

Ecotourism and marine protected areas:
Case Study of perceptions of tourism operators in Nova Scotia

By

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Abstract:

As “Canada’s Ocean Playground” Nova Scotia relies on a healthy ocean to support its economy and citizens’ livelihoods. As part of the economic development strategy, the province is seeking to significantly increase its tourism industry from \$2 billion CAD to \$4 billion CAD by 2024. Because much of the province’s tourism products is nature-based an increase in tourism will result in more pressure being put on coastal and marine ecosystems. With the government of Canada recently announcing the protection of 13.8 per cent of its ocean, the creation of marine protected areas (MPAs) may provide the opportunity for growth in ecotourism. As stakeholders, the view of tourism operators regarding marine protected areas and ecotourism are important to understand because they conduct their business in coastal areas that could become MPAs in the future. A case study method was used to describe tourism businesses perceptions of ecotourism and MPAs. Perceptions were derived from interviews with five tourism operators. Each case provided unique insights to the potential opportunities and concerns related to MPA designation in Nova Scotia. Although there are concerns about restricting regulations and the need for proper management and planning, ecotourism in MPAs provide a unique opportunity to advance conservation objectives and support the local economy of communities simultaneously through using MPAs may be a useful marketing tool for ecotourism leading to increased employment, cultural exchange, and environmental education.

Keywords: ecotourism; marine protected area; perceptions; opportunities; concerns; Nova Scotia

List of Abbreviations

MPA – Marine Protected Areas

CAD – Canadian dollars

CBD – Convention on Biological Diversity

DFO – Department of Fisheries and Oceans

ECCC – Environment and Climate Change Canada

EQ – Explorer Quotient

IUCN – International Union for Conservation of Nature

NMCA – National Marine Conservation Area

OECD – Other Effective Area-Based Conservation Measures

Chapter 1. Introduction

1.1 Management Problem and Rationale

As “Canada’s Ocean Playground,” Nova Scotia relies on a healthy ocean to support the economy and people's livelihoods. The Nova Scotia tourism marketing strategy describes the province as being almost completely surrounded by ocean and the different ways to connect with the sea while you visit (About Nova Scotia, 2017). Tourism accounts for 2.3 per cent of Nova Scotia’s GDP and 4.2 per cent of the provinces population is employed in the industry (Statistics Canada, 2018). The province is seeking to significantly increase the tourism industry over the next five years (Tourism Nova Scotia, 2017). With a goal to double annual tourism revenues from \$2 billion annually in 2010 to \$4 billion by 2024, Nova Scotia’s objective is to attract more visitors to drive sustainable growth in the tourism industry (Tourism Nova Scotia, 2017).

Tourism Nova Scotia has a goal to increase visitor and revenue numbers by targeting three of the nine Explorer Quotient (EQ) profiles (Tourism Nova Scotia, 2019). Of the nine EQ profiles: Authentic Experiencers; Cultural Explorers; Cultural History Buffs; Free Spirits; Gentle Explorer; No-Hassle Traveller; Personal History Explorer; Rejuvenator; and Virtual Travellers (EQ Profiles, 2012), Tourism Nova Scotia is targeting Authentic Experiencers, Cultural Explorers and Free Spirits (Tourism Nova Scotia, 2019). One of the target profiles, Authentic Experiencers, is people who are ethical consumers and want environmentally and socially responsible experiences (Tourism Nova Scotia, 2017). This target population could include ecotourists. While definitions of ecotourism vary, they each involve four main principles: responsible travel to natural areas, conservation of the environment, improvement of the welfare of local people, and education and interpretation incorporated in the experience (Whelan, 2013). With Canada committed to the Convention on Biological Diversity’s (CBD) Aichi Target 11 (CHM, 2019) there may be an opportunity to increase protection of coastal and marine areas by creating marine protected areas while also developing sustainable tourism that attracts ecotourists by creating marine protected areas.

At the same time it is important to recognize that with an increase in tourism in Nova Scotia more pressure will be put on coastal and marine environments. Designating important areas of the ocean and coast as Marine Protected Areas (MPAs) can mitigate pressures on coastal and marine habitats by restricting and prohibiting unsustainable uses. Some of the principles of

ecotourism and MPAs are similar and can complement each other if well managed (Agardy, 1993). However, conservation and development of ecotourism can conflict when protected areas become another commodity driven by interest in increasing profits and providing new experiences rather than supporting conservation efforts (Dharmaratne, Sang & Walling, 2000). MPAs allow ecotourists to participate in recreational experiences while respecting the environment, and contributing to conservation efforts (Dittori & Giudici, 2015).

MPAs in Canada are designated under federal legislation, specifically the *Oceans Act*, the *National Marine Conservation Areas Act* and the *Canadian Wildlife Act* and provincial legislations such as Nova Scotia's *Nature Reserves Protection Act* and *Wilderness Areas Protection Act*. These statutes delineate the rules and regulations of MPAs. Most Canadian legislation does not specify rules and regulation of tourism practices in MPAs. Instead the language must be interpreted on a case-by-case basis with the Minister of the respective government department having authority over the allowance or restriction of activities that can take place within a MPA.

Tourism stakeholders perceptions can influence the process of sustainable tourism practices like ecotourism, and can lead to its success or failure (Imran, Alam & Beaumont, 2014). Perceptions of MPAs vary across countries and even within local communities due to a lack of understanding of what they are and what they are meant to do (Jentoft, Pascual-Fernandez, Modino, Gonzolez-Ramallal and Chunenpagdee, 2012). Perceptions and attitudes towards something like MPAs are shaped by negative or positive opinions and reactions formed through group or personal experiences (Whitham, Kun & Riordan, 2015). Positive perceptions of marine protection can lead to increased support of MPAs, therefore increasing their potential for success (Jentoft et al, 2012). Persons who view MPAs as a benefit to them, are more likely to support them and engage in conservation efforts (Imran, Alam & Beaumont, 2014).

The objective of this research is to identify the perceptions of Nova Scotia ecotourism operators, in regards to marine protected areas (MPAs) and ecotourism. With ocean conservation and protection becoming more common, and coastal and marine areas around Nova Scotia identified as Ecologically and Biologically Significant Areas, it is likely that the province will designate more coastal areas as MPAs in the future. MPAs can be a contentious topic of discussion due to concerns with fisheries however, this research focuses solely on ecotourism. As an important stakeholder, the view of ecotourism operators regarding marine protected areas

and ecotourism are important to understanding the opportunities and constraints associated with creating effective MPAs in Nova Scotia.

1.2 National Conservation Goals

In 2010 the *Conference of the Parties for the Convention on Biological Diversity (CBD)* created the Strategic Plan for Biodiversity with 20 global targets commonly known as the “Aichi Biodiversity Targets”. The targets are designed to improve biodiversity by safeguarding ecosystems, species, and genetic diversity (Aichi Biodiversity Targets, n.d). Aichi Biodiversity Target 11 states:

“By 2020 at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated in the wider landscape and seascapes” (Quick Guide to the Aichi Biodiversity Targets, n.d).

In response to the CBDs Strategic Plan for Biodiversity, in 2015 Canada adopted national targets known as the “2020 Biodiversity Goals,” in addition to the global targets for Canada that contribute to the global Aichi Biodiversity Targets (2020 Biodiversity Goals and Targets for Canada, 2016). Canada adapted CBD’s Aichi target 11 in a Canadian context and made it goal number one of the 2020 biodiversity goals, stating “By 2020, at least 17 per cent of terrestrial areas and inland water, and 10 per cent of marine and coastal areas of Canada are conserved through networks of protected areas and other effective area-based measures” (2020 Biodiversity Goals and Targets for Canada, 2016).

Other Effective Area-Based Conservation Measures (OECM), also known as marine refuges in Canada, are not recognized as protected areas but are considered a geographically defined space, governed and managed over the long term to deliver conservation of biodiversity, with associated ecosystem services and cultural and spiritual values (Subsidiary Body on Scientific Technical and Technological Advice, 2018, p2). As of August 1, 2019 Canada had reached the 2020 Biodiversity goal of 10 per cent of marine and coastal areas protected. However, this includes OECMs and there is some debate over whether some OECMs should count such as the Scallop Buffer Zones in the Northumberland Shore region of Nova Scotia (DFO, 2019a; Aten & Fuller, 2019, p 24).

