



# Culture's Role in the Sustainability of Natural History Museums: Using Appreciative Inquiry to develop a Nature Inspiration Center at the Canadian Museum of Nature

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## Abstract

In light of our ecological crisis, scientists studying biodiversity are recognizing the value of Indigenous and local knowledges in the development of conservation research. At the same time the field of environmental education is engaging multidisciplinary and Indigenous pedagogies to increase the ecoliteracy of students. Natural history museums are institutions tasked with the research and collection of the world's biodiversity, and the informal education of its visitors. Their role in the twenty-first century requires they become adept collaborators with Indigenous and local communities, and their visitors, to foster innovative sustainability solutions. In order to become economically and socially sustainable themselves, these institutions are required to transform their practices and begin co-creating exhibits and programs which are relevant to the interests of their visitors. However, to enact this transformation these museums must first address their many challenges. This major research project introduces these challenges, and argues that to overcome them these science-based institutions should create collaborative cultural centers. The Nature Inspiration Center at the Canadian Museum of Nature represents such an opportunity. To build capacity for collaboration within Canada's national natural history museum, I facilitated and evaluated a positive organizational change method; Appreciative Inquiry (AI). The results of my two AI interventions provided evidence for the potential and success of AI within these institutions. This method grounded in positive psychology improved communication between departments and fostered a planning environment which helped to reduce the institutional 'chatter' distracting museums from their mission (Janes, 2010). By addressing these barriers to internal change, this natural history museum is beginning to take responsibility for its role as a proponent for sustainability.

## Foreword

The following Major Project (MP) has allowed me to synthesize my learnings from my four components of my area of concentration. These components were Native/Canadian Relations, Environmental Education, Museum Studies, and Methods for Change. This project chose to use and evaluate Appreciative Inquiry at the Canadian Museum of Nature to determine whether this method could build internal capacity for collaboration. Through my course work for Methods for Change I obtained knowledge of small and large group facilitation methods and their application within action research. This knowledge introduced me to Appreciative Inquiry and to my mentor Maureen Mckenna, an AI consultant who helped me develop my interventions. Maureen Mckenna was a guest speaker in ENVS6291 Facilitation in Environmental Studies. To outline the challenges and changing role of natural history museums I drew from my Museum Studies component. Through its associated courses I became familiar with the role museums play in society and how they operate and communicate their missions. My practice writing exhibition reviews helped me with my review and analysis of the Canadian Museum of Nature's permanent galleries. Also through MSL2306H Museum and Indigenous communities: changing relations, changing practices, I became knowledgeable about the barriers and existing practices for creating working partnerships between scientists, educators, and source communities. My second component Environmental Education provided the foundation for my review of the Canadian Museum of Nature's programs and informed my recommendation that Science Interpreters become knowledgeable environmental educators in order to adequately meet the museum's mission and its role as a proponent of sustainability. Finally Native/Canadian Relations was crucial to this project because it; increased my understanding of current and historical relationships and barriers to reconciliation; introduced the role of Aboriginal perspective in education, and outlined the Indigenous methodologies which influenced my research methods.

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## Introduction

### Why study the Canadian Museum of Nature?

The Canadian Museum of Nature (CMN) holds a special place in my life and has greatly influenced my work and research. As a child I spent many weekends discovering the halls of Canada's national museums and hiking the trails of Gatineau Park. Both these activities developed my curiosity for animals and their many interpretations through the lens of both science and diverse cultures. During my adolescence I became passionate about environmental issues particularly habitat destruction in the areas where my favorite animals lived. At the age of 14 I was given the opportunity to volunteer at the Canadian Museum of Nature where I began to pass on my passion and knowledge to younger visitors about what fascinated me as a kid. Six years later I crossed over from the volunteer lounge to the payroll to work as an Exhibition Animator. Around the same time I began my undergraduate degree in environmental studies and found that my academic background complemented my work with the public. Since then my experience at the CMN has expanded in my roles as a Guest Services Hostess, Tour Guide, and Science Interpreter. While developing, delivering and evaluating school and public programs, my interest in environmental education grew and I began to identify some of the participatory and pedagogical issues the museum faced. In particular my experience developing a Talking Stick Workshop on how Aboriginal peoples respect nature, a program developed without consultation with community partners or knowledge keepers, is what provoked my desire to complete a master's degree to improve the museum's practices. Consequently I developed a Plan of Study based on four key components: Native/Canadian Relations, Museum Studies, Environmental Education, and Methods for Change. Through this Major Project (MP) my goal is to demonstrate the links between these four components and how they have helped me develop practical recommendations for the museum going forward. While my research is not being funded in anyway by the museum, I am a proud member of the museum's Programs Department passionately invested

