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Tourism in Iceland:

How is the Exponentially Increasing Tourism Industry Impacting Iceland's Natural Wonders?

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Abstract

Since the collapse of Iceland's economy in 2008, tourism has been a leading factor in its recovery. However, the exponential increase in tourism has come with some negative consequences. These consequences were observed and analyzed over the span of a week spent collecting data around the country. Observations were made regarding pollution, environmental degradation, and the urbanization of natural sites. The data collected was recorded in field journals, and photographs were taken to support these findings. Interviews were also conducted with tour guides, locals, and business owners in order to gather inside perspectives on the issue. These interviews were conducted in a wide range of locations, spanning from areas of small populations, to the most populated cities. Through evaluation of this data, a correlation between an increase in tourism, and an increase in littered waste was found. This result is consistent with the expectations that were speculated before conducting research. In response to this issue, a government induced balance between economic growth and environmental conservation, in regards to tourism, is necessary to avoid further degradation.

Introduction

With the constant advancement of technology, the world grows more and more interconnected, leading more and more people to discover new locations that were previously unheard of. Through widespread usage of smartphones and social media, images and descriptions of these countries' beauty are as easily available as those of traditional tourist locations. Of the lesser known countries, the country with the most prominent tourist boom is Iceland. Since 2010, Iceland has seen an average yearly increase in tourism of 24 percent. Within the past two years, the percent increase has been above this average with numbers of 29 percent in 2016 and 39 percent in 2017 (Icelandic Tourism Board, 2017). Historically, Iceland has been a country with a small population, with approximately 350,000 people living there as of 2017 (Ciric, 2018). Iceland has been a homogeneous society up until the mid-1990s, where even then at least 95% of citizens had no foreign background (Heleniak & Sigurjonsdottir, 2018). With the increase in tourism, they are experiencing cross-cultural interactions on a scale larger than ever before. Although these interactions enrich the culture of Iceland and drive its economic growth, there are several factors of increased tourism that negatively impact the people and environment of Iceland. The purpose of this paper is to explore these negative impacts, in the context of Iceland's environment, and to determine the methods of reducing damage in the future. If current trends are continued, the natural beauty and wonders of Iceland will continue to degrade until damage is irreversible. Unfortunately, permanent environmental damage is prevalent around the world. This makes Iceland's beauty uniquely special and important to protect.

Methodology

To have a better understanding of what the context in which research was conducted in Iceland, secondary information was gathered before the trip. This includes research papers and articles on topics that describe environmental destruction due to tourism. In Iceland, interviews were conducted with tour guides, locals, and owners of businesses in popular tourist areas. The questions aimed at the tour guides were tailored to gaining an understanding of how the government plans to balance the effects of environmental conservation and tourism. The questions for the locals were directed to discover their outlook on tourism and how it has affected the community and environment. The questions that are given to the business owners were to understand how they view tourism and whether they care more about increasing revenue or maintaining the current size of commercial zones.

Observational data was collected to determine the general effects of tourism on renewable energy sites. Such observational data included physical signs, or lack thereof, of human pollution and development in the wilderness, evidence of decay in of the ecosystem, and governmental efforts to reduce environmental damage. At each of the sites visited, photographs were taken to support the findings. Other sources of information to back these findings included local newspapers and data from museums.

These findings were then compared to the secondary resources and research that was conducted prior to going to Iceland. This comparison allows for a connection between the data that will assess the balance between the environment and tourism, and how Iceland plans to improve in the future. Through these methods, the research was completed and conclusions regarding the question were drawn.

Limitations

Some limitations to this research included the lack of quantitative data on environmental damage, interviewees being hesitant to answer the given questions, or are not familiar with Iceland's current and/or future tourism related developments, and the locals' neglect of negative environmental impacts. The biggest limitation was not having a complete understanding of the impacts from tourism on the environment. It was difficult to measure and trace the origins of damage, given the amount of time available for research. To combat this, research from more secondary sources such as government environmental reports was used with the observational data collected. Tour guides and plant workers were hesitant to communicate with us because of the negative nature of the questions. To solve this, the same questions were asked to the locals. The locals were more willing to answer them because they may be passionate about the destruction that the tourism is bringing to their community. If the interviewees are not familiar with current events and possible future development projects, Icelandic news articles in English were used to determine what the government is doing to promote balance between the environment and development.

Results

The many factors were found that contribute to environmental damage can be categorized into three groups. These groups demonstrate a correlation between tourism and the amount of damage caused. The three factors are as follows: Concentration of Tourism, Infrastructure Around Wonders, Tourists Ignoring Rules/Signs. These factors will be further explored in the proceeding sections.