Depending on the restriction of activities, each marine protected area or marine refuge is categorized into one of the seven International Union for Conservation of Nature (IUCN) Protected Area Management Categories (Table 1) (Dudley, 2008, p8). The CBD uses the IUCN protected area management categories to measure level the of marine protection that contributes to Aichi target 11 (Dudley, 2008). If a MPA does not fit into one of these categories it does not contribute to Aichi Target 11. MPAs can also have two or more levels of protection through zoning (Dudley, 2008). All but one IUCN category, strict nature reserves, allow tourism activities to take place within MPAs (Dudley, 2008). Each Canadian marine protected area is classified into the IUCN categories based on the restriction of activities.

Table 1. Summary of IUCN Categories for MPAs (Dudley, 2008 p8).

Category	Description
1a	<i>Strict Nature Reserve:</i> Strictly protected for biodiversity. Human visitation, use and impacts are controlled and limited. Managed mainly for scientific research.
1b	<i>Wilderness Area:</i> Protected and managed to preserve their natural condition.
II	<i>National Park:</i> Protecting ecological processes with environmentally & culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.
III	<i>National Monument:</i> Protecting specific natural features such as a sea mount, marine cavern or geological feature
IV	<i>Habitat/Species Management Area:</i> Protecting a specific species or habitat and may have active interventions
V	<i>Protected Landscape/Seascape:</i> Protecting a distinct feature/characteristic with ecological and cultural value that has formed through human-nature interactions.
VI	<i>Managed Resource Protected Area:</i> Protecting ecosystems through sustainable use of resources.

Chapter 2. Marine Protected Areas

Marine protected areas (MPAs) are specific areas of the ocean or coast that allow or prohibit human activities for conservation purposes to protect natural or cultural resources (Reuchlin-Hugenholtz & McKenzie, 2015, p5). In Canada, a marine protected area is an umbrella term that covers a variety of management strategies and levels of protection from seasonal to permanent bans or restrictions on activities (Dettori & Giudici, 2015). While the main objective of MPAs is the long term conservation of nature, other objectives, like ecotourism, can be compatible if developed and managed well. Canada has several different marine protected areas that vary in size and level of protection. In Canada, MPAs can be created through different federal, provincial and territorial governments using a variety of legislations with the three main statutes being the *Oceans Act*, *Canadian Wildlife Act* and the *National Marine Conservation Areas Act*. Across Canada there are currently 14 *Oceans Act* MPAs, three *National Marine Conservation Act* MPAs, one *National Wildlife Act* MPAs, and 59 marine refuges (DFO, 2019a). In Nova Scotia the relevant provincial legislations are the *Nature Reserves Protection Act* and the *Wilderness Areas Protection Act*. Table 2 provides a summary of Federal and Provincial legislation relevant to MPAs in Canada. The relevant legislation is discussed below.

Table 2. Summary of federal and provincial legislation relevant to Marine Protected Areas and Marine Refuges.

Statute	Responsible Department	Type of Protected Area	Primary purpose	Tourism Language
Federal Acts				
<i>Oceans Act (1996)</i>	Department of Fisheries and Oceans	Marine Protected Area	To conserve and protect species, habitats and resources.	No direct language
<i>National Marine Conservation Act (2002)</i>	Parks Canada within the purview of Environment and Climate Change Canada	National Marine Conservation Area	Managed to protect and conserve marine ecosystems and ecological features, while ensuring the sustainable use of marine resources.	Secondary purpose it to manage for visitors to understand, appreciate and enjoy the area in a sustainable manner.

<i>Canadian Wildlife Act (1985)</i>	Environment and Climate Change Canada	National Wildlife Area Migratory Bird Sanctuary	To preserve habitats, ecosystems, and marine resources that support species at risk under the <i>Species at Risk Act</i> .	No direct language
<i>Fisheries Act (1985)</i>	Department of Fisheries and Oceans	OECM/marine refuge	Fisheries closures and management measures to of protect a specific species or habitat.	No direct language
Provincial Acts				
<i>Nature Reserves Protection Act (2000)</i>	Department of Environment & Department of Natural Resources	Nature Reserves	Preserve and protect ecosystems, rare and endangered plants, and animals and their habitats.	No direct language
<i>Wilderness Areas Protection Act (1998)</i>	Department of Environment	Wilderness Areas	Protect ecosystems and maintain and protect natural process and biodiversity.	Defines wilderness recreation permitted within protected area including nature-based tourism

2.1 Federal legislation

Under the *Oceans Act*, a MPA is an “area of the sea that forms part of the internal waters of Canada, the territorial sea of Canada or the exclusive economic zone of Canada and has been designated for special protection” (*Oceans Act*, 1996, p17). The area is legally protected and managed for the long-term conservation of nature, and certain activities may be permitted depending on the impact they have on the ecological feature being protected (*Oceans Act*, 1996, p19). The primary objective of an *Oceans Act* MPA is to conserve and protect species, habitats and resources (*Oceans Act*, 1996, p17). Regulations differ slightly across MPAs depending on the objectives of the area, but each provides restrictions and allowances for certain activities (*Oceans Act*, 1996, p 18). Regulations and restrictions for tourism activities are currently not directly outlined in the *Oceans Act* but rather are implemented on a case-by-case basis for each designated MPA. For example, in the Musquash Estuary, persons who wish to

conduct commercial tourism activities must receive approval from the Minister before the proposed activity is set to begin (Ocean and Coastal Management DFO, 2017, p3). Canada's Department of Fisheries and Oceans (DFO) is responsible for the management of marine protected areas designated under the *Oceans Act*. DFO determines which activities are permitted, restricted or banned in the area (*Oceans Act*, 1996).

Under Canada's *National Marine Conservation Areas Act*, National Marine Conservation Areas (NMCA) are marine areas managed to protect and conserve marine ecosystems and ecological features, while ensuring the ecologically sustainable use of marine resources (*National Marine Conservation Areas Act*, 2002). NMCAs are created with tourism and other non-consumptive human activities in mind. NMCAs do not attempt to protect marine ecosystems in a state that is unaltered by human activity. Instead, they focus on sustainable use of resources and integrating conservation practices with human activities such as education and recreation, creating experiences for visitors to enjoy (*National Marine Conservation Areas Act*, 2002). Recreation permitted within NMCAs allow visitors to appreciate and connect with the marine environment through activities like coastal hiking, wildlife observation such as whale watching, kayaking, and diving. NMCAs are designated by Parks Canada which is also within the purview of Environment and Climate Change Canada (ECCC). Within NMCAs appropriate federal ministers retain their respective responsibilities and authority over fisheries and maritime transport (*National Marine Conservation Areas Act*, 2002).

Under the *Canadian Wildlife Act*, ECCC is responsible for protected marine areas that aim to preserve habitats for migratory birds and other species (*Canadian Wildlife Act*, 1985). Protected marine areas under the *Canadian Wildlife Act* can be National Wildlife Areas or Migratory Bird Sanctuaries. The purpose of protected marine areas is to preserve habitats, ecosystems and marine resources that support species at risk listed under the *Species at Risk Act* (*Canadian Wildlife Act*, 1985). Activities that are determined to disturb, damage, destroy, or remove wildlife or wildlife habitat are prohibited in protected marine areas however, hiking, canoeing and bird watching often don't require permits to be carried out (*Canadian Wildlife Act*, 1985). Again tourism is not explicitly addressed in the *Canadian Wildlife Act*, rather, it is permitted on a case-by-case basis as with the *Oceans Act*. The minister of ECCC can delegate power of a protect marine area to another federal minister if their department is better equipped for the role (*Canadian Wildlife Act*, p 4, 1985).

Other Effective Area-Based Conservation Measures are not considered protected areas but can contribute to the CBDs Aichi target 11, the 2020 Biodiversity Goals and Targets for Canada (Quick Guide to the Aichi Biodiversity Targets, n.d). OECMs are created for management purposes other than protection such as management of a specific species of commercially valuable fish. In Canada OECMs are more commonly known as marine refuges and are often fisheries closures and fisheries management areas put in place by DFO under the *Fisheries Act* for the purpose of protecting a specific species or habitat (DFO, 2017). Sustainable human activities may be allowed in marine refuges and any activities that may harm the species or habitat the OECM is trying to protect are prohibited or reduced (SBSTTA, 2018; DFO, 2017). Conservation is often a byproduct due to the restriction and/or reduction of human activities in the area (Subsidiary Body on Scientific Technical and Technological Advice (SBSTTA), 2018). OECMs are described as “geographically defined spaces that are governed and managed over the long term and result in conservation of biodiversity” (SBSTTA, 2018).

2.2 Provincial legislation

In Nova Scotia the Department of Environment and Department Natural Resources share responsibility for provincial protected areas (Activities and Programs, 2017). Provincial protected area legislation recognizes the importance of public use and promotes outdoor recreational activities that have low-impact on the environment (Activities and Programs, 2017). Restrictions on recreational activities are typically only put in place to protect fragile natural features (Recreation, 2017). The province has two main pieces of legislation for protected areas, the *Nature Reserves Protection Act* and the *Wilderness Areas Protection Act*.

