Exploring the Complex and Competing Relationships of Resource users within the Margaree-Lake Ainslie Watershed

By: Monica Ragan

A thesis submitted in conformity with the requirements for the degree of Bachelor of Arts with Subsidiary

St. Francis Xavier University Anthropology and Interdisciplinary Studies in Aquatic Resources Programs

Advisor: Dr. L. Jane McMillan
Second Reader: Dr. Jim Williams

March 25th, 2019

Acknowledgements

I am grateful for the love and support of my family. The completion of this thesis would not have been possible without your continuing encouragement. Over the past year, I had many ups and downs along my academic journey. At times I did not believe in myself or what I am capable of doing. You all kept me grounded and pushed me to achieve my best. I cannot thank you all enough.

To my supervisor, Dr. L. Jane McMillan, thank you for having me as one of your honours students. I learned a vast amount from you over our last year together. You have taught me how to become an ethical researcher and anthropologist. I cannot wait to take these skills into my future endeavours.

I want to thank Dr. Jim Williams, my second reader. I am thankful for your excellent suggestions and guidance throughout this process.

Thank you to all my interviewees for taking time out of your day to assist me with my research. Sharing your knowledge has not only helped my research, but I have learned much from all of you.

Finally, I would like to thank the RBC Foundation Undergraduate Summer Research Internship Awards. Without your monetary support, I would not be able to complete this thesis.

Abstract

River systems are a common feature across the Canadian landscape, and yet few hold the title as a Canadian Heritage River. This research uses the Margaree-Lake Ainslie watershed, a Canadian Heritage River located on Cape Breton Island, to assess the cultural, natural, and recreational relationships found with Atlantic salmon between various players. This study is grounded in the anthropological research methods of participant observation, semi-structured interviews, and political ecology theory. The findings from this research reveal that the designation of the watershed as a Canadian Heritage River has not eased tensions between recreational salmon anglers, other recreational watershed users, Mi'kmaw harvesters, and landowners. Controversial issues remain regarding salmon management, economic development, and who has the right to use the watershed. This research only scratches the surface of the complex relationships found in the Margaree-Lake Ainslie watershed and does not speak to other complicated issues surrounding the gaspereau fishery, debates on rocking the river banks, or addressing the difficulty of encouraging young adults to live in the region. The findings from this study contribute significantly to the scarce literature and research on Canadian Heritage Rivers and their outcomes.

Acronyms

CHRB: Canadian Heritage Rivers Board

CHRS: Canadian Heritage Rivers System

DFO: Department of Fisheries and Oceans

ECCC: Environment and Climate Change Canada

FSC: Food, Social, and Ceremonial

KMKNO: Kwilmu'kw Maw-klusuaqn Negotiation Office

MAPS: Mi'kma'ki All Points Services

MSA: Margaree Salmon Association

NCNS: Native Council of Nova Scotia

NSDFA: Nova Scotia Department of Fisheries and Aquaculture

NSE: Nova Scotia Environment

PHP: Port Hawkesbury Paper

TEK: Traditional Ecological Knowledge

UINR: Unama'ki Institute of Natural Resources

UNSI: Union of Nova Scotia Indians

List of Figures and Table

Table of Contents

Chapter One: Introduction to the Research Site

Watersheds are dynamic environmental regions. Shaped by millennia of climatic wear and tear, watersheds are continually influencing the lives of those who rely on their presence. Watersheds are life-giving forces when they are healthy; they offer sources of fresh water, access to sustenance, and methods of transportation. With this, humans develop the identities of the watersheds based on their needs for survival and leisure. This relationship is reciprocal: the watersheds provide the necessities of life and shape humans' identities, while human activities shape how the watersheds are utilized and perceived. With human use, watersheds become part of the cultural fabric of the people who use them. This thesis examines the sociocultural significance of the Margaree-Lake Ainslie watershed by surveying the cultural, natural, and recreational perspectives held by various actors within the watershed. Understanding the process of the designation of the watershed as a Canadian Heritage River serves as the case study to signify the intersection of these relationships with the watershed. The case study provides a lens to compare and contrast the interests, opposition, and priorities of people wanting to control access, use, and potential commodification of river resources. In examining the various competing priorities of recreational users (kayakers, canoers, swimmers, tubers), anglers, Indigenous peoples, landowners, and government regulators, I argue that the tensions and power struggles over access and control of the watershed were not resolved by achieving the Canadian Heritage Rivers designation and that the aspirations of conservation, Indigenous rights recognition, sustainability, and economic development continue to shape the contested identity of the watershed beyond its designation as a Canadian Heritage River. The watershed is not just a Canadian Heritage River, but the apex of converging ideologies and competing perspectives of the control of natural resources.

The Margaree-Lake Ainslie river system, located in Cape Breton, Nova Scotia, is 120km long with watershed boundaries in Inverness and portions of Victoria counties encompassing an area of 1165km^2 (figure 1 and appendix 1). The watershed consists of two river branches: the Northeast Margaree River which originates from the Cape Breton Highlands; and the Southwest Margaree River, which derives from Lake Ainslie. The two river branches become one—the Margaree River—at Margaree Forks which empties into the Gulf of St. Lawrence (NSE 2008, 6; Finkelstein 2006). The watershed is classified as Salmon Fishing Area (SFA) 18 and contains the most significant population of Atlantic salmon (*Salmo salar*) stock in Nova Scotia (DFO 2012*a*, 2; NSE 2008, 3).[1]

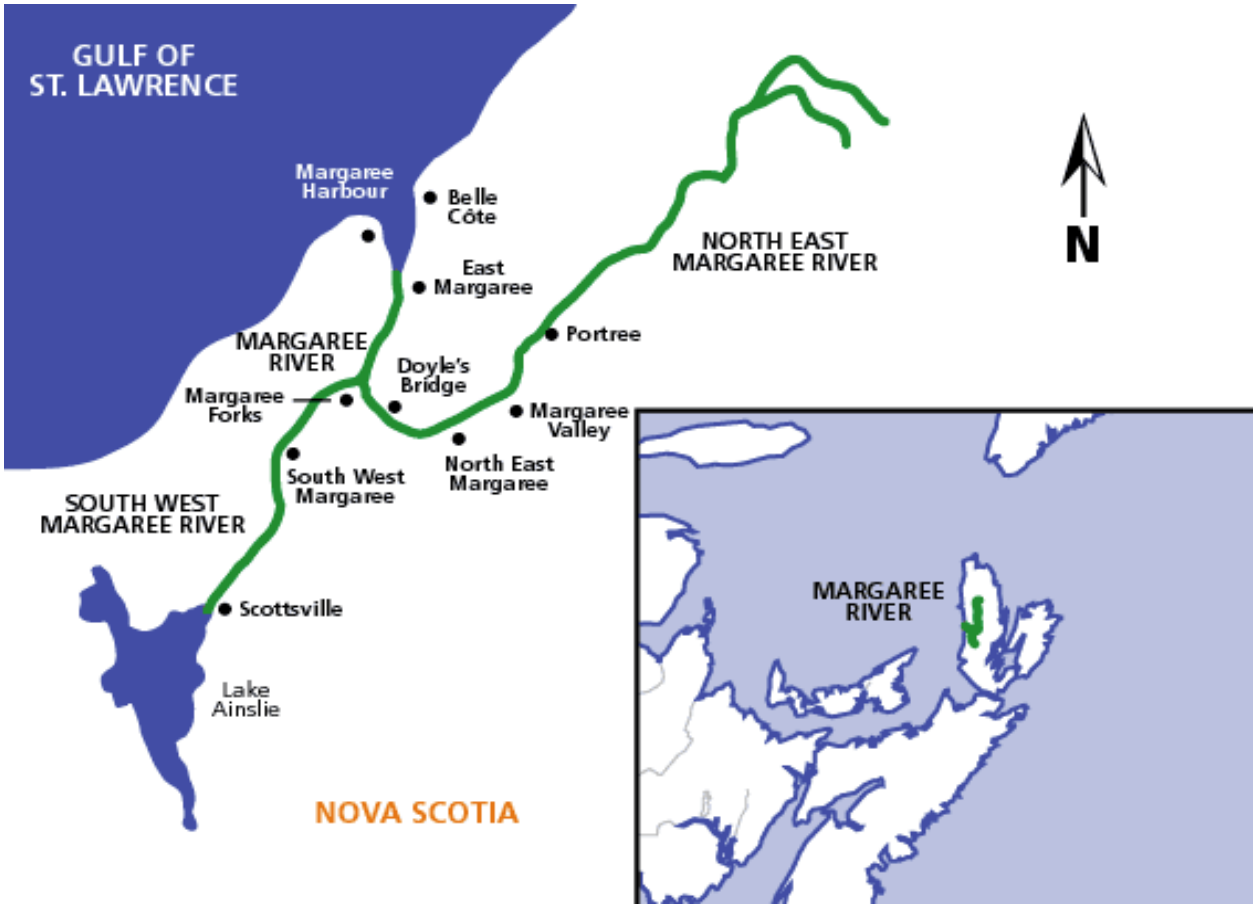


Figure 1: Map of the Margaree-Lake Ainslie River System (CHRS 2017c).

[1] The terms Atlantic salmon and salmon are used interchangeably throughout this paper. Both terms refer to the Atlantic salmon found in the Margaree-Lake Ainslie River system.

The Margaree-Lake Ainslie watershed is a beautiful river system supplying clean water for the residents and users. During the summer months, the river system is outlined in lush green vegetation (figure 2) and in autumn the red, orange, and yellow leaves mosaic the landscape. Several communities are found outlining Lake Ainslie and the branches of the Margaree River. West Lake Ainslie, Scottsville, and East Lake Ainslie are the main communities found around Lake Ainslie. The Margaree region is vast. The community of Margaree Forks is located at the intersection of both river branches. On the Northeast side of the watershed communities include North East Margaree, Margaree Centre, and Margaree Valley. On the main river, the major communities include East Margaree and Margaree Harbour (appendix 2).[2]

Figure 2: Looking upriver the Margaree River. The photo was taken in East Margaree. Photo taken by author.

[2] The Canadian Census data was approached to provide better context of the watershed's population. The Census data was based on other factors rather than the watershed area and included communities that are not located in the watershed. Consequently, I could not use Canadian Census data in this research to provide population estimates.

For community members, the watershed contributes to senses of pride and belonging, but also sources of substantial economic revenue. For recreational users, the watershed provides salmon which are used for angling as well as significant channels to canoe, kayak, or tube. The returning salmon population and presence of Mi'kmaw harvesting of salmon means a recreational salmon angling industry can occur.[3]

Research Design

I am researching this topic because I grew up hearing and learning about the great Margaree River. I am not from the watershed, but I live about 15 minutes away from Lake Ainslie (figure 3), outside of the small village of Whycocomagh.[4] As an elementary student and as a visitor, I made several trips to the Margaree Fish Hatchery to learn and experience their role in maintaining the salmon stocks for the watershed. I was always puzzled why tourists would come to Cape Breton, let alone the Margaree-Lake Ainslie watershed. This question led to developing the research questions: what are the cultural, natural, and recreational relationships held by various users of the watershed and how the relationships have changed over time.

The Scope of the Research

To understand how various populations use the watershed the participants selected for this research included those representing diverse interests. The research identified four organizations operating within the watershed that illustrate cultural, natural, and recreational connections with the watershed: the Margaree Salmon Association (one participant) (MSA), the Mi'kmaw Nation (four participants), the Margaree-Lake Ainslie Canadian Heritage River Society (four participants), and government officials with the Department of Fisheries and

[3] The term Mi'kmaw is used for a singular noun or as an adjective when referring to the language. The term Mi'kmaq is used for a plural noun (Benjamin 2014, XVI).

[4] Whycocomagh is 48.7km away from Margaree Forks (Google Maps 2019*a*)

Oceans (DFO), Nova Scotia Department of Fisheries and Aquaculture (NSDFA), and Nova Scotia Department of Environment (four participants). The inclusion of residents and tourists (eight participants) and businesses (five participants) in the watershed provided supplementary evidence to answer the research questions.

Figure 3: Photo taken from Trout Brook Provincial Park, East Lake Ainslie. Photo taken by author.

Recruitment of Participants

The recruitment of participants was selected based on their affiliation with either residency, usage, local organizations, or provincial/federal institutions. I used a key informant whom I knew personally to provide access to potential research participants. The program of

research asked the five groups about their relationship with watershed use regarding conservation, Indigenous rights, and recreation impact on the watershed. I made phone calls and sent emails to the Margaree Salmon Association, the Margaree Lake-Ainslie Heritage River Society, the Margaree Fish Hatchery, and the Unama'ki Institute of Natural Resources (UINR) at the beginning of June 2018. These were informants I deemed most vital to include in this research because of their interest in the cultural, natural, and recreational well-being of the watershed. In most cases, participants responded to either form of communication to accept or decline the invitation to participate. I contacted two other businesses and seven individuals who did not respond or declined to participate.

I informed interviewees that their participation was voluntary and at any time could withdraw from the research with no negative consequences. In total, there were 26 participants in this study. Participants had the choice of meeting in person with the researcher at a time and location convenient to them or completing the questions through email. Of the participants, the researcher recorded 21 interviews, four did not have the opportunity to be recorded, and one participant completed the interview questions by email. Anonymity was not an issue in this research. Participants signed a consent form outlining how their responses will be used (appendix 3). In the consent form, participants checked one of two boxes stating how they wanted to be identified in this research, either stating I could use their name or could not disclose their name in this thesis.

Snowball sampling methodology of recruitment was employed to ensure the inclusion of a wide range of views. Snowball sampling is used "…for studying hard-to-find or hard-to-study populations" (Bernard 2011, 147). Snowball sampling requires a key informant to list potential participants for the research to interview (Bernard 2011, 148). This methodology worked well

because I recruited additional participants not known to me. I was cautious throughout the snowball sampling process to ensure I collected a diverse set of interests and not one-sided opinions.

The insights from participants allowed me to gather their perspectives on whether they were in favour, against, or neutral on salmon conservation, recreational angling, and cultural expression with salmon. Such assessments of the varying relationships indicate what is important for users and how users get along with others in the watershed. In other words, the relationships reveal what parts of the watershed are important and where tensions develop as a result of differing relationships due to competition over access, control, and management of resources. The case study examines the role of the Canadian Heritage Rivers designation is and how this title reflects competing interests over the regulation, conservation, and cultural manifestation of nature within the watershed. Using this framework and case study, I can assess the structure of power for decision making, how societies develop and attempt to leverage watershed opportunities to advance their interests. To understand the complex relationships, competing interests, and meaning placed on salmon the theory of political ecology will evaluate these intersections.

Methodology

I was awarded the RBC Undergraduate Summer Research Award from Saint Francis Xavier University. These funds assisted data collection which began in May 2018 with an analysis of current academic literature of recreational angling, ecotourism, heritage tourism, and Indigenous knowledge. Fieldwork took place between June and August, November and December of 2018 and in January 2019.

The research methodology was constructed to guarantee a holistic approach was taken, and to present all points of view equally in this study. Holistic is defined as "[a]n approach used by anthropologists that is comprehensive in scope such that all aspects of human life, biological and cultural, are considered important in understanding behaviour" (Hedican 2012, 271.) I am interested in all of the competing interests surrounding the Margaree-Lake Ainslie watershed: cultural, economic, social, political, and environmental. I also ensured chapter nine of the *Tri-Council Policy Statement 2* was adhered to when working with Indigenous groups. Chapter nine addresses the issue of non-Aboriginal peoples conducting research with Aboriginal populations. The emphasis of the chapter is placed on respect and reciprocity throughout the research process with Aboriginal individuals and communities (Government of Canada 2014, 109). Chapter 9 was integrated into this research by including Mi'kmaw individuals and organizations (UINR). Data was gathered using semi-structured interviews, which were a respectful way to elicit data with Mi'kmaw individuals. Conducting interviews was similar to listening to storytelling and other oral mechanisms of sharing knowledge.

The research methodology further included describing the cultural significance of salmon for Mi'kmaw peoples before colonization. This information came from a review of the ethnographic literature and interviews with members of the UINR. I conducted ethnohistorical research of settler uses of salmon in the Margaree-Lake Ainslie watershed using data from museums, public archives, and library resources.[5] Ethnohistory is "…the study of the history of a social group from an anthropological perspective" (Hesson 2006, 854). To obtain information the use of non-anthropological data from historical documents and records are employed (Sturtevant 1966, 6).

[5] The term settler in this research is defined as a person who comes from a different region and establishes a permanent homestead in a new region.

After the collection of historical data, I detailed the history of the salmon stocks and various regulations implemented to control, conserve, protect or exploit salmon stocks in the watershed through an examination of Department of Fisheries and Oceans (DFO) archives, court cases, and other relevant government records. The purpose of understanding the salmon stocks aided in representing the changing uses, methods of conservation, and fluctuation of stocks from 1600 to 2018 CE.

The field-based study consisted of two parts. First, participant observation occurred along various sections of the watershed. Participant observation means "…getting close to people and making them feel comfortable enough with your presence so that you can observe and record information about their lives" (Bernard 2011, 256). Participant observation is both a humanistic and scientific method and is a less intrusive practice which can occur over many hours without interfering or impinging on other peoples' time (Bernard 2011, 256). I conducted participant observation at public places where I could have casual conversations with many different people (visitors, locals, employees). The locations selected for participant observation were places that provided easy driving access and parking to unload and pack a kayak. Therefore, Trout Brook Provincial Park in East Lake Ainslie and between Garden and Brook Pools in North East Margaree were selected. As well, participant observation occurred at events within the watershed or relating to salmon. For example, I attended a meeting for the Margaree-Lake Ainslie Heritage River Society in July and the Anything that Floats Race in August.

The use of participant observation permitted me to obtain primary data by watching how people use the watershed and how they engage with others using the watershed. Participant observation was less intimidating for participants than answering questions in a formal setting, and I had hands-on experience in some situations (i.e. kayaking and interacting with other

watershed users). The use of participant observation was helpful because it provided me with the opportunity to use all senses to gather information on how people engage with the watershed and behaviours towards salmon, conservation. For example, during my kayaking experience, I saw individuals swimming, canoeing, and angling in the Northeast Branch and East Lake Ainslie. All users were respectful and appeared to enjoy their time using the watershed for recreational activities. I even had a small conversation with a group of anglers looking for alternative fishing pools. Overall, participant observation facilitated access to witness the cultural, natural, and recreation relationships between users, salmon, and the Margaree-Lake Ainslie River system.

Second, I organized semi-structured interviews with key proponents of salmon fishing management and/or commodification in the Margaree-Lake Ainslie River system. Semi-structured interviews use an interview guide which orders what questions must be answered during the time allotted (Bernard 2011, 158). The semi-structured interviews allowed me to gather stories in a conversational way that is respectful and courteous, but also very productive in generating information about diverse perspectives. Furthermore, semi-structured interviews are a method that permitted probing for greater details particularly as themes begin to emerge and it is conducive to comparative analysis.

To focus this research, I explore the watershed's relationship primarily with salmon in the cultural, natural, and recreational arenas. Although other species are important, such as the gaspereau which involve the regions of Lake Ainslie and the Southwest Margaree River branch, and are of natural and cultural significance, organizing gaspereau into the recreational arena presented difficulties. Additionally, any more species for comparisons would be out of the scope for an undergraduate thesis.

The presence of salmon in the watershed is a main reason why the Margaree-Lake Ainslie watershed received Canadian Heritage Rivers System designation (CHRS) (Margaree-Lake Ainslie River System Advisory Committee 1996, 18). The designation reflects an important component to the historical and current use of the watershed. The CHRS title shows the intersection of competing interests and aspirations for what the watershed means to the various players relating to cultural, natural, and recreational purposes.

Case Study: The Margaree-Lake Ainslie Heritage Rivers Designation

The Margaree-Lake Ainslie became part of the CHRS program in 1998, and is only one of two CHRS watersheds in Nova Scotia (CHRS 2017*a*; CHRS 2017*b*). In 2016, only 39 rivers were CHRS designated, and three rivers were going through the nomination stages (CHRB 2017, 8). The designation reflects an important component to the historical and current use of the watershed. The CHRS title shows the intersection of competing interests and aspirations for what the watershed means to the various players relating to cultural, natural, and recreational purposes.

The CHRS program "…promotes, conserves and enhances Canada's river heritage and ensures that Canada's leading rivers are managed in a sustainable manner and that their values are communicated to residents and visitors" (CHRB 2017, 10). Heritage values belong to three broad categories: cultural, natural, and recreational. CHRS program and not the nominees define these heritage values. Cultural values refer to the river's influence of ethnic groups development, events, or ideologies within Canada. Natural values represent biological and geological features. Recreational values refer to the activities which one can participate because of the river (CHRSB 2017, 50).

The CHRS program is both a federal and provincial/territorial program and works in conjunction with local river stewardship associations to advocate and preserve rivers with significant cultural, natural, and recreational heritage qualities (CHRS 2017*a*). The CHRS program began in 1984 to provide national recognition for rivers which have exceptional values and to promote long-term watershed management (CHRS 2017*a*). The CHRS program is unique as it aims to maintain the heritage and recreational values of outstanding rivers in Canada (CHRB 2017, 10).

The CHRS is an important flashpoint in the history of the watershed because the designation encapsulates cultural, natural, and recreational values. The case study covers the period from 1984 to 2018 to include the pre-designation phase, designation, and post-designation phase to determine what the impacts of this title are for the watershed community.

Key Organizations

Several organizations in the watershed aim to conserve the biodiversity while other organizations promote the environment and the activities the region has to offer. This section highlights four interests in the watershed. Each organization represents a different point of view on the spectrum of priorities for the cultural, natural, and recreational management of the watershed and salmon. For some individuals, they see the watershed as their traditional territory which creates conflicts among other groups or individuals.

The Margaree Salmon Association

The Margaree Salmon Association (MSA) began in 1982 with an office operating out of Margaree Centre. It is a not-for-profit association directed to conserve, protect, and enhance salmon habitat (MSA 2018). According to the president of the Margaree Salmon Association:

> Margaree Salmon Association is a group of conservation-minded individuals. There's probably 225 members. I'd say at least 40 to 50% are from the USA, many are from Nova

> Scotia, many are from this area. But we also have members from the UK, from various provinces across the country, and ultimately they're all concerned with maintaining a safe population, strong population of Margaree …of salmon in the Margaree River. And they do that by either providing money through memberships, donations, participating at our auctions, and other events to raise funds or by actively being involved in instream and fieldwork (July 25, 2018, SA1).

Most of the work by MSA involves restoring habitat, bank stabilization, inserting flow diverters, and working with the Nova Scotia Salmon Association and government agencies (MSA 2018). The meaning of salmon for the MSA revolves around the cultural, natural, and recreational importance salmon provide for recreational angling and to ensure the watershed is healthy for salmon to keep returning.

The MSA has identified several concerns with the watershed and the lack of information, research, or action present at the time of research (Baechler, Foulds, and Jones 2016, 3-6). The document presented five areas of concern where future research must be directed: understanding the active channel, defining the health of the river, lack of monitoring, central repository and library, and the changing climate (Baechler, Foulds, and Jones 2016, 7-8).

Membership fees range depending on one's interest. Regular memberships are $30 a year or $50 a year for a family. Youth are encouraged to become members. Children under the age of 14 can become members for $10 a year. Life time memberships are available for a one-time charge of $300. The fees can be paid online through the MSA website or mailed (MSA 2019*a*).

The structure of the MSA encompasses a Board of Directors. As of November 2018, the officers are president, Bill Haley, vice presidents Paul MacNeil and Leonard Forsyth, secretary Greg Lovely, and treasurer John Stinson. Additionally, there are eight more individuals on the Board of Directors (MSA 2019*b*).

The Mi’kmaw Nation and the Unama’ki Institute of Natural Resources (UINR)

The Mi’kmaw Nation has the longest presence in the watershed and is another important voice for the assertion of protected rights to harvest salmon.[6] To express Mi’kmaw interest in natural resource use and management UINR offers a participatory mechanism. Established in 1999 and located on the Eskasoni First Nation, UINR brings both traditional (*netukulimk*) and scientific knowledge to policymakers to ensure Mi'kmaw Treaty rights are respected when dealing with natural resources.[7] The approach by UINR is referred to as Two-Eyed Seeing, taking the best concepts from Mi'kmaw and Western pieces of knowledge and creating a diverse solution satisfying all interests. UINR is vital in this research as it demonstrates an organization blending both Mi'kmaw and Western institutions and knowledge to advocate for natural resources use and protection (July 17, 2018, MR2; UINR 2016*a*).

