

The Effects of Commercial River Operators on River Protection

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# **Introduction**

## **What am I studying?**

I find the relationship between whitewater enthusiasts and the river environment incredible. I want to know if commercial operators, and the community they generate, benefit the environment they rely on to recreate and work.

## **Why I think it's an important subject.**

This topic is incredibly important and pertinent today. Global warming becomes an increasingly influential factor in both the adventure tourism and all aspects of life. The success of adventure tourism relies directly on winters being snowy and cold for the maintenance of glaciers, ski terrain, and for the required melts to support commercial rafting. If we don't start analysing our impact on the environments in which we recreate and operate we will soon lose them. I think that the social science side to environmentalism is fascinating as I do not believe there is a more complex side to any problem than the human aspect. Through my research I hope to explore the practices already adopted by the industry and gain insight in to what sustainability means in the river industry. Another side which I hope to develop in pursuit of my thesis is a look at the communities that develop around river operations. I believe that I will find a direct link between the opportunity for people to work on the river and a strong recreational paddling community. This community due to size has a large impact on the treatment of the river. I have been a part of several kayaking crews with varying ideas towards infrastructure development, leave no trace ethics and user group interactions. I aim to explore a larger sample size across the province and come up with evidence of their impact on the environment.

## **What lead to my interest in river protection.**

For me there is a feeling that overcomes me when I'm on the river. In the sections between rapids I can't help but feel a powerful connection to my surroundings. I become acutely aware of each layer of rock in the canyons; built up over millions of years while simultaneously being eroded by water. Our nation was colonised through the use of rivers and these paths across the country dictate the locations of towns and other, non-human, life. Rivers are our opportunity to look into the past and watch first hand as the future is formed.

When my sister and I were just infants my parents started paddling the North Saskatchewan from it's source in the Rocky Mountains. Over portions of the next eight summers we paddled the entire length of the N. Saskatchewan to the Saskatchewan river until it reached Lake Winnipeg.

This multi-year trip became a standard for how summers were spent. I now raft guide 60+ days a summer, whitewater kayak 10 months a year chasing new rivers internationally and still try to canoe with the family as the schedule allows. This love of the river only grows, and I think it natural to want try and incorporate it into my studies. I have an invested interest in seeing these incredible environments stick around for generations. Another influence towards this path of river protection would be the work my parents do as environmentalists. While historically they have focussed on air quality issues and policy reform, I think the dinner conversations about the state of the world and the need to protect it, has shaped who I am today. Both parents formed careers seeped in ethical consciousness and, while financial success found it's way into our family's life, the importance of working in areas that will impact the world positively was stressed over financial gain.

Since leaving home my life has revolved around the pursuit of adventure. I surround myself with dreamers who discard the reification of money, security and conventional success. These "dirtbags" use the wilderness to connect with truer versions of themselves. We pursue isolation in wilderness similar the actions of Thoreau at Walden Pond. This postmodern take on transcendentalism has given me incredible purpose and confidence. The river has taught me the most valuable lessons. No environment gives such swift and direct feedback to one's actions. Confidence is rewarded while overconfidence comes with a hefty price. An accident on the river in middle school left me with PTSD for months, since then, not only have I worked through nightmares and fear but, I have reached a point of empowerment and passion. I would not be the person am today if it weren't for trials on the river. I am incredibly privileged to spend so much of my time in the wild. With this privilege comes the responsibility to protect these spaces for the future generations. I believe that if everyone had opportunity to face challenges in the wild, we would have a society that did not focus so much on small digressions that inhibit progress.

# Overview

## Research Question

What impacts do commercial river operations in British Columbia have upon river protection?

## Objectives

I wish to discover how the community that develops around commercial river operators interacts with the river environment. I will look at the current best practices as well as other studies of the environmental impact the operations have physically. I hope to do primary research to discover the whether the culture surrounding the operations has eco-centric approach to recreation. At the end of my research, I hope to have the ability to either support or oppose the commercial river industry as an environmental protector.

