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Historical Resource Reflection: A Methodological Tool for Resource Partnerships: A Case Study of the Mi'kmaq of Prince Edward Island

Introduction:

The term co-management was first coined by Aboriginal tribes in Washington State during the 1970s to vocalize the relationship they hoped to attain with state resource managers and agencies (Pinkerton, 2003). Over the past few decades the term co-management has become a trendy alternative management model for a host of academic disciplines. This paper will draw upon some key co-management principles to make the case for the use of Aboriginal historical reflection as a tool for forming resource management partnerships. In addition, the story of the Aboriginal peoples of Washington State will be used as an example of how "indigenous negotiation of co-operative environmental management agreements" can be successful (Ross, 1999 p. 1). The co-management principles that will be examined and utilized are the three phases of the co-management process, pre-implementation, implementation, post-implementation, and building legitimacy, resilience, and empowerment. The goals of this paper are three fold. First, to make a case for historical reflection as a valuable tool for completing the pre-implementation phase of the comanagement process (partnership building), second, to present the Mi'kmaq of Prince Edward Island as a case study, and lastly, to illustrate why it makes sense for the Mi'kmaq to jumpstart a community based collaborative partnership for the Malpeque Bay Watershed. This paper assumes two simultaneous theoretical orientations in order to make a convincing

case for historical resource reflection, a conceptual social science perspective blended with an applied resource management framework.

First Nations Are Not Just A Stakeholder

The principle determinant when any species chooses a geography to inhabit is resource availability. Human societies, as a whole, have poorly managed their resources over the last millennia. In the late 20th and early 21st centuries resource planning/management began to abandon traditional top-down government lead resource management. In lieu of this schema, co-management emerged as a convincing alternative. The co-management planning process is broken down into three phase: pre-implementation, implementation, and postimplementation (Chuenpagdee, and Jentoft, 2007). Pre-implementation is the most difficult and time consuming of the three phases because it requires significant research, time, money, and community engagement. A successful pre-implementation phase facilitates community empowerment, builds local legitimacy, and creates resilience. This process has the potential to bring a high degree of compliance and enforcement to a collaborative resource management partnership's goals and objectives.

One of the problems with contemporary co-management thinking is the tendency to consider First Nations as a normal stakeholder. First Nations are not a "just a stakeholder" in a public policy sense. It is essential when considering resource management in an Aboriginal context to explain and utilize the distinction between First Nations and "other stakeholders."

Historical reflection can be an effective mechanism to help highlight these dissimilarities and develop a more comprehensive resource management partnership.

Historical resource reflection is a logical first step in a creating an Aboriginal resource management partnership. Historical reflection tells a story from a resource (as the main character) point of view. Historical reflection is the idea that before one begins any comanagement strategy, a complete history of resources use, users, and the significance of their interface with the economic and cultural health of society, should be assimilated and documented. Historical reflection has the potential to yield key insights that will be invaluable to solving common conundrums, for example, where does a community stop and start, who are the relevant resource users, what is the best strategy to engage them, what is the history of resource exploitation, what is the nature of existing social and political power relationships, how have they evolved through time, and what effects have they had on resource use and harvesting.

Historical reflection can help expediently move beyond many of the circular and repetitive arguments that often dominate preliminary conversations on forming resource management partnerships. One of the greatest challenges with resource management partnerships is that they seek to assimilate traditionally discrete fields of study, and use that information to develop and produce a functional management plan. Upon reviewing co-management literature, there is a consensus with respect to what pieces of information are necessary before a co-management system can be implemented, but there is not a well developed

methodological framework that is consistently drawn upon. The issue of stakeholder
engagement, involvement and identification for the planning process is a heated topic.
The simplest way to differentiate First Nations from traditional stakeholders is to examine
the story of Aboriginal tribes in Washington State and the Pacific Northwest (Ross, 1999 p.
2). Aboriginal tribes are unto themselves a nation; they have their own governance structure,
democratic process, and culture. Simply because their territory is within another national
jurisdiction does not de-legitimize them as a "nation within a nation."

One of the foremost problems with the use of the term stakeholder for Aboriginal tribes in a co-management context is the perception of equality among user groups (Ross, 1999 p. 3). "The concept of stakeholder is used to refer to all parties, government and non-government alike, who effect, or are affected by, an issue. Government and non-government parties are thus regarded as equally as 'stakeholders'" (Ross, 1999 p.3). In this circumstance Aboriginals would be considered to have the same "stake" as industrial, commercial, and civic user groups. Historical reflection can highlight the difference between Aboriginal groups and other stakeholders by exemplifying their long history of resource use in the area, body of traditional ecological knowledge, and draw attention to any treaty rights that recognize Aboriginal authority and or access to specific resource stocks.

The concept of historical reflection or ethno-history has been invaluable to the Aboriginal peoples of Canada. Historical analysis has been a primary driver behind land claims, treaties rights, legal disputes, etc. It is logical that an Aboriginal case study would serve as a prudent

example for the application of historical reflection to forming a resource management partnership.

The Coastal CURA Project in conjunction with the Mi'kmaq Confederation for Prince Edward Island (MCPEI) partnered to conduct a historical reflection of Mi'kmaq resource utilization on Prince Edward Island. The goal of this partnership was to construct a theoretical and evidentiary foundation for MCPEI to launch a "Restorative Fisheries Project" for the Malpeque Bay watershed. The end goal of the "Restorative Fisheries Project" is to create a collaborative community based management partnership for the Malpeque Bay watershed.