in ensuring the success of the institution and its programs. In my role as a researcher I've had the opportunity to take a step-back and evaluate how the museum meets its objectives while investigating the theories informing its practices. While sections of this report seek to analyse and critique the museum's current practices I recognize the difficulty of consistently putting theory into practice. During the process of this MP I found it challenging at times to separate my dedication as an employee from my role as an objective researcher. However, this unique perspective may prove useful for readers from the museum sector who are also challenged with playing multiple roles within their organizations. This report is in essence a love letter to the organization, and its innovative employees, who have inspired and made my research possible.

### **Purpose and Content**

Given my discomfort developing a culturally insensitive workshop, the objectives of my research project were twofold. First to better understand the history, motivations and practices of the CMN, and secondly find best-practices for future cross-cultural projects. To meet these research objectives this report provides an overview of the Canadian Museum of Nature, the history and changing role of natural history museums, the current division between nature and culture, and finally discusses the role of environmental education and Appreciative Inquiry as pathways towards best-practices. I argue for the strategic reintegration of culture in natural history museums as a means of meeting its new role as a proponent of sustainability, and that this role requires that these research institutions become adept co-creators of relevant programs and exhibits which foster a multifaceted sustainable culture inspired by diverse knowledges. Grounding this argument is the historical, present, and future objectives of the Canadian Museum of Nature; particularly its current focus on Arctic research and programs, and the creation of a new Nature Inspiration Center. Both these museum objectives require internal and external collaboration between members of diverse departments and

stakeholders. As a result this report outlined how Appreciative Inquiry was introduced and used at the CMN to improve internal collaborations.

### **Relevance, Respect, Responsibility, Reciprocity**

Throughout this document I make reference to and use the terms Relevance, Respect, Responsibility and Reciprocity. These principles outlined by Jo-ann Archibald (2008) inform my research methodology and help provide an overarching structure for this MP. In her book *Indigenous Storywork; educating the heart, mind, body and spirit*, Archibald outlines the importance of practicing these four principles and the need to become a ‘cultural-learner’ when working with individuals outside of the researcher’s own epistemology (2008). Archibald’s research studied best-practices for working with members of Indigenous communities outside her own to develop decolonizing public education curricula. Her work is relevant to this MP given its objective to introduce best-practices for creating cross-cultural programs and exhibits within a natural history museum. Relevance, Respect, Responsibility, and Reciprocity are present within the works of other Indigenous researcher’s methodologies and are often described as being co-dependent principles (Absolon 2011, Alfred 2009, Atleo 2004, Kovach 2012, Wilson, 2008). For instance Kovach (2012) outlines an important link between the relevancy of a research topic and researcher’s responsibility to reciprocate or give back to communities within which they work (p.149). For the Canadian Museum of Nature it is important that museum researchers study what is relevant to Canadians and source communities, and communicate through its programs, exhibitions, and other activities the results of its research to their national audience.

Introducing best-practices also requires demonstrating how these principles inform my own research. In an attempt to conduct research which is allied to Indigenous methodologies I outline below my interpretation of these four principles as they apply to this MP.

Relevance: The issues discussed in this report responds to a real circumstance within my own experience at the museum and reflect the need for natural history museums to examine and develop policies and best-practices for the creation of programs on topics outside of their scientific expertise. This report is intended for museum professionals who may have little knowledge of the history of natural history museums or of their responsibilities associated with their role in the 21st century. As a museum professional new to museum studies, I have come to appreciate the importance of knowing where we've been and where we are going. This research responds to the challenges and changing role of natural history museums, particularly how their increased interest in Indigenous Knowledges requires the creation of appropriate policies and frameworks.