UINR represents all five Mi'kmaw communities of Unama'ki (Cape Breton) which also includes the community Chiefs as UINR Board of Directors.[8] UINR works with government and other Indigenous groups to meet their objectives (UINR 2016*a*). UINR has three main goals:

1. To provide a participation mechanism for Mi’kmaw communities in relation to natural resources and management in Cape Breton
2. To increase Mi’kmaw natural resource management and research while maintaining traditional understandings
3. To partner with other organizations who share the same commitment in conserving natural resources (UINR 2016*a*).

---

[6] The archaeological evidence for Mi’kmaw presence in Nova Scotia dates to around 13,500-10,000 BP calendar years (Lewis and Sable 2014, 275). This time period is also referred to as time immemorial.

[7] Eskasoni is 110km from Margaree Forks (Google Maps 2019*b*).

[8] Using Margaree Forks as a frame of reference the five Mi'kmaw communities are: We'koqma'q 49.3km (Google Maps 2019*c*), Wagmatcook approximately 45.1km (Google Maps 2019*d*), Membertou is 128km (Google Maps 2019*e*), and Potletek (Chapel Island) is 139km away from Margaree Forks (Google Maps 2019*f*). Refer to footnote seven for Eskasoni’s distance from Margaree Forks.

In contrast to the MSA, the Mi'kmaw Nation does not place recreational value or meaning on the sports salmon fishery in the same sense as the fee-based recreational anglers. The Mi'kmaw do have commercial interests in the overall fisheries, and this pursuit was voiced most notably during the verdict of Donald Marshall Jr. who successfully argued he had a treaty right to fish and sell his catch (*R. v. Marshall* [1999] 3 SCR 456).

Margaree-Lake Ainslie Heritage River Society

The current Chair of the Society is Del Muise, and the Vice-Chair is Eileen Coady. The Society consists of members who live in communities found within the watershed (CHRB 2001, 23). There are approximately ten board members for the Society each of whom brings a diverse set of talents and perspectives (July 16, 2018, HRS3).

The Society formed post-1996 and was responsible for implementing the Partnership Strategy (also referred to as the Management Plan) (CHRB 2001, 23). The formation of the Partnership Strategy was created using public input through mail-outs and public meetings. The Partnership Strategy provided suggestions on where to direct efforts such as tourism and marketing, community stewardship, erosion management, and research conducted in the region (CHRB 1999, 11).

Government Agencies

There are several federal and provincial government departments that operate in the interest of the Margaree-Lake Ainslie watershed. Three departments are used in this research.

The Department of Fisheries and Oceans (DFO)

The DFO is a regulatory agency based out of Ottawa, Ontario. The department is part of the Canadian federal government and headed by a minister appointed by the Prime Minister. Currently, the Honourable Jonathan Wilkinson holds this title. The agency is responsible for

governing Canada's fisheries, marine, and freshwater assets (DFO 2018). In the broadest sense, DFO has two critical functions within the Margaree-Lake Ainslie watershed: "…one is enforcement in terms of environmental regulations… the enforcement side would be that we would regulate the fisheries. The Aboriginal, commercial, gaspereau, salmon fisheries…" and the second function is habitat provisions (such as fish passages) (January 4, 2019, G2). Therefore, the DFO controls the management of salmon in Nova Scotia but shares the authority of regulating the sports fishery with the Nova Scotia Department of Environment (NSDFA 2018*a*, 8). As such, the DFO is restricted, yet shapes how Mi'kmaw, settlers, and recreational salmon anglers engage with the salmon species. According to Prime Minister Justin Trudeau, the minister for DFO is responsible for working alongside the minister of Science and Sport to "…use scientific evidence, traditional Indigenous knowledge, and the precautionary principle, and take into account climate change, when making decisions affecting fish stocks and ecosystem management" (Trudeau 2018). With this responsibility, DFO has an important role in the Margaree-Lake Ainslie watershed to ensure salmon populations remain healthy using both scientific and Indigenous knowledge.

The Nova Scotia Department of Environment (NSE)

The NSE is "…the lead agency in terms of any initiatives or any dealings with the Canadian Heritage River program" (August 20, 2018, G1). The Honourable Margaret Miller is the Minister of Environment (NSE 2018*a*). According to the NSE website, one of the department's goals is to "…focuses on climate change, protecting our environment and advancing our ambitious environmental goals" (NSE 2019). The vision for the department is to be "[a] leader in regulatory excellence, conservation, partnership and promotion, we protect the environment, human health and the welfare of farm animals" (NSE 2018*b*, 3). The NSE has a

considerable stake in the role of the CHRS program and protecting the watershed's environmental features. For these reasons, the NSE is a critical interest in the Margaree-Lake Ainslie watershed.

The Nova Scotia Department of Fisheries and Aquaculture (NSDFA)

The minister for the Department of Fisheries and Aquaculture is the Honourable Keith Colwell (NSDFA 2018*b*, 2). The mandate for NSDFA is:

> The Department of Fisheries and Aquaculture has a legislated mandate to promote, support and develop the fishing, aquaculture, seafood processing and sportfishing industries that contribute to the economic, environmental and social prosperity of Nova Scotia's coastal and rural communities (NSDFA 2018*b*, 3).

To clarify the distinction between DFO and NSDFA, Darryl Murrant the manager of the Enhancement Program of the Inland division of NSDFA stated: "DFO manages the salmon fishery…NSDFA licenses access to both the trout and salmon fishery. NSDFA is provincial lead with regards to fish habitat." Murrant went on to mention work being done to improve salmon angling in the Margaree-Lake Ainslie watershed:

> …recent work on developing a warm water closure protocol developed by DFO Science with participation from local angler groups, guides, and NSDFA. This essentially provides a means for fisheries managers to quickly close the Margaree to angling when the temperature reaches a critical level for a prolonged period and also a way to quickly re-open it when conditions improve. This is to reduce the likelihood of increased mortality or injury to salmon as a result of angling (Darryl Murrant, email to author, March 16, 2019.).

The Margaree Fish Hatchery is a key entity within the NSDFA and stocks the river system with salmon and trout for recreational anglers (Tourism Nova Scotia 2017). In June of 2018, the Margaree Fish Hatchery released 80,000 smolts, and in the Fall of 2017, the organization released 85,000 parr into the river system (June 25th, 2018, FH1).

Conclusion

The aim of this research is to delineate the intersection of cultural practices, environmental sustainability, and recreational development, through a case study of the designation of the Margaree-Lake Ainslie River system as a Canadian Heritage River System and its impact on salmon fishing ecotourism, salmon conservation, and Indigenous treaty rights to access salmon for food, social, ceremonial, and livelihood purposes.[9] This research considers how recreational salmon fishing policies, regulations, and governance, their creation, alteration, and enforcement, reflect and represent Margaree-Lake Ainslie watershed cultural identities and their various resource management priorities. To illustrate these variables of cultural, natural, and recreational values semi-structured interviews and participant observation enabled me to speak with and observe watershed users. Using the theory of political ecology, I interpret how cultural, natural, and recreational values interact with each other. Political ecology allows insights into the competition, power, opposition, and commodification of natural resources. This thesis examines the role salmon have in the social, natural, and recreational spheres of watershed users. This research asks whose interests get heard and what is the competition between different watershed players.

Thesis Outline

The next chapter is a literature review of political ecology, the associated theoretical concepts, and usage throughout this research. Chapter three details the use of the watershed and the role salmon have in the lives of the Mi'kmaw. Chapter four describes the arrival of European

[9] The Aboriginal right to fish for food, social, and ceremonial (FSC) reasons stemmed from the Supreme Court of Canada ruling in the 1990 Sparrow case. The ruling also developed the Aboriginal Fishing Strategy. The objectives of the Aboriginal Fisheries Strategy include creating a management framework for FSC fishing, provide an outlet for Aboriginal participation relating to the management of fisheries, and to provide economic and self-sufficiency opportunities for Aboriginal communities (DFO 2012*b*).

settlers to the watershed in the mid-18th-century. The coming of settlers introduced new ideas and values for the watershed. Chapter five delves deeper into the case study of the Margaree-Lake Ainslie watershed as part of the Canadian Heritage Rivers System program. Chapter six is the contemporary section of this ethnography and an analysis of which I discuss what occurred to the watershed since the CHRS designation in 1998 up until the year 2018. Chapter seven explores more of the designation trends and the impact such a title brings but also current tensions between Mi'kmaw salmon harvesters, anglers, recreational users, and landowners.

Chapter Two: Theoretical Literature Review

The following literature review outlines the political ecology theory which will be used in this research to assist in assessing how Mi'kmaw, settlers, and recreational users understand the meaning-making of salmon. Political ecology is helpful in this research because this theory allows me to understand the various points of competition, power, and opportunities in asserting key players claim to control salmon stocks and whose priorities get met. This section provides a brief overview of the key concepts and ways of looking at political ecology from an anthropological point of view.

Theoretical Literature Review

Ecology from an anthropological perspective is defined as "[a] field of study pertaining to the interrelationships between living populations and their habitats (Hedican 2012, 268). Ecology in the anthropological sense does not only connect with the geological and biological composition of the landscape; humans too are interwoven into this understanding of ecology. Ecology from a social sciences interpretation stems from the field of environmental anthropology. Environmental anthropology emphasizes "…insights derived from ethnographic traditions, methods, and perspectives" and as Heatherington emphasizes "…important cross-cultural differences in the ways that people perceive, use, and care for the world around them" (Heatherington 2016). Within this discipline is the concept of cultural ecology. Cultural ecology, developed by Julian Steward, contains three essential methodological elements: the analysis of production in the environment, human association with said production, and comparisons of relationships of production to aspects of culture (Bohannan and Glazer 1988, 322). With these fundamental methodological criteria, cultural ecology is defined as an anthropological concept which "…focuses on the environmental effects of cultural behaviour in such areas as labour

patterns, exchange systems, and socio-political organization" (Hedican 2012, 266). Cultural ecology observes how societies adapt to their environment and compare and contrasts these adaptations across geographic regions (Bohannan and Glazer 1988, 328).

The theory is "[d]efined as the articulation of biology and history" but also as Arturo Escobar, an anthropologist, reminds his readers "…political ecology examines the manifold practices through which the biophysical has been incorporated into history—more accurately, in which the biophysical and the historical are implicated with each other" (Escobar 1999, 4). More broadly, ecology anthropologists examine how humans associate with their living and non-living surroundings. In other words, it considers how living and non-living forms are connected (Ingold 2012, 428). Escobar's approach to political ecology involves using the "…concepts of territory, biodiversity, life corridors, local economies and territorial governability, and alternative development" (Escobar 1998, 69). These elements provide a well-rounded and holistic basis to understand the meaning the environment holds for users.

The theory of political economy of the environment and identity examines the shared relationships between humans and their environments (Carrier and West 2009, 157). The theory examines the social, cultural, and political relationships that can help protect natural resources (Carrier and West 2009, 160). What needs to be questioned is the notion of hegemony in the pursuit of environmental protection. Hegemony is "…a socially determined category that describes mechanisms and dynamics associated with power, and which is grounded in historically situated social practice" (Calabrese and Briziarelli 2014). Environmental protection is influenced by and enforced (or not) by those able to harness political power to impose their ideas on others.

There are two orientations in the political economy of the environment and identity approach. The first is cultural orientation, which examines the meaning people give themselves and their environments and the connection between the two. The second is institutional political-economic orientation. Institutional political economic orientation studies the processes in how people access the environment and the condition of their environment (Carrier and West 2009, 160-161). The key idea behind the two orientations is to determine how institutional political-economic understandings reproduce and alter relationships between people and their environments (Carrier and West 2009, 161).

The theory of political ecology reflects the interconnected "…flows of matter, energy and information within integrated human-environmental systems" and unpacks "…the actual day-to-day struggles over control of resources" (Walker 2005, 74). Beliefs and values are embedded in institutions and influence environmental interests and administration (Carrier and West 2009, 163). When outsiders place their interpretations on a resource, their understanding may inaccurately reflect how others identify with the resource. A consequence becomes transforming the ecological-human relationship (Carrier and West 2009, 163). The ecological-human relationship is relatable in my research as there are two different interpretations of salmon and how the species should be utilized from Mi'kmaw and settler perspectives. The Euro-Canadian methodology of controlling salmon is the most pronounced and accepted. Salmon are managed through a catch and release fishery under the jurisdictions of the federal and provincial governments.

Biodiversity

Political ecology concepts such as biodiversity and biodemocracy help researchers interpret how people view and interact with their environments. To assist with identifying the

relationships between people and their environments the concepts of biodiversity, biodemocracy, social movements, and incommensurability are employed to focus this research towards understanding priority interests about the Margaree-Lake Ainslie watershed.

G7 countries influence biodiversity perceptions and present the environment as threatened due to the destruction of habitats and invasive species and advise management strategies that encompass research and planning (Escobar 1998, 56-57).[10] Escobar (1998) claims biodiversity concerns emerge through the formation of networks and actors who dictate, through policies, what ecological issues should be prioritized (Escobar 1998, 75). This understanding reflects how interwoven biodiversity is to the social, cultural, political, and economic spheres. For example, in the case of the Margaree-Lake Ainslie watershed, the biodiversity is important economically to the region for income recreational salmon angling contributes. The watershed is valuable economically, recreationally, and culturally for the Mi'kmaw and to the residents. Politically, the issues of recreational anglers, Mi'kmaw salmon harvesters, and landowners all come together in the political arena when arguing for fair regulations in using the watershed.

Biodemocracy

Biodemocracy is a key idea for Escobar (1998) argument when inquiring about biodiversity. The concept of biodemocracy highlights several key factors:

> …local control of natural resources; suspension of megadevelopment projects and of subsidies to diversity-destroying capital activities; support for practices based on the logic of diversity; redefinition of productivity and efficiency to reflect this logic; and recognition of the cultural basis of biological diversity (Escobar 1998, 59-60).

[10] The G7 countries are Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. These countries are some of the world's most influential and wealthiest countries. G7 meetings are held to discuss important global issues, such as climate change (Zimonjic 2018).

The biodemocracy concept allows researchers to explore further the many intersectionalities between humans and their environments by highlighting the desire for control over biodiversity. The connection one has with their environment goes beyond the ecosystem services provided by the environment. People relate to their surroundings because of their dynamic histories, reliance, and control.

Social Movements

In the field of anthropology, social movements are seen broadly as collective mobilization around any number of issues (Bonilla 2014). Social movements are a form of social action over an issue (Escobar 1992, 396). In the environmental sense, social movements are often a political approach to link territory to culture and identity between a community and ecological concerns (Escobar 1998, 60). Escobar (1998) finds that activists "…develop a conception of the territory that highlights articulations between patterns of settlement, use of spaces, and practices of meanings-uses of resources" (Escobar 1998, 69). According to Escobar, the definition of social movements is "… an attempt to show that social life, work, nature, and culture can be organized differently than dominant models of culture and the economy mandate" (Escobar 1998, 76). Social movements illustrate the interconnectedness biodiversity shares with human identity. The appreciation placed on the environment is rooted in one's sense of place. When disruption of this sense of place occurs, expression of dissatisfaction is mobilized by those who share this connection.

Incommensurability

One method of measuring the value of the environment is through the concept of incommensurability. Incommensurability arises when "…there is no common unit of measurement, but it does *not* mean that we cannot compare alternative decisions on a rational

basis, on *different* scales of value, as in multi-criteria evaluation" (Martinez-Alier 1995, 75, emphasis in original). As such, the economy does not have a standard to measure ecological value. A consequence of no standard could encourage environmental movements (Martinez-Alier 1995, 76).

Gender

Escobar (1998) and Martinez-Alier (1995) both reference gender as an essential concept for analyzing political ecology. Although gender is an important consideration, this was not a variable tested during the research process. Gender did not appear to make a difference in participant responses. For this reason, the concept is out of the scope of this research.

Theoretical Application in this Research

The use of political ecology presents the strengths of both the social and natural sciences relating to ecological theories (Walker 2005, 79). The key concepts and ideas listed in the previous section guide the analysis of the data for this research. Biodiversity (Escobar 1998) in this research refers to the natural resources found within the watershed. The species of choice in this research are the Atlantic salmon because of their significant role in the historical, cultural, and economic development of the region. Salmon serve as a vehicle in this research to understand the meaning placed on salmon for cultural, natural, and recreational purposes.

Biodemocracy (Escobar 1998) assists in viewing the numerous intersections between developing the Margaree-Lake Ainslie watershed for various forms of tourism, the extensive forestry operations taking place in the upper portions of the watershed, and the identity the environment provides for Mi'kmaw users, settlers and residents, and anglers. All of these interests reflect dynamic political pursuits for control over the preferred resource management of the watershed. Management in this research is seen in two different forms: the dominant

conservation policy implemented from the provincial and federal governments and the practice of *netukulimk* by Mi'kmaq. *Netukulimk* is a Mi'kmaw cultural ideology which is adhered to by some members. *Netukulimk* uses laws, beliefs, and behaviours in managing natural resources and self-action when harvesting. The essence of *netukulimk* ensures sustainability of both human and ecological communities as well as the larger spiritual world (Prosper et al. 2011, 1, 5-6). *Netukulimk* assures economic and nutritional needs are met but leaving enough of the resource to thrive in its environment and maintain productivity (UINR 2016*b*).

Social movement theory (Escobar 1998) relates to the concept of biodiversity on the basis of meaning-making placed on Atlantic salmon for the various actors. In particular, examining the questions of what salmon mean culturally, naturally, and recreationally for individuals. The responses to these questions reveal the meaning, values, and strategic positioning of the players concerning their priorities associated with biodiversity. There are a range of positions and priorities including protecting the watershed for future generations, maintaining the returning salmon stock, accessing the watershed for food, social, and ceremonial needs, and assuring free access for watershed users.

The result of social movements is related to incommensurability (Martinez-Alier 1995). Different cultural, natural, and recreational values lead to distinctive expressions of mobilization for what type of unit should be used to determine the worth of the environment and the actions necessary to protect interests for all watershed users.

An example of a social movement in the watershed is the Canadian Heritage Rivers designation. I argue that the Heritage Rivers program is a political movement to provide leverage to maintain the heritage values of a river system. Additionally, the program's incommensurability

(Martinez-Alier 1995) is related to cultural, natural, and recreational values identified by the CHRS program; its heritage values define the worth of the watershed.

Conclusion

The theoretical framework is the basis for understanding the numerous relationships individuals have throughout the Margaree-Lake Ainslie watershed. The political ecology model determines the value of biodiversity through assessing the political, economic, and cultural domains. Political ecology provides a lens into what is going on between competing interests and priorities in the watershed through the concepts of biodiversity, biodemocracy, social movements, and incommensurability. Comparing the various perceptions of meaning-making placed on salmon will expose the contending pursuits which emerge and contribute to tensions in the watershed.

Chapter Three: A Mi'kmaw Perspective of the Margaree-Lake Ainslie Watershed

Since time immemorial, the natural resources found in the Margaree-Lake Ainslie River system have served and continue to serve important roles for many of the Mi'kmaq. This chapter provides a historical examination of the Mi'kmaw in relation to the Margaree-Lake Ainslie watershed and the importance Atlantic salmon hold for the Mi'kmaq. The chapter examines the Supreme Court of Canada decisions which have impacted the Mi'kmaw traditional fisheries. The chapter concludes with an analysis of *netukulimk*, to which some Mi'kmaw individuals ascribe to as an alternative resource management practice.

The Mi'kmaq, Oral Traditions, and the Environment

This section details what the watershed would have provided for the Mi'kmaq before European settlement. The history is provided through the use of stories and other oral means to facilitate knowledge transmission to learn about the individual's surroundings and responsibilities towards the environment.

The Importance of Oral Traditions

The oral tradition comes from using language: stories, songs, legends, and music to pass on information and this is understood to be forms of cultural expression. The Mi'kmaq did not leave written histories; instead, they used oral histories such as storytelling (Wicken 2002, 26). Storytelling provided great teachings to Mi'kmaq children. Kerry Prosper, the Knowledge Keeper at St. Francis Xavier University and Councilor for Paqtnkek First Nation, described

storytelling as an educational part of life and a mechanism for knowledge transmission to the next generation:[11]

> Well, I guess it's a way of keeping history alive, passing down knowledge, events, family names, family places, hunting places and it's a form of teaching, I guess. Yeah, I guess it's important just to know what happened, how things happened, cause things tend to repeat themselves… (November 28, 2018, MR4).

As anthropologist Julie Cruikshank wrote, information was passed down by the retelling of the story, and each rendition of the information includes multiple messages in the story. The listener also plays an important role. The listener is expected to bring their experiences to the narration and learn new themes each time the story was told (Cruikshank 1992, 33). Salmon harvesting provided stories that were an integral part of Mi'kmaq education. As Prosper noted, stories of everyday activities such as hunting and fishing contained valuable language, skills, and morals to teach children and adults:

> …they'd learn who caught it, and what they did with it, how they'd cooked it, years that they had a lot of salmon, years that they didn't have a lot of salmon and you ask why and if there were bad years you can go well this happened we had to do this to make it right or so you learn a lot of things through conversation … that's how education was, just by talking, and doing, activities have their own language: hunting there's a language that goes with hunting, salmon fishing there's a language that goes with that, moose hunting there's a language goes with that, and the more activities you do the more language you develop from those activities words and everything and yeah it creates a story of, a history of those different activities… they learn the language with it and they talk about you know how they shared it or who cooked it, how good it was (November 28, 2018, MR4).

Taking into consideration the role stories have for the Mi'kmaq, a rich narration of history begins to unfold. Researchers rely on oral histories to piece together the use and appreciation of the watershed. It is through Mi'kmaw language, dance, and song which provide

[11] Paqtnkek is located on mainland Nova Scotia and is approximately a 127.9km from Margaree Forks (Google Maps 2019*g*).

the best avenues to understand how the Mi'kmaq lived with their environment (Lewis and Sable 2014, 278).

Mi'kmaw Relationship with the Margaree-Lake Ainslie Watershed Before European Arrival

The Margaree area for the Mi'kmaq is called *Wiaqajk* meaning "the mixing place" (Sable and Francis 2012, 52). This name reflects in-depth Mi'kmaq ecological knowledge for the watershed. Mi'kmaw place names reveal unique environmental features and indicate historical significance, available resources, and how to live one's life (Sable and Francis 2012, 50). Place names indicate a strong connection and reliance the Mi'kmaw have for the environment.

Clifford Paul, the Moose Management Coordinator at the UINR, believes the Margaree River was an excellent site to intercept all sorts of game including salmon. The Margaree area provided bountiful natural resources for the Mi'kmaq diet. Salmon made up one element of dietary needs but were not exploited or overhunted (July 17, 2018, MR2). Paul added that salmon would be used in many ways:

> I would imagine they [the Mi'kmaw] would dry it and smoke it, prepare for a feast, you know, those days prior to salmon declines, it was a major part of our staple (July 17, 2018, MR2).

Another participant indicated the relationship with the river system, and in particular, the salmon has remained the same for the Mi'kmaq. This relationship is one of great appreciation and reliance on natural resources. As the participant noted:

> I think they did just the same as they've had even when Europeans were here. It's part of a system, it's part of a sustainability. You're sustaining yourself physically, socially, and spiritually...I don't think anything changed…I mean the Europeans developed the commercial fishery, so I mean we probably had a heck of a lot more salmon prior to European arrival (August 7, 2018, MR1).

This narrative indicates salmon were plentiful and managed in a culturally appropriate manner. A great emphasis was placed on balancing human uses and ecosystem sustainability for the environment to remain plentiful for the next generation.

Historical Context of Atlantic Salmon in Mi'kmaw Society

Archaeologists have recovered artifacts dating to 4000 BCE which signifies salmon fishing was relied on by Mi'kmaq in Kings County, Nova Scotia.[12] For the Margaree-Lake Ainslie watershed few archaeological artifacts and features remain to indicate the degree of Mi'kmaw settlement in the region (Margaree-Lake Ainslie River System Advisory Committee 1996, 23). R. W. Dunfield's book, *The Atlantic Salmon in the History of North America,* provides a historical insight into First Nations use of rivers and their resources. Although these studies do not explicitly mention the Margaree-Lake Ainslie River system, more extensive reports can serve as an approximation for a generalized analysis of use. First Nations groups, in what is now referred to as the Maritime region of Canada, used salmon as a tradable item between tribes. Many groups had access to salmon-filled rivers. It was the Europeans who introduced the concept of salmon as a significant economic resource (Dunfield 1985, 12). Concerning the Margaree-Lake Ainslie watershed, Samuel Holland—a surveyor for the British (Thorpe 2003)—stated some Mi'kmaw groups travelled from the Bras d'Or Lakes to Margaree Forks. Here they would harvest salmon for five to six weeks and return to the Bras d'Or Lakes in the Fall (quoted in Dunfield 1985, 12). The Mi'kmaq used Lake Ainslie as a source for spearing eels and catching salmon or gaspereau. Other natural resources such as trees were used to make canoes, shelters, and tools (Virtual Museum 2018). These accounts of the watershed demonstrate a close connection the Mi'kmaw have with the Margaree-Lake Ainslie River system.