Concentration of Tourism

Like in any country around the world, there are attractions in Iceland that are more heavily visited compared to other locations within the country. In these areas of high concentration, the amount of environmental damage is higher compared to areas of low concentration. The locations of highest tourism where research was conducted include Reynisfjara, Geysir, Þingvellir National Park (Figure 1), and Gullfoss. At all these locations, a significant amount of pollution and environmental damage was found (Guardado and DeSaro, personal communication, 2018). This can be seen in Appendix A-1. In contrast, areas that were less visited showed signs of little to no damage. When tourists were questioned about this issue, many complained that the amount of people detracted from the experience of being in Iceland (Tourist, personal communication, 2018). During the peak season for tourism, this issue is likely more prominent.



Figure 1: Tourists gathered near a waterfall in Þingvellir National Park

In an interview with the tour guide, Baldur, the number of tourists has grown in recent years and the amount of pollution he sees at areas like Þingvellir park is much greater than in the past (Baldur, personal communication, 2018). These areas are popular, in part, due to the lack of airports in Iceland. Keflavik airport handles 98.7 percent of incoming traffic, while the second largest airport in Iceland, Akureyri airport, only handles 0.2 percent (Icelandic Tourism Board, 2017). These airports are in the east and north, respectively, and many of the overcrowded

attractions are located near them. Because of this, there are many areas throughout the country that are too frequently visited, and areas that are not visited at all.

Infrastructure Around Wonders

In many popular tourist attractions around the world, hotels, restaurants, gift shops, and other infrastructure surrounds the attraction. However, Iceland is unique in that it's attractions are places of environmental beauty in the wilderness, rather than populous cities. Because of the massive influx of tourists, Iceland has begun constructing buildings near the attractions to help support this influx and generate revenue. Although there are benefits from constructing these buildings, they also come with negative consequences. One such consequence is pollution from construction and demolition (C&D). Though each country has a different standard on the definition of C&D waste, it is generally uniform in that it includes waste items such as wood, drywall, and metal (Hawaii State DOH, 2013). In Honolulu, Hawaii, a city with a similar population to Iceland, approximately 30 percent of waste generated since 1995 was from C&D (Hawaii State DOH, 2013). Although Iceland isn't as urbanized as Hawaii yet, they are heading towards a similar path. This can be seen most prominently at Geysir, where the construction of a hotel was observed. Upon further research, it was discovered that this hotel is to be part of a 72 hectare tourist village, where all services and housing is directed towards incoming visitors (Iceland Monitor, 2017).

Another issue caused by the growth of infrastructure is that the buildings severely detract from the natural beauty of the attractions. This is due to the close proximity of these buildings to the attractions. Gullfoss, known as the Golden Falls, is the most popular waterfall in Iceland. As a result of this, a gift shop and restaurant was constructed on the top of the waterfall. Furthermore, a new building is currently under construction showing that the infrastructure is

continuing to grow. Since the buildings are right at the top of the waterfall, they are directly in line of sight with the beauty of the waterfall and land (Guardado and DeSaro, personal communication, 2018).

Disregard of Signs/Rules

Due to the wild nature of most of Iceland, the safety of tourists is a key priority for the government. Although there are signs and warnings provided by the government, it seems it is not enough to dissuade visitors from putting themselves in harm's way. For instance, at the Black Sand Beach, dubbed "Iceland's most dangerous beach," tourists are warned of the extreme rip currents of the ocean, yet several people were observed near and in the water (Guardado and DeSaro, personal communication, 2018), as pictured in figure 2 by the Iceland Monitor. Multiple people have been put at risk at this beach over the years, including most recently in 2016, when a man was unfortunately



Figure 2: Tourists running from the waves at Reynisfjara (Iceland Monitor, 2016)

dragged away from his wife and drowned by the strong currents (Iceland Monitor, 2016). However, the risks of Iceland are not limited to specific areas; simply driving on the icy roads introduces a hazard that many tourists do not consider. In 2016, 223 tourists were injured in traffic accidents, with two of those accidents resulting in death (Hafsthath, 2017). The government of Iceland needs to invest in supplementing dangerous roads with guard rails and informing visitors of the dangers of icy roads.

While many of the signs and rules are for safety, there are also many rules designed to protect the environment. Large portions of Iceland, in areas off of the designated paths, are covered in moss that is vital for vegetation growth (Cwynar, n.d.). Damage to this moss is significant because it takes decades to grow back once



Figure 3: Path in moss created by tourists who ignored the rules.

removed. An example of tourist removal of moss can be seen on a moss covered hill near Nesjavallaleið, where words, phrases, and symbols are carved into the hillside. Acts like these have driven locals to stand up and call for “people to know the law and respect it” (Buckley, 2017). At Þingvellir Park, tourists were quite often seen directly acting against these laws even when the signs are right in front of them. At this park, tourists regularly walk off the path usually for the purpose of simply trying to get a good picture, as seen in figure 3. Though damage to the moss is not the intent of the tourists, the effect of their footprints is similar in severity to the previous example. Another form of

environmental damage that took place within Þingvellir, is the tourist neglect of signs that prohibit throwing currency into streams. There is a designated stream where this is allowed, yet coins can be seen in a multitude of other pools of water. As seen in figure 4, many of



Figure 4: Sign prohibiting the tossing of coins in a stream (ignored).

these signs are located directly in front of these pools. This can cause an increase in the level of heavy metals in the water, which has adverse effects on the fish population near Þingvellir. This can in turn affect the quality of the available food supply (Lentech, n.d.).