Another important aspect of relevance is proper preparation before beginning research activities (Absolon 2011, Alfred 2009, Atleo 2004, Kovach 2012, Wilson 2008). In addition to my own personal, mental, and emotional preparation to conduct this MP, I completed relevant courses and research in my four Plan of Study components, attended museum conferences, and participated and volunteered for events and activities within the Native communities of Toronto and Ottawa. These activities included: participating in a Feasting Ceremony at York University; attending lectures by Jeff Corntassel, Taiiike Alfred, and Ellen Gabriel on Indigenous resurgence; volunteering for two ImagineNative Film and Media Art Festivals in Toronto; and participating in York University's, Algonquin College's and Ottawa's annual International Competition Pow wows. Through my participation in these events and activities I have begun my journey as a "cultural-learner" within the diverse Indigenous communities where I live and work. These experiences are part of my preparation to conduct research in a good way as a non-indigenous person because they have provided me with a better understanding of cultural protocols, facilitated self-reflections about my interest in this topic area, and helping me to recognize my privilege and responsibilities as a white women in academia.



Respect: As a non-indigenous person seeking to conduct research which helps to further decolonize museum practices I chose to use a research method allied to Indigenous methodologies; participatory-action research (Wilson, 2008). Appreciative Inquiry is a participatory-action research method widely used to collaboratively evaluate and plan the future of companies, communities and industries. In particular I chose this method because its process demonstrates links to Relevance, Respect, Responsibility and Reciprocity. Appreciative Inquiry,

- begins the advancement of affirmative topics relevant to participants' objectives
- demands that participants respect each other's perspectives and experiences,
- stresses participants' responsibility for their ideas and associated plans of action, and
- develops 'learning organizations' which value reciprocity and the sharing of best experiences (Cooperrider, Whitney & Stavros, 2008).

Rather than being a linear process with a beginning and an end, AI functions through the application of a 4 part cycle. These elements have no direct link to North American Indigenous worldviews or philosophies. However, I would argue that Appreciative Inquiry's 4-D cycle, its link to Archibald's 4 principles, and its foundation as a participatory-action research method, illustrate the extent to which it should be considered an allied methodology.

Responsibility: As a researcher I recognize my responsibility to uphold the ethical obligations of working with human participants, and of recognizing those who have inspired my arguments through the proper citation of their work. I recognize my responsibility to provide my research participants with the results and data from our work together in a timely manner. Also as a dedicated employee of the Canadian Museum of Nature I recognise my responsibilities to seek and uphold the highest standards of service and have thus developed this MP around issues of relevance to the museum.

Reciprocity: Most importantly, this research project is the direct result of my intention to give-back to the institution which has provided me with so many life altering opportunities. I came to York's Faculty of Environmental Studies with the desire to analyse the museum's draft Aboriginal Policy but I chose to redirect my research towards more pressing needs. I have also practiced reciprocity through my work with my mentor Maureen McKenna who has coached me in preparation to facilitate my AI interventions. As she has provided me with the skills necessary to conduct my research, I shared with her my knowledge on topics of interest to her. I have also begun giving-back to my broader community by sharing the skills she has taught me with my colleagues at the CMN and with other environmental educators at the NAEE 2014 conference this October.

