

UNDERGRADUATE THESIS PROPOSAL

TO: Greg Jackson, Summer Valente, Weihong Wang

FROM:

DATE: 12/5/2023

SUBJECT: Proposal to complete a research paper on the environmental effects and socioeconomic impacts of cruise ship tourism in southeast Alaska.

STATEMENT OF THESIS AND PROJECT SUMMARY

Officially nicknamed as The Last Frontier, Alaska has some of the most untouched and striking landscapes in the entire United States. Millions of people take the long journey every year just to get a taste of the beauty that the mountains and rivers have to offer. Many travelers are driven to visit by the idea that this may be the last chance they get to see the renowned Alaskan landscapes before they are gone forever. As much of Alaska is inaccessible by car, most of these visitors come by boat or plane; cruise ships passengers are the overwhelming majority of visitors to the panhandle in the southeast of the state. In 2023, southeast Alaska received 1.65 million visitors from 700 voyages during their five-month tourism season, bringing in just under 12,000 jobs to the region and helping to grow the economy (CLIA, 2023). Because of the potential harmful effects that cruise ships can have on their surrounding environment, and the impacts that heavy tourism can take on small communities, environmental experts are concerned about the sustainability of the tourism industry in southeast Alaska due to its impact on the environment and local communities.

This paper will explain how tourism in southeast Alaska helps the economy, but may also hurt the environment and disrupt fragile community structures. Ultimately tackling the question: Are the economic benefits worth the environmental and social costs? I argue that the tourism

received from cruise ships is ultimately more helpful than harmful to southeast Alaskan communities and their economies, so long as proper resilience planning is prioritized for environmental and social protection. Using multiple lenses to view this complex issue is the best way to get a full understanding of the overall sustainability of cruise ship tourism. Considering the enormous economic benefits, weighed alongside environmental and social harms, allows for a rounded approach to evaluate how resilience planning can effectively protect Alaska while still allowing for the economic benefits to be realized.

REVIEW OF LITURATURE

Review of Environmental Impacts

Alaska's remote nature provides for beautiful and diverse wildlife habitats along with some of the most untouched land in the United States. Because of this, it has become a major tourist destination over the last three decades. The ecosystems in southeast Alaska are some of the most fragile and vulnerable in the country, meaning they need extra consideration and protection from the negative impacts of tourism. Due to its lack of connecting roads, cruise ship tourists are the most common visitor type for southeast Alaska, bringing over 1.3 million visitors in 2019 (Southeast Conference, 2023). This brings up concerns for the environmental impacts of large vessels regularly traversing the waterways and potentially disturbing the surrounding fragile ecosystems. Experts have studied wastewater discharges effecting marine life both under the water and on the surface (Mearns et al., 2002). Studies have also been conducted on air quality consequences from ships exhaust (Bynerowicz et al., 2008) and how these large vessels disturb vulnerable wildlife above the surface such as seabirds who permanently live in these highly trafficked areas.

Cruise ships are unique compared to other large shipping vessels due to their passenger capacity, because of their large number of passengers a key concern is the amount of waste they produce. Cruise ships represent less than 1% of commercial shipping fleet yet are responsible for 25% of all waste (Tina et al., 2019). This wastewater is collected from various points around the ship such as toilets, showers, laundry, and sinks including the galley and medical facilities (Cruise Ship Wastewater Management Report, 2007). This waste product is dumped into the oceans as a means of disposal, causing potential harm to marine life. A study published in 2002 found that wastewater discharged while moving has little to no impact on the quality of water (Mearns, 2002), likely due to the extensive water treatment practices that are required before discharging (Cruise Ship Program, 2023) and the currents that exist while the vessel is in motion. However, if a ship is moored or discharges in a harbor that could lead to water quality issues and should be avoided (Mearns, 2002). Ships are required to have a permit to discharge waste if they're within three mile of the Alaska shoreline. The state regulates zero to three miles and the Environmental Protection Agency (EPA) regulated the remaining distance up to 12 miles, but cruise ships are exempt from the requirement to have a permit within those three to 12 miles (Cruise Ship Pollution, 2010).