Coastal CURA & MCPEI

"The Coastal CURA is a five-year project that is building knowledge and capacity, across the Maritimes, to support community involvement in managing our coasts and oceans. The Coastal CURA – a "Community University Research Alliance" – is a partnership of First Nations communities, fishery-related organizations and university participants, funded by the Social Sciences and Humanities Research Council of Canada (SSHRC),"

(www.coastalcura.ca, accessed 11/4/2007).

The Coastal CURA Project has three broad themes: "reflection and evaluation methods: learning from experience, integrated coastal management initiatives: iterative learning in the present, and organizational and institutional capacity: building for the future," (www.coastalcura.ca, accessed 11/4/2007). The Coastal CURA Project hopes that these three areas of concentration will allow the project to meet its four primary goals: "improve effectiveness in governance of coastal resources, enhance community capacity to participate in coastal management, construct a Maritimes network for community-level coastal governance, and contribute to research innovations and knowledge generation," (www.coastalcura.ca, accessed 11/4/2007).

One of the First Nations partners in this community and university research alliance was the Mi'kmaq Confederation of Prince Edward Island. MCPEI is a non governmental organization that represents both bands of Mi'kmaq living in Prince Edward Island, the Abegweit and Lennox Island. MCPEI formed in 2002; it was intended to be an institution that "represents the collective interests of the PEI Mi'kmaq to foster a society that respects and sustains their existing aboriginal and treaty rights" (www.mcpei.ca, accessed 11/4/2007).

"Both communities participate in food fisheries and commercial fishing, and are involved in aquaculture and harbour management activities. The Lennox Island Development Corporation (LIDC) has a processing facility; hold and manage rental properties; have a marine biosciences research and development facility; and, are developing a Mi'kmaq fisheries product branding and marketing strategy" (www.mcpei.ca, accessed 11/4/2007).

The two bands are actively working in unison towards creating an integrated coastal management strategy, specifically for the Malpeque Bay watershed. In line with this objective MCPEI created an Integrated Resource Management Department. This function of this department is to support ecosystem-based resource management by building on historical Aboriginal knowledge of and participation in fishery management," (<u>www.mcpei.ca</u>, accessed 11/4/2007).

The Ecological Significance of Malpeque Bay

A watershed is an area of land that drains into a lake, river, or bay. As rainwater and melting snow run downhill, they carry sediment and other materials into streams, lakes, wetlands, and groundwater (Oregon Watershed Assessment Manual, 1999). Figure 1 (below) is a good

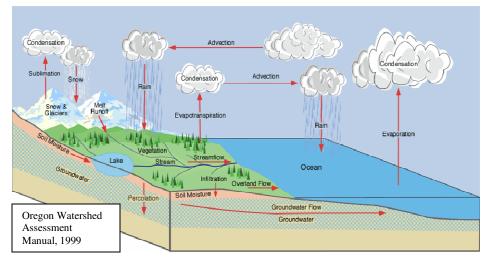


illustration of how a watershed operates. Malpeque Bay is located on the north coast of Prince Edward

Island, approximately 10 km north of Summerside, in Prince County. The bay has a total area of 24,400 ha, and contains a blend of marine and coastal wetlands. Malpeque Bay is a complex ecological watershed and has been referred to as a "small Chesapeake Bay." The watershed is comprised of marine waters, subtidal aquatic beds, sand beaches, intertidal marshes, and brackish to saline lagoons.

According to Environment Canada, Malpeque Bay and its watershed is the most significant ecological feature in the province of Prince Edward Island. However, there is presently no

comprehensive management strategy in place to balance the region's need for a sustainable and profitable lobster, rock crab, and aquaculture fisheries, while preserving and protecting this fragile ecosystem. Creating a collaborative community based resource management partnership for the Malpeque watershed is essential to the long term health of the ecosystem and guarding the region's economic interests. MCPEI is attempting to spearhead this process through their newly formed integrated resource management department. The integrated resource management department has developed a "Restorative Fisheries Project" for Malpeque Bay. Historical reflection will play a key role in the "Restorative Fisheries Project."

The Restorative Fisheries Project

Malpeque Bay has been the focus for food harvesting, transportation, recreation and economic development for the Mi'kmaq of Lennox Island for thousands of years. As a result there is rich historical and traditional knowledge of the uses and distribution of marine and coastal resources in the area (Lescarbot, 1968).

This area is rich in marine shellfish, crustaceans and migratory fish species, and offers a safe harvesting environment. The region's oyster fishery is strongly dependent on Malpeque Bay for production of spat (juvenile oysters) that supplies many of the Islands aquaculture operations. Furthermore, over the last century, the northern coast of Prince Edward Island has become the focus for tourism development, in part due to the favorable summer climate, and the abundance of sand dune beaches. Today, tourism operators, aquaculturists, fishers and other users of the marine and coastal environment around Malpeque Bay impact the environment and compete for space. Increased and varied use of the region has resulted in conflicts between different resource users. There is a need to establish an integrated management plan/partnership to protect the environment and resources within the Bay and reduce spatial and temporal conflicts between resource users, so that all activities can coexist without detrimental impact on each other. This is particularly important in light of the development of offshore mussel aquaculture that will depend on spat production from within Malpeque Bay.

MCPEI will be initiating discussions with DFO, PEI Fisheries, Malpeque Bay fishers, all other stakeholders concerning the need to advance an integrated management planning process that will bring together First Nations, and the various representative groups of resource users and residents around Malpeque Bay. As a first step in this process, the MCPEI seeks to collect and compile local aboriginal knowledge of the marine and coastal ecosystems within Malpeque Bay from Lennox Island Band members who have been intimately involved with the area. This aboriginal traditional knowledge will be used to establish a baseline of traditional resource use, and the importance to the economic, social, cultural, and health of the coastal communities.