## **Chapter 1: The Canadian Museum of Nature**

### **History**

Canada's national natural history museum located in Ottawa is housed in the nation's first national museum building known as the Victoria Memorial Museum Building or VMMB. This institution has a 150-year history with its roots in the Geological Survey of Canada whose creation is largely linked to William Logan the survey's first director. Designed by Architect David Ewart, the VMMB is a unique landmark characterised by its mix of Tudor-gothic and beaux-art architecture and the incorporation of Canadian flora and fauna throughout the building's design. This historic building was completed in 1910 by some 300 Scottish mason-workers who were brought to Canada for this immense task. The museum first opened its doors to the public in 1912, at which time the first two floors housed exhibitions, while the two upper-levels housed a library, offices, and research laboratories. At its opening the National Museum of Canada preserved and displayed diverse collections including: anthropological artifacts, natural history specimens, and fine art. In fact all of Canada's modern national museums can trace their roots back to the VMMB including the National

Art Gallery, Canadian War Museum, and the Canadian Museum of History (Vodden & Dyck, 2006, p.29). Prior to 1988 the VMMB held two distinct collections divided by its east and west wings; one containing the Museum of Man and the other the Museum of Natural Sciences. However, once granted a building of its own, the Museum of Man, renamed the Canadian Museum of Civilization was relocated to its home designed by Douglas Cardinal in Hull, Quebec. As a result the Museum of Natural Sciences was also renamed, the Canadian Museum of Nature, and became the sole tenant of the VMMB. In 1990 the Canadian Museum of Nature's Mandate became,

to increase throughout Canada and internationally, interest in, knowledge of and appreciation and respect for the natural world by establishing, maintaining and developing for research and posterity a collection of natural history objects, with special but not exclusive reference to Canada, and by demonstrating the natural world, the knowledge derived from it and the understanding it represents (Canadian Museum of Nature, 2011).

As described in its mandate, the CMN is a research institution highly invested in its collections and the scientific research these collections support. This MP is interested in how public, school, and other programs and their associated exhibitions have increased “interest in, knowledge of and appreciation and respect for the natural world”. In other words how does the museum's investment in scientific discovery impact its mission to increase respect and appreciation for nature? To identify how the CMN interprets and delivers on its mission I reviewed the museum's annual reports for the last five-years and its strategic plan for the coming five-years. Informing my review of these activities include: my experience as a volunteer and employee at the CMN since 2004; readings of the museum's annual reports for the last 5 years (2009-2010, 2010-2011, 2012-2013); my knowledge and analysis of the current permanent galleries; and my review of the Strategic Plan for 2014 to 2019. The following overview focuses on the public programming activities and the museum's strategic objectives over a period of a decade (2009-2019).

## Annual Reports and Corporate Summaries

Informing the annual reports from 2009 to 2013 is the museum's strategic vision based on its mandate as previously quoted. The table below created from Figure 1 from the 2009-2010

Corporate Summary outlines four objectives that have driven the museum's activities of the last five-years (Summary of Corporate Plan, 2009-2010, p.5).

Knowledge	Objective 1 To develop innovative approaches that increase awareness of Canada's natural environment, based upon research and collections programmes.	Outcome: The Canadian Museum of Nature is recognized as a credible and comprehensive source of knowledge.
Education and Advocacy	Objective 2 To present the natural world through public education programmes that increase understanding of Canada's changing natural environment.	Outcome: Canadians are making informed choices for the environment.
Presence	Objective 3 To create unique experiences and increased value for visitors through the renewal of the Victoria Memorial Museum Building and associated programming and services	Outcome: The Canadian Museum of Nature is a destination of choice for Canadians and international audiences.
Performance	Objective 4 To establish leading edge governance practices and corporate systems that support and help finance the Museum's strategic direction and objectives.	Outcome: The Canadian Museum of Nature is a viable, successful organization.

These objectives and outcomes represent the challenges and opportunities shaping the research topic of this MP. In particular I am most interested in Objective 2 titled Education and Advocacy and how its associated activities have met the museum's mandate. In addition to these objectives the CMN defined its Vision and it's strategies as follows.

The Canadian Museum of Nature strives to be an engaging and trusted resource for the development of a sound, knowledge-based relationship with the natural world. To support this the Canadian Museum of Nature will:

- Safeguard the collections it holds on behalf of all Canadians and continue to build a consistent physical record of the natural environment of Canada

- Create new knowledge and increase public understanding of the complexity and diversity of the Canadian natural environment and issues concerning Canadians' relationship with this environment, and
- Support informed decision-making and debate about natural science and sustainability (Summary of Corporate Plan, 2009-2010, p.7)

Considering these overarching parameters what follows is how these objectives and vision have been enacted, particularly as they related to programs, over the last five years.