Air quality has also been of major concern following the increase in cruise ship tourism. A study published by the National Park Service and conducted in Skagway, found that nitrogen oxide levels were five to ten times higher than in similar test locations, such as Glacier Bay and Sitka, while lead nickel and vanadium were also much higher (Geiser et al. 2008). Skagway is of particular note since summer inversions are common and prevent emissions from dispersing causing visible smog. The bulk of airborne emissions affecting air quality in Skagway comes from in-port cruise ship operations like diesel fuel tanks (Geiser et al. 2008). The degraded air

quality in Skagway is concentrated around the urban populated areas, which protects much of the inland forests at the same time as it harms the residence and their land.

Such large cruise ships traversing Alaskan waters cause more issues than just what they expel, the size also causes environmental disturbances. A case study done in Glacier Bay National Park and Preserve monitored Kittitz's and Marled Murrelets which are seabirds who rely heavily on the park. These birds are of particular importance for protection by the park because 37% of their known population utilize the park during the summertime (Marcella et al., 2017, p. 2). Coincidentally the summer is when they are at highest risk of being disturbed by cruise ships entering the park. Glacier Bay has no outside roads connecting to it which results in 95% of all visitors arriving via marine vessel (Marcella et al., 2017), which can be worrisome since the Murrelets reside primarily on the water. While the park has a cap on how many cruise ships can enter daily, it is usual for them to allow the maximum of two per day throughout most of the summer. The study recorded a total of 4,251 bird disturbances with the ship distance and angle of attack being the two main factors for how quickly and aggressively a bird reacted (Marcella et al., 2017). With cruise ships being the largest vessels that Glacier Bay allows into its waters they are the most disturbing to these sensitive birds.

Tourists are increasingly interested in visiting nature and the natural (Gossling and Hall, 2006), along with this comes ecotourism. Ecotourism has long been a topic of debate for economic scholars, also called "Last Chance Tourism" this is a specific form of tourism where "tourists explicitly seek vanishing landscapes or seascapes, and/or disappearing natural and/or social heritage" (Lemelin et al., 2010, p. 248). The urge to see something before it's gone creates increased tourism to vulnerable places that may already be suffering negative environmental impacts due a myriad of factors including climate change and degradation caused by the existing

tourist demand. This is shown clearly in a study done on the last chance tourism for polar bear viewing in Kaktovik, Alaska where tourists take days to travel to one of the northernmost points on earth in order to view polar bears. Tourists leave this experience having an increased desire for environmental conservation, while directly contributing to the problems facing the declining population of polar bears. Their desire to see the endangered species outweighs their desire for conservation, which only compounds the problem (Miller et al., 2020). Some argue that the environmental consequence of increased visitation to sensitive areas does more harm than good by degrading these ecosystems quicker (Miller et al. 2020, p. 1704). However, others argue that the environmental stewardship promoted by these ecotourism companies ultimately has a larger positive effect in the long run, outweighing any potential degradation done by the increase in number of visitors (Beaumont, 2010). Companies wishing to promote ecotourism ensure that it “takes place in a natural setting, it should be ecologically sustainable, and it should include some form of environmental education or interpretation” (Beaumont, 2010, p. 319) hoping that these things together create a social change in visitors.

Review of Social & Economic Impacts

In addition to the ecosystems in this region being vulnerable, the communities have their own causes for concern when looking at cruise ship tourism. These concerns include preserving indigenous values and navigating social change. Western capitalism is not always in line with indigenous business practices, which can make tourism in Alaska at odds with the Native culture. Integrating indigenous values into the tourism industry is an effective way to rewrite the western stereotypes of native Alaskan communities. Fear of perpetuating these stereotypes is a concern for many native communities as they attempt to balance the economic benefits from tourism while not “selling out” their heritage (Bunten, 2010). There are also increasing benefits to be seen from

Alaska's tourism industry bringing economic growth and stability (Bunten, 2010) to coastal communities. Understanding the environmental, social, and economic impacts of cruise ship tourism in Alaska is imperative for ensuring sustainable practices as the industry continues to grow.