Historical Resource Reflection: A case study of the Mi'kmaq of Prince Edward Island

This section will reveal data from the historical resource reflection that was done for the Mi'kmaq of Prince Edward Island. The emphasis will be on the process that went into creating the historical resource reflection, what is looked like (the physical representation), some of the key themes, how this information helped build empowerment, legitimacy, and resilience to the "Restorative Fisheries Project." The historical resource reflection conducted answered many key pre-implementation co-management questions for the Mi'kmaq. Historical resource reflection, if deemed a general methodological tool for forming resource management partnerships, has the potential to offer other coastal communities (not just aboriginal communities) insights into forming the pithiest, effective, and expedient comanagement plans possible.

The Research Process

The historical resource reflection for the Mi'kmaq was jointly funded by MCPEI and the Coast CURA Project. The process entailed an interdisciplinary literature review of sources that contained information regarding resource-use/harvesting by the Mi'kmaq of Prince Edward Island. An emphasis was placed on pre-contact fisheries and economic activities. This was done to establish a baseline of resource use and develop an inventory of the types of resources that were exploited – in order to ascertain the role that resource use/harvesting played in the cultural fabric of Mi'kmaq culture.

A primary consideration for using historical resource reflection as a co-management tool is figuring out the most effective way to organize and display the myriad of qualitative data. In

this instance, there were four themes that emerged: archeological data, testimonial evidence, how changes in the natural environment of the Bay of Fundy affected resource populations, and changes in the Mi'kmaq diet over time (food sources and harvesting techniques). The historical resource reflection was labeled "A Chronological Account of Mi'kmaq Resource Utilization on Prince Edward Island," (See Appendix 1). Each of these themes (stories) had a linear time variable; in addition, changes in the Mi'kmaq diet over time, also contained a seasonal time variable. The model (Appendix 1), designed using Adobe Illustrator, tells each of these stories chronologically, beginning with the arrival of Aboriginals in the Bay of Fundy Region (10,000 B.C.) and ending in present times (Wallis, 1955).

The Results: Mi'kmaq Resource Use, Themes, and Lessons for Resource Partnerships

The earliest evidence of Mi'kmaq resource exploitation comes from ethnohistographic accounts written by early French missionaries/explorers like Nicolas Denys and Father Biard, and from contemporary archeological dig-sites. With respect to the written word, this story began about 1500 AD with the arrival of the Europeans.

"The history of this land does not necessarily begin in 1500, with the arrival of the Europeans with their alphabet, their pens, and their parchment. Others were here before them. Over the centuries during which the Mi'kmaq People roamed sea and land and learned them well, history was encoded in stories and chants, passed down by word of mouth, taught through dance and song and dreams," (Whitehead, 1991).

Before the arrival of the Europeans, the Mi'kmaq lived a pseudo-nomadic lifestyle. Communities would shift seasonally to locations that were proximate to available terrestrial, marine, and or waterfowl populations. A complete list of food sources that were harvested by the Mi'kmaq is represented by *Appendix 2* (Hoffman, 1995; Chute, 1998; Whitehead, 1991; Wicken, 1994; Wallis, 1995). Many of the species listed have been extirpated on Prince Edward Island. However, it is important to document the complete gamut of resources that were once available in the Bay of Fundy region. *Appendix 2* highlights two key points for resource management on Prince Edward Island: first, that the area has the potential to support an incredible amount of biological diversity. A strong majority of species that have existed on Prince Edward Island are suitable for human exploitation. Secondly, before the arrival of Europeans in the New World, the Mi'kmaq harvested these resources relatively sustainably. European contact marked a new paradigm of resource use/harvesting for the Mi'kmaq. French missionaries and explorers introduced a plethora of novel European goods that facilitated a burgeoning fur trade. Items like hardtack, beans, corn, prunes, flour, brandy, muskets, the copper kettle, and iron, came to replace traditional Mi'kmaq foods, disrupt native subsistence patterns, and become engraved into everyday culture (Miller, 1976).

Appendixes 3 and 4 are histograms and pie-graphs of proposed pre and post-contact subsistence patterns. *Appendix 3* clearly indicates that the Mi'kmaq divided the year relatively evenly between coastal, riverine, inland, and lake geographies. The most important piece of information to note is that the Mi'kmaq spent no more than four months a year at anyone locality. *Appendix 4* illustrates the geographic subsistence cycle for the Mi'kmaq post European contact. These graphs communicate a profound re-organization of geographic subsistence patterns. Post-contact the Mi'kmaq spent seven months living on the coast.

These changes in the Mi'kmaq subsistence cycle marked an epistemological resource shift. Resources were once known for their subsistence and cultural values, now they were known as a commodity that could fetch a price with European traders. Terrestrial species were no longer harvested exclusively to meet subsistence needs; they became a valuable commodity in the fur trade. "More time is dedicated to killing animals for skins to for European foods and supplies," (Hoffman, 1955). The Mi'kmaq had to give up their summer gathering if they wanted to participate in the fur trade. "This change…had drastic effects on their winter diets, in that they had no native food stores and had to rely on whatever dried foods they received in trade," (Miller, 1976). This signaled a new paradigm of resource use/exploitation for the Mi'kmaq of Prince Edward Island. Species were now hunted at a scale that would eventually drive many to extirpation.