## **2009-2010**

In its annual report titled "A National Treasure Transformed" the activities of 2009-2010 are overwhelmingly geared to the grand re-opening of the museum. The five strategic priorities were:

1. Achieve financial sustainability
2. Complete the VMMB Renewal Project
3. Implement the Strategic plan
4. Maximize Revenue
5. Increase National Service (Summary of Corporate Plan, 2009-2010, p. 6-7).

In particular implementing the Strategic Plan required that the museum begin to identify its position and role according to its new vision. Four initiatives were outlined to accomplish this:

- Identifying and promoting areas of excellence or leadership relating to environmental issues on which the museum will initially focus
- Developing innovative ways and tools for promoting access to and use of scientific knowledge
- Defining the museum's advocacy role and positioning strategy; and,
- Developing a new National Education Strategy (Summary of Corporate Plan, 2009-2010, p.6).

During this year the museum further defines its new strategic direction to include 'establishing itself as an advocate for nature' and 'aligning the museum's programs and services with the needs and interests of Canadians' (Summary of Corporate Plan, 2009-2010, p. 4). To establish itself as an advocate, the museum stated that it would use "its knowledge and resources to inform Canadians about the environment and about issues that threaten the natural balance" and that it will do so using education to "promote individual understanding and conscionable action" (p.4). To "Align the

Museum's programmes and services with the needs and interests of Canadians" it would "closely monitor trends and directions in issues and opinions to ensure that its research and collections activities remain socially relevant" (Summary of Corporate Plan, 2009-2010, p. 4).

In 2009-2010 'Climate Change' and 'Waste' were identified as being important issues relevant to Canadians (Annual Report 2009-2010, p.15) and activities for Objective 2 (Education and Advocacy) were created around the theme of Biodiversity in honour of the International Year of Biodiversity. Four special programs on this theme were developed including; a symposium in partnership with Natural Sciences and Engineering Research Council and Parks Canada on Arctic Biodiversity; an Earth day celebration as of a new signature piece of the museum's national education program; "public interpretation programming to support the national Water and Earth Projects"; and the "development of new programming for schools" (Annual Report 2009-2010, p.21). Special exhibitions at the CMN during this year are predominately artistic and featured photographs from Canadian photographers including Arnold Zagens, Susan Coolen and F.H Varley. This report also mentions that a National Education Strategy for the Alliance of Natural History Museums of Canada is being created and will be finalized in 2010. During this year Joanne DiCosimo is the CEO of the museum, and educational programs account for 7% of the corporation's operating costs.

## **2010-2011**

In this annual report titled "They came from far and wide... to help celebrate the rebirth of a national treasure" the activities of 2010-2011 continued to be focused on the grand re-opening of the museum (Annual Report 2010-2011). In particular this year is marked by record-breaking visitation and the museum's new status as the second most popular museum in the nation's capital after the Canadian Museum of Civilization (Annual Report 2010-2011, P.6). Waste and Climate

Change were again identified as environmental issues of concern to Canadians, and the museum has identified “Arctic Research” and “Species Discovery” as its ‘areas of scientific excellence and leadership’ (Corporate Summary, 2010-2011, p.5).

In response to the opinions of its stakeholders, and in common with other similar institutions, the Canadian Museum of Nature worked to define its appropriate advocacy role. In this role, the Museum will use its expertise in the natural sciences to define options for the wise stewardship of the natural environment. Through education and communication, the Museum will encourage debate and exploration of emerging issues, inform Canadians of implications and alternatives, and support informed choices for the natural environment. (Corporate Summary 2010-2011 p. 13)