[12] Kings County is 451km from Margaree Forks (Google Maps 2019*h*).

The Meaning of *Plamu*[13]

Steps taken before and after the salmon harvest ensure respect for the salmon. By adhering to these practices, one is guaranteeing a continual supply of food (November 28, 2018, MR4). To prepare one's self for a salmon harvest, Kerry Prosper said the following protocols would be performed:

> …well usually people prepare themselves like mentally you know, spiritually, they smudge or offer tobacco. If you are going to a certain river to fish and you're basically asking for good luck or that you catch some fish. And when you do you give thanks and you share the food with your family and community (November 28, 2018, MR4).

Harvesting responsibilities extend to handling methods. Mi'kmaq children learning to fish are taught the importance of releasing females (MAPS 2013, 20-21). Protocols also aid to restrict stock depletion. If there were not enough salmon in the rivers to harvest, another species is harvested to ensure conservation levels are in balance (UINR 2015). Mi'kmaq harvesters establish the number of salmon in a pool to decide how many, or if any, will be harvested. The harvest of salmon is based on need. After harvesting a pool, the pool is not used again for that season (Denny and Fanning 2016, 10). Most importantly the whole salmon is used, there is no waste. The inedible parts are utilized in other ways, for example becoming fertilizer for plants or medicines (Denny et al. 2013, 13). These practices illustrate careful conservation measures to ensure salmon stocks remain plentiful for future harvests and for future generations to rely upon.

Salmon for the Mi'kmaq have many purposes, and as Kerry Prosper recapitulated, salmon's importance spreads across Mi'kmaw culture:

> …a basic food source, a very good source of food and energy. And the relationship with the salmon and its yearly journey up river and its reproductive cycle really instills strength, endurance, resilience just by its way of life and really reflects on how our people at the same time living in that same manner. How it contributes to our physical, spiritual wellbeing, learning from it and actually adapting and you know taking on some of its spiritual and physical strengths you know in our daily lives and journey here on

[13] The Mi'kmaw word for Atlantic salmon.

> Earth. That is the thing we try to embrace from all living things that we use is to hopefully get a part of what they have endured life here. To be part of it… (November 28, 2018, MR4).

From this description, salmon encompasses many facets of life: natural, cultural, and spiritual realms. Salmon serve as an educational tool to facilitate ethics for nature, and this is passed down through teachings, stories and oral transmissions, and hands-on experiences.

The Mi'kmaq, Settlers, and the Desire for Salmon

The Mi'kmaw intend to live in harmony with natural resources. All parties maintain a respectful relationship. With the arrival of European settlers in Mi'kma'ki, they did not adhere to the practices of conservation exercised by the Mi'kmaq. Clifford Paul stated:[14]

> …when you're feeding your family, when you're feeding your community, there's no outside influence. It's you and the river, the land, the spirit of the land, all these things is a respectful it's a respectful existence. And then when the non-aboriginal came, and they seen the fish, they would fill their nets, fill their buckets and without any due regard for future generations (July 17, 2018, MR2).

The Mi'kmaw ethos of protection for future generations reflected sustainability in harvesting natural resources. This practice is referred to as *netukulimk* and ensures the removal of resources are on an as-needed basis. As Kerry Prosper summed up:

> …*netukulimk* is a word about gathering from the land to provide for your well-being economically, physically, your health, and everything. Without really changing and altering the lifecycles that you have come to depend on. It is like developing the consciousness of what you're doing, and how you provide for yourself (November 28, 2018, MR4).

As more settlers arrived, the relationship the Mi'kmaq had with their environment changed. The development and implementation of colonial laws did not reflect traditional

[14] The traditional land of the Mi'kmaw Nation. The region encompasses seven districts, encompassing the Gaspé Peninsula in Quebec, the Maritime provinces, the southern part of Newfoundland, and a portion of Maine, USA (Battiste 2016, 71).

Indigenous resource management strategies (McMillan and Prosper 2016, 633).[15] Around the nineteenth century in Atlantic Canada, due to the growing influx of British immigrants, the government determined the Atlantic marine species were common property. Consequently, this placed additional stress on an already limited Mi'kmaw resource. As a result, the Mi'kmaq were forced to turn to alternate, non-Mi'kmaw ways of obtaining food and income (Barsh 2002, 26-27).

Settlers introduced laws and management practices to control the salmon fishery (Dunfield 1985; MacDougall 1922, 423). The Europeans took natural resources from the Mi'kmaw lands and ignored treaty responsibilities (Barsh 2002, 26).[16] The treaties signed between Indigenous and British officials were supposed to guarantee that Indigenous peoples could hunt and fish with no repercussions. As stated in the 1752 Treaty signed by the Mi'kmaw Nation and the British Crown, article four explicitly affirms "…the said Tribe of Indians shall not be hindered from, but have free liberty of Hunting & Fishing as usual…" (Indigenous and Northern Affairs Canada 2016). This treaty promise was not kept by the British. When the British expanded across Mi'kma'ki, they seized subsistence areas belonging to the Mi'kmaq. The repercussion for the Mi'kmaq was a loss to their traditional resources or locations. As well, the development and implementation of colonial laws did not reflect Indigenous resource management strategies and failed to include the Mi'kmaq in natural resource stewardship. With

[15] Colonial is understood in this research as the "…dominant form of cultural exploitation that developed with the expansion of Europe over the last 400 years" (Ashcroft 2012).

[16] The treaties signed between the Mi'kmaw and the British were of peace and friendship. The first treaty with the Mi'kmaw Nation came in 1726. The agreements of the treaty were as followed: the Mi'kmaq would continue peaceful relations with the settlers, the Mi'kmaq would allow settlers to live in areas where their villages were established at the time of signing the Treaty, Britain must protect the lands belonging to the Mi'kmaw Nation, the Mi'kmaq can continue to hunt and fish as they did prior to settler's arrival, and the Mi'kmaq and the British would continue trade relationships (Palmater 2016, 32-33). The peace and friendship treaties are one of respect and not of land transfer.

these actions, the Mi'kmaq endured poverty, and food insecurity led to malnourishment (McMillan and Prosper 2016, 633). As a result, the Mi'kmaq were forced to turn to alternate, non-traditional ways of obtaining food and income (Barsh 2002, 26-27).

Indigenous Rights, the Fisheries, and the Supreme Court of Canada

This section provides a greater context about the fight for Treaty recognition relating to Indigenous hunting and fishing rights. Although Atlantic salmon are the focus in this study, the Supreme Court of Canada decisions relating to other natural resources has impacted the Mi'kmaq and access to resources like salmon. Such decisions have assisted in recognizing treaties as binding agreements and respected by everyone to uphold the promises made in the treaties by both the Mi'kmaw Nation and the British Crown. The protection of treaties falls under section 35 of the Canadian Constitution.

The Sparrow Outcome

In the 1990 *R vs. Sparrow* decision, the Supreme Court of Canada recognized Indigenous rights to harvest fish for FSC reasons and the decision acknowledged that harvesting for FSC purposes is more important than the recreational fishing industry (KMKNO 2010). FSC harvesting takes priority after conservation levels are met (DFO 2012*b*). The defendant, Ronald Sparrow, of the Musqueam First Nation in British Columbia, was charged with fishing with a net longer than what the license allowed. In appealing his conviction to the Supreme Court of Canada, Sparrow claimed:

> …his aboriginal right to fish was protected under Section 35(1) of the Constitution Act, which recognizes and affirms the existing aboriginal and treaty rights of aboriginal peoples in Canada, and that the regulations imposed in the licence granted to his Band were therefore inconsistent with the Constitution" (King 2011, 1-2).

The Supreme Court of Canada indicated that Indigenous peoples harvesting food are the first priority and protected under the Canadian Constitution. Once meeting this requirement, a

commercial fishery can take place (King 2011, 2). The Sparrow decision demonstrated Aboriginal peoples "…have a legal stake in resource conservation and management" (Mi'kmaq Grand Council et al. 1993, 21). The Sparrow outcome indicated that governing authorities could not determine biodiversity conservation and extraction. Decisions must be made using many points of view.

The Sparrow Test

One of the most critical aspects of the Sparrow case was the development of the infringement test. The Sparrow Test outlines measures to verify if an Indigenous right is present by illustrating what infringement is, and why the government may assert infringement on this right (Salomons and Hanson 2009). The Sparrow Test asks the following questions: "… if the limitation is found to be unreasonable, does it impose undue hardship and does it deny to the holder of the right their preferred means of exercising that right?" (Isaac 1993, 211). Salomons and Hanson (2009) describe infringement as:

- Unjustifiable hardship placed on the First Nation;
- Determined by the courts to be unjust;
- The right-holder is unable to practice their right
  (Salomons and Hanson 2009).

Infringement is allowed if the following statements are evident: "First, is there a valid legislative objective? Here the court would inquire into whether the objective of Parliament in authorizing the department to enact regulations regarding fisheries is valid" (R v. Sparrow 1990, 1079). Infringement does not include public interest but does apply to natural resource conservation (*R v. Sparrow* 1990, 1079). Furthermore, the second portion of this test deals with the Crown and Aboriginal peoples:

> If a valid legislative objective is found, the analysis proceeds to the second part of the justification issue: the honour of the Crown in dealings with aboriginal peoples. The special trust relationship and the responsibility of the government vis-à-vis aboriginal

> people must be the first consideration in determining whether the legislation or action in question can be justified. There must be a link between the question of justification and the allocation of priorities in the fishery. The constitutional recognition and affirmation of aboriginal rights may give rise to conflict with the interests of others given the limited nature of the resource (*R v. Sparrow* 1990, 1079).

Following the Sparrow outcome, the Department of Fisheries and Oceans created the Aboriginal Fisheries Strategy (AFS). In essence, this strategy stated that Indigenous peoples could catch fish for subsistence, share their catch at celebrations, ceremonies, and with other individuals in their communities (King 2011, 2-3). The goals of the AFS as defined by the DFO:

- To provide a framework for the management of fishing by Aboriginal groups for food, social and ceremonial purposes.
- To provide Aboriginal groups with an opportunity to participate in the management of fisheries, thereby improving the conservation, management and enhancement of the resource.
- To contribute to the economic self-sufficiency of Aboriginal communities.
- To provide a foundation for the development of self-government agreements and treaties.
- To improve the fisheries management skills and capacity of Aboriginal groups. (DFO*b* 2012).

The Sparrow decision is relevant to the Margaree-Lake Ainslie watershed because Atlantic salmon are not are plentiful in now in the region. Enough salmon is returning to the watershed for Mi'kmaw to harvest, but not enough to sustain a recreational salmon fishery in which the fish are captured. The Sparrow decision raises the issue of who should have access to salmon and how effective policies are to manage salmon.

The Marshall Decision

One of the most pivotal rulings came in 1999 regarding Donald Marshall Jr. and his treaty right to catch and sell eels in order to make a moderate livelihood. Charged with selling eels without a license, fishing during a closed season, and fishing without a license, Marshall argued that he had the right to do so as indicated in the 1760/61 Treaties (*R v. Marshall* 1999, 456). The Supreme Court of Canada ruled that indeed, Marshall held a treaty right from the

1760/61 Treaties in which a Mi'kmaw person could earn a moderate livelihood by way of the commercial fishery (Battiste 2016, 82; Metallic 2016, 49). Mi'kmaq could only sell fish to provide for necessaries (Harris and Millerd 2010, 90). The decision further indicated that the 1760/61 Treaties are legitimate, and the Mi'kmaq can "…continue to provide for their own sustenance by trading the products of their hunting, fishing and other activities for what in 1760 was termed their 'necessaries'" (Henderson 2016, 110). The judgement signified the Mi'kmaw could continue to have access to their commercial fishery as long as they upheld their promises of the Treaty which was not to bother the British settlers (Wicken 2002, 234-235).

Due to a lack of respect and intentional denial of treaty rights, the Mi'kmaq harvesting resources for subsistence or to earn a moderate livelihood is often frowned upon by Euro-Canadians. In the case study of the Margaree-Lake Ainslie watershed, the tensions are brought on when Mi'kmaw harvesters use the watershed for FSC purposes, while non-Mi'kmaw individuals cannot remove salmon.

Netukulimk

Two different views of conservation and sustainability are considered in this research. The primary understanding of conservation is through the means of scientific data and management introduced by settlers. Some individuals practice the Mi'kmaw concept of conservation and sustainability for one's self and ecosystem through *netukulimk* (King 2011, 3). There are many elements which make up the Mi'kmaw concept of *netukulimk*. *Netukulimk* refers to meeting personal needs as opposed to earning great economic wealth (Barsh 2002, 17). *Netukulimk* reflects law, beliefs, and behaviours in resource management (Prosper et al. 2011, 1). Practicing *netukulimk* is understood to achieve "…adequate standards of community nutrition and economic well-being without jeopardizing the integrity, diversity, or productivity of our

environment" (UINR 2016*b*). Following *netukulimk* encourages or fosters the sustainability of both human and ecological communities and the spirit world. In other words, living or practicing *netukulimk* assures only the resources that are needed are taken, so minimal waste or depletion of the resource occurs (Prosper et al. 2011, 5-6). To maintain healthy stocks harvesters did not target one specific species. Instead what was caught varied depending on the season and camp location (Barsh 2002, 17). Leadership was also required to ensure *netukulimk* was successfully adhered to by the Mi'kmaq:

> The leadership of the Mi'kmaq managed the constant need to supply sustenance and *netukulimk* was mobilized as a management structure for harvesting (Prosper et al. 2011, 6; emphasis added).

From a general perspective, aquatic species served many roles in the Mi'kmaw culture. Aquatic species provide sustenance and trade, but also a source of cultural expression:

> The significance of Mi'kmaw relationships with marine life was incorporated in every facet of their pre and early contact life, from cosmological belief systems to political and family organization. The premises of Mi'kmaw traditional fisheries were both spiritual and practical, focusing mainly on the wellbeing and survival of families and community members (McMillan and Prosper 2016, 631).

Expanding on this claim by McMillan and Prosper (2016), a number of Mi'kmaq individuals see the salmon as a gift from Mother Earth. To recognize this salmon is used in ceremonies, utilizing all parts as possible and returning unused portions to Mother Earth. The Mi'kmaw assessed the salmon stock based on determining the population of the stock and deciding how many could be harvested. Conservation in this sense refers to the halt in fishing when social and economic needs are met, or when the ecosystem cannot sustain further exploitation (Denny and Fanning 2016, 9).

In the context of the Margaree-Lake Ainslie watershed, the lack of practicing *netukulimk* caused the eel population to decline. Up until the 1970s, some Mi'kmaq individuals would harvest eels from the watershed to sell. After this time, the eel industry became operated by a

non-Mi'kmaw commercial industry. Those who customarily relied on the eels from the Margaree River lost a portion of their annual income. As well, the industry had less focus on conserving the eel population for future generations of local use (Barsh 2002, 27).

The principle of *netukulimk* is evident in the following dispute between Mi'kmaq harvesters from Whycocomagh and their right to fish or hunt (McNeil 1990*b*, 22). This right to hunt and fish is fundamental to the Mi'kmaq and evident in their narratives, but that right entails responsibilities. Ian McNeil, a reporter for the *Inverness Oran*, interviewed Joe Googoo on the topic of hunting and fishing and sharing the bounty with others in the community. Mr. Googoo expressed to McNeil when he hunted and fished, the food went to his family first, and any extra given to family and friends who needed his catches (1990*b*, 22). When hunting, Terry Gould told Ian McNeil, he wasted nothing. He gave all parts of his hunt to his family. Gould further noted the Mi'kmaq know what conservation is and they are not going to hunt and fish throughout the year (1990*b*, 23). Another interviewee stated he loved to eat deer and moose meat but relied on others to supply the meat (McNeil 1990*b*, 23).

Although these accounts are not related to the Margaree-Lake Ainslie watershed, the narratives demonstrate that local Mi'kmaq residents depend on natural resources for subsistence. What is caught is not wasted, and given to family and community members who are unable to hunt or fish. These first-hand accounts are important to understand the Mi'kmaq challenges and settler conceptions of resource exploitation and conservation. Mi'kmaq understandings and practices are rarely incorporated into definitions of conservation because self-limitation, sharing, respect for the environment, and equal distribution does not conform to Western practice. Western understandings of conservation deal with policies and government involvement. There is no spiritual aspect or sustaining one's self or community as evident in Mi'kmaw management.

Indigenous Traditional Ecological Knowledge Importance

Traditional Ecological Knowledge (TEK) has multiple meanings in academia. In this research, TEK is a philosophical understanding incorporating values and beliefs, and this ideology can impact how someone responds to changes in their environment (Turner and Clifton 2009, 181). TEK is made up of beliefs and information passed down from generations of ancestors regarding the way of life practiced. This information is not learned from books but rather through oral and cultural transmission (Berkes 2004, 627). TEK provides a human perspective on the local ecosystem (Alexander et al. 2011, 477). TEK assists in understanding environmental conditions and patterns which are critical for proper resource management. This knowledge is collected over a series of thousands of years and can significantly assist and complement Western scientific data in understanding climatic trends and species fluctuations (Turner and Clifton 2009, 186).

TEK provides value for this research because the concept further relates to the models of Two-Eyed Seeing and *netukulimk*. Using TEK to support Western science is important because of the long, rooted knowledge individuals with TEK have accumulated for conservation and preservation of natural resources (Turner and Clifton 2009, 181). In this sense, Mi'kmaq TEK is reflected in *netukulimk* and traditional stories of hunting, gathering, and the natural world can complement Western science to find correlations.

Two-Eyed Seeing

The Margaree-Lake Ainslie River system is home to many cultural groups, and therefore careful attention to management decisions relating to natural resources must be applied. Without inclusive management, issues arise between cultural groups regarding who has the "correct" method of conservation and resource management practices. The concept of Two-Eyed Seeing

acts as a vehicle in providing a voice for minority cultural groups to make sure the inclusion of their knowledge in creating a management plan. Two-Eyed Seeing, coined by Mi'kmaq Elders Albert and Murdena Marshall, denotes seeing the strengths and weaknesses of both Western and Mi'kmaq frameworks (Denny and Fanning 2016, 16). Everyone holds specific knowledge, and when combined with other ideologies a collective conscious develops. The essence of Two-Eyed Seeing is many worldviews used in conjunction to understand a problem (Bartlett, Marshall, and Marshall 2012, 336). Each perspective has merits, and these values must be used to create a culturally appropriate and effective conservation strategy.

Conclusion

The Mi’kmaw have been present in the watershed well before European settlement, as such, a library of vast environmental knowledge developed and advanced with the changing ecological conditions. The Mi’kmaq are in tune with the ebbs and flows of their environments. They are knowledgeable when and where to harvest natural resources. Delineating the Mi’kmaw perception provides one aspect of how the watershed is used culturally, economically, and personally. The insights can be compared and contrasted to settlers’ connection with the watershed.

The following chapter outlines changes to the watershed when settlers arrived. Examining settler actions and perspectives contextualize the dynamic descriptions in the watershed because settlers brought their mechanisms, ideologies, and practices for natural resource management and cultural consumption. The arrival of settlers was a significant turning point in how natural resources, in particular, salmon, were utilized and the differing values placed on salmon.

Chapter Four: The Arrival of Settlers (1750s to 1983)

The influx of settlers is a paramount time in the history of the watershed, as new ideas about resources and management dominated the landscape. The interactions, or failure for settlers to interact positively with many of the natural resources relied upon for Mi'kmaw created several tensions within the watershed which remain (such as contesting views on salmon conservation and salmon harvesting for FSC purposes). This chapter examines the arrival of settlers to the Margaree-Lake Ainslie watershed and how they utilized the region. The early commercial and recreational salmon addresses the desire settlers had for such a resource. The chapter points to early salmon fishery regulations and attempts at controlling the important salmon resource.

The Western history of the watershed began when the first settlers reached this region from France (referred to as the Acadians) arriving by boat throughout the 18th-century. By 1799, Scottish Highlanders arrived in the watershed and were followed by Irish and English settlers. (Department of Lands and Forests 1989-90, 3). The other significant wave of immigrants who came to the watershed were Dutch settlers arriving in the 1950s (Beaton 2017, 10-11). The arrival of settlers brought a shift in the relationships the Mi’kmaq had with the environmental resources in the watershed. The new immigrants constructed industrial operations around the watershed such as tanneries, sawmills and undertook forestry work (Department of Lands and Forests 1989-90, 3). The availability of such natural resources was used to satisfy cultural and economic needs, but also shaped how different cultural groups interact with the Margaree-Lake Ainslie Watershed.

The arrival of European settlers to the Margaree-Lake Ainslie watershed changed the dynamic of resource extraction, especially as it relates to the use of salmon. An important

distinction must be made between the traditional fishery and subsistence fishery (Davis and Ruddle 2010, 891). The traditional fishery used by settlers utilized the watershed's resources in the commercial industry. The subsistence fishery relates to the Mi'kmaq who fished for food and trade. Although the Mi'kmaq economy focused on hunting and gathering, they did not exploit the natural resources (Wicken 2002, 26). Clifford Paul believes when the Europeans arrived, no respect was given to the salmon:

> …when you're feeding your family, when you're feeding your community, there's no outside influence. It's you and the river, the land, the spirit of the land, all these things is a respectful it's a respectful existence. And then when the non-aboriginal came, and they'd seen the fish, they would fill their nets, fill their buckets and without any due regard for future generations (July 17, 2018, MR2).

During approximately 400 years, the watershed has experienced a significant influx of non-Mi'kmaw individuals who value the economic benefits the natural resources provide. The value placed on such resources is to sustain and develop the local communities' economies.

The Early Salmon Fishery

During the 1400-1500s immense fishing activity by European fishermen caught salmon in the area now referred to as Eastern Canada. The salmon was then shipped across the Atlantic Ocean to places such as the Mediterranean region (Dunfield 1985, 23). By the Early Colonial period (1600-1700), the French settlers used salmon in the Margaree River as an important subsistence resource and to satisfy any other needs, but the consensus among academics believe the French impact on the salmon population at this time was minor (Dunfield 1985, 27). Samuel Holland's 1768 account of the Margaree River upholds this belief. He stated the region is known as Salmon River and was plentiful of salmon. The Mi'kmaq fished there all year long and camped there with their families (1935, 62). The arrival of European settlers brought alternative harvesting measures such as nets and traps (Chase 2003, 3).

The salmon industry within Nova Scotian rivers spiked due to an increased number of settlers. To manage the resident and their consumption of salmon, the region in 1786 passed legislation to reduce exploitation and introduce management of the resource (Dunfield 1985, 62). Despite such regulations, the outcomes were poor due to ineffective implementation and enforcement (Dunfield 1985, 80). Additionally, the sea and coastal areas remained unregulated. Massive exploitation occurred by companies who shipped salmon to Europe, the Mediterranean, and the United States (Dunfield 1985, 63).