Nova Scotia’s *Nature Reserves Protection Act* allows for the identification, acquisition, designation, protection, maintenance, restoration, regulation, study and educational use of land or waters owned by the crown (*Nature Reserves Protection Act*, 2000). The primary purpose of Nature Reserves is to preserve and protect ecosystems, and rare or endangered plants and animals and their habitats (Nature Reserves, 2018). The primary use of Nature Reserves are research and education with extractive activities like fishing and hunting and other damaging practices prohibited (Recreation, 2017). The Department of Environment is responsible for designation, management, and monitoring of Nature Reserves with the Minister’s approval required to permit activities (*Nature Reserves Protection Act*, 2000).

The *Wilderness Areas Protection Act* provides for the establishment, management, protection and use of wilderness areas in Nova Scotia (*Wilderness Areas Protection Act*, 1998). The objective of wilderness areas is to protect ecosystems, and to maintain and restore the integrity of natural processes and biodiversity (Wilderness Areas, 2018). Wilderness areas provide opportunities for public access for environmental education, scientific research and recreation (*Wilderness Areas Protection Act*, 1998). Protected areas designated under the *Wilderness Areas Protection Act* only restrict activities to protect property, the environment and/or the health and safety of humans (Wilderness Areas, 2018). The act defines wilderness recreation as “non-motorized outdoor recreational activities that have minimal environmental impact, including nature-based tourism” (*Wilderness Areas Protection Act*, 1998). The Department of Environment is responsible for designation of wilderness areas.

Under both the *Nature Reserves Protection Act* and the *Wilderness Areas protection Act* “land” includes water and land covered with water. Meaning that marine and coastal areas can be designated as protected areas under the provincial government (*Nature Reserves Protection Act*, 2000; *Wilderness Protection Act*, 1998).

All federal and provincial legislations have marine protected areas with the primary purpose to conserve and protect biologically sensitive species and habitats, or conservation of natural resources. Of the five pieces of legislation only the federal *NMCA* and the provincial *Wilderness Areas Protection Act* directly use the term tourism and specify that it is allowed in protected areas. The remaining federal and provincial legislations that provide the framework for the creations of marine protected areas have no language that would prevent tourism activities from occurring within the boundaries of MPAs.

For the purpose of this paper all protected areas under the *Oceans Act*, *National Marine Conservation Act*, *Canadian Wildlife Act*, *Nature Reserves Protection Act* and the *Wilderness Areas Protection Act* will be referred to as Marine Protected Areas (MPAs) and OECEMs will be referred to as marine refuges.

Chapter 3: Tourism

Tourism is defined by the United Nations World Tourism Organization as “activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes”. The UN-WTO estimates that over 1.3 billion Canadian dollars was generated by tourism globally in 2017 (UNWTO, 2017,p3), making tourism one of Canada’s largest export industries. In both developed and developing countries the tourism industry represents one of the main contributors to value-added job and wealth creation (WTTC, 2019). It is estimated that international tourism will increase by 3.3 per cent annually and domestic tourism will increase even more (UNWTO, 2017,p3). While the economic benefits are very attractive all types of tourism cause environmental impacts. Within MPAs minimal impact tourism or more specifically ecotourism are most compatible with the goals of conservation and protection.

3.1 What is Ecotourism

Over the past few decades the development of ecotourism has been increasing with the number of ecotourists increasing three times faster than other types of tourists (Starmer-Smith, 2004). It is predicted that ecotourism will continue to be one of the fastest growing segments of the tourism industry (Das and Chatterjee, 2015, p 5). Different forms of ecotourism have been around long before the term was defined and popularized in 1983 (Park, Parks and Allen, 2009, p1). Initially ecotourism was meant to describe nature-based tourism in undisturbed areas that had an emphasis on education (Park, Parks, and Allen, 2009, p1). Today there is still a general lack of agreement on the definition of ecotourism (Hunt, Durham, Driscoll, & Honey, 2015). The lack of consensus on a definition of ecotourism makes it easy for tourism operators to misuse the label of ecotourism for their own benefit, adding to the confusion around the term (Townsel, 2016).

Ecotourism is often confused with or mistaken as nature-based tourism or sustainable tourism. This lack of a consistent definition makes it difficult to assess the development of the industry (Park, Parks and Allen, 2009). The International Ecotourism Society (TIES) defines ecotourism as “responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education” (TIES, 2018).

Sustainable tourism can refer to all forms of tourism that strive to be more sustainable (UNEP & UNWTO, 2011). Nature-based tourism is a broad term that covers many different experiences centered around the natural environment, and may include ecotourism as a subcategory (Park, Parks and Allen, 2009). Not all forms of nature-based tourism qualify as ecotourism due to the lack of a cultural aspect, educational component, benefits to local people and/or environmental conservation (Machnik, 2013). Ecotourism activities are usually conducted in small groups with a knowledgeable guide who provides the educational component by explaining the nature and culture being explored (Park, Parks, & Allen, 2009).

3.2 Ecotourism in Marine Protected Areas

Ecotourism is dependent on the health of wildlife and ecosystems (Leung et al, 2018). Ecotourists are more inclined to visit healthy ecosystems that are protected and well-managed (Agardy, 1993). Protected areas attract people that are looking for experiences in nature, making tourism one of the most common uses of protected areas globally (Strickland-Munroe, Allison & Moore, 2010). Tourists could be attracted to the scenery, iconic species or the recreational activities natural areas can offer (Miller et al, 2014). MPAs can be a catalyst to kick start ecotourism (ICF Consulting Services Ltd., IEEP & PML, 2018). Ecotourism operators are attracted to MPAs because they provide opportunities to meet the recreational needs of tourists while simultaneously respecting the environment (Dettori & Giudici, 2015).

Marine ecotourism includes activities that take place in the coastal zone, marine environment, or both (Hector, 2001). Whether it's activity on the surface like kayaking, activity below the surface like SCUBA diving or observation like whale watching, marine based ecotourism activities interact with the marine environment in different ways. Marine ecotourism activities can be land-based, water based or both (Hector, 2001). Activities range from non-consumptive activities such as observation to extractive activities such as fishing (Figure 1). Common marine based ecotourism activities in Nova Scotia include whale watching, kayaking, SCUBA diving and snorkeling, boat tours, sailing, surfing, coastal hiking and beach going. Each of these activities have different impacts on the coastal and marine environment and some can have more widespread effects than others.

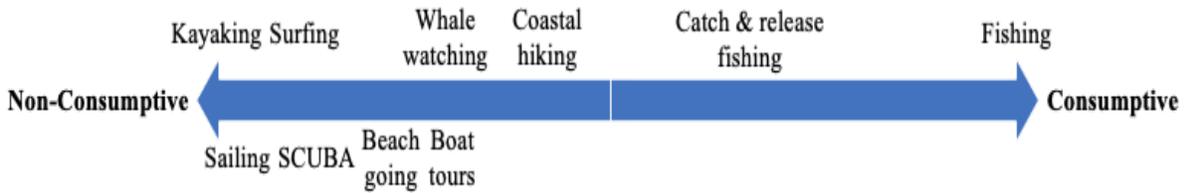


Figure 1. A continuum of ecotourism activities in Nova Scotia

The relationship between conservation and ecotourism is complex and can be complementary or conflicting with the objectives of MPAs. There are economic, environmental and social benefits to having ecotourism in MPAs.

3.2.1 Economic Opportunities

Economic benefits can incent communities to take part in ecotourism activities (Musad, Aldakhil, Nassani, Azam, 2017). While tourism activities can and do happen in areas without a designated MPA, having an MPA has the potential to attract a global market of environmentally conscious tourists seeking experiences in natural environments (Bjork, 2000). Protected areas offer an opportunity to generate economic benefits from tourism while still safeguarding nature (Bjork, 2000). Ecotourism can be used to support conservation and provide income for communities (Das & Chatterjee, 2015). Creating new tourism products for environmentally conscious tourists can increase jobs and income for local residents by diversifying the local economy (Dettori & Giudici, 2015; Leung et al, 2018). For communities that rely heavily on seasonal industries, ecotourism can provide additional income during off the season (Nyaupane & Poudel, 2011). For example in Nova Scotia some lobster fishermen operate whale watching tours after the fishing season ends in the spring.