“Hosting people is a deeply native thing to do” (Bunten, 2010, p. 295) as Alexis Celeste Bunten writes in her piece *More Like Ourselves Indigenous Capitalism Through Tourism*, the history of hosting pairs well with Alaskan tourism as they both revolve around welcoming new people into historically native land. The underlying value of hosting is where the productive similarities end. The tourism industry boom in Alaska has come along with some significant side effects including the loss to local communities of a sense of control over their native values and history. As western capitalism descended upon southeast Alaska when the cruise ships docked, the history and culture was put into a box fit for western visitors to digest. In presenting themselves as something curated specifically for visitors they felt as if they were “selling out” their culture simply for economic gain (Bunten, 2010). Along with this type of presentation came the inability to authentically depict who Native Alaskans are, how they live, and what their values are. This type of tourism came with heavy disapproval from community elders who felt as though “presenting culture outside of its appropriate context is not only inauthentic but also culturally illegal” (Bunten, 2010, p. 292). In the last decade or so the tourism industry has started to make a shift back to indigenous values, they have done this by starting “Indigenous tourism” which is defined as “any service or product that is a) owned and operated at least in part by an indigenous group and b) results from a means of exchange with outside guests” (Bunten, 2010, p. 285). Introducing indigenous tourism has helped southeast Alaskan natives to take back the narrative on who they are, to debunk stereotypes and replace them with authentic, meaningful

stories. In the face of cruise ship tourism in southeast Alaska, communities have to find ways to be resilient in order to benefit from economic gain while also “survive and maintain the capacity to benefit from opportunities” (Adams, 2010, p. 654).

Protecting indigenous culture is imperative to preserving the Alaskan way of life, and it requires extra effort when these communities receive millions of visitors a year. Coastal communities are inherently vulnerable (Adams, 2010, p. 663). In 2010 *Planning for Cruise Ship Resilience: An Approach to Managing Cruise Ship Impacts in Haines, Alaska* Alex W Adams shows how communities like Haines have suffered socially and economically in the past and will again in the future if they don’t plan ahead for the inevitable impacts of cruise tourism. Communities are a complex system, so there is no one-size-fits-all solution, but finding the trends can help management effectively plan for resilience to mitigate potential disasters. These complex systems go through the adaptive cycle that is composed of three fundamental properties (Holling, 2001, as cited in Adams, 2010) including the wealth of a system, the controllability of the system, and the adaptive capacity of the system. The wealth, controllability, and adaptive capacity properties undergo four different system states as part of the adaptive cycle, exploitation, conservation, release, and reorganization. These four systems states can be volatile and can result in major social and economic disaster if not properly managed — as Haines, Alaska saw in the early 2000’s (Adams, 2010, p. 659). In order to protect the culture, social structures, and economics of these communities they must plan for resilience from cruise tourism, without planning these communities are destined to collapse under the pressure.

It is widely accepted that the economic benefits of cruise ship tourism are generally positive. The tourism industry in Alaska has led to new jobs, allowing workers to stay in their home communities even after their industry leaves, and the stimulation of the economy

(Cervený, 2005, p. 67). One in ten jobs in all of Alaska are in the tourism industry, and in 2018 more than \$1.4 million was created in payroll (Alaska's Tourism Industry, 2023). According to the Alaska Resource Development Council more than \$126 million in state revenue and \$88 million in municipal revenue was generated from tourism in 2018. These economic benefits are clearly a good thing for coastal Alaskan communities who are physically separated from most major economies in the USA. Economic stability is an important factor for Indigenous peoples' well-being (Bunten, 2010, p. 298) and cruise ship tourism has contributed to stability in a way that no other industry was able to do previously. Growing the economy, providing stability, generating revenue, and creating new jobs have all helped southeast Alaska to have year-round benefits from the summer visitors.