Discussion

Concentration of Tourism

Areas of higher concentration of tourism are going to decline long before anywhere else. To combat this, the Icelandic government should promote lesser known tourist attractions, such as Lake Myvatn, the Skutustadir pseudocraters, and Skutustathahreppur. One way that this can be done is by increasing the amount of air traffic going to airports outside of the largest airport, Keflavik Airport. By rerouting traffic to Akureyri airport, tourists will have access to less known attractions. This would reduce the strain on more popular sites while maintaining, and perhaps increasing, the amount of tourism in Iceland. Another way to spread the concentration would be to provide incentives to people who visit during the off-season of tourism. By providing rebates and discounts on hotels and plane tickets during the winter, more people will choose to visit when there is less of a tourist population and decrease the strain on popular sites during the summer.

Infrastructure Around Wonders

With the Icelandic economic collapse of 2008 still fresh in their minds, the vast economic growth may be blinding the Icelandic people in that their growing tourism sector is harming their environment. Although the majority of Iceland is still considered wild, it is slowly becoming more and more urbanized. As the need for hotels and restaurants grows, more waste is going to be produced as a result of increased construction. The Icelandic government needs to find an

efficient method of either reducing this waste, through more efficient and strict construction policies, or disposing of the waste.

The build-up of infrastructure near natural wonders is counterintuitive because many tourists are visiting this location to see the appeal of untouched nature, rather than to go shopping for souvenirs. A possible solution to this issue is to place buildings at a reasonable distance from the attractions, which would allow for a balance between convenience and the maintenance of the natural beauty of Iceland. Because of this convenience, however, the infrastructure will inevitably appeal to some tourists and possibly increase the volume of people visiting. This means that areas with less infrastructure will go ignored, further aggravating the issue of a high volume of tourists at a few specific locations.

Disregard of Signs/Rules

The occurrence of dangerous situations is not uncommon and highlights the necessity of better safety standards at popular tourist spots. This can be accomplished by requiring safety videos to incoming tourists and introducing safety monitors at popular locations. By introducing these policies, tourists would be forced to be aware of the possible dangers of the wilderness, and should someone choose to ignore warnings, there are people at tourist sites ensuring that everyone remains safe. This would allow the Icelandic government to reduce the number of tourists putting themselves in danger, while also reducing the liability of the government in the case of an unfortunate accident. These videos would also inform visitors of the dangers of frost covered roads during the winter and possibly dissuade inexperienced drivers from attempting to drive in unfavorable conditions.

The purpose of tourists visiting Iceland is to admire the natural beauty of the country. Logically, several of the warnings and rules are aimed not only to ensure the safety of visitors,

but also to preserve the natural sites that are most frequently visited. With an increase in tourism, the amount of pollution and environmental damage is likely to increase and because of this, it is essential that the Icelandic government enact policies that encourage tourists to aid in preserving the environment. An example of such a policy could be restaurants located near tourist sites, like the one in Reynisfjara, rewarding people who bring a bag full of garbage with a free drink or snack. The presence of monitors that were previously mentioned, would also dissuade tourists from openly littering and reduce the amount of trash on the ground.

Conclusion

As the tourist population in Iceland continues to grow, so too does its environmental damage. Concentration of tourism in a few specific areas, the growth of infrastructure near natural sites, and the neglect of environmental protection laws are the leading factors driving this damage. In order to counter a disproportionate concentration of tourists, the government of Iceland needs to promote lesser known areas of the country, and facilitate reaching these areas by encouraging the use of other airports. To reduce the impact of infrastructure near natural sites, future construction can be moved to a reasonable distance away from the site. And lastly, instructional videos detailing the proper safety and environmental protection policies of Iceland need to be shown to every incoming tourist. Also, government supervisors can be placed at several sites to ensure that the rules are followed. Environmental damage is growing proportionally to the increasing tourism industry, and action must be taken before damage becomes irreversible.

Due to time constraints, several questions were left unanswered, the most prominent of which, is how the observed effects of tourism impact Iceland over a longer period. In the future, a longer study can be conducted to understand the full scope of the effects and determine more

accurate and useful solutions. Another study which looks at more measurable quantities such as pH and concentration of carbon dioxide in the atmosphere, would also be beneficial in further understanding how tourism impacts Iceland.

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Appendix A

A1-1,



Crowd near waterfall at Thingvellir National Park

Appendix B

A2-1



Buildings surrounding a popular landmark