Such a dramatic modification of diet translated to a transformation in cultural practice and lifestyle. "Since the French have begun to frequent this country...they (Mi'kmaq) do nothing all summer but eat; and the result is that, adopting an entirely different custom and thus breeding new diseases, they pay for their indulgence in the autumn and winter by pleurisy, quincy, and dysentery, which kills them off," (Thwaites in Whitehead, 1991). Furthermore, there was a correlation between this cultural transformation and the loss of biological diversity on Prince Edward Island. By the start of the 20th century, walrus, marten, fisher, otter, lynx, moose, caribou, black bear, and beaver had all been extirpated (PEI Department of Environment, Energy, and Forest). This trend continued into the 20th century. MCPEI conducted a living memory land-use survey of Mi'kmaq living on Prince Edward Island to determine locations where Aboriginals had knowledge of harvesting animal, fisheries, and

flora resources. *Appendixes 5, 6, and 7* are maps that were generated by MCPEI's Integrated Resource Department by GIS technician and data manager, Lori Riccard. These maps assimilated traditional knowledge of Mi'kmaq resource gathering since 1960. The Mi'kmaq way of life was first transformed by contact with Europeans and their products, then by the colonialization of Prince Edward Island, and lastly, by the rapid loss of resource availability due to privatization and intensive commercial harvesting.

It should be noted that in spite of a rapidly changing cultural, resource, and geographic environment, the Mi'kmaq culture continued to adapt and survive. However, the historical resource reflection also suggests that the Mi'kmaq are quite sensitive (like most small communities) to shifting patterns of resource use, ownership, and exploitation. The most important themes that emerged from the historical resource reflection were the significance of diet as a primary cultural determinant, that the Mi'kmaq are an extremely resilient people, and that profound augmentations in resource use can cause cultural disconnects (new paradigms of cultural practice and epistemological resources relationships), which are followed by gradual shifts in day to day life.

Historical resource reflection offers the Mi'kmaq a unique opportunity to facilitate resource management partnership for Malpeque Bay. Simultaneously, it is also a chance for cultural and economic restoration by re-building local capacity to be partners with government in resource management decisions. Culturally it would reconnect Mi'kmaq youth to their people's inimitable relationship with the regions ecology. The historical resource reflection conducted for the Mi'kmaq yielded data that provided MCPEI with information and evidence

necessary to move from the first phase of their Restorative Fisheries Project (reflection) to taking the lead in forming a community-based resource management partnership for the Malpeque Bay.

Lessons from Co-management - Historical Reflection and Resource Management Partnerships

In the past, one of the reasons resource managers have turned to co-management is because of the failure of traditional top-down government resource-management structures. These management schemata have not consistently produced desirable environmental, economic, and social results (Chuenpagdee and Jentoft, 2007). Although there is not one accepted definition of co-management, for the purposes of this paper is should be considered, "a partnership arrangement in which the community of local resource users, government, other stakeholders (boat owners, boats builders, business people, etc), and external agents (nongovernmental organizations and academic institutions) share the responsibility and the authority for the management of resource stock," (Pomeroy and Rivera-Guieb, 2006). The foremost goal of a co-management partnership is to achieve a sustainable level of resource harvesting/use. In theory, this is accomplished by developing an official agreement (management plan) among all the relevant resource users/groups and the government. This process can take years to accomplish and requires an intensive series of negotiations and consultations. Co-management goes by many names: "participatory, joint, stakeholder, multi-party, and or collaborative management," (Pomeroy and Rivera-Guieb, 2006). The

practical and applied nature of co-management yields "lessons that are largely focused on 'how to' as opposed to 'how come,'" (Chuenpagdee and Jentoft, 2007).

Recent co-management literature divided the process into three distinct phases: preimplementation, implementation, and post-implementation (Chuenpagdee, and Jentoft, 2007). Broadly, the pre-implementation phase begins with the recognitions of a resource management problem (Pomeroy and Rivera-Guieb, 2006). "At this early stage, an enthusiastic individual or organization my step forward as the prime mover(s) of the comanagement program," (Pomeroy and Rivera-Guieb, 2006). Such an individual or institution will then formulate a plan of action to identify and rate stakeholder significance, discuss the resource management problem/gather data, and initiate community consensus building meetings (Pomeroy and Rivera-Guieb, 2006).

Pre-implementation co-management planning has a set of objectives that must be considered to seamlessly move into the implementation phase of resource management. A few examples are determining the spatial and non-spatial boundaries of the community in question, user group(s) significance/engagement, building local capacity to effectively share the responsibilities and rewards of the resource co-management process, and uncovering an effective method to build consensus among community stakeholder groups. "Accordingly, a pre-implementation study from a governance framework emphasizes...stakeholders who are not only at the receiving's end, but they are themselves active players in the implementation process and in the events leading up to it," (Dunsire, 1995). From a pre-implementation orientation, resources managers/planners should focus on circumstances that facilitate

cooperative participatory civic structures among resource users/stakeholders "who may have conflicting interests," (Dunsire, 1995).

MCPEI should employ the objectives, goals, and considerations that have been deemed important through past resource co-management experiences, for example, the three phases of co-management (Chuenpagdee and Jentoft, 2007), empowerment (Jentoft, 2005), legitimacy (Jentoft, 2000), and resilience (Olsson et al., 2004). However, labeling the "Restorative Fisheries Project" a partnership will allow MCPEI to avoid the recent shortcomings of the co-management process.

Chuenpagdee and Jentoft focused on the conditions and drivers that make the "preimplementation" phase of co-management transition smoothly into the "implementation" and "post-implementation" phases. Conditions like community capacity building and increased cooperation between scientists and resource harvesters/users could be improved through historical reflection.