The considerable salmon stock present provided settlers to develop a salmon market. Salmon was not just an edible commodity but could be used for a recreational fishery.[17] Around the 18th-century, recreational angling became a popular activity in the region and practiced by the European elite (Dunfield 1985, 4-5). By the middle of the century, various military ranks were practicing the sport. Many historians believe it was this group who spread the activity to other parts of the imperial world. Angling for British military personnel in North America was believed to be an activity to get away from the garrison and uncivilized environments (Dunfield 1985, 4-5). With such rapid changes, the Europeans altered the Mi'kmaq-salmon subsistence

[17] Recreational fishing (also referred to as angling or sportfishing) is an activity in which the fish caught are not used to meet nutritional means. The fish is caught using a hook and line along with a rod and reel (Arlinghaus et al. 2007, 76-77). Historical accounts place recreational fishing development in Europe, in particular, Middle Age England as the origin of the activity (Arlinghaus et al. 2007, 81). During the Middle Age in England, recreational fishing was an activity of the elite class, and not practiced by commoners. For the commoner to show eliteness, they could not fish for subsistence, but release their catch as this was also adhering to the practices of being a gentleman. By the 19th century, recreational fishing became an exclusive activity of the elite (Arlinghaus et al. 2007, 82-83). By the middle of the 19th century, various military ranks were practicing the sport, and many historians believe it was this group who spread the activity to parts of the imperial world. Angling for British military personnel in North America was believed to be an activity to get away from the garrison and uncivilized environments (Dunfield 1985, 4-5). In other words, this form of tourism originated from an elite class: "…as a small-scale, elite enterprise, tourism of the nineteenth-century Grand Tour variety reflected early liberal capitalism's nascent entrepreneurial structure" (Fletcher and Neves 2012, 63). Moreover, the sports angling popular today in North America's rivers was a sport brought over from the European elite class. As such, the sport is representative of Western influence, ideologies, and oppression still maintained today in North America. Recreational angling is representative of power and status. The activity was not to protect the biodiversity, but to show off one's prestige.

relationship by introducing commercial and recreational industries without proper resource management (Dunfield 1985, 17).

It was not until 1813 when the watershed established its permanent salmon fishery (Dunfield 1985, 71). Minutes from the Freeholders of Margaree meeting on February 1st, 1813 indicated settlers needed laws to preserve salmon stock. For this year, the regulations included nets which had to be less than thirty Fathoms long and the distance between the nets could only be fifty Fathoms (MacDougall 1922, 423). Following these regulations, in his mid- 19th-century account of Cape Breton, Reverend Uniacke noted salmon were plentiful around the Island (1958, 63). In 1860, sports fishing became the main attraction in North America, and the Margaree River was one of the best locations in Nova Scotia (Dunfield 1985, 150-151). By 1861, the only river worthy of fishing and earning a profit in his opinion was the Margaree River (Uniacke 1958, 158, 161).

Commercial regulations came in 1865 when Nova Scotia attempted to control the salmon fishery through the introduction of seasons and weekend closures. If someone was caught fishing during this period, there was a $40 fine. The use of bag nets became illegal, and nets could only cover 1/3 of the river. Many of these regulations were abused and not adhered to (Dunfield 1985, 136). These examples of settler management strategies differ greatly from the Mi'kmaq and *netukulimk*. The commercial and recreational industries contributed to the decline of salmon stock over a relatively short period. Additionally, the management procedures established by the settlers were not adhered to or enforced by the Nova Scotia Legislature, leading to overharvesting and mishandling practices.[18]

[18] The Atlantic salmon commercial industry closed in 1998 (Chase 2003, 4-5).

Consequently, the policies of 1813 and 1865 were not sufficient. As early as 1869, watershed users noticed signs of Atlantic salmon depletion and voiced these concerns to government officials (Chase 2003, 4). Richard Dashwood noted an interesting encounter from his mid-1800s experience in the watershed:

> The poaching on the Margaree is far worse than in any other river in North America, the settlers spearing and netting the pools nightly, in open defiance of the law. We were much annoyed by their spearing the pool opposite our camp, and reported it to the chief warden, who was afraid to do anything… (1871, 76).

Dashwood did not like his experience with the Margaree River because it was too civilized and on Sundays, there were a "…crowd of loafers and gaping natives" (1871, 77). In this interpretation, Dashwood did not account for the social and cultural uses for salmon. The locals have a different perspective on using biodiversity rather than support leisure but to sustain them nutritionally.

Although regulations were not adhered to sufficiently, some narratives about the watershed indicate wardens did indeed ensure poachers faced penalties. Despite the need for food, poaching was illegal, and the fines were substantial. Even if one needed food for their family and were caught poaching, wardens did not care, and they would still fine the individual (Caplan 1981, 25-26). The enforcement of regulations varied throughout the history of the watershed. In some years the wardens enforced regulations, while other years they did not and Dashwood (1871) and Caplan (1981) present two differing experiences about salmon regulations execution.

In a guidebook for tourists, Charles Roberts (1891) wrote about various locations in Nova Scotia. Roberts (1891) refers to the Margaree River as a place "…where the trout and salmon swarm" (210). He further stated that the river is known as a popular fishing destination (Roberts

1891, 210). This excerpt is the only information provided to the reader. Roberts does not acknowledge policies or an unstable salmon population.

Examining the various historical accounts of the Margaree-Lake Ainslie river system reflects fluctuations of strong salmon stock and times of low, returning salmon. To determine whether human or environmental causes caused these is beyond the scope of this research. The historical record shows there was a concern for salmon, as evidenced by the evolving policies and social mobilization associated with creating regulations. It was not until 1979/80 when recreational salmon regulations came into effect for the Margaree-Lake Ainslie watershed to have a catch and release fishery (July 25, 2018, SA1).

Historical Anecdotes of Personal Salmon Use

The concern for the Atlantic salmon has been an issue for some time. Personal accounts from *Cape Breton's Magazine* indicated this worry as well as a difference how locals and tourists engaged with the river system. At one point in time, the Margaree River was filled with salmon (Caplan 1981, 25). By the mid-20th-century, watershed users do not know why there is a decline in the Atlantic salmon returning to the Margaree River (Caplan 1980, 10). With over 41 years of using the Margaree River, resident Johnny White told *Cape Breton's Magazine* he noticed a decline of the salmon stock and left the guiding business. As White notes, when he began his salmon guiding business, he did not remember a salmon quota system in place. At the time of the interview with *Cape Breton's Magazine*, the quota is two salmon per day (Caplan 1980, 10).

With regards to consuming salmon, there was also a stark difference between locals and tourists. The locals did not waste the salmon they caught, as they used all the parts in some way. If someone had extra, they would give the salmon to someone in need (Caplan 1981, 28). On the

contrary, the men and women visitors who fished at the Margaree River were mostly from the United States (Caplan 1980, 5, 9). Elward Hart told *Cape Breton's Magazine* at the end of one salmon season, a large group from the United States left a pile of salmon in the ice house at the hotel they stayed at because nobody in the group had a use for the extra (Caplan 1981, 28). The settlers, although disrupting the natural rhythm of salmon, their decedents highly relied on salmon as part of their sustenance. Visitors to the watershed had a differing ideology. For visitors, salmon served as a dispensable commodity.

Malcolm Gillis, a Gaelic Bard from Upper Margaree, composed the song *Am Bràighe*, "The Breas of Margaree" before his death in 1929 (Creighton and MacLeod 1979, 66). The song in its English translation praises the River and recognizes the beauty of the region including the flora, fauna, and it's cold and pure water. One can always hear the sounds of the river which is the perfect backdrop at community and personal events. Perhaps Gillis is alluding to the River serving a central role in the lives of residents. The river system symbolizes a natural embodiment for community members who come together and share their happiest moments in the presence of the river. The river is not only serving a biological role but assists in creating and enforcing social relationships.

In verse five, Gillis stated he would forever love Margaree as long as the river flows to the sea (Creighton and MacLeod 1979, 66). The verse illustrates the beauty of the watershed and the importance it holds for residents. In the interest of this research, verse six explicitly refers to the salmon and anglers. In its English translation, the verse says: "Many a man fishes for salmon around your fair shores; gentlemen from England come over to pass summer near you" (Creighton and MacLeod 1979, 66). This verse speaks to the culture at the time. Recreational anglers from England continue to spend time in the region. Although Gillis' poem is an ode to

the beauty of the watershed, much of the detail draws upon settler history, providing significant income and subsistence for residents. In particular, what settlers perceive as ideal biodiversity values.

Conclusion

The arrival of settlers in the mid-18th-century to the Margaree-Lake Ainslie watershed had a different understanding of how natural resources should be used and managed. Settlers introduced fishing regulations, a commercial fishery, and a recreational fishery. Consequently, the returning salmon population fluctuated, and salmon regulation enforcement was poor.

The narratives of hardship, survival, and consumption of the watershed shaped the modern discourse of its history. The Margaree-Lake Ainslie watershed at this time served many purposes for settler descendants from an economic resource to providing subsistence. The river system was the main artery of the communities and served as a social centrepiece.

Presenting the settlers' use of the watershed speaks to the differing relationships found throughout the region. Settler's conservation regulations became the dominant form of resource management. By the end of 1983, the Margaree-Lake Ainslie watershed was set to become a focal point of highlighting the natural, cultural, and recreational values through the Canadian Heritage Rivers program.

Chapter Five: The Canadian Heritage Rivers System (1984 to 1998)

The Margaree-Lake Ainslie watershed has a complex history of Mi'kmaq and settler use and management. Together these histories form the collective consciousnesses of what the watershed represents culturally, socially, naturally, and economically. To signify the natural, cultural, and recreational importance, a significant milestone in the history of the watershed was the designation as a Canadian Heritage Rivers System in 1998.

The case study of the Margaree-Lake Ainslie watershed consists of reviewing CHRS and Canadian Heritage Rivers Board (CHRB) documents, *Inverness Oran* newspaper articles, and semi-structured interviews with key players at the MSA, Margaree-Lake Ainslie Heritage River Society, the DFO, NSE, NSDFA and residents and users of the watershed. This chapter will outline the CHRS program and the requirements for the nomination and designation stages. The Margaree-Lake Ainslie River system is analyzed as to what values stood out for nominating this particular river system. As well the formation of the overseeing organization for the designation the Margaree-Lake Ainslie Heritage River Society.

The CHRS Program

A goal of the CHRS program is to build an iconic river system curriculum which exhibits a sense of pride for all Canadians: "By the inclusion of such rivers in a single national system, they become representative of Canada's river heritage as a whole, thus reflecting a 'Canadian value'" (CHRB 2017, 24). The selection process of river systems is done through a rigorous nomination process.

Designation and Nomination Process

Not all rivers can receive the righteous title as a Canadian Heritage River. There are seven steps for CHRS nomination and designation. These checks and balances assure that the river is a good representation of natural, cultural, and recreational values in Canada:

1. Discuss potential river nomination with provincial/territorial Canadian Heritage Rivers Board Member or CHRS Secretariat to see if cultural or natural values are credible.
2. A pre-screening process is conducted to ensure the river can be a candidate for the program. The pre-screening process is a detailed report of the proposed watershed. At this stage, a Board member or the Technical Planning Committee will outline CHRS policies regarding natural and cultural values.
3. Completion of a background study. This study follows a successful pre-screening report and support for nomination from the provincial/territorial government. The background study critically assesses the river's natural, cultural, and recreational values.
4. Nomination Document: this stage builds off the Background Study, but substantial community support must be evident for the nomination. As well a convincing claim must be made of the natural, cultural, and recreational values the river possesses.
5. Review and Approval: if the river meets all the requirements, the Board will then ask the appropriate provincial/territorial minister and Federal Minister of the Environment for approval.
6. Producing a Designation Document: this document outlines how the river will be managed to maintain natural, cultural, and recreational values. Once designated there can be no new regulations for the river.
7. Review and Approval of the Designation: the Technical Planning Committee and the Board reviews designation document and states their proposal to the provincial/territorial minister and Federal Minister of the Environment to recognize the river as part of CHRS. (CHRS 2017*d*)

The criteria used to determine heritage and recreational values in the Background Study included the quality and quantity of the value and the diversity of the values found within the river corridor. These values were ranked 1 (low) to 7 (high). Once the rankings were complete, the results went to the Nova Scotia Department of Lands and Forests, Parks, and Recreation for their opinions on the results for further revisions (L.A. Rutherford and Associates 1988, 6-7). The cultural heritage, natural heritage, and recreational values were pre-established by the CHRS program and used to determine whether the river system contained these merits. The five main categories for cultural heritage were resource harvesting, water transport, riparian settlement,

culture and recreation, and jurisdictional use. Natural heritage refers to hydrology, physiography, river morphology, biotic environment, vegetation, and fauna. Recreational values were quite broad and included boating, angling, winter activities, and any other water-related activities (CHRB 2017, 59-60). As figures 4 and 5 illustrate, there are several subcategories to each of the main themes identified for the three values.

CHRS monitoring of the river system is done through yearly reports and 10-year reports detailing events, changes, and threats (CHRS 2017*d*). The CHRS designation is not permanent. If the system becomes endangered or lost the values which made up the designation, the CHRS title is removed (CHRB 2017, 33). The Minister for Parks Canada can remove the river system from the program or ask for increased protective measures for the watershed (CHRB 2017, 34).

Governance of the Margaree-Lake Ainslie Heritage River Designation

The CHRS program can be understood as a governance structure to promote influential river systems in Canadian history. There are several administrations in place to provide checks and balances for potential designation. All three levels of government played a role to ensure heritage values were accurately represented. This unit became known as the Technical Working group who helped with the planning process for the Margaree-Lake Ainslie River System to be CHRS designated. At the municipal level organizations included the Recreation and Tourism Department. The provincial level representatives included the Economic Renewal Agency, Department of Agriculture and Marketing, and the Department of Environment in these deliberations. Finally, the federal government was represented by the DFO with Parks Canada in charge of the CHRS program (Margaree-Lake Ainslie River System Advisory Committee 1996, 9).

At the local level, the organization responsible for delivering the Heritage Rivers program is the Margaree- Lake Ainslie Heritage River Society. The Society fields questions from residents and ensures the maintaining of natural and cultural heritage values. The formation of the Margaree-Lake Ainslie Canadian Heritage River Society was responsible for implementing the Partnership Strategy (CHRB 2001, 23). The Partnership Strategy provides direction to tourism and marketing strategies, community stewardship, erosion management, and conducting background studies on the watershed (CHRB 1999, 11). The Society consists of members who live in the six communities found throughout the watershed (CHRB 2001, 23). The Society meets once a month to discuss how to maintain the watershed's values and balance community concerns related to the watershed and designation (CHRB 2001, 23).

Why the Margaree-Lake Ainslie Watershed?

The Margaree-Lake Ainslie River System at the time of nomination was a unique proposal for the CHRS Program because of high human reliance on the River for recreational fisheries (salmon and trout), agriculture, and tourism (Margaree-Lake Ainslie River System Advisory Committee 1996, 7). Many of the rivers nominated for CHRS program before the Margaree-Lake Ainslie system possessed provincially significant heritage values. However, the Margaree-Lake Ainslie watershed was world-renowned for its sports angling, and Atlantic salmon runs, therefore highlighting natural and recreational values (L.A. Rutherford and Associates 1988, 11).

In June 1989 the nomination process was announced in the House of Assembly that the Department of Natural Resources was researching the Margaree-Lake Ainslie River System for a potential CHRS designation. During this phase, there was a need for lots of public consultation (Margaree-Lake Ainslie River System Advisory Committee 1996, 4). The Margaree-Lake

Ainslie River system was also characterized for having the second highest complexity of management out of seven other rivers studied in Nova Scotia. Factors such as high private land ownership (the Nova Scotian Government owned about one-third of land) led to this ranking (L.A. Rutherford and Associates 1988, 22-23).

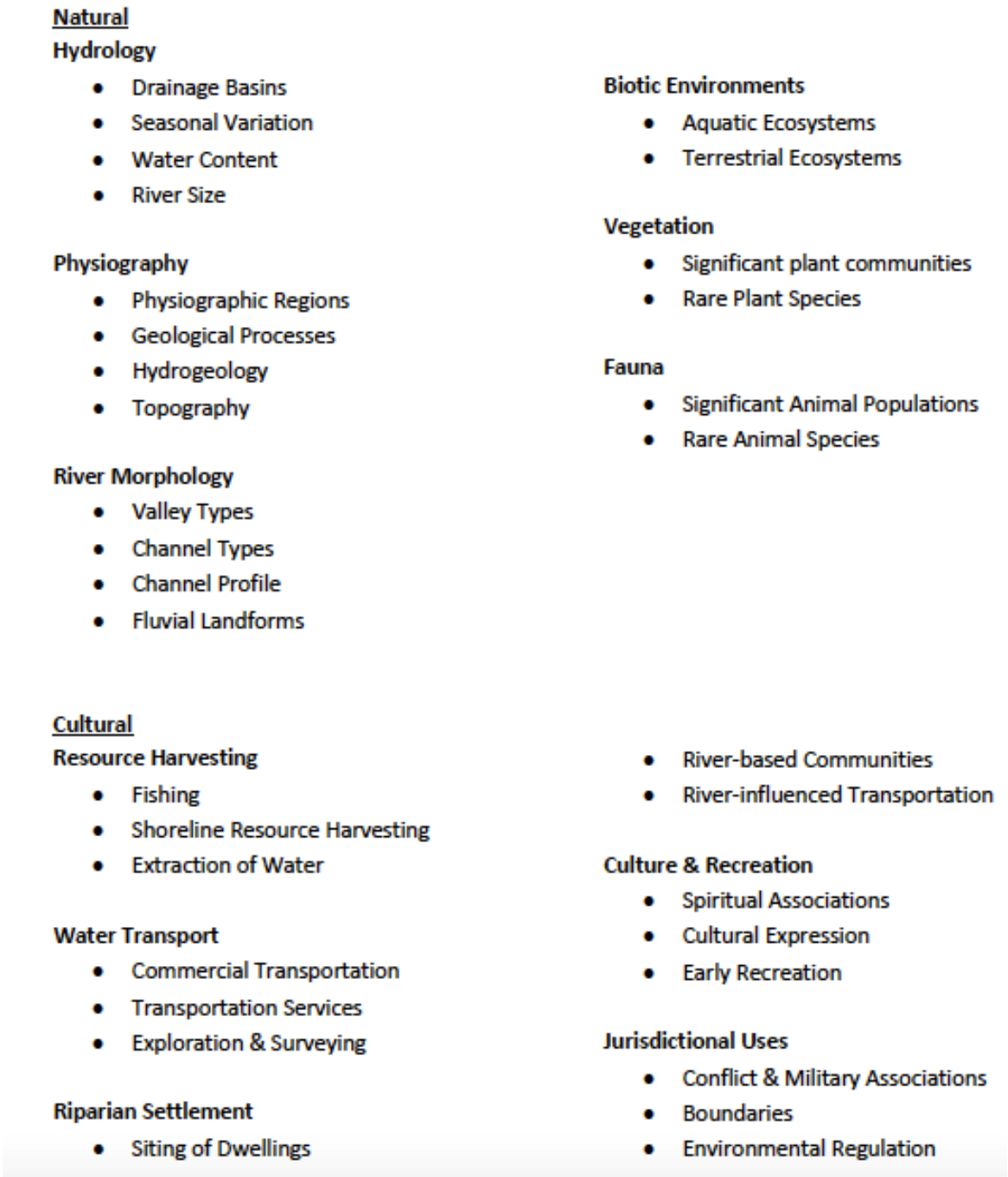


Figure 4: Natural and cultural values (CHRB 2017, 53).

Recreation

Boating

- White-water Canoe, Kayak & Raft
- Extended Canoe Tripping (motor & non-motor)
- Day Paddling & Rowing
- High Speed Boating
- Motorized Pleasure Cruising / Houseboats
- Commercial Tour Boats
- Sailing

Angling

- Day Angling
- Weekend Angling
- Extended Angling Vacation
- Fly Fishing
- Ice Fishing
- Specific Fish Species

Water Contact / Content

- Swimming
- Water Skiing
- Snorkel/Scuba

Water-associated Activities

- Trail Use (hiking, walking, cycling)
- Camping
- Hunting

Winter Activities

- Snowmobiling/Dog Sledding
- Cross-country Skiing
- Skating

Natural Heritage Appreciation

- Wildlife
- Vegetation
- Vistas/Scenic Quality
- Geological Features / Water Features

Human Heritage Appreciation

- Historic Sites
- Cultural Landscapes
- Sporting Events / Activities
- Cultural Events / Activities

Figure 5: Recreational Values (CHRB 2017, 54).

The Canadian Heritage River Board accepted the nomination of Margaree-Lake Ainslie River System in 1991 and the watershed became a candidate for CHRS designation (Margaree-Lake Ainslie River System Advisory Committee 1996, 4). From my interviews, no one really knew who put the designation forward. All participants agreed that it did not come from inside the watershed; the residents did not ask to be part of CHRS. Many participants speculated government officials were responsible for the nomination undertaking.

Most of the land is under private ownership, public consultation and input were required to create the Management Plan (also referred to as the Partnership Strategy). Public support in this plan would ensure the natural, cultural, and recreational values of the watershed are maintained for many generations of users (L.A. Rutherford and Associates 1987, 40). Public participation in the nomination process included an Advisory Committee, open houses, and sending newsletters to residents (LeFort 1990, 3). Open houses were held in several locations in the Margaree area to field questions about the implications of the Margaree River system becoming a Canadian Heritage River (McNeil 1990*a*, 1). These meetings were required to educate landowners and other watershed members about the CHRS designation and what it means for the region. Consultations were also a mechanism to ease frustrations and anxieties associated with the potential designation. Almost 70% of the land adjacent to the river system at the time of CHRS planning had private ownership of roughly 500 residents, creating difficulties in reaching a consensus decision about a Management Plan for protecting the values of the river system (McNeil 1990*c*, 6). The consultation process ultimately asks the questions who owns and controls biodiversity? In the Margaree- Lake Ainslie watershed many competing interests and opposing views are between landowners refusing the CHRS nomination process and those for the designation. The CHRS title for disgruntled owners did not reflect biodiversity but their ownership and control of the land.

Several interest groups were invited to participate in the development of the Management Plan for the designation of the watershed; these groups became known as the Public Advisory Committee. Local organizations nominated these groups who had stakes associated with the watershed. Residents were encouraged to speak with members of this group about their concerns regarding designation (Margaree-Lake Ainslie River System Advisory Committee 1996, 7-8).

The only Indigenous voice in this committee was the Mi'kmaw community of Wagmatcook. Helen MacPhail informed me about Mi'kmaw involvement. She noted that presentations were given to Whycocomagh and Wagmatcook communities. She could not speak directly about Mi'kmaw involvement in the designation process but left me with this statement:

> I can't really speak for the Mi'kmaw community. We did give presentations in Whycocomagh and I think Wagmatcook… we always invited them to the table, but they didn't come (December 27, 2018, G3).

Due to a lack of Mi'kmaw perspectives, the designation of the watershed as a Canadian Heritage River took on the form according to Euro-Canadian values.

Margaree-Lake Ainslie's Heritage Values

Cultural heritage values refer to historical past, ethnic groups, as well as archaeological remains which reflect Canada's history (CHRB 2017, 50). The Background Study, conducted by L.A. Rutherford and Associates, states the Margaree River system only met one of the human heritage values. The value was the third guideline in which the watershed contained historical or archaeologically significant sites that were rare or of ancient times (1988, 16). Although the watershed was not nominated for cultural values, many distinct cultures used the watershed for their livelihoods. Mi'kmaq groups probably used the watershed as a source of food, timber, and for trade. However, no permeant or notable settlement developments are currently known (CHRS 2017*c*; St. Clair 2003).

Much later, the French Acadians settled in this region. Then later in the 18th-century came the arrival of Scottish and English settlers (CHRS 2017*c*). These European groups were the most recognized and prominent in the watershed. Greater acknowledgement for the Mi'kmaw use and history with the watershed may increase as indicated by the Margaree-Lake Ainslie River System Advisory Committee. The Committee stated that pre-contact history could add to

the heritage values of the river system (Margaree-Lake Ainslie River System Advisory Committee 1996, 23).

Natural heritage values refer to the environment, biological and geological processes (CHRB 2017, 50). The Margaree-Lake Ainslie River system received its designation based on its natural values. The Margaree-Lake Ainslie watershed met all four natural heritage values set out by Parks Canada in 1984 (L.A. Rutherford and Associates 1988, 14). Although the wording has changed since the 1984 guidelines, the essence remains in the updated 2017 version. The natural values included the geologically significant Karst sinkholes which provide evidence of Pangaea, while the faults show continental collisions for the building of the Appalachian Mountain range (CHRS 2017*c*). The geological strata visible provided excellent examples of fluvial and geomorphological processes. The alkaline bog in the watershed contained at least five provincially rare plants, and the watershed is home to four provincially rare mammals. The natural values also recognized the significant salmon and gaspereau habitat (NSE 2008, 8) and the Atlantic salmon, gaspereau, and sea trout species as naturally noteworthy (CHRS 2017*c*). The nomination knew the "…salmon [were] a key value which [gave] Margaree its Canadian Heritage River significance" (Margaree-Lake Ainslie River System Advisory Committee 1996, 18). Aside from purely aquatic species, important land species living in the watershed included bald eagles and Gaspé shrew. The flora, as the nomination stated, was abundant with vast forests such as maple-elm and old growth forests (CHRS 2017*c*).