## Rationale for Interdisciplinary Approach

Environmentalism is an inherently interdisciplinary pursuit. There are many factors that influence our interaction with the environment. This question marries the physical sciences of ecology, geology and hydrology with the social sciences like tourism, cultural studies and philosophy. One discipline is inadequate for creating a broader understanding of such a multi-faceted situation. Ideally this interdisciplinary approach will create answers that are viable and logical to most perspectives.

## Identification of Relevant Disciplines

This question can be tackled from a plethora of approaches: legal, political, tourism, economic, sociological, ecological, hydrological, geological. I have isolated three that I will be focussing on. Environmental science as a combination of ecology, hydrology and geology will allow insight as to whether there is a problem and the scale of the impact. We need sociology to look at the cultural factors that facilitates actions to degrade the environment. Thirdly, by centering this research around commercial operations the problem lies directly in the scope of tourism studies. Looking at the trends in tourism should give insight as the direction the industry is heading. While many of the other disciplines would give further insight into this question the scope of this paper must be narrow enough to complete within a year. Furthermore, the legal, political, economic approaches are most heavily linked to the British Columbian region and laws where the other disciplines may be more transferrable as I approach this subject while traveling.

## **Project Outline**

**Abstract**

**Acknowledgements**

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# Literature Review

## **The importance of environmentalism.**

Concepts of environmentalism have been around since the first half of the twentieth century. Aldo Leopold's chapter *Land Ethic* set the base for a moral defense of the environment. His insights spoke to including the land and those that dwelled on it as members of our community (Leopold, 1949). By taking care of this broader community we in turn take care of ourselves. Drawing parallels to Garrett Hardin's famous essay *The Tragedy of the Commons* we find that if left unregulated, individuals and business are more likely to destroy the land that provides for them than look at the broader picture, limit their own consumption and create success for the larger community (Hardin, 1968). While these philosophical approaches to land use are now at least fifty years old, the dilemmas are still ever present. We watch humanity demand growth yearly on an increasingly finite planet. With population and demand continuing to grow we cannot expect it to come without cost. River tourism in British Columbia relies heavily upon the environment with 94.9% of respondents in a 2007 rafting survey saying that scenery was either somewhat or very important to them while on a river trip (Tourism British Columbia, 2009). With scenery being such an important factor in the river tourism experience operators have an investment in preserving nature as an asset. In contrast to environmental protection for the sake of scenery, the effects of climate change will also negatively effect river companies' ability to operate. Climate wetting, a factor identified by Ashmore & Church has a huge impact of the propensity of floods. These floods destroy vegetation and infrastructure and may cause the river to exceed runnable levels (Ashmore & Church, 2001). The debris that is carried by high water levels poses hazards to river users and changes the rapids from year to year.

## **Tourism's impact on the environment.**

Leopold is contributed with saying "it would not be logging, mining, or roads that would threaten the wilderness, but the people who came to visit these area" (Taylor, 1997). The province of British Columbia has directed it's focus toward tourism from a historically resource extraction-based economy. Relying on the natural world for sales, nature-based tourism in 2004 added a \$782.9 million to the provincial GDP (WTA, 2004). Because this industry is so large it has the capability of causing great environmental impact. Bob McKercher, of Charles Sturt University, argues that tourism is not a commercial enterprise with similar impacts to the service sector but an resource-based industry with large consumptive needs (McKercher, 1993). He

makes the point that tourism's adverse environmental effects are often not catastrophic but cumulative. Tourism's cumulative nature allows it less exposure to public eye and legislation preventing over consumption. Backing up McKercher's sentiment of tourism being destructive, a survey of 44 American National Park superintendents found 54.5% believed they had "water quality problems related to tourism" (Wang & Miko, 1997). Since this study tourism continues to grow increasing it's potential for harm. The literature indicates that both tourism activities and tourism development have negative environmental impact (Buckley, 2001; Buckley, 2001). Buckley speaks to the variety of impacts created by tourism. Tour operators often develop wilderness areas to create bases of operations and accommodation for guests (Buckley, 2011). Many of these areas are essential for the protection of animals. Furthermore, the travel to and from the operations creates emissions through use of air, land and water transportation. Lastly the activities themselves have negative environmental impacts (Buckley, 2001; Buckley 2011; Wang & Miko, 1997).

