscapes, as opposed to international runners, who experience the landscape as exotic and stunning. In addition, Icelanders' livelihoods have long been heavily dependent on nature and utilizing its resources, which has shaped how they value nature, while the international visitors see the value in protecting nature (eg Árnason 2005).

Mountain wilderness areas have become an important natural resource for the tourist industry in many places. Countries where wilderness areas still exist can treat them as a capital property and create income by exporting such a wild experience (Talbot 1998; Nash 2001). Economic reasons are thus being increasingly used as a justification for conserving wilderness areas and have even become a critical reason for their protection in some parts of the world (Boyd and Butler 2009; Fredman and Sandell 2009; Hall and Frost 2009; Hall et al 2009). The wilderness experience still found in the Icelandic highlands (eg Sæþórsdóttir and Saarinen 2016; Ólafsdóttir and Sæþórsdóttir 2020b; Sæþórsdóttir and Hall 2021) is an invaluable resource for Icelandic tourism. However, the Icelandic highland ecosystems are extremely susceptible to external impacts, such as tourism (Runnström et al 2019). This emphasizes the importance of careful planning and management of running events in the highlands. Hence, with regard to the highlands' wild character and the increased emphasis of the Icelandic government on protecting wilderness (eg National Planning Agency 2016), it is vital to properly manage the Laugavegur trail. This will attract both hikers and runners who have an ecocentric view and prefer and respect wilderness for being wild.

Organizers of mountain marathons in wilderness areas must recognize the environmental and social impacts that undeniably accompany such events by seriously considering the overall long-term impact of the race. This includes limiting the number of participants so not to exceed the environmental and social carrying capacity of the area. Likewise, they should limit the number of spectators and supporters. In environmentally vulnerable areas, like the southern Icelandic highlands, it is essential to raise runners' awareness of the area's natural sensitivity and plan the race in close collaboration with nature conservation experts. Such management will sustain the area's bio- and geodiversity while preserving the runners' experience and the image of the race.

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