Recreational value refers to "…when a river and its immediate environment possess a combination of river-related recreational opportunities and related natural and/or cultural values that together provide capability for an outstanding recreational experience" (CHRB 2017, 50). In terms of recreational values, the watershed is a popular location for intermediate canoers and

paddlers in the Northeast and Southwest branches. The watershed is also an attraction for Atlantic salmon fly-fishers between June and October. (CHRS 2017*c*). Angling for striped bass and white perch are among several species targeted for this activity, but the most economically viable species were salmon. Concerning other recreational values, the Margaree-Lake Ainslie River System holds significant wilderness and hiking opportunities. (Margaree-Lake Ainslie River System Advisory Committee 1996, 17-18). Besides, canoeing and boating, winter outdoor activities, and camping are other significant recreational activities within the watershed (Margaree-Lake Ainslie River System Advisory Committee 1996, 20-21).

Residential Resistance Towards the CHRS Designation

Many residents feared such designation would impact their access and use of the river system. In particular, some residents believed the government would take greater control of the watershed. Some landowners believed they would have a similar experience to the Acadians in Cap Rouge when their lands were expropriated for the creation of Cape Breton Highlands National Park.[19] Although these suspicions did not materialize, the CHRS nomination and designation debates were heated in the watershed communities.

Many residents also criticized the potential designation for not regulating the clearcutting of forests in the highland portion of the watershed. In my conversations with Charles MacInnis, who worked for DFO as the Area Chief of Habitat and Oceans at the time of Heritage River designation and was the selected DFO representative on the committee for the Margaree-Lake Ainslie designation, noted the watershed reaction to designation process:

---

[19] In the mid-1930s, the Acadian community of Cap Rouge, just north of Cheticamp, was uprooted in the process of creating the Cape Breton Highlands National Park. The surveyor, R.W Cautley, did not see the value the residents and their fishing brought to the soon-to-be park. This opinion was in contrast to other communities that were either included (Pleasant Bay) or excluded (Cape North) in park boundary considerations. The land was deeded from Nova Scotia to Canada in 1936 (MacEachern 2001, 54-55, 57). The land was deeded from Nova Scotia to the Government of Canada in 1936 (MacEachern 2001, 54-55, 57).

> And from the community, they were looking at this and saying “well okay you're going to come in and regulate us, whether that’s true or not, what are you… why are you not regulating the amount of cutting that’s going on top of the watershed. If this is Heritage River and you're serious about protecting it and when people say that DNR [Department of Natural Resources] was leading it, well they’re looking at DNR saying you’re trying to put more regulations on us, yet you are not doing anything to address what we think is an issue in the upper part of the watershed, which is a lot clearcutting on Crown land” and there was (January 4, 2019, G2).

One of the main fears for resisting the Canadian Heritage River designation as Charles MacInnis summarized was landowners losing: "[t[heir land and their control over their land and regulations…" (January 4, 2019, G2). When I spoke with Helen MacPhail, who created the Partnership Strategy for the Margaree-Lake Ainslie designation, told me about her experience in formulating the Partnership Strategy and working with residents:

> …and it wasn't really until I arrived in Margaree that I found out what a controversial project it was!... I quickly realized that a lot of people were sort of fearful at the Heritage River designation. The word had gone out that land along the River was going to be expropriated and they thought it was going to be much like the National Park and the history of the National Park because it was a federal-provincial program (December 27, 2018, G3).

The purpose of the Management Plan would provide opportunities for users to enjoy the watershed while also protecting the features for which it was nominated (McNeil 1990*d*, 6). The Management Plan also recognizes the various groups and individuals who help keep the watershed healthy and maintain traditional activities (CHRB 1999, 11).

When I interviewed Pieter DeVries, a current member of the Margaree-Lake Ainslie Heritage River Society, he noted the designation process as complex, with differing opinions of how residents felt:

> It was rather complicated. In the sense that in principle people were pleased and honoured that their watershed could possibly become a Canadian Heritage River. On the other hand, there were serious suspicions and fears about what it might entail in the way of controls or legislation (August 14, 2018, HRS5).

A meeting held by landowners in the Margaree area highlighted the opposition to the designation of the Margaree-Lake Ainslie River system. These landowners aimed to make sure their concerns about the designation are made known to the province (McNeil 1990*c*, 1). Landowners feared the Heritage River designation would mean regulations imposed for building and raising their animals on their land bordering the rivers (McNeil 1990*c*, 1).

Residents had additional concerns asides from uncertainty regarding land control and clearcutting regulations. Other apprehensions noted included increased trespassing and only focusing on recreational sports and not assisting the commercial fishing industry (LeFort 1990, 9). In respect to landowner's rights David Williams, the Regional Protected Areas Coordinator with the Nova Scotia Department of Environment, noted:

> Initially, there was a great deal of concern about land ownership rights, and the impact of that designation would have on them. There was concern that there would be regulations associated with the designation that would impede landowners along the River from doing what they wish to do on their land. And so quite a bit of the process leading up to the designation was communicating to the communities that it was a nonregulatory designation and in fact it had no impact on private landowner usage of their lands (August 20, 2018, G1).

The hesitation in accepting the designation and what it actually meant due to conflicting interpretations of the CHRS program and its objectives would undoubtedly lead to mixed feelings about this title. Participants noted in their interviews, the confusion of what the designation would entail ultimately led to the prolonged nomination process. The nomination and designation process lasted from 1989 to designation in 1998.

The Management Plan for the river system was approved in April 1998 and did not allow for expropriation of land (MacDonald 1999, 1, 3). The federal government supported the River system on September 24th, 1998. The province of Nova Scotia did not release this information

until October 1998. The province decided to withhold telling the public until a later date due to internal issues with the Provincial Protected Places (MacDonald 1999, 1).

Failure of the Designation Process?

The CHRS nomination process ignored Mi'kmaw TEK and did not take a Two-Eyeing Seeing approach when creating the Partnership Strategy. The nomination documents outlined the Mi'kmaw under the cultural heritage values as being one of the three main cultural groups using the watershed (the other two being the Scottish and Acadians) for fishing, hunting, and trading. Due to few archaeological remains left from use and occupation difficulty arose to accurately place Mi'kmaw individuals in the watershed (Margaree-Lake Ainslie River System Advisory Committee 1996, 23). The committee suggested: "[t]hemes including pre-contact native history and Mi'kmaq history could become part of a cultural heritage experience" (Margaree-Lake Ainslie River System Advisory Committee 1996, 23). In 2018, the inclusion of Mi'kmaw history or cultural were not evident.

From a political ecology perspective, the exclusion of Mi'kmaw history reflects the dominant interest of presenting the Margaree-Lake Ainslie watershed through a Euro-Canadian view. The competing interests and importance of the watershed for the Mi'kmaw individuals fell silent during the nomination process. The CHRS designation only reflects settler's history and their meaning-making placed on the watershed.

Conclusion

From the CHRS creation in 1984 to the designation of the Margaree-Lake Ainslie river system in 1998, represents the vying interests between residents and government officials. Each party has their own agenda to push, and these competing interests emerge. Two councillors for the Municipality of the County of Inverness noted the designation of the river system would

provide national acknowledgement and increased conservation efforts (MacDonald 1998, 10). The goals set out by the Margaree-Lake Ainslie Heritage River Society did not materialize as these two councillors had hoped as the next chapter addresses. Much controversy and conflict developed between the proponents of the CHRS designation and landowners. These tensions likely resulted in the lack of implementation of projects.

A significant void during the nomination process was Mi'kmaw individuals to tell their stories and appreciation for the watershed. The CHRS representatives did make efforts to include the Mi'kmaw in the nomination process. Throughout my research, I did not come across a reason why the Mi’kmaq did not actively participate. To determine how the Mi’kmaq felt about the nomination and eventual designation of the Margaree-Lake Ainslie watershed as a Canadian Heritage River cannot be established from the research results.

Chapter Six: Analysis of Post-Designation Results (1999-2018)

With the long history of inhabitants in the watershed, the Margaree-Lake Ainslie River system has experienced many changes in resource use. With the closure of the Atlantic salmon commercial fishery in 1998, the recreational industry remained opened to "wealthy foreigners" (Chase 2003, 4-5). In the Margaree-Lake Ainslie watershed, salmon angling has primarily been the main staple of economic revenues. This chapter addresses what changed or remained the same in the watershed, and what impacts stemmed from the CHRS title. I examine the current relationships with the watershed between residents, recreational users, and Mi'kmaw users. Understanding these relationships address the tension, competing interests, and power distributed among the watershed players.

The Margaree-Lake Ainslie Watershed (1999-2018)

Throughout Margaree-Lake Ainslie's history, many actors utilized natural resources. Who has the most considerable influence or what are the competing interests between users? Have relationships changed between users and biodiversity? How can social movements be understood in this context? Has the CHRS program affected cultural, natural, and recreational relationships? These questions are addressed using data obtained from informants to highlight what the Margaree-Lake Ainslie river system is experiencing since the CHRS designation in 1998.

Current Relationships with the Watershed

In a more recent account of the Margaree River, the emphasis is placed on the whole fishing experience. Martin Silverstone, a recreational visitor to the Margaree-Lake Ainslie watershed, described his first experience fishing for salmon on the Margaree River. Throughout the article, Silverstone praised how beautiful, laidback, and accessible the Margaree River was for anglers. One perk of fishing on the Margaree River was that there are no access fees, which is

the norm for many other rivers (Silverstone 2017, 34). After his visit, Silverstone understood why anglers keep returning, although he is surprised not more sports fishers were aware of the river (2017, 34, 36). For these reasons and probably others, those who know the Margaree River call it their "*Shangri-La*" (Silverstone 2017, 34).

Norman Gillis, a resident of the watershed, expressed his admiration of the river through a song he wrote. In his poem, Gillis recalls the river as a source of beauty, provider of recreation, and is home to a welcoming community full of hospitality (July 7, 2018, LR4). Bill Haley, also noted the watershed is a hospitable community, and the friendliness of the people is a dominant cultural value (July 25, 2018, SA1). For resident Patrick Mahoney he described the Margaree River as enchanting:

> It's a magical place to be honest with you. I know it sounds off the wall, but it is. I've fished many rivers around the world and it's a special place…The wildlife start to accept you as part of the river itself. It's not uncommon to have a bird perch on your rod…it's just a beautiful place (December 19, 2018, R1).

The watershed is a special place for many participants. A negative perception of the watershed seems difficult to fathom, but hostilities are present. From my research I found two repeating views of hostilities between recreational anglers and the other watershed users: tensions were either present or not present. First, many participants informed me that there were tensions between users of the watershed, residents of the watershed, and Mi'kmaw harvesters who use the watershed. As some interviewees noted, the most prominent tension related to recreational anglers and other river users or residents. John Hart, a board member for the Margaree Salmon Museum and salmon guide, expressed in his interview how much power anglers hold:

> …in most cases, someone would come down the river in a canoe they see some fishermen, they say "oh excuse me" or whatever, some of them may actually pull out, go on…you know walk their canoes or kayaks down behind them, rather than disturb the guys fishing. You know there's room for everybody (July 14, 2018, MSM1).

Some of the recreational anglers have the mindset that they control the river, and only their activities should prevail. Although not representative of all anglers', many are respectful because there is also an etiquette system in place. The etiquette system ensures recreational anglers follow appropriate behaviour and to reduce altercations between anglers and the whole community (figure 6). Leonard Forsyth, a local angling guide, commented on respect for other users while angling:

> …if you come to a pool, and there's somebody there sitting on the bank waiting for 6 o'clock to come, whoever sitting there waiting they have the first turn through the pool. So, and the other thing is, is that you can't hog that pool, what we call it, like take that pool over and stay there all day, and fish in one spot. So, the etiquette is you start at the head of the pool, and you take a couple casts, then you take a step ahead. And then you take a couple more casts, you take a step ahead and you work your way right down through the pool. That gives every angler their equal opportunity (July 27, 2018, R3).

The etiquette policies reflect a control mechanism, so every angler respects the rights of other anglers, the environment and the watershed community.

With etiquette standards in place for using the watershed, there are laws in place to allow access for anglers on to private property. The *Angling Act* (1989) section 3(1), states "[a]ny resident of the Province [Nova Scotia] shall have the right to go on foot along the banks of any river, stream or lake, upon and across any uncultivated lands and Crown lands for the purpose of lawfully fishing with rod and line in such rivers, streams or lakes." Forsyth continued to explain that anglers cannot cross agricultural fields, but there are laws in place to regulate where anglers are allowed to access:

> …if it's uncultivated land and like just bushes or woods or anything like that, you can go through there to access the river and you have the right to go along the river bank in order to fish (July 27, 2018, R3).

Second, other participants articulated to me that they do not notice any tensions at all. According to Bill Haley, he does not see any tensions or disputes between various users of the watershed:

> Whether it's groups of kayakers, groups of canoeists, anglers standing in the water, anglers fishing from a watercraft. You would rarely hear of any type of confrontation. In matter fact none come to mind when it comes to sharing the river (July 25, 2018, SA1).

Liam Fraser, a watershed resident and business owner, also echoes Haley's account. From his experience of using the river and hearing accounts of other river users, usually everyone is respectful:

> Generally, you know there's always one or two people who might be grumpy that there's somebody going through their fishing hole at some time during the day but 99.9% of people are very pleasant (August 13, 2018, LR2).

There appears to be a range of views whether or not recreational anglers rise their concerns about other watershed users utilizing the resources while angling.

Figure 6: River etiquette sign near Garden and Brook Pools in North East Margaree. Photo taken by author.

The Mi'kmaq and Salmon: Post-Designation

Currently, Mi'kmaq who partake in the fisheries do so "…under the constitutional umbrella of Aboriginal and treaty rights, but also under the same legal framework as non-Aboriginal fishers" (Harris and Millerd 2010, 95). In the 21st-century, due to a lower number of returning salmon to Nova Scotian rivers, salmon is only harvested for special occasions and celebrations (Denny et al. 2013, 13).

Salmon serve as a social, spiritual, cultural entity for the Mi'kmaq people. In particular, the journey the salmon makes holds great importance in the Mi'kmaw worldview, especially the salmon's endurance. When Kerry Prosper teaches children to harvest salmon, the first salmon they catch is an important milestone. To recognize this, when the child is cleaning the salmon, Kerry Prosper explained there is a specific protocol:

> …we make them eat the heart when they clean the fish. And I've taken the heart out of a salmon and I put it on a log and it beat for a half an hour by itself, just nothing and it just tells you how strong what strength that we have beyond physical things. There's a spiritual strength that we all have that we tap into sometimes in life and he represents that so when...for us when we get these children to eat that, they inherit some of that strength (November 28, 2018, MR4).

Regarding Mi'kmaq use and access, there are challenges in the post-designation era. Tensions remain with Mi'kmaw users harvesting salmon. Danny Paul has used the Margaree River for 30 years to harvest food for his family and community. Paul, a traditional Mi'kmaw harvester, noted the violence has receded, but vicious acts remained in 2018. It's not an issue which can be solved by one party, but an issue to be addressed collectively. Paul stated the violence included flattened tires, being shot at, harassed by residents and authorities, and filmed for what he is doing. He acknowledged that the recreational fishing industry provides a significant economic boost for Atlantic Canada and much-needed income. Paul feels recreational anglers who use the Margaree River have the mindset of ownership:

> …they seem to think that they own the river and they own the fish. And that they're the only ones who have access or supposed to have access to these resources (July 19, 2018, MR3).

For Paul, he wants others to know that his actions are feeding Elders and children (July 19, 2018, MR3). More education is needed between recreational and traditional harvesters to respect each other's philosophies. As another participant noted, tensions may also stem from not understanding the impact of recreational angling from the perspective of someone who believes salmon as a sacred food source:

> …Mi'kmaw people in general don't agree with the recreational fishery. If you're not going to use food, then don't bother with it (August 7, 2018, MR1).

One informant with UINR indicated, for many Mi'kmaq today, the Margaree area is not just important for the salmon, but a place of refuge and solitude:

> I've seen how people really value that area not just for the salmon that it has, but it holds something different for them. It holds a sense of identity for them. You know they…it's not a place that they go all the time, it's a place to go when they need to go. And sometimes it isn't just for the fish, sometimes it's just a place to get away. A place to have that solitude and just to get away from the hustle and bustle of daily life. So, it's more than just the fish for them (August 7, 2018, MR1).

The reliance on the Margaree region for salmon comes from declining numbers in other parts of Nova Scotia. Due to the regression in salmon stock, the dependency on the Margaree River for salmon has increased for the Mi'kmaw Nation. As the same participant indicated, access to the Margaree River salmon for harvesting is not huge for the Mi'kmaq, as it provides approximately 600 fish to serve half of the Mi'kmaw population (August 7, 2018, MR1). To reduce or address tensions cultural awareness is required by all parties to understand Mi'kmaw customs, philosophy, and why harvesting in the watershed must take place.

UINR assisted harvesting salmon for the 2018 St. Anne's Mission in which salmon for the ceremony came from the watershed.[20] For the mission, the salmon was not gilled but seined to ensure only certain salmon were selected, and extra ones humanely returned to the river. The principles of *netukulimk* are expressed in this practice (August 7, 2018, MR1). As explained by a UINR interviewee:

> …we started with ceremony and we offer tobacco to the river, and we ask for forgiveness and ask for gratitude and we were humbled by that experience. So, it's more like you know it's not just about taking it, you have to give something back to the river whether it's part of the fish or part of your spirit, I guess. Some people don't always understand that *netukulimk* isn't just about taking what you need. It's about giving back as well. It has to have meaning, it has to be significant, and has to be relevant to that river (August 7, 2018, MR1).

This statement illustrates the essence of *netukulimk*. There is reciprocity, and this reflects the river as a living entity and must be respected. Again, there is an acknowledgement that salmon are not plentiful in the watershed and only what was needed was harvested. With differing perspectives on utilizing biodiversity, whether for legal, moral, social, cultural reasons, tensions and conflicts ensue. The need exists for more education about different user groups and what the watershed means to them.

Margaree-Lake Ainslie Heritage River Society

Since the designation of the watershed to the CHRS program, the Margaree-Lake Ainslie Heritage River Society had engaged in several watershed activities. In the CHRB Annual Report for 2000-2001, a proposal was put forward for joint work with the federal and provincial governments to form a community-based water quality project (CHRB 2001, 23). The following year the Society obtained this funding. During the summer and fall of 2002, a program put on by the Margaree-Lake Ainslie Canadian Heritage River Society, in conjunction with the Human

[20] St. Anne's Mission occurs on an island (called *mniku* in Mi'kmaw) off of Potlotek First Nation and is the "…longest continuous mission in Canada" (Potlotek First Nation 2016).

Resources Development Canada, called “Youth Service Canada” trained eight youths, aged 18 to 30, about different areas of management and research along the Margaree River. Duties included water quality analysis, bank stabilization, and work with the Margaree Fish Hatchery. At the end of the program, the youth gave back to the communities and shared their results. Presentations were given to local schools and communities to educate the public on three crucial aspects: the importance the river has for their communities, the vital role volunteers have on the river, and the need to monitor the river to ensure its pristine condition (CHRB 2002, 17).

In the 2005 Annual Report, the Margaree-Lake Ainslie Canadian Heritage River Society began digitally archiving sites of local heritage importance found in the watershed (CHRB 2005, 16). The project may be related to the goal of creating a space in the Margaree Forks Public Library to provide resources about CHRS, Margaree-Lake Ainslie Canadian Heritage River Society materials, and the Margaree River for public use, in conjunction with Nova Scotia Department of Environment and Labour to complete the project (CHRB 2001, 23). The Society also recorded natural values of the watershed and river characteristics. The area selected was a 14km portion along the Northeast Branch (CHRB 2005, 16). The subsequent years indicate minimal activity of the Society, but rather a concern for the health of the watershed. Although the striped bass population increased, smallmouth bass introduced into Lake Ainslie may impact the watershed negatively including the landlocked salmon populations. At the time of writing the invasive species were not able to reproduce (CHRB 2006, 16). In 2009, the only activity consisted of the Society submitting the required 10-Year Monitoring Report (CHRB 2009, 8). Highlights from the 2010 Annual Report show concern over the potential fracking industry taking place around Lake Ainslie. The Nova Scotia Department of Environment also began a project to map the Northeast Margaree branch using digital technology. Lastly, the returning

salmon populations were steady, mostly attributed to the Greenland Convention Agreement, which stopped the commercial salmon industry until 2013 in Greenland (CHRB 2010, 15).[21]

From the concerns expressed in the CHRB Annual Reports, the Margaree-Lake Ainslie Heritage River Society remained relatively dormant. As Pieter DeVries alluded to, volunteer fatigue likely contributed to the lack of activity, as many of the volunteers with the Society were members of other local organizations (August 14, 2018, HRS5). When I spoke with Del Muise and asked what the impacts of the designation have been, Muise replied:

> None that are discernible to me anyway and in a way you know that was kind of deliberate, you know given the sort of tension that existed around the original designation there was a tendency to sort of minimalize what the direct impact might be and then I think there were circumstances that evolved which basically left the Society with a lesser role, particularly after 2003/04 because it was a kind of… there was an imperative to jump with the government grants and stuff surrounding the millennium. But once that petered out by 2001/02 then there was very little. But there was a considerable attempt you know, at that juncture to interview older people and do various other things. But it wasn't sustained I don't think in the long-term (July 10, 2018, HRS1).

Despite the inactivity for some years after 2005, the Margaree-Lake Ainslie Heritage Society is busy attempting to reinvent the Society's image. The Society aims to bring awareness that indeed the watershed is part of the CHRS program, and there are benefits associated with this designation. These efforts are essential for the Margaree-Lake Ainslie River system to remain with the CHRS program and not lose the designation.

One project concluded in 2017 related to information panels about various elements of the watershed, as Eileen Coady described:

> …the panels in connection with … were in connection with Canada 150 funding last summer [2017]. We had four panels that were representative of just the river in general, then we did a three-panel set that celebrated the salmon fishing on the river, and then we

[21] In May 2018, a deal called the "Greenland Salmon Conservation Agreement" was reached between the Atlantic Salmon Federation, the North Atlantic Fund (Iceland), and the Association of Fishers and Hunters in Greenland. This agreement is to halt Greenland's commercial salmon industry for 12 years. However, the inclusion of an allocation clause for 20 tonnes of salmon for Greenland's Indigenous groups to respect their Treaty right and access to the traditional food source (Ibrahim 2018).

> did a two-panel permanent set for the Southwest celebrating the Lake Ainslie, Southwest River and the gaspereau history. So those…those were ways of bringing awareness to the River and celebrating the fact that yes, we are a Heritage River (July 16, 2018, HRS3).

A project that finished in the Summer of 2018 was the creation of signs (figure 7). The signs, or plaques as some members refer to them, are found throughout the watershed. The purpose of these signs is to bring attention to the historical importance of that area. The goal of the signs project is to provide greater historical understanding to the watershed:

> … [the signs] show a location with a picture…a vintage picture of that particular area, the map of the river and kind of bringing awareness to you know how… how 100 years perhaps how the land has changed and the river and kind of acknowledging that (July 16, 2018, HRS3).

A new undertaking which began in the Summer of 2018 is called a "Story Map" project. The project highlights the watershed's cultural, natural, and recreational values and intends to raise awareness and create an online presence for the Margaree-Lake Ainslie Heritage River. David Williams explained the concept of the idea came from Parks Canada and described the project to me as:

> …there would be various features identified on that river where you could click on it and it could be a photograph, maybe a historical photograph, it could be a video of a unique feature about the river, it could be something about the natural values of the river. And so you can zoom in and as you zoom in, there's more detail shown and you can use various backgrounds. You can use satellite imagery as a background, or you could use a topographic mapping background. And yeah, and also it contain documents where you click on something and you can either be taken to a separate website, or a PDF, or some document about it another feature on the river. So, for the Margaree we're looking at about 30 items to be identified along the River and the Lake Ainslie system as well where people would find out you know what are the values for which this river was designated, what's happening on the river even today (August 20, 2018, G1).

The project provides recognition of values that may have been left out from the original designation or values now deemed vital for the designation.

Figure 7: One of the signs created by the Margaree-Lake Ainslie Heritage River Society overlooking East Lake Ainslie. Photo taken by author.

Clearcutting of Forests in the Watershed: Placing Harm on the CHRS Title?