### **The impact of exposure to nature on environmental sentiment.**

In an American study, Thapa and Graefe find quantitative correlation between appreciative outdoor activities and pro-environmental beliefs. These researchers categorised appreciative activities as activities that did not consume parts of the natural world, like hunting or fishing, and are not motorised (Thapa & Graefe, 2003). Rafting and kayaking fall into this description and while not specifically studied, I find no reason to suggest findings will be different.

Understandably, this concern was linked to pro-environmental political action, recycling and other environmentally supportive activities. This nature inspires environmental concern message is mirrored in a study focused on eco-tourism. Kim and Brijesh found that eco-tours that created flow state and satisfaction for their participants correlated to an increase in environmentally responsible behavior (Kim & Brijesh,2017). After taking satisfactory tours participants were more likely modify their behavior to protect areas like those they had visited. These studies lead to the sentiment that if exposed to nature in a positive way, individuals will have an increase in eco-friendly view. Commercial river operators offer an unique insight into our natural environment as the river allows people to travel efficiently through different ecosystems and access locations too remote for road travel. A study on sense of place and positive human-environment relationship would suggest that by using commercial river operations to create a



connection to these remote places, one could increase protection sentiment amongst guests and guides (Davenport & Anderson, 2006).

### **Current environmental guiding standards in British Columbia.**

Simmonds research on sea kayaking guides and their practices helps gain insight as to possible factors influencing guides impacts upon the environment. He finds that misinformation and a lack of education leads to a failure to maintain best practices and furthers environmental damage (Simmonds, 2012). While his research also targets water-based tourism operators Simmonds recognises that “environmental practices often need to be tailored to the specific geographical region in which they are to be implemented” (Simmonds, 2012). This points to a gap in the literature where my study will fit. The British Columbian Rafting Outfitters Association (BCROA) which most operators in the province are a part of, regulates the training standards for guides. Most operators will have higher level staff certified to instruct courses through the BCROA in order to ease the process of training staff. Each spring before season guides must be signed off on each section of river they will be guiding with the focus completely on safety and skills. While guides in the river environment also rely on the environment for their profession, the BCROA has no environmental protection education in their certification process (Registrar of Commercial River Rafting Province of British Columbia, 2002). The training guides receive from their operators has been identified as an important factor in the maintenance of sustainable practices (Lackey, 2016). The lack of formal education suggests that there may be a huge variance in practices upheld at river operators across the province.

### **Current best practices.**

While there is no provincial standard set for river guides in respect to environmental behavior. Institutions have attempted to come up with more general best practices for all involved in the wild. The most widely accepted program is that of Leave No Trace (LNT). LNT is a non-profit organisation based around the promotion of the “Leave No Trace Seven Principles”.

- Plan Ahead and Prepare
- Travel and Camp on Durable Surfaces
- Dispose of Waste Properly
- Leave What You Find
- Minimize Campfire Impacts

- Respect Wildlife
- Be Considerate of Other Visitors

© 1999 by the Leave No Trace Center for Outdoor Ethics: [www.LNT.org](http://www.LNT.org).

These principles were created in the 1960's by the US Forest Service and National Outdoor Leadership School (NOLS) (Our History, 2012). NOLS continues to use these principles in all of their teachings today. The academic world also accepts these standards using them in studies such as Blye's (2016) investigation into what Canadians are doing in two of our provincial parks and Vagias and Powell's (2010) look into backcountry visitor's attitudes towards environmental best practices. Both studies found that even though there was an awareness for the principles further information of specific practices was needed to further positive behavior (Blye, 2016; Vagias & Powell, 2010). The Grand Canyon National Park has attempted to make these specific practices known to all their visitors with strict rules on waste management, fire use and camping locations (Grand Canyon, 2016). Both commercial operators and non-commercial river trips must apply for permits and follow these rules or face penalties. While rafting companies in British Columbia do not have the same outlined best practices, a combination of the "Leave No Trace Seven Principles" and the Grand Canyon's trip regulations creates a testable set of parameters for my own primary research.