Local coastal communities benefit financially from ecotourism in MPAs. There are direct and indirect financial benefits to operating a business within and outside of a MPA. Ecotourism operators within MPAs get income directly from the products and services they provide, while businesses outside MPAs such as accommodations and restaurants can benefit from their indirect relationship with a MPA by simply being in the vicinity. Local businesses and organizations from other sectors of the local economy can profit from ecotourists purchasing goods and

services during their stay (Cater, C & Cater, E, 2007). There are also induced effects on the local economy from local residents spending wages and salaries earned from tourists on local goods and services (Cater, C & Cater, E 2007). Commitments to protect nature can be strengthened when communities are generating revenue from the local natural environment because less tourists will visit an area that has been degraded. When people are benefitting financially from a natural area they are more likely to protect it.

3.2.2 Environmental Opportunities

Ecotourism activities should be non-consumptive and have low impact on the environment as they often happen in attractive but fragile natural areas (Andereck, Valentine, Knopf & Vogt, 2005). Because of this, MPAs are an important tool for ocean conservation around the world, conserving ecosystems, habitats and protecting samples of marine biodiversity (Todorut & Tselentis, 2013). Ecotourism in coastal MPAs aims to reduce pressure on the natural environment by reducing pollution and waste normally generated by mass tourism. The designation of MPAs often improves environmental quality through restoration and protection thus making them more appealing to ecotourists (Leung et al, 2018). As the experience improves, ecotourism operators may be able to increase the price charged which further enhances the economic benefit to local communities.

MPAs and ecotourism operations promote awareness of the natural resources they rely on through education (Agardy, 1993). Through education ecotourists can learn about the impact their actions have on the environment and ways to reduce it. This can foster a sense of environmental stewardship, and allow tourists the opportunity to be involved in conservation efforts (Agardy, 1993; Leung et al, 2018). While participating in ecotourism activities in MPAs tourists typically learn about environmental issues, local threats, and the importance of protecting nature (Leung et al, 2018).

Revenues from entrance fees or use of infrastructure and amenities in MPAs can help fund conservation efforts. Revenue collected from fees can be used for restoration efforts as well as maintenance and monitoring of the protected area. In many destinations the fees collected from ecotourists account for a significant portion of the funding used to support MPAs (Bjork, 2000; Das & Chatterjee, 2015; Leung et al, 2018). Funding can also be used to support other local conservation initiatives and economic development projects (Bjork, 2000).

3.2.3 Social Opportunities

Ecotourism in MPAs can be used to link biodiversity conservation and livelihood improvement by creating social and cultural benefits (Nyaupane & Poudel, 2011). Ecotourism in MPAs can promote economic growth which can directly increase quality of life in communities through environmental quality, wealth, well-being and infrastructure improvements (Musad, Aldakhil, Nassani, Azam, 2017). Increased visitation often results in improvement in infrastructure used by the local community (Musad, Aldakhil, Nassani, Azam, 2017). The recreational, health care facilities, and transportation infrastructure built or upgraded to support the tourism industry often benefits the local community by improving services (Leung et al, 2018).

Ecotourism products and services may encourage people to spend more time outdoors. Engagement with the marine environment can promote a greater appreciation for nature which may result in pro-environmental behaviours and sustainable practices (Hanna, Wijesinghe, Paliatsos, Walker, Adams & Kimbu, 2018). Ecotourism and sustainable tourism not only creates a deeper appreciation for nature it can also improve individual well-being (Hanna et al, 2018). Spending time in nature has been known to improve mental and physical health (Bartman, Hamilton & Daily, 2012; Leung et al, 2018). Nature improves an individual's mental health by reducing stress and fatigue (Bartman, Hamilton & Daily, 2012). Physical health is improved through recreational exercise such as coastal hiking, surfing and other outdoor activities. Therefore, MPAs that support the well-being and livelihoods of local residents are more likely to reach their conservation goals due to support from the community.

Education is an important aspect of ecotourism and can provide social benefits for both the community and tourists. Ecotourism can help communities understand, retain and interpret their culture and history (Musad, Aldakhil, Nassani, Azam, 2017). Tourists learning about local culture and history while participating in ecotourism activities can lead to improved cultural understanding of the area and its residents. Ecotourism can also provide the opportunity for cultural exchange between tourists and residents (Musad, Aldakhil, Nassani, Azam, 2017). When the exchange of authentic cultural heritage, arts and traditions happens between tourists and local residents it can lead to personal growth (Leung et al, 2018).

3.3 Problems of Ecotourism and MPAs

Despite the many synergies between ecotourism and MPAs it is not a panacea. Because ecotourism and MPAs need to be implemented and managed on a case by case basis the challenges can vary depending on the location and context of the area. If not managed well, ecotourism in MPAs can cause more harm than good.

3.3.1 Environmental Problems

All forms of tourism have some impact on the environment. Poorly managed ecotourism can have negative effects on the environment and hamper the objectives of MPAs (Das & Chatterjee, 2015; Hctor, 2001; Park, Parks, & Allen 2009). With an increased number of visitors it can be challenging to manage the balance between tourism development and environmental protection (Todorut & Tselentis, 2013). An increased number of visitors can have negative effects on local environment. In turn, a decline in the environment can cause a decline in tourism because it no longer has the natural qualities that made it popular in the first place (Otrachshenko & Bosello, 2016).

The tourism industry also has the potential to disturb wildlife. Increased pollution, litter and human-wildlife interactions can damage habitat and change animal behaviour including feeding, and migration. Animals can become habituated to humans with increased interactions making them vulnerable. When animals become accustomed to humans they become less scared making them vulnerable to traffic accidents and causing them to forgo important activities like feeding (Monti, Duriez, Dominici, Sforzi, Robert, Fusani and Gremillet, 2018). An increase in visitors can also result in an unsustainable use of native plants and animals for souvenirs made from wildlife or the introduction of invasive species (Secretariat of the Convention on Biological Diversity, 2004).

3.3.2 Economic Problems

Conservation and economic development are not always compatible. The economic benefits generated from MPAs and ecotourism vary depending on a number of factors including the location, size, type and activities offered as well as the species and habitat present (ICF Consulting Services Ltd. IEEP and PML, 2018). Tourism is very seasonal in many places. During low seasons communities and seasonal workers may face economic difficulties (Leung et al, 2018). Individual tourism operators and communities that rely heavily on the industry are also vulnerable to potential declines in tourism numbers that are exceed by exogenous facts such as foreign exchange rates, political instability, and perceptions of crime and safety.

If MPA governing bodies yield to the demands of ecotourists, MPAs risk becoming a commodity driven and resource to be exploited for profit, rather than being a tool used to support conservation efforts (Leung et al, 2018). Tourism operators that misuse the label of ecotourism for personal gain offer nature-based products and services without protecting the environment often to maximize their profits (Townsel, 2016, p 1). If a substantial amount of tourism activities that misuse the label of ecotourism for profit take place within a MPA their lack of concern for the environment can result in degradation of the ecosystem the MPA is trying to protect. With the ecotourism industry predicted to grow rapidly it is likely that tourism businesses that are not authentic ecotourism will want access to this niche market. Because is this MPAs may see operations owned by people outside the community arrive with the objective of economic profit.

Some tourism businesses can be owned and operated by people from outside the community resulting in economic leakage (Bennett & Dearden, 2012). This means revenue from the MPA and ecotourism is not being invested back into the community. Economic leakage at the local level can be high, reducing benefits and undermining potential incentives for conservation (Sandbrook, 2010). The higher the leakage the less local people will benefit from the ecotourism industry (Supradist, 2004).

3.3.3 Social Problems

Not all community members participate in the ecotourism industry, creating unequal economic benefits between local residents who participate and those who do not (Buckley, 2002). A lack of community consultation and understanding can lead to conflicting objectives and opinions among stakeholders. MPAs are often viewed as no take zones (extraction of any resource is prohibited) that restrict access to user groups creating conflict between user stakeholders. Ecotourism can also cause disruptions in local communities if not managed well. An increased population during high tourism season can displace residents and cause crowding (Ahn, Lee & Shafer, 2002). Improper commodification and a lack of authenticity can cause a disruption of cultural lifestyles, traditions and ceremonies to fit the high demand of tourists (Ahn, Lee & Shafer, 2002; Buckley, 2002).