Cruise ship tourism is an invaluable source of income for coastal communities in southeast Alaska, but protecting against environmental degradation and social pressures for these indigenous communities is essential. The environmental impacts on water, air, and wildlife all need to be considered, along with the social and cultural challenges, weighed against the economic benefits. Protecting indigenous values and the well-being of native Alaskans is of paramount importance. Resilience planning for coastal communities is a must. Without it they risk losing economic freedoms, cultural autonomy, and social resilience (Adams, 2010, p. 663). Ensuring that the ecosystems are taken care of and not being exploited will ensure that tourism is sustainable and not exploitative. Looking at the economic benefits, cultural challenges, and environmental impacts of cruise ships as they all work together will ensure that tourism in southeast Alaska has a future, alongside healthy ecosystems. Resilience planning is an imperative step in ensuring that cruise ship tourism can continue in Alaska. Although some communities have started to use resilience planning, it is not nearly as widespread as is needed to be an

effective tool. As shown, plenty of research has been done on tourism in The Last Frontier, but a comprehensive approach of how to mitigate these environmental and social impacts is missing. I will show how resilience planning can effectively be used by communities impacted by cruise ship tourism to ensure they have a long and sustainable future.

METHODOLOGY

The proposed thesis will include an analysis of scholarly articles regarding cultural and social impacts on native Alaskans for qualitative data regarding the preservation of culture. I will examine books and published reports for their analysis on environmental impacts, along with quantitative data sets provided by the state of Alaska and natural resource management agencies. Considering previous research done on the economic impacts along with state provided economic data will help to examine the role of tourism in the Alaskan economy.

PRELIMINARY OUTLINE

- **Introduction**

- States importance of environmental protection for Native lands and wildlife preservation.
- Introduces the annual number of visitors to AK by ship and the resulting money generated.
- THESIS: I argue that the tourism received from cruise ships is ultimately more helpful than harmful to southeast Alaskan communities and their economies, so long as proper resilience planning is prioritized for environmental and social protection.

- **Environmental, Social, and Economic Effects of Cruise Ships Tourism (pt.1)**

- Ship exhaust effect on air quality/bird life.

- Bird disturbance in Glacier Bay NP.
 - Inversion causing air quality degradation.
- Wastewater discharge & ship noise on marine life.
 - Existing regulations.
 - Wastewater impact on upper & lower marine life.
 - Ship noise disturbing marine life.
- Social changes seen due to the tourism industry.
 - Native culture being “sold”.
 - Struggle between elders and the younger generation, keeping things sacred.
- Economic benefits seen from increased tourism.
 - Smaller communities able to work within the national economy.
 - Infrastructure improvements & growing jobs.
- **Importance of Resilience Planning for Sustainability (pt.2)**
 - Overview of what resilience planning is.
 - Why resilience is necessary for sustainability.
 - How resilience has helped communities who have already implemented it.
 - Haines case study.
 - What might happen if resilience planning isn’t implemented.
- **Conclusion**
 - Summary of tourism impacts.
 - Why the Last Frontier needs to be preserved.

- How resilience planning will help preserve AK environments and make ongoing cruise ship tourism sustainable.

SCHEDULE FOR COMPLETION

2023:

December 15: Thesis Proposal Complete w/ Mentor Approval

2024:

August 23: (start of semester) Submit Loan Request for Cerveny (2008) Book

August 30: Meet with Professor Wang and Professor Valente in person

September 6: Introduction Draft

October 4: Introduction Revisions and Part 1 Draft

November 8: Part 1 Revisions and Part 2 & Conclusion Draft

November 15: Revisions & Final Draft

End of November: Thesis Defense

December 9: Final Thesis Completed

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