## Annotated Bibliography

Ashmore, P. Church, M. (2001). *The Impact of Climate Change in Rivers and River Processes in Canada*. Retrieved from [http://publications.gc.ca/collections/collection\\_2017/rncan-nrcan/M42-555-eng.pdf](http://publications.gc.ca/collections/collection_2017/rncan-nrcan/M42-555-eng.pdf)

This study conducted for Natural Resources Canada looks at the impacts of climate warming and wetting on rivers throughout Canada. They highlight climate wetting as incredibly impactful to flow and flood propensity and argue that the most damage will be felt in southern regions of Canada below the permafrost. These floods will have consequences to industry through road destruction and cities through residential flooding. The report also highlights human impact on fluvial paths as the reduction of stream width increases flood potential. This article works well to justify the importance of my research.

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Blye, C. (2016) Do Canadians' Leave No Trace? A study examining the pro-environmental behaviours of front country and back country overnight visitors to Canadian provincial parks. *What are people doing in our parks? Understanding, comparing, and predicting the low-impact camping practices of Canadian Provincial Park over-night visitors*. (pp. 17-55). Retrieved from [https://era.library.ualberta.ca/files/c4t64gn435/blye\\_clara-jane\\_e\\_201609\\_MA.pdf](https://era.library.ualberta.ca/files/c4t64gn435/blye_clara-jane_e_201609_MA.pdf)

This thesis examines the usage of "Leave No Trace" style campaigns in parks located in Alberta and Ontario. The results suggest that Albertans have a higher LNT ethic which may be correlated to high bear encounter rates (plausible motivation to clean up after oneself) and higher incomes and education levels. The study also found that front country users were both more knowledgeable and engaged in LNT practices. Blye argues that education is essential to increased environmental ethic. In regards to my own research, many whitewater enthusiasts fall into front-country users. I will compare this to my findings.

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Kim, M., Brijesh, T. (2017). *Journal of Destination Marketing and Management*. *Perceived value and flow experience: Application in a nature-based tourism context*. Retrieved from <https://www.sciencedirect.com/science/article/pii/S2212571X1730077X>

The study looked into the relationship of perceived values of an eco-tour and the tourists' flow experience and satisfaction. They went on to evaluate the creation of environmentally

responsible behavior and destination loyalty through flow experience and satisfaction. Using surveys to gather data, they find that if eco-tours focused on increasing quality, emotional value, and social value in their trips they could inspire both destination loyalty and environmentally responsible behavior in their guests. This falls into the previous literature that I will be using to justify my research.

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Leopold, A. (1949). *The Land Ethic. A Sand County Almanac and Sketches Here and There*. (pp. 201-226). New York, NY: Oxford University Press

This segment of *A Sand County Almanac* speaks of the philosophical approach to nature laid out in Leopold's Land Ethic. In this, he argues that community includes the soils, water, plants and animals. As part of the community they should receive the same ethical concern as other members. He attempts to end the commodification of nature in order to create an obligation of respect. This expansion of ethics creates the grounds for modern environmentalism. This theory of land ethic is a main factor in people's actions towards the environment.

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McKercher, B. (1993). *Journal of Sustainable Tourism. Some fundamental truths about tourism: Understanding tourism's social and environmental impacts*. Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/09669589309450697>

McKercher provides insight on what he has found to be the eight fundamental truths about tourism. He speaks out against the assumption that tourism is a low impact option and looks at the social and environmental cost of the industry. The environmental impacts portion of his research focuses on the use of a large variety of resources and the potential for over consumption. He then goes on to discuss the problems that arise because tourism is rooted in capitalism. He speaks to the profit driven nature of the industry and its inability to be controlled because of its multifaceted nature. Lastly McKercher focuses on the sociological realities of tourism being that those who participate are not often preoccupied with ethical choices but prefer to be unconscious consumers of entertainment. There is no primary research done for this article.

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Simmonds, G. (2012). *An Examination of Environmental Practices Used in Commercial Sea Kayaking in British Columbia*. (Master's thesis). Retrieved from <http://tru.arcabc.ca/islandora/object/tru%3A32/datastream/PDF/view>

This thesis creates a snapshot of the environmental practices employed by British Columbian sea kayak guides in 2011. It finds that the majority of guides have great respect for the environment, but often fail to utilise low-impact practices. Simmonds attributes the poor practices to misinformation and a lack of education on specific environments in which they operate. This paper is useful to my own writing as it demonstrates three styles of research I may use (interviewing, observation and surveying), in a similar context to my own research.