The clearcutting of forests and loss of biodiversity within the watershed raises many concerns for the CHRS title in the post-designation era. In the Margaree-Lake Ainslie watershed Port Hawkesbury Paper (PHP) monitors the proportion of the watershed area managed by PHP in a non-clearcut condition (i.e. greater than 10 years of age). PHP is licensed to manage approximately 22% of the Crown land within the watershed. Within that 22%, PHP will have 80% of the area in a non-clearcut condition. Since 2011, PHP has maintained an average non-clearcut condition of 92% in the watershed. Additionally, PHP will also have 90% of the area

under management for restoration management. That is, these forests will be managed for their natural Acadian forest characteristics. The remaining 10% may be established as intensively managed areas where timber production is the main goal while still adhering to all laws, regulations, policies, and special management practices. PHP's current operational plan for the watershed up to the year 2021 includes management of approximately 3,662 hectares (3% of the total area managed by PHP). This area will be managed under a variety of harvest treatments including clearcuts. Furthermore, as the provincial government approval process for these harvest areas occur over the next few years, there could be areas extracted from harvest for a range of values including species at risk habitat, active nest sites, riparian buffers, and/or inaccessibility issues (MSA 2017; August 27, 2018, E3; PHP 2018). Near Belle Côte will see harvesting done in 50 hectares increments and separated by a buffer zone (MSA 2017).

Despite environmental concerns to what tree harvesting will have for the watershed, PHP does provide significant employment for the region. Andrea Doucette, a representative for PHP informed me:

> Each year Port Hawkesbury Paper directly employs 330 people, 450 people indirectly in forestry, and engages over 400 suppliers (August 27, 2018, E3).

Doucette went on further to express that the company was not aware the region had the CHRS title. The designation has not impacted PHP forestry practices, but Doucette did state:

> PHP will be reviewing the Canadian Heritage River System program to gain a better understanding of its objectives and any stated management opportunities (August 27, 2018, E3).

The removal of forests situates the watershed in a conundrum. The lumber extraction provides much-needed employment for the area, but there is great concern among participants in this study who fear the outcomes of tree harvesting will have on the integrity of the watershed.

Conclusion

Since the designation in 1998, many elements have changed in the watershed. Although the designation aims to maintain cultural, natural, and recreational heritage values, this is difficult to sustain. This chapter demonstrated that although salmon play an integral part of the region's economy, the returning stock numbers remain a concern for many users and who has access to salmon is a contentious issue. The Margaree-Lake Ainslie Heritage River Society had good intentions to uphold the requirements created by the Canadian Heritage Rivers Board. However, the Society eventually petered out of energy; most likely attributed to a lack of money and not enough volunteers (July 10, 2018, HRS1; August 14, 2018, HRS5).

With a revival of the Margaree Heritage River Society in the past two years, they have accomplished much work since 2017. This evidence shows a new interest in preserving the watershed—or at least promoting the CHRS designation—in terms of heritage values and developing a space to ensure future values can thrive. Concern remains among some participants in both the designation and post-designation eras about the forest clearcutting. Some participants involved with this research indicated the CHRS title must do more than praise the pristine condition of the watershed. Instead, the CHRS title should promote watershed protection. Chapter seven presents the results of this research and how the CHRS title can be improved upon to benefit users of the watershed.

Chapter Seven: Results

The study revealed mixed views on whether tensions exist among the various watershed users. Some of these conflicts relate to the CHRS designation, but the primary tensions identified by interviewees are in respect to recreational anglers, landowners, and Mi'kmaw harvesters. The region heavily relies on recreational users as the economic backbone in particular recreational angling. Catch and release angling has different connotations for recreational users and Mi'kmaw harvesters. For recreational anglers, they pay for a privilege to fish. For Mi'kmaw harvesters, they have a right to catch salmon for FSC purposes. As articulated by one interviewee, both groups have responsibilities, and that is to be aware and notice trends and changes in the river (July 17, 2018, MR2).

Findings

Regarding the Margaree-Lake Ainslie watershed, cultural tourism to the area was less prevalent in the mid-twentieth century, rather environmental tourism and recreational tourism— especially salmon angling— was popular and continues to be the main attraction for the region (Makkai 2000, 162-163). Cultural use of the watershed and its resources has changed significantly. Before European arrival, many Mi'kmaq relied on the watershed for its provision of salmon for personal and ceremonial consumption. The onset of settlers and the introduction of commercial fisheries altered traditional access to salmon.

Recreational Significance of the Salmon Fishery

The Margaree-Lake Ainslie watershed offers many recreational opportunities. Salmon angling is a significant economic driver in Nova Scotia. According to a survey published by the Inland Fisheries Division of the Nova Scotia Department of Fisheries and Aquaculture from 2010, “[a]nglers [in Nova Scotia] spent $85.6 million for all reasons in pursuit of their

sportfishing activities in 2010. Of this amount, $56.4 million, was wholly attributable to sportfishing…" (NSDFA n.d., 11). Such statistics represent a strong reliance on the recreational fishery. The recreational fishery contributes both directly and indirectly to the economic well-being of Nova Scotia. For the Margaree-Lake Ainslie river system specifically, there are great economic benefits for the watershed as a result of the presence of Atlantic salmon: "Annual spending of $2.9 million generates $2.5 million in GDP, 70 full-time equivalent jobs, and $2.1 million worth of income" (Pinfold 2011, iv). To remove or reduce the recreational salmon fishery in the Margaree-Lake Ainslie watershed will most likely result in a decline of revenues and employment, unless another species becomes commodified.

Although the commercial Atlantic salmon industry closed in 1998, the recreational angling fishery remained legalized (Chase 2003, 4-5). Recreational salmon angling has special regulations established in Nova Scotia. In the context of the Margaree-Lake Ainslie watershed, Bill Haley the president of the Margaree Salmon Association, articulated that "…restrictions began in 1979-80. We [the Margaree-Lake Ainslie River system] were the first river in the world to have catch and release for Atlantic salmon" (July 25, 2018, SA1). The 2018 salmon regulations included purchasing a valid salmon fishing license, all salmon caught must be returned to the river, there is no retainment of salmon, as well salmon must be caught with a single hook barbless or with a pinched barb, and artificial flies are allowed. The 2018 salmon angling regulations further state only four salmon (both grilse and adult) can be caught and released in a day (NSDFA 2018*a*). The most prominent regulation is the licensing system. A fee must be paid to obtain a license. Figure 8 outlines the costs for residents of Nova Scotia and non-residents to purchase a salmon angling license in 2018.

(All fees include H.S.T.)	
Residents (18 years & over) (Seasonal)	$42.00
Non-Residents (age 18 and over) (Seasonal)	$157.40
Non-Residents (age 18 and over) (7-Day)	$63.65
Residents **and** non-residents (one-day)	$30.00
Residents **and** non-residents ages 16 and 17	No charge for any Salmon Fishing Licence

Figure 8: Cost of a 2018 salmon license in Nova Scotia (NSDFA 2018a).

Anglers in the Margaree-Lake Ainslie watershed salmon anglers must report and date all small and large salmon released. Although mandatory, not all license holders complete their report, affecting the number of salmon can be caught and released for the following season (DFO 2012*a*, 7). Until 2015, the recreational fishery allowed an angler to keep one small salmon (grilse). After this time, the recreational fishery changed its regulations, and at the time of this research, a non-Mi'kmaw person cannot remove any salmon from any river in Nova Scotia (Denny and Fanning 2016, 6-7).

Debates Surrounding Recreational Catch and Release Fishing

Recreational fishing is an activity in which the fish caught are not used to meet nutritional means. The fish is caught using a hook and line along with a rod and reel. When the fish is caught, it's released back to the same water they were caught under the assumption the fish will survive (Arlinghaus et al. 2007, 76-77). Research conducted by Thompson et al. (2018) demonstrated that "…angling-induced injuries have a negative impact on suction feeding performance and hydrodynamics in fishes" (2018, 5). The fish used in the study were shiner perch (*Cymatogaster aggregate*) and those fish in the study with mouth injuries due to angling "…exhibited a reduction in maximum suction-induced prey velocity in comparison with the control group" (Thompson et al. 2018, 5). Additional negative consequences related to the physiological well-being of the salmon. Findings from Lennox and colleagues (2017) study

indicated that mortality rates increase when water temperatures are warm (around 20°C). The authors also found that angling equipment can impact hook damage found on the salmon which leads to an increased risk of delayed mortality. Salmon caught with a fly had a greater chance of survival than other salmon caught by lure or bait. This reduction in mortality is likely attributed to smaller hooks used for fly fishing (Lennox et al. 2017, 153-154). In another study, adverse outcomes related to the migration pattern of salmon. Lennox et al. found that their "…model predicted longer migrations after catch-and-release than we observed, suggesting that the upriver migration could have been hindered by angling, which could be a relevant sublethal effect of catch-and-release" (Lennox et al. 2016, 49). Delayed morality is of particular concern for researchers. Delayed mortality after an angling event may be related to additional stress placed on the salmon (Dempson, Furey, and Bloom 2002, 143). Even for fish that are caught with a hook properly may not die from such injuries, but rather from stressors, infection, or the failure to obtain sustenance (Thompson et al. 2018, 7).

Other academic studies with salmon indicate a different result for adverse effects due to recreational angling. Atlantic salmon caught, radiotagged, and released in 1995 and 1996 from the Ponoi River, Russian Federation, showed that fish once released were still active. Even after a second capture, the salmon remained healthy (Whoriskey, Prusov, and Crabbe 2000, 124). A study of catch-and-release-angling on the Conne River Newfoundland found that their results "…were consistent with most previous experiments indicating that when salmon are handled properly in suitable water temperature conditions, mortalities are generally low and usually occur within a short time after the angling event" (Dempson, Furey, and Bloom 2002, 142-143). In a study of three Irish rivers regarding catch and release, the results demonstrated when angling for

salmon using the proper guidelines and cool water temperatures, the survival for a salmon caught using a fly is high (Gargan et al. 2015, 259).

As these studies demonstrate, there are mixed views of how a catch and release fishery affects the angled fish. Many factors influence the mortality rate for the fish (water temperature, handling practices). Most Mi'kmaw do not participate in the recreational industry, a stark contrast in how biodiversity should be exploited within the watershed. As a result, difficulties and tensions develop between both parties how to educate and respect each other's relationship with the watershed.

Impacts of the CHRS Designation

Although the CHRS program is non-regulatory, the benefits noted for belonging to the CHRS program include protection and conservation of the watershed and using established laws to enforce these practices, surveying the water quality, and a mechanism to promote environmental attributes of the watershed (LeFort 1990, 8). The Management Plan contained the following themes which outline watershed protection: preservation of the ecosystem, water quality, and bank erosion; support traditional uses of the watershed; guidelines for tourism and access to both the river branches and Lake Ainslie to avoid potential conflicts; and management of recreational activities (LeFort 1990, 17-18).

After implementation, no impacts or benefits came along with being a part of the Canadian Heritage Rivers program. When I asked Helen MacPhail what recommendations she made in the Partnership Strategy report, MacPhail replied:

> So there were the idea of buffers along the river, you know don't cut the trees too close to the river, to stabilize the banks keep the bank stable, and also we got any number of rare plants in the floodplain, like bloodroot and just the variety of plants along there, sort of special. The scenic views were identified, and I think some lookoff areas flagged for developing in the future (December 27, 2018, G3).

In terms of what has materialized, MacPhail responded: "Some of them have. The lookoffs I think they developed some of those" (December 27, 2018, G3). MacPhail's response aligns to what participants noted throughout this study, and no impacts relating to economic spin-offs, cultural rights, or increased recreational use have stemmed from the CHRS designation. Instead, participants stated no extra money had been provided for the watershed, and many do not see a difference with the watershed with the CHRS designation. There are no known changes in conservation practices and minimal impacts associated with the title. Overall the CHRS designation functions just a title for the residents and users of the Margaree-Lake Ainslie watershed, with no substance. When asked if the designation has helped or hindered the watershed, Charles MacInnis stated:

> Well, I don't say it has hindered. I would say it may have helped from the tourism point of view, but has it helped the main river any in terms of is it better protected than it was 30 years ago? I… I… I would have to say no. You've had changes in federal habitat regulations, you have all that clearcutting… And to me that's the biggest impact on the river (January 4, 2019, G2).

In terms of the absence of tangible results stemming from the designation, one possibility may relate to the prolonged nomination process. Some residents in the watershed feared what the government agenda was behind the CHRS title. Leonard Forsyth recalled the tense meetings, and great concern locals had about what the government was going to do:

> There were some people that were deadly opposed to it because they could see it as being another thing being run, taken over and run by government (July 27, 2018, R3).

During the nomination phase, the current Vice Chair of the Margaree-Lake Ainslie Heritage River Society, Eileen Coady, stated:

> …there was some concern and there was some definite reluctance on the part of some landowners to support the designation. I think they had feeling that it had more to do with perhaps the experience of property owners who lost land to expropriation of parks (July 16, 2018, HRS3).

In this statement, Coady is referring to the loss of land during the creation of the Cape Breton Highlands National Park. Landowners in Cap Rouge had to relocate their community to make way for the national park. Del Muise, the current Chair of the Margaree-Lake Ainslie Heritage River Society, added on to this theme and suggested:

> …there was so much anxiety about whether or not Heritage River status would have some impact, people were very reluctant to sort of take any big initiatives in the period after designation in 1998 (July 10, 2018, HRS1).

With such fears, there is no doubt these transformed into a lack of inactivity within the Margaree-Lake Ainslie Heritage River Society.

Twenty years have passed, and the watershed community either accepts the designation or does not see what impact the title brought. With a lack of activity, there is a possibility of losing this righteous title. A river can lose CHRS designation if the river becomes endangered or lose the values for which the designation was based upon (CHRB 2017, 33). As Patrick Mahoney noted, the designation is an honour, but more respect is needed for the watershed:

> I think it made a lot of the local people quite proud they've got a Canadian designated Heritage River. But I just wish they would show that pride more by protecting it other than just saying they got it (December 19, 2018, R1).

The progress of the designation is difficult to measure when there are organizations, government policies, and stewardship all impacting the health and prosperity of the river and its resources. Such a concern was cited several times with interviewees. Although much has changed since the designation in 1998, the CHRS title does not seem to be aiding in much conservation or environmental awareness.

The role of the CHRS designation has not been an influential factor in the management, protection, or promotion of the watershed. Interviewees noted the designation did not impact their rights, access, use of the river system. As one participant stated:

> Like I said, it was a title they put on it, that didn't seem to have any…any guts to it (June 25, 2018, FH1).

No economic, conservation or extra money has stemmed from this title that is evident to the local community. The CHRS title may have assisted the government with supporting protected places in the watershed (August 20, 2018, G1). As several interviewees mentioned, it is hard to assess the impacts of the designation. There are many other forces at play and policies in place; it is hard to determine which of these factors have impacted the watershed. Overall there have been minimal impacts from the designation. Despite the lack of tangible effects, the designation for many participants is a positive title. Resident, Norman Gillis, stated the designation captures the beauty of the area:

> To me it demonstrates how valuable this part of nature is. This river, how important it is. For its beauty, and its cleanliness you know, not polluted, nice water… (July 7, 2018, LR4).

Other interviewees see the designation as not meaning much. Danny Paul explained the designation "…doesn't mean anything to me" (July 19, 2018, MR3). When asked if the designation matters, Paul replied:

> You know, this concept of ownership and designations and stuff like this here really bothers me because when we look at how divisive the land has become since European arrival here, we [the Mi'kmaq] never looked at it that way and I still don't look at it that way (July 19, 2018, MR3).

Clifford Paul believes the designation is a representation of the stewardship taken on by his ancestors:

> From my perspective it gives…it gives the world an understanding for greater respect of ecosystems and beautiful places we have managed, since time immemorial, that designation allows the world to see that we have defended it and protected it well and that when and non-aboriginal came, they seen that. So that designation for me is a confirmation that we've done a great job, let's do a remarkable job on bringing it back the way it should be, and making sure our decisions will positively impact the next seven generations. So, from my point of view it validates the work of my ancestors (July 17, 2018, MR2).

Participants from a diverse set of backgrounds and interests see the CHRS designation in many different understandings. There is no universal unity which comes with having CHRS designated watershed for the Margaree-Lake Ainslie system.

Settlers and their Connection to the Watershed

In addition to the Mi'kmaw presence and connection with the watershed, the region is a hub for developing, evolving, and continuing social traditions. Swimming in the Margaree River was an important aspect for many children growing up in the watershed as Liam Fraser explained:

> We would do swimming lessons in the river. So we'd be all summer long from June until September two or three days a week up at the river and there would be all the kids who were in the community all around one or two swimming holes, hanging out at the beach and being at the river all day (August 13, 2018, LR2).

Swimming in the Margaree River was not just a means to cool off in the summer months but was a social event. The river was a location where the communities would meet, and news exchanged. For some participants, the Margaree River led to the development of new friendships. Norman Gillis recounts he learned to swim and made friends with his connection to the Margaree River:

> As a very young person I learned to swim… the river was a great place for recreation. We had a diving board down there, the pool we called it. And it provided lots of fun you know... there was lots of kids coming to the pool from both sides of the river you know. We got to know a lot people. Some were home for the summer, their parents were from Margaree and they'd come down in the summer of course and they'd be…a lot of the kids would be there all summer you know, across the river, so we got to know a lot of people (July 7, 2018, LR4).

To create opportunities of bringing together communities and social interactions, the Anything that Floats Race which began in the 1970s by the Margaree Area Development Association (figure 9). Held on the first Saturday in August the event has evolved from a canoe race into a family friendly river event. In this event, participants can use their kayak, canoe, tube, or make

their float to "race" to the designated end point. The event draws many participants and spectators. Both adults and children take part in the event and many in their creative float.

Cultural Heritage of the Margaree-Lake Ainslie Watershed

Taking together the Mi'kmaq importance of the watershed, the social connections being on the river brings, and the development of social activities associated with the watershed there is great cultural heritage correlated with this region. By recognizing more than the different cultures within the watershed and highlighting uses of the river system, the cultural heritage values can be strengthened not only for the Margaree-Lake Ainslie Heritage River designation but as a whole for the CHRS program. In writing the 20-Year Report for the Margaree-Lake Ainslie watershed, administrators must look more broadly at the cultural heritage values of the watershed. In particular, examining how the river system is a linkage for many communities and serves many cultural purposes stemming from time immemorial to the present age. Making this connection reflects the use and reliance of biodiversity, the competing interests regarding natural resources, and the power (or lack of) held by the key players. All of these influences shape the dynamic history of the Margaree-Lake Ainslie watershed into what residents, users, and visitors see today.

Figure 9: The starting point, Tanner's Run, for the 2018 Anything that Floats Race. Photo taken by author.

Natural Resource Management

Accepting alternative methods can distinguish the CHRS title in the Margaree-Lake Ainslie watershed in natural and cultural values. I examine two forms evident in the watershed for Atlantic salmon. A modern Western, scientific method of conservation, and one Mi'kmaq way of management, *netukulimk*. Today managing salmon is important because the salmon stock returning to the watershed is less than what it was decades ago.

Atlantic salmon management is through a Western, scientific approach. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC), created in 1977, is a means to provide credible information to Canadians on wildlife in danger of extinction (ECCC 2016). COSEWIC's report uses several sources to create a holistic report. For example, current knowledge in the scientific field coupled with community knowledge and Aboriginal Traditional

Knowledge on the species in question (ECCC 2017). Community knowledge of species is used especially for species that are not well studied. Community knowledge refers to information obtained by individuals through the medium of observation, personal experience, and cultural teachings to inform changes in the ecosystem, population, and potential harms for the species (ECCC 2016).

With the introduction federal legislation of the Species At Risk Act (SARA) (ECCC 2016), in 2003, COSEWIC became the lead independent body for researching and reporting on threatened wildlife (ECCC 2017). The data gathered by COSEWIC is reported to the Federal Government and is made public. Once obtained, the Minister of Environment and Climate Change Canada must respond to the report. The report submitted by COSEWIC are only recommendations, and the Minister must list the species under SARA for protection. However, further deliberation may be required as the COSEWIC report does not take into consideration social, pollical, or economic elements which are attached to the species (ECCC 2017).

The last assessment conducted by COSEWIC was in November 2010. The committee concluded that salmon found in this region are of special concern; therefore, no SARA listing or further protection measures are granted (ECCC 2018). Special concern as defined by COSEWIC means "[a] wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats" (COSEWIC 2015, 15). Species with this designation are usually more susceptible to human and natural activities but still have a high enough population not considered being at risk (COSEWIC 2015, 11).

Netukulimk is a different concept as opposed to the Canadian method of COSEWIC and SARA. *Netukulimk* requires more education and promotion as an alternative to resource

management. For Clifford Paul, he uses the principles of *netukulimk* and only takes what is needed:

> Through ceremony I offer tobacco and I ask the river to protect me, I asked the gods to protect me, my ancestors, I also asked the spirit of the river to provide, and if any salmon gave its life I accept that life, I take it, I don't kill, I harvest, I facilitate the gift provided by the salmon and Creator, and I'd make that gift part of… part of my community. So people… the outside world will look at me and say that guy is a poacher, he's getting salmon, killing them, and getting a number. No, we're only getting what we need and we're not overfishing it because we noticed the trends because we're there… (July 17, 2018, MR2).

As expressed throughout this research there are different forms of environmental management and moving away from a dominant Western understanding to including participation and understanding of Indigenous perspectives is not easy for policymakers but important to making progress in both conservation management and reconciliation with Indigenous groups. Comprehending an alternative form of management could lessen tensions in the Margaree-Lake Ainslie watershed. Interviewee, Liam Fraser summed up these the different management views as such:

> …that just because somebody is doing managing resources in a different way than you are doesn't mean they are doing it poorly or doing it wrong (August 13, 2018, LR2).

Fraser's statement highlights the need for the watershed community to come together and recognize that there are alternative forms of management. There is more than one way to practice conservation and can be done in various ways.

Conclusion

This research intended to examine the relationships with the Margaree-Lake Ainslie watershed from time immemorial to 2018. Specific attention was paid to the period of 1984-1998 when the Canadian Heritage Rivers program was funded, up until the Margaree-Lake Ainslie River system became designated. My findings demonstrate the designation of the Margaree-Lake

Ainslie river system as a Canadian Heritage River has made no substantive difference in conservation, social, or rights issues surrounding the watershed. There were undoubtedly rights-based concerns surrounding landowners fearing loss of their land by government officials which, resulted in a lengthy nomination and designation process (1989-1998). This study did highlight key issues surrounding the future of the watershed. There are two different natural resource management strategies: *netukulimk* exercised by many Mi'kmaq and authoritative management brought from European origin. Including Mi'kmaw ecological knowledge can strengthen the CHRS title in both natural and cultural values: aiding in resource management and the cultural importance species, such as salmon, have in Mi'kmaq culture. These alternative ways of understanding the CHRS program can provide more comprehensive means for Indigenous voices, and in this case Mi'kmaw and their connection with the watershed and its resources. Greater awareness for *netukulimk* may also ease tensions between Mi'kmaw harvesters and the rest of the watershed community. The violence between the groups, as described by Danny Paul in chapter six, must be confronted. Although this violence is part of the watershed's history and identity, the violence also represents a cultural clash of ideas and values over biodiversity. The Margaree-Lake Ainslie Watershed in one sense can be considered a site which comprises different understandings of cultural heritage.

Participants hold mixed views about the future of the Margaree-Lake Ainslie watershed. Many are optimistic and see the system flourishing for years to come. A majority of participants see not much changing for the system, and it will keep on flowing. Several participants have mixed feelings and are unsure or concerned what the future will hold for the watershed. The value of the watershed is attesting to the concepts of incommensurability and biodemocracy. No one value defines the watershed or its longevity, but the watershed's resources have different

uses for key players and residents. As a result of the watershed holding different meanings for watershed users, tensions and disagreements arise with who has a more righteous claim for the biodiversity.

There are minor results for the Margaree-Lake Ainslie river system with being a Canadian Heritage River. The sense of ownership to the natural resources can be linked to stewardship. Stewardship maintains a strong presence in the watershed for both residents and users and David Williams states that is a reason why the Margaree River system has upheld its pristine nature is because of the people looking after the river (August 20, 2018, G1). Such concerns highlight the intersection of what political ecology is interested in finding. The watershed houses cultural and economic prominence. The value or incommensurability varies for each group. Due to differing goals, tensions and conflicts develop.