This paper will now examine how some of the key ingredients to pre-implementation, building empowerment (Jentoft, 2005), legitimacy (Jentoft, 2000), and resilience (Olsson et al., 2004), can specifically be informed by historical reflection. "Empowerment increases the ability of the individual to predict, control, and participate in society. It is perceived as an enabling process," (Jentoft, 2005). Building empowerment is very logical for the preimplementation phase of co-management. Empowerment seeks to redistribute the set amount of power that exists within society (Jentoft, 2005). This principle is in line with the fact that

a co-management arrangement is a mechanism to re-configure the way resource decision making power is allocated.

Empowerment provides an individual (or community) with the proficiency, knowledge, and motivation to become involved in the pre-implementation phase of the co-management process. Eliciting community support to buy into the co-management process is extremely important. It increases the probability that whatever management plan is drafted will enjoy a high degree of compliance and enforcement.

"Finally, the contextual dimension involves collective action, the individual's awareness of environmental factors influencing his or her life situation, the ability to define problems and opportunities, and to exert influence on ecological, social, and cultural conditions individually or as a member of a group," (Jentoft, 2005).

The acknowledgement of a "contextual dimension" as a central component to creating empowerment would be greatly enhanced through historical reflection. Historical reflection could create empowerment within a community by connecting citizens to the root causes behind how "environmental factors" have influenced their lives (Jentoft, 2005). Furthermore, historical reflection can provide information that initiates conversations on "ecological, social, and cultural conditions" that are relevant to pre-implementation.

If empowering a community is an "enabling process," then building legitimacy gives a comanagement scheme staying power (Jentoft, 2005). Legitimacy can be defined as "a management system that has been justified according to some moral principles and values," (Jentoft, p. 142, 2000). The ability of a co-management system to connect with a community through existing cultural traditions and norms has the potential to bring a high degree of legitimacy (authenticity) to the process. "The validity of a social order by virtue of the sacredness of tradition is the oldest and most universal type of legitimacy," (Weber, 1978). There is not a better informant or communicator of tradition than historical reflection. The history of a place is usually intimately attached to a story of resource exploitation.

In addition to creating a sustainable social and economic relationship between a place and a resource, co-management is supposed to yield a management plan that is also credible from the community's perspective (Jentoft, 2000). This is not possible without conducting a detailed examination of the history of resource use in a give area. Historical reflection is a tool that can convey a baseline of resource harvesting/use, traditional uses and values associated with resource exploitation, their community impact (economic, social, cultural, and health), and document any erosion of such traditional uses. If this type of data is incorporated into the pre-implementation phase of the co-management process it will create a degree of legitimacy. "Legitimacy is not the icing on the cake of power, which is applied after baking is complete, and leaves the cake itself essentially unchanged. It is more like the yeast that permeates the dough, and makes the bread what is," (Beetham, 1991). Legitimacy has to do with an appropriateness and authenticity of process. A pre-implementation phase that is able to create legitimacy will also foster conditions that facilitate a high degree of compliance and enforcement of the management initiative (Jentoft, 2000).

Legitimacy creates conditions that make a co-management plan functional; but resilience gives it staying power. A co-management agreement requires more than an involved public

and authenticity; it must be adaptive to changes in the ecosystem and the human environment. The successfulness of the principle of adaptivity is called resilience. "The dynamic process of adaptive co-management may help build resilience...we stress the necessity to expand from knowledge of structures to knowledge of processes that sustain the social-ecological capacity to respond to ecosystem change," (Olsson et al., 2004).

Adaptivity requires more than incorporating adaptive feedback (evaluative) loops into the comanagement process. True adaptivity begs the ability to ascertain an accurate perspective of the success or failure of a management scheme. Perspective is greatly informed through the acquisition and use of longitudinal data. "The lack of long term data…makes it difficult to reach informed decisions and tends to lead to conservation efforts that focus only on the most recent symptoms of the problem," (Olson et al., 2004).

Historical resource reflection can assimilate different fields of information over long periods of time. The result is a collage of data (often qualitative) that accurately reflects the nature of resource harvesting in a given area. A historical perspective on resource exploitation, combined with contemporary data (scientific resource studies), can inform an adaptive comanagement process with a holistic perception of the successes and or short-comings of the management plan to date. Thus, historical resource reflection can create resilience and durability.

It was argued that empowerment, legitimacy, and resilience each have the potential to significantly improve a co-management strategy's chance of success (Jentoft, 2005; Jentoft,

2000; Olsson et al., 2004). These criterions infuse the pre-implementation phase with the necessary ingredients to produces a functioning, authentic, placed-based management system. All of these ideas are similar in that they build social capital around the idea of co-management, have the potential to improve the effectiveness of resource co-management initiatives, and would be aided by historical reflection. Implicit in the definitions of empowerment, legitimacy, and resilience, is an argument for the functionality and value of historical resource reflection.

All of the processes defined above require social and ecological learning (Olsson et al., 2004). Co-management planners hope that knowledge and capacity building has the potential to usefully bring those who harvest resources to the resource management decision making table. This process should simultaneously improve the health of that resource from both an ecological and economic perspective. An informed "social learning" process would be enhanced through historical resource reflection. Historical resource reflection would allow evolving socio-ecological management processes to benefit from examples of historical community cooperation and resource management success, while avoiding sociological pitfalls that may doom ones attempt to unify an area with a contentious ethnic and or religious history. This is another example of how historical resource reflection is a valuable methodological instrument for MCPEI's "Restorative Fisheries Project."