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Sweeney, B. Blaine, J. (2016). River conservation, restoration, and preservation: rewarding private behavior to enhance the commons. *Freshwater Science*. (pp. 755-763). Retrieved from <https://www.journals.uchicago.edu/doi/pdfplus/10.1086/687364>

This paper studies the effect of incentive giving to agricultural communities towards river protect. They look at the adoption of stream side buffers as a natural way to protect waterways from contaminants. In a summation of their findings they argue that financial incentive is beneficial to promoting environmental behavior but for the most effective behavioral change comes with monitoring as well. Specifically, this study argues that incentivization is superior to penalisation when it comes to river protection amongst farmers. This will help form my suggested actions in my own paper.

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Thapa, B. Graefe, A. (2003). Journal of Park and Recreation Administration. *Forest Recreationists and Environmentalism*. Retrieved from <https://eds.b.ebscohost.com/eds/pdfviewer/pdfviewer?vid=1&sid=02fd00d5-808a-4337-831b-f7703cc09cfd%40sessionmgr101>

This paper studies the environmental attitudes and behaviors of outdoor recreationalists. It sub-categorizes recreationalists into appreciative (canoeing, cross-country skiing, etc.) consumptive (hunting and fishing) and motorized (snowmobiling, trail biking, etc.). Using this framework, the study argues that those involved in appreciative activities hold more pro-environmental beliefs. It finds that those involved in motorized activities do not place the environment above their own sport, and while most at risk to political change, engage the least in the political processes that protect their interests. This study uses surveys placed on windshields to draw many correlations between user groups and ideologies. This is a similar study to my own with a broader scope and no focus on whitewater (gap in knowledge).

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Tourism British Columbia. (2009). *BC River Outfitter Client Survey (2007): Final Report*.

Retrieved from [https://www.destinationbc.ca/getattachment/Research/Research-by-Activity/Water-based/British\\_Columbia\\_s\\_River\\_Outfitter\\_Client\\_Survey\\_2007-sflb.pdf.aspx](https://www.destinationbc.ca/getattachment/Research/Research-by-Activity/Water-based/British_Columbia_s_River_Outfitter_Client_Survey_2007-sflb.pdf.aspx)

This report uses surveys to discover who is whitewater rafting in British Columbia and their motivation for doing so. It finds out what type of trips are most common and the general satisfaction of consumers. This information is applicable to my own research as it suggests that most consumers of whitewater rafting experiences in British Columbia are Canadian. This is crucial to the development of local river protection. Another relevant finding was the motivation for many rafters was the scenic aspect of the trip which relies heavily of river conservation. This will help me think of the demographics involved in my own research and it lists many key players in the industry.

# Logistics

## Proposed Timeline

Sept. 2018 – Finalise scope and question I will be exploring.

Sept. 2018 – Confirm supervisors and readers

Oct. 2018 – Apply to UREAP (research not done until summer, may need to do second semester)

Jan. 2019 – Finish literature review

Feb. 2019 – Finish methods section and write first edition of survey

Feb. 2019 – Apply to UREAP (if unable to apply early in fall)

Mar. 2019 – Submit ethics proposal

Apr 2019 – Finalise survey

May 2019 – Send out survey

Aug. 2019 – Follow up on survey request

Sept. 2019 – Collect and Analyse Data

Oct. 2019 – Finish writing thesis

Nov. 2019 – Review and edit thesis

Dec. 2019 – Defend thesis

Jan. 2020 – Move to South America

## Proposed supervisor and list of possible readers

Supervisor: James Rodger – Department of Adventure

Reader 1: Kellee Caton – Department of Tourism

Reader 2: Tom Pypker -Department of Natural Resource Sciences

Alternate Supervisors: Craig Campbell (ADVG), Sharman Learie (ADVG)

Alternate Readers: Greg Simmonds (ADVG), Ross Cloutier (ADVG), Tracy Penny-Light (IDIS),

## Ethics



Sample Ethics Proposal.pdf

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