Chapter 4: Perceptions of Marine Protected Areas

Perceptions are “the way an individual observes, understands, interprets, and evaluates an action, experience, individual, policy, or outcome” (Bennett, France, Calo, Nethery, Niccolini, Milazzo & Guidetti, 2019, p. 2). Perceptions can provide important insight of the social impacts, ecological outcomes, and acceptability of environmental management (Bennet, 2016, p. 585). Perceptions towards and support for, conservation is influenced by a number of factors including social norms, demographics, socioeconomic status, and dependence on resources (Bennett et al, 2019). Based on these factors perceptions often vary between people, communities, and stakeholder groups. Often even within a stakeholder group that has specific goals and objectives perceptions within the group can vary. Also, what one individual or group perceives as a benefit and opportunity another may view as a detriment and challenge. Discourse about resource management, seeing MPAs implemented in other locations, listening to peers, media and other social settings inform perceptions of marine protection (Jentoft, Pascual-Fernandez, Modino, Gonzolex-Ramallal & Chuenpagdee, 2012). Often a person's interests in the marine ecosystems plays an important role in how they view MPAs (Jentoft et al, 2012). The influence of historical events and contexts are also important determinants of individual and community perceptions of conservation efforts (McNeill, Clifton & Harvey, 2018).

4.1 Negative Perceptions

Negative attitudes of marine protection formed before the designation of MPAs may influence perceived social impacts of them (McNeill, Clifton & Harvey, 2018). Due to historical events, stakeholders may have problems distinguishing perceptions they have of MPAs from the image they have of those who promote them (Jentoft et al, 2012). If stakeholders do not trust the organization promoting the implementation of a MPA they are less likely to support it. When perceptions among stakeholders diverge it often results in conflict which can prevent the success of a MPA (Whitham, Kun & Riordan, 2010). One reason people may resist MPAs is the lack of understanding of what they are and what they do (Jentoft et al, 2012). There is a common misconception that all MPAs prohibit consumptive uses and restrict all commercial uses; however, this is not the case. Depending on the local level of knowledge about MPAs the individual or communities perceptions may or may not be accurate (Bennett et al, 2019). Understanding and monitoring perceptions of ecotourism and MPAs can be used to better inform

management actions (Bennett et al, 2019). When negative perceptions are identified, managers can create plans to help correct perceptions, through actions, such as communication outreach activities and relationship-building aimed at sharing positive views.

4.2 Positive Perceptions

Positive perceptions along with scientific evidence of the consequent economic and social benefits can help ensure support from community members, improving the long-term success of MPAs and other conservation efforts (Bennett, 2016). During the creation of MPAs, if stakeholders and community members are adequately consulted, they are more likely to have positive perceptions (Bennett, 2016). Stakeholders, like ecotourism operators, that have positive perceptions of MPAs often view them as protecting the coastal and marine environment they rely on for their livelihood (Jentoft et al, 2012). Tourists can also develop positive perceptions of the environment and MPAs as a result of interests and personal experiences in the coastal and marine ecosystems as well as through recreational experiences. (Imran, Alam & Beaumont, 2014). Satisfaction from recreational experiences and the desire or willingness to revisit a MPA can be linked to these positive perceptions (Petrosillo, Zurlini, Corliano, Zaccarelli & Dadam, 2007).

4.3 Changing Perceptions

Perceptions are difficult to change but can shift as a person becomes more involved in discussions about MPAs (Jentoft et al, 2012). Potential income derived from ecotourism in MPAs can change an individual's perception of the environment (Imran, Alam & Beaumont, 2014). When community members depend on the ecotourism industry and experience economic gain and personal benefits from protected areas they are more likely to support them and have positive perceptions (Andereck, Valentine, Knopf & Vogt, 2005). Perceptions have also been shown to be related to engagement in the tourism industry through decision making, knowledge of the industry and contact with tourists (Andereck, Valentine, Knopf & Vogt, 2005). Increased engagement often results in more people having positive perceptions of ecotourism. When more people have positive perceptions of MPAs and ecotourism they are more likely use natural resources in a sustainable way (Imran, Alam & Beaumont, 2014).

Chapter 5. Research Methodology

5.1 Study Area (map of NS with tourism regions)

Located in eastern Canada, Nova Scotia has approximately 13,000 kilometers of coastline that offers many diverse opportunities for tourism operators and visitors to experience the coastal environment (Tourism Nova Scotia, 2018). Tourism Nova Scotia has divided the province into seven different regions; Bay of Fundy and Annapolis Valley; Eastern Shore; Northumberland Shore; Yarmouth and Acadian Shore; Cape Breton Island; Halifax Metro; and the South Shore as seen in Figure 2 (Nova Scotia Canada, 2017). Within each of these regions there are a diverse number of coastal activities including: whale watching, kayaking, surfing, fishing, sailing, swimming, and coastal hiking and biking (Tourism Nova Scotia, 2018).

Because tourism operators conduct their business in coastal ecosystems that could become MPAs in the future, it is beneficial to get an in-depth understanding of their perceptions as they are more likely to be impacted by the designation of an MPA.

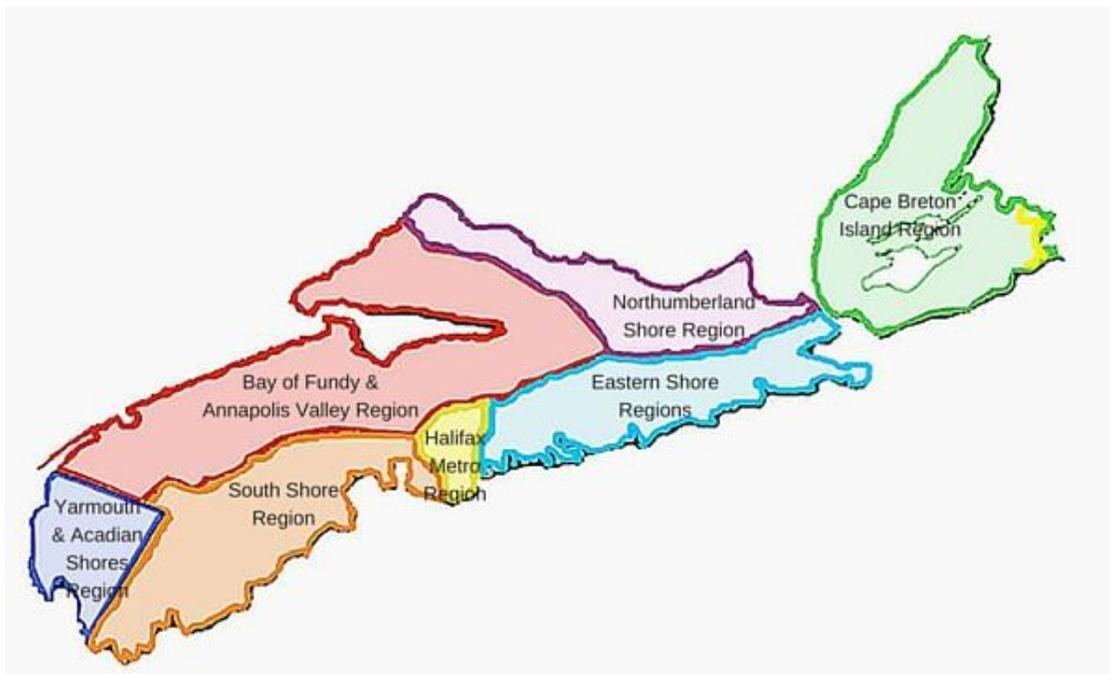


Figure 2. Map of Nova Scotia's seven tourism regions.

5.2 MPA Designation Process

MPA designation in Canada is a complex and long process that often takes years to complete. For example, after the Musquash Estuary MPA in New Brunswick was proposed in 1998 it took eight years to be officially designated in 2006 (Ocean and Coastal Management Division DFO, 2017, p 3). Under each federal and provincial statute the designation process varies to an extent however, they all follow the same general process of: identification of potential site; feasibility assessment of site; development of the regulatory measures; official designation; and management, monitoring, and compliance (DFO, 2019b; Parks Canada, 2017). Throughout the process, consultation with local stakeholders is conducted to allow them to provide input and contribute information based on their knowledge and expertise. Selection of potential MPAs is determined by the best available science and a number of different factors such as: environmental quality, representation of biodiversity and critical habitat, existing MPAs as well as implication for Indigenous rights and treaties among others (DFO, 2019b; Parks Canada 2017).

While the provincial government of Nova Scotia has goals for protection of terrestrial habitats there are no objectives for marine protection. The goal to protect ten per cent of the marine environment was a federal objective that was reached in August, 2019 however, there has been criticism that ten percent is insufficient to effectively protect biodiversity, preserve ecosystems and achieve sufficient socioeconomic benefits (O’Leary, Winther-Janson, Bainbridge, Aitken, Hawkins and Roberts, 2016). Based on a review done by O’Leary et al (2016), 30 per cent of the marine environment should be protected to optimize benefits. Now that Canada’s goal to protect ten per cent of the ocean by 2020 has been reached it is likely that new goals will be outlined that may include increased ocean protection.