Lastly, if historical resource reflection is used to build a solid, accurate, and sustainable comanagement framework then benefits like "rapport between fishers and the state," "awareness among fishers of ecological implications of fishing," "cooperation between fishers and scientists," and "unity between fishers" would have the best probability to be maximized (Schuman, 2007).

The Mi'kmaq: A Logical Leader

The Mi'kmaq are an example of a user group that could jumpstart the process of forming a collaborative community based watershed partnership for the Malpeque Bay watershed. The Mi'kmaq hold a unique position when compared to the collective of use groups in Malpeque Bay. Both the Federal government of Canada and the Provincial government of Prince Edward Island should allow the Mi'kmaq to jumpstart the process of forming a community based partnership for the Malpeque Bay. The "Restorative Fisheries Project" (in addition to safe guarding the ecological and economic prosperity of Malpeque Bay) is creative opportunity to partially compensate the Mi'kmaq their Peace and Friendship Treatise (Clarke, 1987). The government of Prince Edward owns a small fraction of land in the province. If this fact is considered in conjunction with the size of Prince Edward Island, awarding the Mi'kmaq a large track of land as compensation is not as practical as it is in other Canadian provinces. Therefore, supporting the Mi'kmaq's "Restorative Fisheries Project" would be pragmatic and preemptive decision that could improve Peace and Friendship Treaty conversations in the future.

Furthermore, the Mi'kmaq are a source for of traditional ecological knowledge for Malpeque Bay. The unique and intimate relationship the Mi'kmaq have had with the Malpeque Bay would be extremely valuable to a community based resource management partnership.

Before 1500 AD (approximately), the Mi'kmaq enjoyed relatively exclusive access to the Malpeque Bay watershed and its resources. There was an abundant supply of terrestrial and oceanic species to consume see *Appendix 2*. The Mi'kmaq have a storied history of adapting their subsistence cycle to meet new environmental conditions. However, this tradition became severely compromised when French traders, explorers, and missionaries arrived in Atlantic Canada throughout the 16th century. Over the past five hundred years the Mi'kmaq diet has transformed profoundly. It has mutated from a diet based fully on the consumption of local resources to one that relies on global industrialized food production. It closely resembles an "average" North American diet; food is purchased in large super-markets, fastfood chains, with a very small portion of food resources originating within the community, Malpeque Bay.

Before European contact the Mi'kmaq held exclusive authority over both the resources of Malpeque Bay and related decision making processes. In contemporary times, the Mi'kmaq are just one, of a diverse and stratified collective of user groups who wield influence over the resources of Malpeque Bay. They possess a number of unique characteristics that distinguish them from other user groups, and which make them a good candidate to facilitate a collaborative community based resource management partnership for the Malpeque Bay.

First and foremost the Mi'kmaq are Aboriginal group and therefore have the potential to negotiate from an even playing field with government. The Mi'kmaq are also capable of communicating with the user group collective in the Malpeque Bay watershed. It represents a diverse group of resource-users and interests; it includes, but is not limited to: the Mi'kmaq

Confederacy, agricultural, commercial, forestry, industry, residential, environmental, transportation, government, etc. These interests and their actors all have varying amounts of influence on different dimensions of the Malpeque Bay watershed. To coalesce such a dissimilar group of stakeholders, the facilitator of the process must be "an enthusiastic individual or organization who steps forward as the prime mover(s) of the co-management program," (Pomeroy and Rivera-Guieb, 2006). Based the Mi'kmaq's historical use and knowledge of the resource of Malpeque Bay, they understand "necessity to expand from knowledge of structures to knowledge of processes that sustain the social-ecological capacity to respond to ecosystem change," (Olsson et al., 2004).

This decision also makes sense from an ecological perspective. The Mi'kmaq are also the only user group who have ever engaged in sustainable resource management and harvesting within the Malpeque Bay watershed. It would also be a prudent safeguard to the ecological health of Lennox Island. Lennox Island is a component watershed of the Malpeque Bay watershed and home to one of Mi'kmaq Confederacy's Band's. Non-point-source pollutants or other detrimental environmental activities around the bay have the potential to compromise the ecology of Lennox Island. The Mi'kmaq would be able to rally support for the "Restorative Fisheries Project" with the community at large by employing logic like, this is everyone's home, we all should work together to safe guard resources that we all rely on, and that if we all live in the same neighborhood it would be easier to work with each other than institutions from outside the community.

Lastly, this process would be invaluable to the Mi'kmaq from a cultural restoration and community health perspective. It would be a mechanism to re-connect the 'next generation' with knowledge of their ancestral land's and resource(s), while simultaneously engaging them in practices that are valued by the broader culture and economy of the 21st century.

One final consideration that must also be debated is whether or not an Aboriginal group is capable of forming successful partnerships with community and government. Many would argue that given First Nations obvious bias with respect to ascertaining power over land and resources, they would not be a suitable user group to lead a process like "The Restorative Fisheries Project."

An Example of a Successful Aboriginal Lead Partnership

Aboriginal groups in Washington State have been credited with creating new solutions to resource management problems. They were able to negotiate a proximately equal voice to state and federal governments with respect to constructing, contributing, and executing resource management partnerships (Ross, 1999). This was a manifestation of a series of court rulings in the 1980s and 90s. Aboriginal groups were consistently winning in the courtroom; however, the health of the resource stock in question continued to decline (Ross, 1999). It was imperative from economic, ecological, and community health perspectives that resource stocks rebound and be sustainably harvested (Ross, 1999).