Using the words of Julie Cruikshank: "[a]nthropology continues to grapple with the controversial questions about the role of environment, of history, of power relations, of symbolism, of language in human social organization" (Cruikshank 1992, 27). This research demonstrated this struggle remains in 2018 for anthropologists. Residents and non-residents of the Margaree-Lake Ainslie watershed are contesting whether or not clearcutting should continue in the upper part of the watershed, how salmon should be protected, and the overall health of the river system. The watershed holds many diverse opinions of what the watershed means, who should have control over natural resources and access, and ideologies as to how to manage natural resources. The use of the political ecology theory allows this research to identify conflicts and opportunities in the watershed. Political ecology acknowledges whose interests are heard, how social mobilization is a factor for national recognition and Mi'kmaw involvement.

Additionally, political ecology examines the commodification of biodiversity, especially salmon that play a crucial role in the economic well-being of the watershed community.

The key players and residents interviewed identified sources of praise and concern for the Canadian Heritage Rivers designation. The Canadian Heritage River status sounds righteous and noble, but does it mobilize people, acknowledge all heritage whose is lost out, and whose heritage is presented? According to participants and a review of CHRS documents, the Margaree-Lake Ainslie watershed Canadian Heritage River designation did not mobilize residents of the watershed for greater environmental protection, rather a mobilization against the designation by landowners. Mi'kmaw participation and recognition are limited as evidenced from nomination documents. Players do not fully embrace the Canadian Heritage Rivers designation as their answer to their concerns of environmental protection, sustainability, acknowledgement of Indigenous rights, and economic development. Table 1 highlights these statements from participants on their perceptions of the strengths and weaknesses of the Canadian Heritage Rivers designation.

	MSA	Mi'kmaw Nation and UINR	Margaree-Lake Ainslie Heritage River Society	Government Agencies	Residents
The Canadian Heritage Rivers designation means:	"…symbolizes the special recreational and historic features of this river" (July 25, 2018, SA1).	"…everybody's got those different connections to the river and they really want to say "don't let that river die," type thing, it's pretty personal. It's almost like a human life or somebody" (November 28, 2018, MR4).	"Well I think it's a tremendous honour for the river to have, I mean there are only 42 rivers in Canada that have that designation, only 2 in Nova Scotia" (August 16, 2018, HRS3).	"Well in Nova Scotia a number of rivers were evaluated based on their natural, cultural, and recreational values. And two rivers were identified as being the most significant in Nova Scotia one being the Shelburne and one being the Margaree" (August 20, 2018, G1).	"To me it demonstrates how valuable this part of nature is. This river, how important it is. For its beauty, and its cleanliness you know, not polluted, nice water—I know as kids we'd take a drink of water out of the river no problem at all, so yeah and of course it's such a beautiful area you know, Cape Breton, Margaree Valley" (July 7, 2018, LR4).
The Canadian Heritage Rivers designation does not mean:	"…I would say most of the conservation efforts are generated by either the provincial government scientists, the federal government scientists, First Nations—individuals that are from both the Unama'ki Institute of First Nations [Natural Resources] and others—and by NGOs like us..." (July 25, 2018, SA1).	"…I don't know who's on the board, the management board, for the…I think they could probably benefit from having Indigenous representation" (August 7, 2018, MR1).	"…I'm a little bit ambivalent about it because in many ways what it does is translates into jobs for bureaucrats you know that's probably the most real aspect of it and it's the kind of thing that's… it's rather tenuous because a new government could come up and say "oh this is ridiculous"… and you know they could cancel it" (August 22, 2018, HRS2).	"But has it brought a whole lot more money to the table than say what the Cheticamp got or Mabou got? I haven't it and I'm involved in all of them…" (January 4, 2019, G2).	"Really nothing … I can't see any difference than what it was before…" (July 6, 2018, LR3).

Table 1: A summary of what the Canadian Heritage Rivers designation means and does not mean for each of the four key players and residents as indicated by participants.

This research surveyed one Canadian Heritage River and only scratched the surface of the complex issues facing the watershed. Further studies are required to determine the overall effects of CHRS title across Canada. Additional research can validate how the designation helps or hinders the watershed in all spheres of the political ecology model. Such results can assist the CHRS program to make coherent decisions to direct future efforts. For example, the designation for the Margaree-Lake Ainslie watershed must be updated to include Mi'kmaw use and

occupation. Archaeological excavations in the region could assist in improving CHRS cultural values. The CHRS title only reflects one point in time, the late 1980s to 1998. Since the designation, much has changed throughout the watershed, and the CHRS title must be flexible to transformations. The use of a Two-Eyed Seeing approach and greater awareness for *netukulimk* could increase the watershed's cultural values. The main takeaway from this research is the Margaree-Lake Ainslie watershed is more than a Canadian Heritage River. The key players, residents, and users are continually shaping the identity of the watershed. There are many competing interests and collaborations occurring in the watershed and using the CHRS values of cultural, natural, and recreational importance assists in comparing and contrasting principles relevant to the watershed community and key players.

References

Alexander, Clarence, Nora Bynum, Elizabeth Johnson, Ursula King, Tero Mustonen, Peter Neofotis, Noel Oettlé, Cynthia Rosenzweig, Chie Sakakibara, Vyacheslav Shadrin, Marta Vicarelli, Jon Waterhouse, and Brian Weeks. 2011. "Linking Indigenous and Scientific Knowledge of Climate Change" *BioScience* 61(6): 477-484. doi: 10.1525/bio.2011.61. 6.10.

Angling Act. R.S., c. 14, s. 1. 1989. Accessed October 26, 2018. https://nslegislature.ca/ sites/default/files/legc/statutes/angling.htm.

Arlinghaus, Robert, Steven J. Cooke, Jon Lyman, David Policansky, Alexander Schwab, Cory Suski, Stephen G. Sutton, and Eva B. Thorstad. 2007. "Understanding the Complexity of Catch-and-Release in Recreational Fishing: An Integrative Synthesis of Global Knowledge from Historical, Ethical, Social, and Biological Perspectives." *Reviews in Fisheries Science* 15(1-2): 75-167. doi: 10.1080/10641260601149432.

Ashcroft, Bill. 2012. "Colonialism." In *Blackwell Encyclopedias in Social Sciences: The Wiley-Blackwell Encyclopedia of Globalization*, edited by George Ritzer. Hoboken, New Jersey: Blackwell Publishing Ltd. Accessed November 26, 2018. https://search.credoreference. com/content/topic/colonialism.

Baechler, Fred, Jim Foulds, and Bill Jones. 2016. "09 July 2016 Planning Session – Final Report on Task A (Meeting)." September 21. 1-22. EXP: Sydney, Nova Scotia. Accessed May 21, 2018. https://www.margareesalmon.ca/wp-content/uploads/2017/12/EXP_ River_Management.pdf.

Barsh, Russel Lawrence. 2002. "*Netukulimk* Past and Present: Míkmaw Ethics and the Atlantic Fishery." *Journal of Canadian Studies* 37(1): 15-42. doi: 10.3138/jcs.37.1.15.

Bartlett, Cheryl, Murdena Marshall, and Albert Marshall. 2012. "Two-Eyed Seeing and other lessons learned within a co-learning journey of bringing together indigenous and mainstream knowledges and ways of knowing." *Journal of Environmental Studies and Science* 2(4): 331-340. doi: 10.1007/s13412-012-0086-8.

Battiste, Jaime. 2016. "Treaty Denied: The 1928 Trail of Grand Chief Gabriel Sylliboy." In *Living Treaties: Narrating Mi'kmaw Treaty Relations*, edited by Marie Battiste, 66-82. Sydney, Cape Breton: Cape Breton University Press.

Beaton, Elizabeth. 2017. *Gaspereau Fishing on the Southwest Margaree River*. Pictou, Nova Scotia: Advocate Printing.

Benjamin, Chris. 2014. *Indian School Road: Legacies of the Shubenacadie Residential School*. Halifax, Nova Scotia: Nimbus Publishing.

Bernard, H. Russell. 2011. *Research Methods in Anthropology: Qualitative and Quantitative Approaches*. Lanham, Maryland: AltaMira Press.

Bohannan, Paul, and Mark Glazer. 1988. *High Points in Anthropology*. Second Edition. New York: McGraw-Hill.

Bonilla, Yarimar. 2014. "Social Movements." *Oxford Bibliographies*. Accessed February 10, 2019. doi: 10.1093/obo/9780199766567-0024.

Calabrese, Andrew, and Marco Briziarelli. 2014. "Hegemony." *Oxford Bibliographies*. Accessed February 7, 2019. doi: 10.1093/OBO/9780199756841-0071.

Caplan, Ronald. 1980. "Guiding for Salmon on the Margaree." Interview with Johnny White. *Cape Breton's Magazine* issue 26: 1-11.

Caplan, Ronald. 1981. "Poaching for Salmon on the Margaree." Interview with Elward Hart. *Cape Breton's Magazine* issue 28: 25-29.

Carrier, James G., and Paige West. 2009. "Introduction: Surroundings, Selves and Others: The Political Economy of Environment and Identity." *Landscape Research* 34(2): 157-170. doi: 10.1080/01426390802390509.

Chase, Stephen. 2003. "Closing the North American Mix Stock Commercial Fishery for wild Atlantic Salmon." Overview paper, Atlantic Salmon Federation. 1-9. St. Andrew's, New Brunswick. Accessed May 15, 2018. http://www.oldsalmon.ca/docs/issues/past_ closures.pdf.

CHRB. 1999. "Canadian Heritage Rivers System Annual Report 1998-1999." 1-28. Minister of Public Works and Government Services Canada: Ottawa, Canada. http://publications.gc.ca/collections/Collection/R62-122-1999E.pdf.

CHRB. 2001. "Canadian Heritage Rivers System Annual Report 2000-2001." 1-36. Minister of Public Works and Government Services Canada: Ottawa, Canada. http://publications.gc.ca/collections/Collection/R62-122-2001E.pdf.

CHRB. 2002. "Canadian Heritage Rivers System Annual Report 2001-2002." 1-24. Minister of Public Works and Government Services Canada: Ottawa, Canada. http://publications.gc.ca/collections/Collection/R62-122-2002E.pdf.

CHRB. 2005. "Canadian Heritage Rivers System Annual Report 2004-2005." 1-16. Minister of Public Works and Government Services Canada: Ottawa, Canada. http://publications.gc.ca/collections/collection_2007/pc/R61-20-2005E.pdf.

CHRB. 2006. "Canadian Heritage Rivers System Annual Report 2005-2006." 1-16. Minister of Public Works and Government Services Canada: Ottawa, Canada. http://publications.gc.ca/collections/collection_2007/pc/R61-20-2006E.pdf

CHRB. 2009. “Canadian Heritage Rivers System Annual Report 2008-2009.” 1-16. Minister of Public Works and Government Services Canada: Ottawa, Canada. http://publications.gc.ca/collections/collection_2010/pc/R61-20-2009-eng.pdf.

CHRB. 2010. “Canadian Heritage Rivers System Annual Report 2009-2010.” 1-22. Minister of Public Works and Government Services Canada: Ottawa, Canada. http://publications.gc.ca/collections/collection_2011/pc/R61-20-2010-eng.pdf

CHRB. 2017. “Canadian Heritage Rivers System Principles, Procedures and Operational Guidelines 2017.” 1-74. Last revised May 8. Accessed May 24, 2018. http://chrs.ca/wp-content/uploads/2018/04/PPOG_May-2017_Updated-2-1.pdf.

CHRS. 2017*a*. “About the CHRS.” Accessed April 17, 2018. http://chrs.ca/about/.

CHRS. 2017*b*. “The Rivers.” Accessed June 20, 2018. http://chrs.ca/the-rivers/.

CHRS. 2017*c*. “Margaree River.” Accessed May 23, 2018. http://chrs.ca/the-rivers/margaree/.

CHRS. 2017*d*. “Nomination and Designation.” Accessed August 27, 2018. *chrs*.ca/nominationdesignation/.

COSEWIC. 2015. “COSEWIC Assessment Process, Categories and Guidelines.” 1-19. Accessed May 24, 2018. http://www.cosewic.gc.ca/94D0444D-369C-49ED-A586-EC00C3FEF69B/Assessment_process_and_criteria_e.pdf.

Creighton, Helen, and Calum MacLeod. 1979. *Gaelic Songs in Nova Scotia*. Ottawa: National Museums of Canada.

Cruikshank, Julie. 1992. “Invention of Anthropology in British Columbia’s Supreme Court: Oral Tradition as Evidence in *Delgamuukw v. B.C.*” BC Studies 95 (Autumn): 25-42. doi: https://doi.org/10.14288/bcs.v0i95.1435.

Dashwood, Richard Lewes. 1871. *Chiploqurgan: or Life by the Camp Fire in Dominion of Canada and Newfoundland*. Dublin, Ireland: White.

Davis, Anthony, and Kenneth Ruddle. 2010. “Constructing confidence: rational skepticism and systematic enquiry in local ecological knowledge research.” *Ecological Applications* 20(3): 880-894. doi: 10.1890/09-0422.1.

Denny, Shelley, and Lucia Fanning. 2016. “A Mi’kmaq Perspective on Advancing Salmon Governance in Nova Scotia, Canada: Setting the Stage for Collaborative Co-Existence.” *The Indigenous Policy Journal* 7(3), article four: 1-25. doi: 10.18584/iipj2016.7.3.4.

Denny, Shelley, Angela Denny, Keith Christmas, and Tyson Paul. 2013. “Plamu Mi’kmaq Ecological Knowledge: Atlantic Salmon in Unama’ki.” Unama’ki Institute of Natural

Resources. 1-24. Accessed April 10, 2018. http://www.uinr.ca/wp-content/uploads/2013/07/Salmon-MEK-WEB.pdf.

Dempson, J.B., G. Furey, and M. Bloom. 2002. “Effects of catch and release angling on Atlantic salmon, *Salmo salar* L., of the Conne River, Newfoundland.” *Fisheries Management and Ecology* 9(3):139-147. doi: 10.1046/j.1365-2400.2002.00288.x.

Department of Lands and Forests. Winter 1989-90. *The Margaree-Lake Ainslie River System*. 1(1): 1-8. Newsletter.

DFO. 2012*a*. “Atlantic Salmon Fisheries Scenario Analysis for the Margaree River (NS) for 2012.” Canadian Science Advisory Secretariat Science Response 2012/019. 1-16. Accessed February 17, 2018. http://waves-vagues.dfo-mpo.gc.ca/Library/347640.pdf.

DFO. 2012*b*. “Aboriginal Fishing Strategy.” September 24. Accessed June 21, 2018. http://www.dfo-mpo.gc.ca/fm-gp/aboriginal-autochtones/afs-srapa-eng.htm.

DFO. 2018. “Fisheries and Oceans Canada.” December 21. Accessed January 7, 2019. http://www.dfo-mpo.gc.ca/index-eng.htm.

Dunfield, R. W. 1985. *The Atlantic Salmon in the History of North America*. Department of Fisheries and Oceans: Ottawa, Canada.

ECCC. 2016. Community knowledge and the COSEWIC assessment process.” October 17. Accessed May 24, 2018. https://www.canada.ca/en/environment-climate-change/services/committee-status-endangered-wildlife/community-knowledge-assessment-process.html.

ECCC. 2017. “About COSEWIC and the Species at Risk Act.” June 6. Accessed May 24, 2018. https://www.canada.ca/en/environment-climate-change/services/committee-status-endangered-wildlife/about-species-risk-act.html.

ECCC. 2018. “Species at Risk Public Registry: Atlantic Salmon Gaspe-Southern Gulf of St. Lawrence population.” Last updated May 18. Accessed May 24, 2018. http://www.sararegistry.gc.ca/species/speciesDetails_e.cfm?sid=1134.

Escobar, Arturo. 1992. “Culture, Practice and Politics: Anthropology and the study of social movements.” *Critique of Anthropology* 12(4): 395-432. doi: 10.1177/0308275X9201200402.

Escobar, Arturo. 1998. “Whose Knowledge Whose nature? Biodiversity, Conservation, and the Political Ecology of Social Movements.” *Journal of Political Ecology* 5(1): 53-82. doi: http://dx.doi.org/10.2458/v5i1.21397.

Escobar, Arturo. 1999. “After Nature: Steps to an Antiessentialist Political Ecology.” *Current Anthropology* 40(1): 1-30. doi: https://www.jstor.org/stable/10.1086/515799.

Finkelstein, Maxwell. 2006. “Margaree River.” Last updated January 23, 2014. Accessed April 19, 2018. www.thecanadianencyclopedia.ca/en/article/margaree-river/.

Fletcher, Robert, and Katja Neves. 2012. “Contradictions in Tourism: The Promise and Pitfalls of Ecotourism as a Manifold Capitalist Fix.” *Environment and Society: Advances in Research* 3(1): 60-77. doi: 10.3167/ares.2012.030105.

Gargan, Patrick G., Trevor Stafford, Finn Økland, and Eva B. Thorstad. 2015. “Survival of wild Atlantic salmon (*Salmo salar*) after catch and release angling in three Irish rivers.” *Fisheries Research* 161: 252-260. doi: 10.1016/j.fishres.2014.08.005.

Google Maps. 2019*a*. “Directions from Whycocomagh to Margaree Forks.” Accessed March 19, 2019. https://www.google.com/maps/dir/Whycocomagh,+Nova+Scotia+B0E+3M0/Margaree+Forks,+Nova+Scotia/@46.1468531,-61.2887267,10z/data=!3m1!4b1!4m14!4m13!1m5!1m1!1s0x4b5d73f3bf565b85:0xb3f1735a77eef924!2m2!1d-61.1215811!2d45.9751009!1m5!1m1!1s0x4b677b739667c499:0xd1f3c3f1c0a45079!2m2!1d-61.096054!2d46.332937!3e0

Google Maps. 2019*b*. “Directions from Eskasoni to Margaree Forks.” Accessed March 19, 2019. https://www.google.com/maps/dir/Eskasoni,+Nova+Scotia/Margaree+Forks,+NS+B0E+2A0/@46.1165331,-60.972124,10z/data=!3m1!4b1!4m14!4m13!1m5!1m1!1s0x4b5d5b6933534aa1:0xfe82c4cb50d4d16e!2m2!1d-60.6011523!2d45.948514!1m5!1m1!1s0x4b677b739667c499:0xd1f3c3f1c0a45079!2m2!1d-61.096054!2d46.332937!3e0

Google Maps. 2019*c*. “Directions from We’koqma’q to Margaree Forks.” Accessed March 19, 2019. https://www.google.com/maps/dir/We'koqma'q,+P.O.+Box+149150,+Reservation+Rd,+Whycocomagh,+NS+B0E+3M0/Margaree+Forks,+NS+B0E+2A0/@46.1468531,-61.2887267,10z/data=!3m1!4b1!4m14!4m13!1m5!1m1!1s0x4b5d73c5854c1745:0x38d8825c6339f20e!2m2!1d-61.139011!2d45.9711769!1m5!1m1!1s0x4b677b739667c499:0xd1f3c3f1c0a45079!2m2!1d-61.096054!2d46.332937!3e0

Google Maps. 2019*d*. “Directions from Wagmatcook to Margaree Forks.” Accessed March 19, 2019. https://www.google.com/maps/dir/Wagmatcook+Indian+Reserve+No.+1,+Victoria,+Subd.+B,+NS/Margaree+Forks,+NS+B0E+2A0/@46.2079215,-61.1179466,11z/data=!3m1!4b1!4m14!4m13!1m5!1m1!1s0x4b5d7b4293a3c77d:0x77cab70abf796e2f!2m2!1d-60.9203529!2d46.0828828!1m5!1m1!1s0x4b677b739667c499:0xd1f3c3f1c0a45079!2m2!1d-61.096054!2d46.332937!3e0

Google Maps. 2019*e*. “Directions from Membertou to Margaree Forks.” Accessed March 19, 2019. https://www.google.com/maps/dir/Membertou,+Cape+Breton,+Nova+Scotia/Margaree+Forks,+NS+B0E+2A0/@46.1279657,-60.9511638,10z/data=!3m1!4b1!4m14!4m13!1m5!1m1!1s0x4b67fb6fe3acbe03:0x7511684ec0813f8!2m2!1d-60.1894324!2d46.1151395!1m5!1m1!1s0x4b677b739667c499:0xd1f3c3f1c0a45079!2m2!1d-61.096054!2d46.332937!3e0

Google Maps. 2019*f*. "Directions from Chapel Island to Margaree Forks." Accessed March 19, 2019. https://www.google.com/maps/dir/Chapel+Island,+Nova+Scotia/Margaree+Forks,+NS+B0E+2A0/@45.9646805,-61.7082573,9z/data=!3m1!4b1!4m14!4m13!1m5!1m1!1s0x4b5d3a11650cfa61:0x271f6b5c868972f8!2m2!1d-60.7825495!2d45.7162267!1m5!1m1!1s0x4b677b739667c499:0xd1f3c3f1c0a45079!2m2!1d-61.096054!2d46.332937!3e0.

Google Maps. 2019*g*. "Directions from Paqtnkek to Margaree Forks." Accessed March 19, 2019. https://www.google.com/maps/dir/Paqtnkek+Gumnasium,+136+Afton+Loop,+Afton+Station,+NS+B0H+1A0/Margaree+Forks,+NS+B0E+2A0/@45.9675022,-61.9775327,9z/data=!3m1!4b1!4m14!4m13!1m5!1m1!1s0x4b5c57be081801eb:0x8184547c7cae020b!2m2!1d-61.7377222!2d45.6028956!1m5!1m1!1s0x4b677b739667c499:0xd1f3c3f1c0a45079!2m2!1d-61.096054!2d46.332937!3e0

Google Maps. 2019*h*. "Directions from Kings County to Margaree Forks." Accessed March 19, 2019.https://www.google.com/maps/dir/Kings+County,+Nova+Scotia/Margaree+Forks,+NS+B0E+2A0/@45.5344106,-63.9992989,8z/data=!3m1!4b1!4m14!4m13!1m5!1m1!1s0x4b5845140238fb1d:0xfbc6cd9b6d07d213!2m2!1d-64.6552641!2d45.1072491!1m5!1m1!1s0x4b677b739667c499:0xd1f3c3f1c0a45079!2m2!1d-61.096054!2d46.332937!3e0

Government of Canada. 2014. Tri-Council Policy Statement *Ethical Conduct for Research Involving Humans*. Ottawa, Ontario: Canadian Institutes of Health Research (CIHR), Natural Sciences and Engineering Research Council of Canada (NSERC) and Social Sciences and Humanities Research Council of Canada (SSHRC). Accessed February 4, 2019. http://www.pre.ethics.gc.ca/pdf/eng/tcps2-2014/TCPS_2_FINAL_Web.pdf.

Harris, Douglas C., and Peter Millerd. 2010. "Food Fish, Commercial Fish, and Fish to Support a Moderate Livelihood: Characterizing Aboriginal and Treaty Rights to Canadian Fisheries." *Arctic Review on Law and Politics 82,* 1(1): 82-106. https://papers.ssrn.com/sol3/papers .cfm?abstract_id=1594272.

Heatherington, Tracey. 2016. "Environmental Anthropology." *Oxford Bibliographies.* Accessed February 7, 2019. doi: 10.1093/OBO/9780199766567-0041.

Hedican, Edward. 2012. *Social Anthropology: Canadian Perspectives on Culture and Society*. Toronto: Canadian Scholars' Press Inc.

Henderson, James (Sa'ke'j) Youngblood. 2016. "Alexander Denny and the Treaty Imperative." In *Living Treaties: Narrating Mi'kmaw Treaty Relations*, edited by Marie Battiste, 95-114. Sydney, Cape Breton: Cape Breton University Press.

Hesson, Michael W. 2006. "Ethnohistory." In *Encyclopedia of Anthropology*, edited by H. James Birx, 854-857. Thousand Oaks, California: Sage Publications.

Holland, Samuel. 1935. *Holland's Description of Cape Breton Island and Other Documents*. Edited D. C. Harvey. Halifax: Public Archives of Nova Scotia.

Ibrahim, Hadeel. 2018. “Atlantic salmon group strikes deal to stop Greenland fishery for 12 years.” CBC News. May 28, 2018. Accessed October 29, 2018. https://www.cbc.ca/news/canada/new-brunswick/salmon-fishing-prohibition-greenland-faroe-island-1.4680875.

Indigenous and Northern Affairs Canada. 2016. “Treaty Texts- 1752 Peace and Friendship Treaty.” Last modified March 7, 2016. Accessed October 10, 2018. https://www.aadnc-aandc.gc.ca/eng/1100100029040/1100100029041.

Ingold, Tim. 2012. “Toward an Ecology of Materials.” *Annual Review of Anthropology* 41: 427-442. doi: 10.1146/annurev-anthro-081309-145920.