There are currently six federally designated MPAs in Nova Scotia waters along with an additional one (Eastern Shore Islands) in the process of being designated and six marine refuges (Aten & Fuller, 2019; DFO 2019c; Environment and Climate Change, 2019). Despite there being six designated MPAs and six designated marine refuges only one MPA and one marine refuge are within a reasonable distance of the coast for tourists to access. If the Eastern Shore Islands becomes a designated MPA it would be Nova Scotia’s first federal coastal MPA. There are also a number of provincial Nature Reserves and Wilderness Areas. However, while there are coastal and beach areas (such as Gabarus Wilderness Area protected) the boundaries do not extend into

the water despite legislation that land covered water can be protected (Parks and Protected Areas, 2019).

5.3 Case Study Methodology

The case-based method was used for the empirical analysis of five case studies. Because there was more than one case and multiple subunits of tourism interest the case study design can be classified as a multiple embedded case study (Yin, 1984, p48;1994, p39). This method was chosen because of its ability to identify and illustrate perceptions of tourism operators.

The five tourism business cases were a convenient sample of those tourism operators that were able to reply within the limited timeline of the research. All participants were tourism businesses that provided small-group guided tours and rentals in Nova Scotia's coastal and marine environment. The guided tours and rentals ranged from three hours to a full day for all tourism business cases.

Triangulation across data sources and cases was used to enhance validity of the analysis (Jick, 1979). Triangulation across data sources, in this instance tourism business participants, identified commonalities. The triangulation of multiple perceptions allowed for more confidence and identified commonalities between cases (Jick, 1979). The emergence of commonalities between case data provides confidence that they would be applicable to other tourism businesses. Data for each case was collected using an interview guided by a structured instrument.

5.4. Structured Interviews

Nova Scotia tourism operators were asked to participate in a telephone interview. Representatives from each case (tourism operators) were asked to answer twelve opened ended questions (Appendix A). Interviews were conducted in July and August of 2019. Each interview took about 30 minutes to complete and detailed notes were taken. Each participant was provided a same definition of MPA to ensure they had the same general understanding of the concept. Open ended questions allowed the tourism operators to include rich information such as feelings, attitudes, and understanding of the subject. The questions were designed so as to not limit the response affording respondents the opportunity to relay anything they felt relevant about the subject. Results from the interview were analyzed for common themes and responses. Because the study gathers perceptions there is no measurement of accuracy in these results.

Chapter 6: Results

All five case respondent businesses provide guided tours and rentals to tourists and locals in the coastal and marine environment. Three of the tourism businesses were family owned and operated and started because of personal interest. One participant said, “the business was founded by my grandfather and I took over operations from my family recently making me the third generation owner”. The other two businesses started due community interests to capture tourist demand for the area. As one participant stated, “when people [community members] saw outsiders coming with trailers and boats and kayaks and leaving no economic input they decided to start the business and employ local guides”. Tourists represent approximately 75 per cent of participants businesses with the exception of one participant where tourists represent 20 per cent of their consumers. The participant’s business that had lower tourist visitation numbers was founded due to community interest however, they are seeing a steady rise in tourist visitation stating, “over the last four years we’ve seen more tourists and its slowly rising”.

6.1 Opportunities

Participants were asked about developing tourism in Nova Scotia, its effects on the environment and how MPAs may affect the industry and their business (see Appendix A for full list of questions). Through analysis of interview data two main opportunities to ecotourism in MPAs emerged: using a MPA as a marketing tool; increased employment; and cultural exchange and preservation.

6.1.1 MPAs as a marketing tool

All participants seemed to be aware of Tourism Nova Scotia’s goal to increase the tourism industry and believe there is demand for more environmentally focused tourism activities among tourists. One participant suggested that tourists are interested in more environmentally focused tourism activities due to Tourism Nova Scotia’s marketing and advertising stating “Tourism Nova Scotia is trying to attract people to an outside setting. There’s probably a greater demand because of the advertising from Tourism Nova Scotia.”

Marketing tools are techniques and strategies used by companies to develop and promote their products and services. Two of the five ecotourism operators that participated in the study believe that MPAs can be used as advertisement tools to promote their business. One participant also commented on the educational opportunity MPAs can provide saying, “It [a MPA] could

provide an opportunity to have ecotours and advertise that this is protected and important, why we are doing it and why we care.” Marketing tools and strategies can be used to get a competitive advantage over similar businesses in the industry. One participant noted, “we would be able to go to it, show it off and bring it to light”. Successful marketing strategies and tools can help a business create their brand, increase sales and bring in new customers. Operating a business within a MPA provides a unique marketing opportunity as stated by a participant, “if we can advertise that there’s an abundance [of species] due to a [marine] protected area that would be great for us.” MPAs that are marketed for ecotourism often attract tourists and are more visited than unprotected areas (Monti et al, 2018, p, 449).

6.1.2. Increased employment

The four participants that do want to see an increase in tourism cite the opportunity for increased employment as one of the main reasons. Ecotourism within coastal MPAs creates the opportunity to increase employment in communities. The employment opportunity of ecotourism in MPAs was identified by three participants throughout interviews. Tourism products and services can be created to employ locals when other industries decline as one participant stated “many lost work because of the cod moratorium. It [the ecotourism business] was developed to provide work for locals... they [the community] decided to start the business by employing local guides.” With an increase in visitation, existing ecotourism operators can expand allowing them to hire more employees to service higher numbers of visitors, creating new jobs for locals. As one participant pointed out, “with an increase in tourism we would be able to pay more people to give tours and increase the number of employees.” Not only does ecotourism create jobs within individual businesses, it can also increase employment in the broader community through indirect jobs. One participant noted that “tourism is a logical industry for our area to embrace, to increase jobs for community members and boost employment so the area can prosper.”

6.1.3 Cultural exchange and preservation

Participants noted that there are opportunities for cultural exchange between locals and tourists allowing for improved understanding amongst them. One participant stated, “it’s good for exposing our culture and traditions to others”. The cultural aspect of ecotourism allows tourists to learn about Nova Scotia’s different cultures and traditions from a local perspective while at the same time sharing their own culture. One participant said, “tourists are learning from locals and vice versa”.

Ecotourism can also contribute to the preservation of cultures. Once participant commented that “it’s a great way to preserve culture and traditions as it can provide a feasible way to record and maintain those traditions”. The exchange of cultures can be developed as a tourism experience that benefits local communities financially and socially while at the same time preserving important culture and traditions for generations. As one participant stated, “with proper story telling it can be developed into tourism ‘products,’ while at the same time preserving those traditions so they don’t get forgotten”.

6.1.4 Environmental education

Visiting MPAs that are well managed provides unique learning experiences for tourists. Ecotourism and MPAs can educate tourists about the sensitive coastal ecosystems and conservations efforts happening in the area they are visiting. One participant noted that ecotourism in designated MPAs can “make people aware of areas that are sensitive and bring light to environmental issues through education”. Learning about MPAs not only occurs while tourists visit an area but also when they return home or travel to a new place. When tourists return home or travel to a different place they can share their experiences with others. One participant stated, “Ecotourism has the potential to help make the broader public more aware of environmental issues, by word of mouth, or after individuals visit special places and learn about what is being done to protect them.”

6.2 Problems

Two main problems emerged while analyzing interview data. Tourism operators that were interviewed identified restrictive regulations and the need for proper management and planning when it comes to ecotourism and MPAs.

6.2.1 Restricting regulations

The first problem of conducting ecotourism in MPAs identified by participants was restrictive regulations. It is well known that there are strict rules and regulations about the activities that are permitted within MPAs. While most participants are generally supportive of MPAs designated in other areas of Canada and the world, they would be more or less supportive of one being designated in their community depending on the related regulations and restrictions. One participant said, “it’s impossible to say [if MPA designation would affect them] until the details and specific regulations of the MPA are defined”. If regulations and restrictions allow

tourism activities to take place and result in less competing activities, tourism operators are more likely to support MPAs. Regulations that restrict or limit tourism activities may deter operators from wanting to conduct their business in a MPA resulting in them going elsewhere or not operating at all. Three participants commented that it depends on the details of the regulations and how they may restrict them. Until details and specific regulations of a MPA are defined, it's difficult to say if they are supported by tourism operators. In this regard, one participant commented that whether or not they think a MPA will affect their business "depends on the regulations and how they would be enforced against me." The language used, by other respondents, suggests that some tourism operators are worried MPA regulations may negatively affect them.