In the 1990s the Chelan agreement was an excellent example of this phenomenon (Pinkerton 2003). This project, like the "Restorative Fisheries Project," was a watershed management partnership. The project's objectives were to create a watershed management schema that effectively coalesced how "irrigators, hydroelectric companies, and tribes would share scarce water" (Pinkerton, 2003 p 68). In this partnership First Nations were the facilitator of the arrangement. In addition, the Aboriginal tribes were recognized as an independent government by both state and federal authorities (Pinkerton, 2003). This was significant because (like the Mi'kmaq hope for) they were successfully able to differentiate themselves from other user groups, and ascertain greater resource management responsibilities and rewards.

The three governmental bodies (First Nations, Washington State, and US Federal) had to reach consensus on rules, strategies, objectives, goals, restoration techniques, etc. The collective of resource users/groups formed a fourth decision making body. A majority of this collective would have to be reached for any proposal by the governmental bodies to reach fruition (Pinkerton, 2003).

This example is invaluable to the Mi'kmaq. It is an excellent case study of how Aboriginal tribes were able to achieve a satisfactory level of resource management power with government. Furthermore, it also symbolizes that a community will respect and follow an Aboriginal lead management partnership.

MCPEI Has the Capacity to Lead Community Consensus Building Meetings

It makes sense for the Provincial Government of Prince Edward Island and community at large to buy into MCPEI's "Restorative Fisheries Project." As evidenced by the Washington State example, it is possible for an Aboriginal group to successfully lead the process of forming a community based resource management partnership. In addition to these criteria, MCPEI also has the technical capacity to launch and complete the "Restorative Fisheries Project."

The Integrated Resource Management Department of the Mi'kmaq Confederacy of Prince Edward Island has developed a three pronged strategy to engage and involve the plethora of user groups of the Malpeque Bay watershed. First, a coarse land use analysis has been conducted on all of the 25 component watersheds that constitute Malpeque Bay. Geographical Information System (GIS) was employed to create a land use layer for each of the provincial government's land use designations: agriculture, forestry, wetland, nonevident, transportation, residential, recreation, commercial, industrial, urban, and institutional. These data layers yielded the total amount of land each land use designation occupied within each component watershed, where that land is located within each watershed, and allowed for some preliminary quantitative analysis to forecast which watersheds have similar composites of land use (and user group collectives).

The first stage provided a solid foundation to build a more informed examination upon. The next step is to do a qualitative rating for each user group in each component watershed. It is possible, and probable in some instances, that user groups who control the largest quantities

of land may not wield the greatest power (potential impact) within a particular component watershed. It is mandatory to delineate between user groups who have the greatest potential for either negative or positive sway on the watershed management planning process. They will be essential allies to building legitimacy (compliance and enforcement) for a community based resource management partnership for the Malpeque Bay.

Land use analysis and user-group qualitative assessments will be an invaluable bridge to the next step of the Restorative "Fisheries Project." The next phase of this process will be to hold community consensus building meetings. These meetings will be an opportunity for all involved parties to voice their concerns and specific resource needs in a public forum. An impartial mediator will be hired to lead this process. The conclusion of this process will symbolize an agreement between MCPEI, the federal and provincial governments, and the community at large.

Conclusion

The historical reflection done for the Mi'kmaq of Prince Edward Island was a successful first step in the "Restorative Fisheries Project." The ethnohistographic data met the first objective of the "Restorative Fisheries Project" by yielding traditional ecological knowledge, which established a baseline of traditional resource use, and its importance to the understanding the economic, social, and cultural health of the coastal communities of Malpeque Bay.

Historical resource reflection should be considered a valuable methodology for a preimplementation co-management phase. It is a useful and discerning tool that highlights salient resource use data in a specific geography. For the Mi'kmaq of Prince Edward Island, this exercise expediently uncovered prominent data that formed the foundation for MCPEI's Restorative Fisheries Project for Malpeque Bay.

Historical reflection also helped to differentiate the Mi'kmaq from other user groups in Malpeque Bay. This will be instrumental when MCPEI enters into dialogue with the federal and provincial governments about facilitating a community based resource management partnership for the Malpeque Bay Watershed. The example of Aboriginal groups in Washington State illustrated that it possible for a First Nations organization to broker a resource management partnership.

The "Restorative Fisheries Project" is an opportunity for the Mi'kmaq to significantly increase their power with respect to resource management and decision making in Malpeque Bay. Simultaneously, it is also a method to compensate the Mi'kmaq for the Peace and Friendship Treaty. Given the size of Prince Edward Island and the provincial government's limited amount of crown land, alternative compensatory measures will have to be explored for the Mi'kmaq.

Historical reflection was essential to MCPEI's "Restorative Fisheries Project." However, the Mi'kmaq have many similarities to other small traditional coastal communities. The pressures of privatization, resource stock collapses, and government management failures,

make it difficult to sustain a traditional way of life in the 21st century. Historical reflection is a method that can incorporate salient resource management data into contemporary resource management partnerships.