Isaac, Thomas. 1993. “Balancing Rights: The Supreme Court of Canada, *R. v. Sparrow*, and the Future of Aboriginal Rights.” *Canadian Journal of Native Studies* 13(2): 199-219. http://www3.brandonu.ca/cjns/13.2/isaac.pdf.

King, Sarah J. 2011. “Conservation Controversy: Sparrow, Marshall, and the Mi’kmaq of Esgenoôpetitj.” *The International Indigenous Policy Journal* 2(4): 1-14, Article 5. doi: 10.18584/iipj.2011.2.4.5.

KMKNO. 2010. “Assembly of NS Mi’kmaq Chiefs Say DFO Must Conserve Depleted Atlantic Salmon.” May 12. Accessed May 25, 2018. http://mikmaqrights.com/wp-content/uploads/2014/01/hooknreleaseMay1210.pdf.

L.A. Rutherford and Associates. 1987. “An Overview of Nova Scotia’s Rivers as Heritage Resources: Phase IV Summary and Conclusions.” Prepared by L.A. Rutherford and Associates: Truro, Nova Scotia.

L.A. Rutherford and Associates. 1988. “Background Study of Selected Rivers in Nova Scotia: Summary and Conclusions.” Prepared by L.A. Rutherford and Associates: Truro, Nova Scotia.

LeFort, Simon (Chairperson). 1990. “Report on the Margaree River Advisory Committee to the Honourable C.W. “Chuck” MacNeil Minister of Lands and Forests Concerning The Nomination of the Margaree-Lake Ainslie River System to the Canadian Heritage Rivers Program.” June 11, 1990. 1-19.

Lennox, Robert J., Steven J. Cooke, Ola H. Diserud, Torgeir B. Havn, Martin R. Johansen, Eva B. Thorstad, Frederick G. Whoriske,y and Ingebrigt Uglem. 2016. “Use of simulation approaches to evaluate the consequences of catch-and-release angling on the migration behaviour of adult Atlantic salmon (*Salmo salar*).” *Ecological Modelling* 333(C):43-50. doi: 10.1016/j.ecolmodel.2016.04.010.

Lennox, Robert J., Steven J. Cooke, Colin R. Davis, Paddy Gargan, Lorraine A. Hawkins, Torgeir B. Havn, Martin R. Johansen, Richard J. Kennedy, Antoine Richard, Martin-A. Svenning, Ingebrigt Uglem, John Webb, Frederick G. Whoriskey, Eva B. Thorstad. 2017.

"Pan-Holarctic assessment of post-release mortality of angled Atlantic salmon *Salmo salar*." *Biological Conservation* 209: 150-158. doi: 10.1016/j.biocon.2017.01.022.

Lewis, Roger, and Trudy Sable. 2014. "The Mi'kmaq: *Ta'n Mi'kmaqik Telo'ltipni'k Mi'kma'ki*— 'How the People Lived in Mi'kma'ki.'" In *Native Peoples: The Canadian Experience*, edited by C. Roderick Wilson and Christopher Fletcher, 273-296. Don Mills, Ontario: Oxford University Press.

MacDonald, Rankin. 1998. "Margaree-Lake Ainslie: Will Heritage River status come in '98?" *The Inverness Oran,* January 7, 1998. Vol. 22, no. 42.

MacDonald, Rankin. 1999. "Margaree-Lake Ainslie: Province names system Canadian Heritage River." *The Inverness Oran,* January 27, 1999. Vol. 23, no. 45.

MacDougall, John Lorne. 1922. *History of Inverness County, Nova Scotia*. Accessed June 1, 2018. https://archive.org/stream/historyofinverne00macduoft#page/422/mode/2up.

Margaree-Lake Ainslie River System Advisory Committee. 1996. "Margaree-Lake Ainslie Canadian Heritage River: A Partnership Strategy." Unpublished Manuscript.

MacEachern, Alan. 2001. *Natural Selections: National Parks in Atlantic Canada, 1935-1970.* Montreal and Kingston: McGill-Queen's University Press.

Makkai, Jon-Callum. 2000. "Margaree and Metropolis: Economic Marginality and Dynamic Underdevelopment in a Twentieth-Century Rural Cape Breton Community." Master Thesis, Dalhousie University.

McMillan, L. Jane, and Kerry Prosper. 2016. "Remobilizing *netukulimk*: indigenous cultural and spiritual connections with resource stewardship and fisheries management in Atlantic Canada." *Reviews in Fish Biology and Fisheries* 26(4): 629-647. doi: 10.1007/s11160-016-9433-2.

McNeil, Ian. 1990*a*. "Heritage River Status Discussed in Margaree." *The Inverness Oran,* March 28, 1990. Vol. 15, no. 2.

McNeil, Ian. 1990*b*. "Hunting and Fishing Rights in Whycocomagh." *The Inverness Oran,* April 4, 1990. Vol. 15, no. 3.

McNeil, Ian. 1990*c*. "Margaree Heritage River Status: New Group Opposed to Designation." *The Inverness Oran,* April 11, 1990. Vol. 14, no. 4.

McNeil, Ian. 1990*d*. "Heritage River Status: Margaree Group to Decide Thursday." *The Inverness Oran,* April 18, 1990. Vol. 15, no. 5.

Metallic, Fred. 2016. “Treaty and Mi’gmewey.” In *Living Treaties: Narrating Mi’kmaw Treaty Relations*, edited by Marie Battiste, 42-51. Sydney, Cape Breton: Cape Breton University Press.

MAPS. 2013. “Mi’kmaw and the Atlantic Salmon (Salmo salar) in Mainland Nova Scotia.” 1-35. Shubenacadie, Nova Scotia. Accessed May 14, 2018. http://mikmaki.ca/wp-content/uploads/2016/07/MAPS_Mikmaw_and_the_ Atlantic_Salmon.pdf.

Martinez-Alier, J. 1995. “Political Ecology, Distributional Conflicts, and Economic Incommensurability.” *New Left Review* I/211: 70-88. https://newleftreview.org/I/211/j-martinez-alier-political-ecology-distributional-conflicts-and-economic-incommensurability.

Mi'kmaq Grand Council, UNSI, NCNS, and DFO. 1993. *Mi'kmaq Fisheries, Netukulimk: Towards a Better Understanding.* Truro, NS: Native Council of Nova Scotia, Language Program.

MSA. 2017. “Mill Meets with Margaree Salmon Association.” August 9, 2017. Accessed September 6, 2018. https://www. margareesalmon.ca/final-mill-meets-with-margaree-salmon-association/.

MSA. 2018. “The Margaree Salmon Association.” Accessed April 18, 2018. https://www.margareesalmon.ca.

MSA. 2019*a*. “MSA Membership.” Accessed March 1, 2019. https://www.margareesalmon.ca/membership/.

MSA. 2019*b*. “MSA Board.” Accessed March 1, 2019. https://www.margareesalmon.ca/governance/msa-board/.

NSE. 2008. “Margaree-Lake Ainslie Canadian Heritage River 10-year Monitoring Report.” Accessed April 19, 2018. www.chris.ca/wp-content/uploads/2016/01/hr.Margaree.Ten-.Year-.Monitoring.Report.2008.pdf.

NSE. 2018*a*. “Minister of Environment.” Last modified July 24, 2018. Accessed March 10, 2019. https://novascotia.ca/nse/ dept/minister.asp.

NSE. 2018*b*. “Business Plan 2018-19.” 1-6. Accessed March 10, 2019. https://novascotia.ca/government/accountability/2018-2019/2018-2019-business-plan-Department-of-Environment.pdf.

NSE. 2019. “Home.” Last modified February 25. Accessed March 10, 2019. https://novascotia.ca/nse/.

NSDFA. 2018*a*. "2018 Salmon Regulations." Accessed November 17, 2018. https://novascotia.ca/fish/documents/regulations/2018-Salmon-Angling-information-and-licence-fees-web.pdf.

NSDFA. 2018*b*. "Business Plan 2018-19." 1-8. Accessed March 10, 2019. https://novascotia.ca/government/accountability/2018-2019/2018-2019-business-plan-Department-of-Fisheries-and-Aquaculture.pdf.

NSDFA. n.d. "A Survey of the Sportfishing Industry in Nova Scotia." Pictou, Nova Scotia. 1-17. Accessed November 26, 2018. https://novascotia.ca/fish/documents/NS-Sportfishing-Survey.pdf.

Palmater, Pamela. 2016. "My Tribe, My Heirs and Their Heirs Forever: Living Mi'kmaw Treaties." In *Living Treaties: Narrating Mi'kmaw Treaty Relations*, edited by Marie Battiste, 24-41. Sydney, Cape Breton: Cape Breton University Press.

Pinfold, Gardner. 2011. "Economic Value of Wild Atlantic Salmon." Halifax, Nova Scotia. Unpublished manuscript.

PHP. 2018. "2017 Annual Monitoring Report: SFM Indicators and High Conservation Values." Unpublished manuscript.

Potlotek First Nation. 2016. "St. Anne's Missions." Accessed March 7, 2019. http://potlotek.ca/news-events/annual/19-st-anne-s-mission.

Prosper, Kerry, L. Jane McMillan, Anthony Davis, and Morgan Moffitt. 2011. "Returning to Netukulimk: Mi'kmaq cultural and spiritual connections with resource stewardship and self-governance." *The International Indigenous Policy Journal* 2(4): 1-17. doi: 10.18584/iipj.2011.2.4.7.

R. v. Marshall [1999] 3 SCR 456.

R. v. Sparrow [1990] 1 SCR 1075.

Roberts, Charles D. 1891. *The Canadian Guide-Book: The Tourist's and Sportsman's Guide to Eastern Canada and Newfoundland*. New York: D. Appleton Company. Accessed October 19, 2018. https://babel.hathitrust.org/cgi/pt?id=wu.89067586834;view=2up;seq=288; size=200.

Sable, Trudy, and Bernie Francis. 2012. *The Language of this Land, Mi'kma'ki*. Sydney, Nova Scotia: Cape Breton University Press.

Salomons, Tanisha, and Erin Hanson. 2009. "Sparrow Case." First Nations and Indigenous Studies, the University of British Columbia. Accessed on December 4, 2018. https://indigenousfoundations.arts.ubc.ca/sparrow_case/.

Silverstone, Martin. 2017. “Closing Time.” *Atlantic Salmon Journal* 66(3): 32-36. Print.

St. Clair, Jim. 2003. “Lake Ainslie-The Settlers Story.” Virtual Museum. Accessed October 17, 2018. http://www.virtualmuseum.ca/sgc-cms/histoires_de_chez_nous-community_memories/pm_v2.php?id=record_detail&fl=0&lg=English&ex=00000561&rd=134824#.

Sturtevant, William C. 1966. “Anthropology, History, and Ethnohistory.” *Ethnohistory* 13(1-2): 1-51. https://www.jstor.org/stable/480777.

Thompson, Melissa, Sam Van Wasseenbergh, Sean M. Rogers, Scott G. Seamone, and Timothy E. Higham. 2018. “Angling-induced injuries have a negative impact on suction feeding performance and hydrodynamics in marine shiner perch, *Cymatogaster aggregate*.” *Journal of Experimental Biology* 221(19): 1-8. doi: 10.1242/jeb.180935.

Thorpe, F.J. 2003. “Holland, Samuel Johannes,” in *Dictionary of Canadian Biography*, vol. 5, University of Toronto/Université Laval. Accessed March 3, 2019. http://www.biographi.ca/en/bio/holland_samuel_johannes_5E.html.

Tourism Nova Scotia. 2017.” Margaree Fish Hatchery.” Accessed November 19, 2018. https://www.novascotia.com/see-do/attractions/margaree-fish-hatchery/1377#

Trudeau, Justin. 2018. “Minister of Fisheries, Oceans and the Canadian Coast Guard Mandate Letter.” *Office of the Prime Minister*. August 28. Accessed February 8, 2019. https://pm.gc.ca/eng/minister-fisheries-oceans-and-canadian-coast-guard-mandate-letter-august-28-2018.

Turner, Nancy, and Helen Clifton. 2009. “’It’s so different today’: Climate change and indigenous lifeways in British Columbia, Canada.” *Global Environmental Change* 19(2): 180-190. doi: 10.1016/j.gloenvcha.2009.01.005.

Uniacke, Richard John. 1958. *Uniacke’s Sketches of Cape Breton and Other Papers Relating to Cape Breton Island*. Edited by C. Bruce Fergusson. Halifax: The Public Archives of Nova Scotia.

UINR. 2015. “Just the Facts: Plamu.” Accessed May 25, 2018. http://www.uinr.ca/wp-content/uploads/2016/09/Plamu-Atlantic-Salmon-Fact-Sheet.pdf.

UINR. 2016*a*. “About UINR.” Accessed April 19, 2018. www.uinr.ca/about/.

UINR. 2016*b*. “Netukulimk.” Accessed April 19, 2018. http://www.uinr.ca/programs/netukulimk/.

Virtual Museum. 2018. “Lake Ainslie—The Settlers Story.” Accessed July 4 2018. http://www.virtualmuseum.ca/sgc-cms/histoires_de_chez_nous-community_memories/pm_v2.php?id=story_line&lg=English&fl=0&ex=00000561&sl=4425&pos=1#.

Walker, Peter. 2005. “Political ecology: where is the ecology?” *Progress in Human Geography* 29(1): 73-82. doi: 19.1191/0309132505ph530pr.

Wicken, William C. 2002. *Mi’kmaq Treaties on Trial: History, Land and Donald Marshall Junior*. Toronto: University of Toronto Press.

Whoriskey, F. G., S. Prusov, and S. Crabbe. 2000. “Evaluation of the effects of catch-and-release angling on the Atlantic salmon (*Salmo salar*) of the Ponoi River, Kola Peninsula, Russian Federation.” *Ecology of Freshwater Fish* 9 (1-2):118-125. doi: 10.1034/j.1600-0633.2000.90114.x.

Zimonjic, Peter. 2018. “7 things you need to know about the G7.” *CBC News*. June 7. Accessed February 10, 2019. https://www.cbc.ca/news/politics/g7-summit-seven-things-1.4694608.

Interviews

E3. Port Hawkesbury, Cape Breton (via email). August 27th, 2018. On file with author.

FH1. Northeast Margaree, Cape Breton. June 25th, 2018. On file with author.

G1. Baddeck, Cape Breton. August 20th, 2018. On file with author.

G2. Antigonish, Nova Scotia. January 4th, 2019. On file with author.

G3. Halifax, Nova Scotia. December 27th, 2018. On file with author.

HRS1. East Margaree, Cape Breton. July 10th, 2018. On file with author.

HRS2. Margaree Forks, Cape Breton. August 22nd, 2018. On file with author.

HRS3. Margaree Forks, Cape Breton. July 16th, 2018. On file with author.

HRS5. Whycocomagh, Cape Breton. August 14th, 2018. On file with author.

LR2. Margaree Forks, Cape Breton. August 13th, 2018. On file with author.

LR3. Upper Margaree, Cape Breton. July 6th, 2018. On file with author.

LR4. Upper Margaree, Cape Breton. July 7th, 2018. On file with author.

MR1. Eskasoni, Cape Breton. August 7th, 2018. On file with author.

MR2. Eskasoni, Cape Breton. July 17th, 2018, On file with author.

MR3. Membertou, Cape Breton. July 19th, 2018. On file with author.

MR4. Antigonish, Nova Scotia. November 28th, 2018. On file with author.

MSM1. Northeast Margaree, Cape Breton. July 14th, 2018. On file with author.

R1. East Margaree, Cape Breton. December 19th, 2018. On file with author.

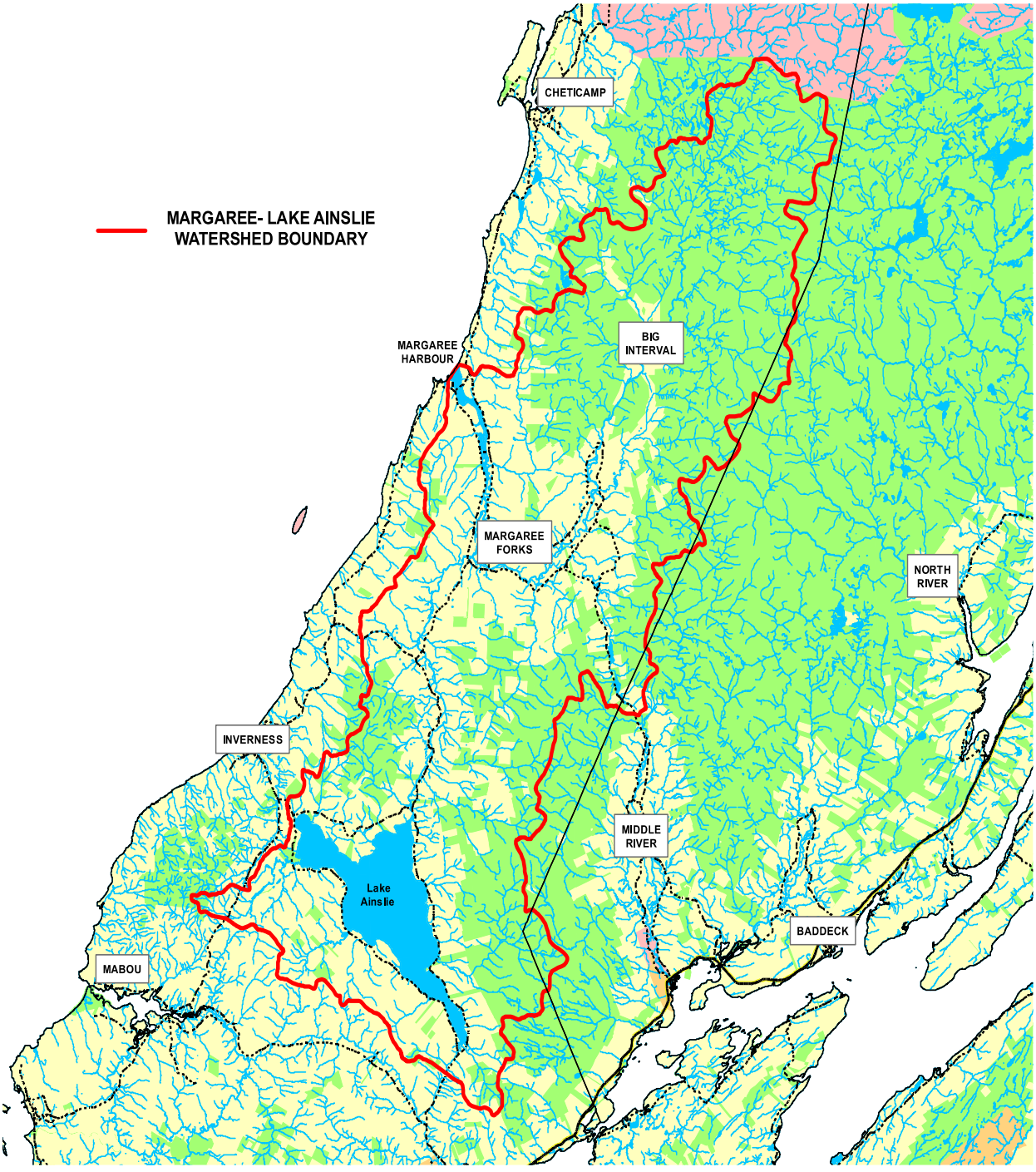
R3. Margaree Forks, Cape Breton. July 27th, 2018. On file with author.

SA1. Margaree Centre, Cape Breton. July 25th, 2018. On file with author.

Personal Communications

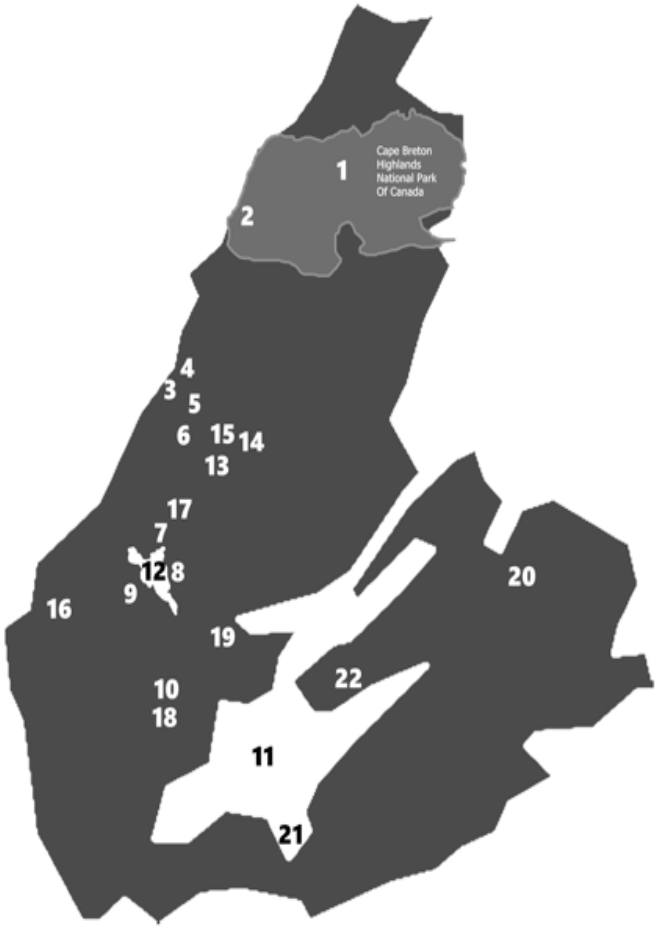
Murrant, Darryl. March 16, 2019. Email to author.

Appendix 1



Map of the Margaree-Lake Ainslie watershed boundaries (courtesy of David Williams 2019).

Appendix 2



1. Cape Breton Highlands National Park
2. Cap Rouge
3. Margaree Harbour
4. Belle Côte
5. East Margaree
6. Margaree Forks
7. Scotsville
8. East Lake Ainslie
9. West Lake Ainslie
10. Whycocomagh
11. Bras d'Or Lakes
12. Lake Ainslie
13. North East Margaree
14. Margaree Valley
15. Margaree Centre
16. Mabou
17. Upper Margaree
18. We'koqma'q
19. Wagmatcook
20. Membertou
21. Potletek (Chapel Island)
22. Eskasoni

Map of Cape Breton communities referred to in this thesis (courtesy of Frank Schmidt 2019).

Appendix 3

Consent Form

My name is Monica Ragan and I am seeking your consent to participate in my research project entitled "Relationships with the Margaree River Salmon: An Investigation of the Cross-Cultural Impacts of a Canadian Heritage River Designation on Conservation, Rights, and Recreation."

This study aims to answer the question whether the Canadian Heritage Rivers System designation has impacted conservation, rights, and recreation and personal relationships with the Margaree River.

By signing this consent form, the research participant:

- has read and understood the relevant information provided by the researcher;
- understands there are benefits and risks associated with participation;
- understands confidentiality will be maintained in accordance with the "Confidentiality and Anonymity" and "Release of Data" agreements stated in the Invitation to Participate form;
- understands this research may be published in academic journals, newspapers, or shown in social media outlets. Presentations may be given to the StFX campus community, stakeholders and interest groups associated with the Margaree River, and/or funders for this project;
- understands that she or he may ask questions in the future; and
- indicates free consent to research participation by signing the research consent form.

By signing this consent form, I am ensuring that I have received a copy of the Invitation to Participate for the research project titled "Relationships with the Margaree River Salmon: An Investigation of the Cross-Cultural Impacts of a Canadian Heritage Rivers System Designation on Conservation, Rights, and Recreation." I have had an opportunity to read the information provided, or it has been explained to me by the researcher. The investigator answered all questions I may have had.

In signing this consent form, I agree to partake in the research project "Relationships with the Margaree River Salmon: An Investigation of the Cross-Cultural Impacts of a Canadian Heritage Rivers System Designation on Conservation, Rights, and Recreation." I recognize I am participating in this study voluntarily. I understand confidentiality will be maintained, and that I have the right to withdraw from the study at any point using the means outlined in the Invitation to Participate.

☐ By checking this box, I give permission for my name, role, and organization to be named in all forms of publications.

☐ By checking this box, I do not give permission for my name or role to appear but the organization I am associated with to be named. A pseudonym name will be used.

Name: _____

Signature: _____

Date: _____

Contact Information:
Monica Ragan
Honours student in Anthropology and Aquatic Resources
St. Francis Xavier University, Antigonish Nova Scotia
x2014fwr@stfx.ca