6.2.2 Need for proper planning and management

While all participants believe there is a demand for more environmentally focused tourism, not all would like to see a growth of the industry. "I know the government wants to increase but I think things are fine the way they are." Those that do want to see an increase in the tourism industry note that there needs to be proper planning and management in place. There is concern that without proper management plans in place, an increase in ecotourism will degrade the environment. As one participant commented, "we need plans and management to prevent damaging practices". Most participants agree that increased tourism development even with management plans will have some impact on the environment. As one participant stated, "if there are proper management plans in place it's possible to have less impact". Other participants point out that while there is going to be some damage to the environment with an increase in tourism in order to have minimal environmental impact there should be a focus on increasing development of certain types of tourism activities.

One participant suggests focusing on "silent" tourism or no noise tourism and water sports saying, "silent tourism will have less of an environmental impact other than the way to get there." It was also noted that the ecotourism activities themselves may have minimal or no impact on the environment but with increased tourism the transportation of people to and from tourism destinations will also increase thus contributing to climate change. As one participant commented, "you're going to have cars and buses taking people, would you rather 40 people showing up in their cars or on a bus? Forty people in cars will increase greenhouse gas emissions and climate change".

6.3 Perceptions of ocean protection

There is a split response between if participants believe there is enough being done to protect the ocean that their business relies on with three participants saying no and two participants saying yes. Those that believe there is enough being done reference a lack of competing uses putting pressure on the local environment. As one participant who responded in the affirmative commented, “there’s not a lot of pressure from commercial fishing. There’s no oil and gas or aquaculture in the area, if we had these pressures then no”. There are many different user groups in Nova Scotia waters and some areas have more competing uses than others. While there may not be competing uses in an area MPAs can be designated to protect features for the future. One participant pointed out, “in the inner part of the bay there’s not a lot of activity, but if you want to protect the area for the future then sure an MPA [will] help it stay quiet”.

Not all coastal and marine spaces need to, or should be designated as a MPA for ecotourism can take place. Those that operate ecotourism businesses outside MPAs still contribute to environmental awareness and have minimal impact on the local environment. While the ecotourism provider feels the area does not need a MPA due to lack of pressures they still focus on providing tourists with an environmentally and socially responsible experience. “Not having it [a MPA] is not a bad thing... We have the opportunity to see an area and explain why it’s important and why we get to paddle to places like this...we have the opportunity to connect people with the environment.”

Three participants responded they feel there is not enough being done to protect the area of the ocean the ecotourism businesses rely on. One participant stated, “management seems to be in a reactive state, we should be more proactive”. Suggesting that protection should occur before recognizable damage occurs requiring action to be taken. Two participants suggest that a specific activity is harmful to the marine environment and should be restricted, and the other comments that they would like to see more done to protect the ocean. Two participants suggested that aquaculture is something that should be restricted. One participant was very specific about open pen finfish aquaculture saying, “open pen salmon farming is a threat to the area that has not been mitigated”. The other was very general saying, “There is a massive aquaculture farm and there’s a group of people that work to make sure the area is protected... there’s only so much they can do because of limited resources.” Participants may believe aquaculture should be restricted or

prohibited for a number of reasons. Aquaculture in Nova Scotia is a contentious topic among different stakeholders.

Participants also indicated that they hear about marine protection efforts but are not seeing action in the area for different reasons. When asked if they feel enough is being done to protect the ocean one participant said, “not necessarily, I see and hear what’s being done on the Eastern Shore and it would be nice to hear the same thing in other areas of Nova Scotia.” While this doesn’t mean the area needs to or should be designated as a MPA it shows that some ecotourism operators would like to see and not just hear about conservation efforts.

Despite having a split opinion on whether enough is being done to protect areas of the ocean around Nova Scotia most participants agreed that MPAs are a good way to protect important species and habitats coastal and marine ecosystems. Participants reference visiting and/or hearing about successful MPAs in other parts of the country or world. As one participant said, “I’ve been to some of the west coast [MPAs] and the sea life there was more vibrant”. Visiting and learning about MPAs that are successful and have provided economic, ecological and social benefits to local communities can help individuals form positive perceptions. One participant referenced seeing a growth in tourism in an area because a MPA was implemented causing environmental quality to improve and an increase abundance of species was attracting tourists. “I was in Honduras when an MPA started... By selecting areas for a MPA, tourism increased because of the quality of the area”. The same participant along with another one mentioned seeing and hearing about the spillover effect MPAs in other parts of the world where improved environmental quality and species abundance within the MPA extended beyond its borders causing fisheries to also benefit. One participant said, “because of the quality of the area there was spill over into fishing areas and they were benefitting”. The other participant said, “there is evidence to show that come other MPAs around the world have had success in their area and the areas surrounding them”.

Chapter 7: Discussion and Management Options

This research identifies and describes Nova Scotia tourism operators perceptions of ecotourism and MPAs. The results suggest that ecotourism and MPAs have the potential to form a complementary relationship in Nova Scotia. Based on five case studies of Nova Scotia tourism operators, ecotourism in MPAs can provide a unique opportunity to increase revenues, employment, and provide an educational platform while protecting the coastal and marine environment. Table 3 outlines a summary of management recommendations based on the the results of this study.

All participants believed there is a demand for environmentally focused tourism activities in Nova Scotia among tourists. The demand for ecotourism experiences has increased over the last decade and it is predicted the industry will continue to grow in the coming years (Angulo-Valdez & Hatcher, 2010; UNEP & UNWTO, 2011). It is estimated that one in three travellers are seeking environmentally focused tourism experiences (UNEP & UNWTO, 2005). This supports Tourism Nova Scotia's desire to increase sustainable tourism development and double revenues by targeting visitors seeking specific experiences including those who want environmentally and socially responsible experiences such as ecotourists (Tourism Nova Scotia, 2017).

With the implementation of MPAs across Canada drastically increasing over the last few years due to Canada committing to the CBD's *Aichi Target 11* and the national *2020 Biodiversity Goals*, MPAs can offer pristine natural environments that are in high demand in the ecotourism industry (Angulo-Valdez & Hatcher, 2010). The development of ecotourism within MPAs can provide important benefits to local communities (Angulo-Valdez & Hatcher, 2010). Ecotourism experiences within MPAs include responsible travel to natural areas that contributes to conservation of the coastal and marine environments, improvement of locals' wellbeing, and education and interpretation of the local culture and ecosystems (Whelan, 2013). As multiple participants noted, increased tourism within MPAs can boost employment opportunities and can help promote their products and services benefitting profitability.

Currently tourism in Nova Scotia accounts for roughly 39,500 jobs (Tourism Nova Scotia, 2018). According to ILO (2001, p118) it is estimated that for every one job directly in the tourism industry it creates one and a half indirect jobs in support businesses. The extent of employment opportunities available in communities depends on the percentage of ecotourism

products and services that are locally owned and operated (UNEP & UNWTO, 2011). To ensure local communities benefit from the increased employment opportunities ecotourism and MPAs can provide, tourism products and services should be locally owned and operated (Hector, 2001). When tourism operators and facilities owners are not from the community it can result in the hiring of outside workers and managers causing benefits to not reach the local economy (Bennett & Dearden, 2012).

Having tourism operations locally owned and operated can also help prevent economic leakage (Bennett & Dearden, 2012), and helps keep financial benefits within communities which supports profitability and economic sustainability. While some economic leakage in the tourism industry is normal, high rates at the local level reduce economic benefits and undermine potential conservation incentives (Supradist, 2004). While only one participant mentioned benefiting financially from increased tourism it is likely that other tourism operators in the province may have similar views. Tourism businesses can receive both direct and indirect financial benefits from products and services provided and supporting businesses also obtain financial benefits indirectly through relationships with a MPA.

The relationship between ecotourism and MPAs can also strengthen the opportunity for tourism operators to advertise their products to a growing market and attract visitors looking for environmentally and socially responsible experiences. MPAs that are marketed for ecotourism are often more visited (Monti et al, 2018, p, 449), which can increase sales and bring in new customers contributing to financial benefits and profitability. Financial benefits can result in local communities strengthening their support and commitment to conservation and protection of nature (Andereck, Valentine, Knopf & Vogt, 2005).

The participants of this study generally support the idea of MPAs and believe they can be a good way to protect important marine features, species and habitats, and provide an opportunity to educate tourists about the local environment. World Wildlife Fund for Nature (2019) reported that there is overwhelming support for MPAs in Canada, particularly in the Territories and Atlantic provinces with 75 per cent of Nova Scotia participants strongly supporting MPAs (p14). The same report also shows that within Canada there is strong belief that ecotourism activities such as non-motorized sports like kayaking, surfing, diving, sailing etc. should be permitted to take place with MPAs (World Wildlife Fund for Nature, 2019, p5).