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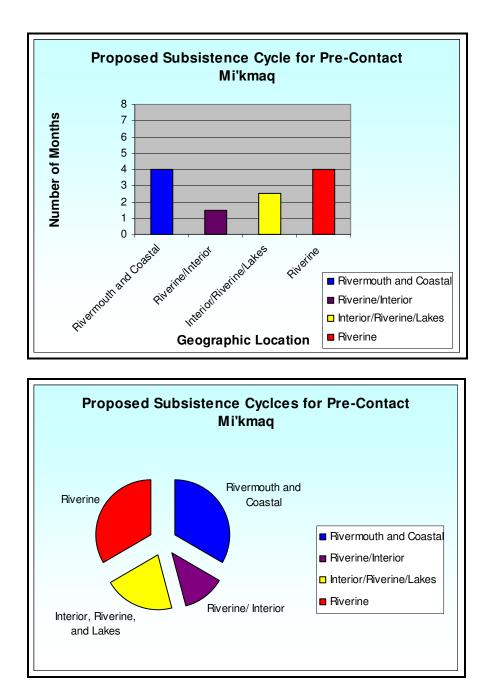
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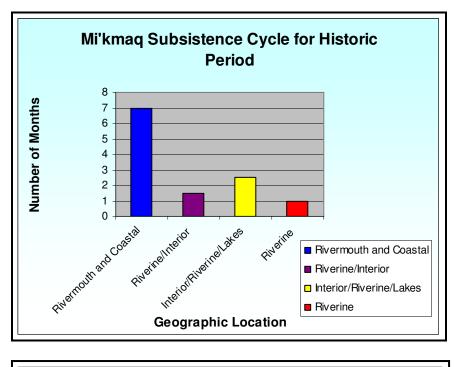
Appendix 2:

Pre-Contact Diet for Mi'kmaq of Prince Edward Island				
Terrestrial	Aquatic		Waterfowl Canadian	
Beaver	tomcod	Swordfish	Goose	
		whales (what		
Otter	Mollusk	Kind)	Eider duck	
Moose	Flounder	Brook trout	Sea Gulls	
Black Bear	Whelk	Bass	Mergansers	
Caribou	Oysters	Lobster	Old Squaw	
Waterfowl	Skates	eel	Brant Geese	
		Sea cows		
Elk	Squid	(Walrus)	Cormorant	
Dog	Periwinkle	cod	Eagle	
Raccoon	Mussel	Salmon		
Woodchuck	Scallop	Herring	Flora	
Muskrat	Porpoise	Ale Wives	Strawberries	
Squirrel	Grey Seal	Mackerel	Raspberries	
Porcupine	Harbor Seal	Grey Seal	blueberries	
	Red Fish (ground			
Wolf	fish	Smelt	cranberries	
Deer	Turtles	Northern Crab	ground nuts	
Lynx	Sea urchins	Sturgeon		
Marten	Shad			

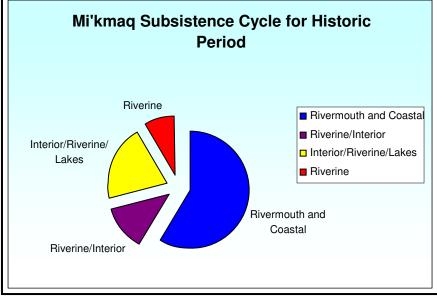
Source: Hoffman, 1995; Chute, 1998; Whitehead, 1991; Wicken, 1994; Wallis, 1995



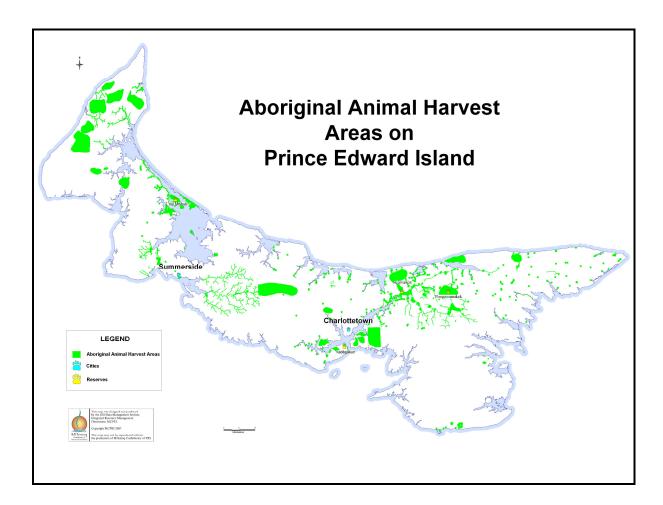
Appendix 3: Histogram and Pie Graph of Proposed Pre-contact Subsistence Cycles



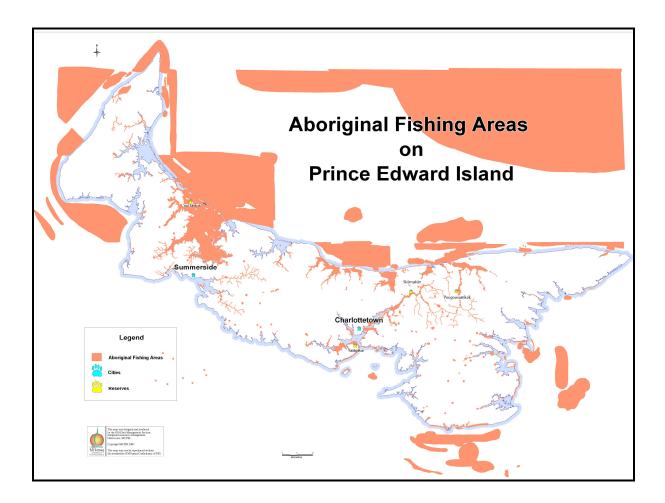
Appendix 4: Histogram and Pie Graph of Post-Contact Subsistence Cycles



Appendix 5: Living Memory Mi'kmaq Animal Harvesting (After 1960)



Appendix 6: Living Memory Mi'kmaq Fisheries Harvesting (After 1960)



Appendix 7: Living Memory Mi'kmaq Flora Harvesting (After 1960)