Despite the high levels of support for ecotourism and MPAs there is still concern regulations will restrict tourism operators ability to conduct business freely within MPA boundaries as noted by participants. There is often a perception that local livelihoods such as fisheries, are prohibited from taking place within the boundaries of MPAs due to regulations and restrictions and the idea that they cause harm to the natural environment. While this perception is usually prevalent among fishers the results suggest tourism operators have similar views. Four out of five participants noted that MPAs may negatively affect them depending on regulations and restrictions and how they are enforced. Having different types of MPAs designated under multiple statutes with different regulations and levels of protection may be contributing to tourism operators negative perception of restricting regulations. Because regulations for tourism activities permitted in MPAs are created on a case-by-case basis in Canada, and depending on which statute they would be implemented under, it is difficult to predict what regulations and restrictions would be put in place until potential sites are selected. The complexity and lack of direct language of tourism in regulations also has implications for the management and planning of MPAs and ecotourism.

Participants identified the need for proper management and planning in order to have better protection of the coastal areas and minimal impacts on the environment and local community. Although principles of ecotourism aim to integrate conservation and sustainable development, all types of tourism have an impact on the environment and local communities. With ambitious goals to double tourism revenues by 2024 it also should be recognized that too much tourism development in the coastal environment and MPAs can cause damage to the ecosystem, biodiversity, and wildlife they are trying to protect (Angulo-Valdez & Hatcher, 2010; Monti et al, 2016). It can also cause disruption in communities with increased population, displacement of residents, and conflict of values (Ahn, Lee & Shafer, 2000). Because of the potential for harm, there should be a focus on non-consumptive activities and development should be limited (Bjork, 2000; Ahn, Lee & Shafer, 2000). Limitations on growth can be determined by the state of the environment and the ability to provide experiences that don't cause environmental degradation (Bjork, 2000).

As participants suggested, management and planning of ecotourism in MPAs can limit impact on the local environment. Management plans can help prevent the mislabeling of ecotourism caused by the lack of a standard definition and vague tourism language in MPA

legislation by outlining principles and objectives, and ensuring everyone has the same understanding. Misuse of the ecotourism label can result in damaging practices and difficulties tracking its development (Townsend, 2016; Park, Parks, and Allen, 2009). Because the province is looking to significantly increase tourism industry revenues and development in Nova Scotia by targeting three explorer profiles, monitoring and evaluating the progress is important to achieve goals and address any issues that emerge.

Table 3. Summary of management recommendations

1. Ecotourism activities conducted within MPAs should be locally owned and operated to maximize employment opportunities and financial benefits.
2. Outline and define ecotourism principles and objectives
3. Provide educational opportunities such as workshops for tourism operators to learn about ecotourism opportunities
4. Advance marine-based ecotourism activities in Nova Scotia to create a network of opportunities
5. Create a management plan for sustainable development of ecotourism
6. Monitor and evaluate ecotourism businesses to ensure products and services are genuine marine ecotourism

Chapter 8: Conclusions

Coastal marine protected areas are a relatively new concept on the east coast of Canada. Currently there are only a few small coastal sites such as the Musquash Estuary MPA in New Brunswick designated in 2006, and Basin Head MPA in Prince Edward Island designated in 2005. Within the waters surrounding Nova Scotia there are six designated MPAs and six designated marine refuges, however only one MPA, St. Ann Bank, and one marine refuge, scallop buffer zone, are close to shore and accessible. Because of this, ecotourism within MPAs is not as prevalent in Eastern Canada as it is in other parts of the world creating potential concerns about restricting regulations. Despite concerns, ecotourism potential can be an important factor in the selection of MPAs in Canada.

Based on the perceptions of Nova Scotia tourism operators, ecotourism and MPAs have the potential to form a mutually beneficial relationship in the coastal waters of Nova Scotia. If ecotourism in MPAs is done sustainably and managed well it can provide communities with increased employment and financial benefits as well as contribute directly to national, provincial, and global agreements such as CBD's Strategic Plan for Biodiversity, Aichi Target 11.

If successfully implemented, ecotourism in MPAs can also educate tourists about the importance of protecting marine and coastal ecosystems, in addition to raising awareness of the effects humans have on the environment. The relationship between conservation and tourism is complex and can be complementary or conflicting creating both opportunities and problems. To reach goals of increased marine protection and increased tourism revenues in Nova Scotia future designated MPAs need to be accessible to ecotourists and managed appropriately.

8.1 Limitations and Future Areas of Research

The limited timeframe and time period of the research made it difficult to schedule interviews with tourism operators. Because the research was conducted during the peak tourism season there were a low number of responses. The low number of responses limits the statistical significance of the findings and consequently no broad generalizations about the ecotourism operators perceptions can be made. Conducting the interviews during the low season in the winter months could have resulted in more responses and a better generalizability of the understanding of tourism operators' perceptions of marine protection around Nova Scotia.

The sample of participants may also have had some biases. Because tourism businesses that provide more environmentally friendly products and services were selected to participate, the participants are arguably positively predisposed towards protecting the environment and by extension view MPAs more favorably.

To gain a more detailed understanding of tourism operators perceptions of ecotourism in MPAs it is recommended that more interviews be conducted during the low season to get a higher response rate. More responses would create more generalizable conclusions regarding opportunities and concerns of ecotourism in MPAs in Nova Scotia and enable analysis that is statistically significant. A comparison of perceptions between tourism regions within Nova Scotia could also identify areas for potential development of the ecotourism industry.

Future work on this topic could include surveying tourists visiting Nova Scotia that participate in coastal and marine activities and experiences to identify their perceptions of ecotourism and MPAs.

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Appendix A

Open-ended questions interview guide

if in person

Hand participant the consent form and ensure they do not have any questions regarding the research project or form

Have participant sign the signature page

if over the phone

Send consent form prior to the interview to get signed or get verbal consent over the phone

Ensure participants to not have any questions regarding the research project or form.

BACKGROUND INFORMATION

Tourism is one of the largest industries internationally and is also an important source of economic activity in Nova Scotia. Nature has always been an attraction to tourists, with people attracted to natural beauty, iconic landscapes, and the recreational activities they afford. Ecotourism is a type of tourism where people travel to natural areas to admire, enjoy and understand nature and the local culture in ways that are environmentally friendly and respectful. With wild spaces and species disappearing due to human activities, it is important to have areas protected from unsustainable uses, including in marine and coastal spaces. Governments around the world have established marine protected areas to achieve this protection. These protected areas have become important tourism destinations, but nationally we only have a few such sites. With Canada committing to protecting more of its ocean, Nova Scotia may see more marine protected areas in its future.

Questions:

1. What it's the nature of your business?
2. What made you start your business in this area?
3. What proportion (roughly) of your business is tourists vs locals?
4. Do you think there is a demand for more environmentally focused tourism activities among tourists in the area?
5. Would you like to see an increase in tourism in the area? Why or why not?
6. Do you think tourism has an effect or could have an effect on local culture and traditions?
7. Do you think the development of the tourism industry can be done without causing harm to the environment?

We've talked about tourism now let's talk about protecting marine spaces. Canada has a goal to protect 10 percent of its ocean and will most likely be making further commitments to protect more. Around Nova Scotia there are ecologically important areas that could become marine protected areas in the future. Marine protected areas are an of the ocean where human activities such as fishing, oil and gas development etc. are more strictly regulated than in surrounding waters, Marine protected areas help ensure that marine ecosystems remain healthy by conserving and protecting marine species and their habitats.

8. Do you think enough is being done to protect the areas of the ocean your business relies on?
9. If a MPA was created how do you think it will affect tourism in the area?
10. Do you think creating a MPA would be a good way to conserve and protect important environmental features and species in the area?
11. Do you think a MPA would affect your business?

12. Is there anything you would like to add or anything that we missed that you feel is important?

Appendix B

Marine Affairs Program
DALHOUSIE UNIVERSITY

**Marine Affairs Program Ethics Review Standing Committee (MAPSERC)
Letter of Approval**

June 27, 2019

Dear Emily,

MAPERSC #: MAP2019-05

Project Title: Opportunities and barriers to ecotourism in marine protected areas: Perceptions of tourist and tourism operators in Nova Scotia

Effective date: June 27, 2019

Expiry date: June 26, 2020

The Marine Affairs Program Ethics Review Standing Committee has reviewed your application for research involving humans and found the proposed research to be in accordance with the Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans. This approval will be in effect until the date indicated above. This approval is subject to the conditions listed below which constitute your on-going responsibilities with respect to the ethical conduct of this research.

Sincerely,

Claudio Aporta, Chair