As a result of this defined advocacy role, Objective 2 is renamed Education and Inspiration. The outcome of Objective 2 is defined as, “Canadian are making informed choices for the environment” and two corporate policy documents an National Education Strategy, and an Aboriginal Policy, are being prepared pending the approval of the management committee and the appointment of new Executive Leadership with the retirement of Joanne DiCosimo (Annual Report 2010-2011, p.14). The museum’s interpretation activities are closely linked to permanent galleries, and the museum’s travelling exhibit Canada’s Waterscapes- Yours to Enjoy and Protect begins its tour. Earth month is celebrated with the museum’s first environmental film festival developed in partnership with the Alliance of the Natural History Museum of Canada and Planet in Focus. The CMN also collaborates with the Canadian Museum of Civilization (CMC) to create an exhibit called Canadian Arctic Expedition 1913-1918 which was on display in 2010 at the CMC before beginning its tours across Canada. Special exhibitions for this year were both artistic and science-based. These were Frogs- A Chorus of Colours, Aqua developed by Cirque de Soleil foundation One Drop, Canadian Wildlife Photography of the Year Contest, Moths at Large, Abyss: Life in the Deep Sea, Ends of the Earth: Arctic and Antarctica, Ikebana: the Japanese art of floral arrangement, Nature into Sculpture, and Arctic Kaleidoscope: photography by Michelle Valberg.

In May 2010 I became an employee of the museum. As an Exhibition Animator for the Aqua Exhibition I witnessed first-hand the influence of this revolutionary multi-media presentation which warned against the social and environmental impacts of water scarcity and pollution at home and abroad. Visitors which were largely families with young children, either loved the exhibit for the message it delivered, or disapproved of its content on the basis that it scared their children (Personal experience, 2010). This exhibit was a powerful example in my opinion of how the museum used a special exhibition to establish itself as an advocate for nature because Aqua provided examples of environmentally responsible actions visitors could choose to do to conserve water. During this year Michel Houle was the Interim CEO, and educational programs accounted for 11% of operating costs (Annual Report 2010-2011).

## **2011-2012**

After undergoing a complete physical transformation with the completion of the renovated museum building, the year 2011-2012 shifted to other internal changes. In the report titled “Preparing for Change” the museum’s new CEO Margaret Beckel is introduced as are this year’s new priorities. Four strategic issues were identified to be addressed for this year.

1. Need to establish long-term financial sustainability
2. Need for a trusted, reliable source of information about the natural environment
3. Need for programmes and services that are relevant to the needs and interests of Canadians
4. Need to attract, engage and diversify the Museum’s audience.

As will be discussed in later chapters, issues three and four are common challenges plaguing natural history museums. In particular this year’s Corporate Summary identified the importance of staying on top of issues and concerns of Canadians and the need to become a ‘Mindful’ (Janes, 2013) museum (p.9). As reflected in the previous year’s renaming of Objective 2, the museum had



redefined its role as an advocate for nature by seeking to become a source of inspiration. This shift from advocacy to inspiration created tension behind the scenes.

At the time I began working as a Science Interpreter, many visitors asked me about what I thought about the development of Canada's Tar sands and its implications for climate change. People wanted to know the pros and cons of these operations, and what the health and environmental impacts would be, but as a museum employee I had unsatisfactory answers for them. This was in part because the museum did not directly research such questions and thus we did not have any official answers. In fact I recall being discouraged from making connections between climate change and the tar sands during one of our introductory meetings with the new CEO. In my interview with the CEO on April 28th 2014, I brought up my discomfort with the museum's lack of involvement in this relevant and timely debate and her answer helped further illuminate the renaming of Objective 2. According to Margaret Beckel the role of a natural history museum is not to advocate for environmental responsibility or protection but to present for the public the research and facts about environmental change.

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Olivia: In terms of our messaging, you know, I mean, there's some tensions behind the scenes. Oh, we can't talk about certain things because it's Political. But we're Scientists.

Margaret Beckel: But like what?

Olivia: Like climate change, for instance.

Margaret Beckel: Yeah, but nobody's denying climate change.

Olivia: Okay.

Margaret Beckel:

Nobody's denying climate change. What the battle is, is what's causing it and to what degree are humans causing it and to what degree. Should we change how we behave in order to affect the rate of climate change? So, I think that the tension is that there are many people who work at museums who want to be advocates. Especially in natural history museums we get a lot of tree huggers. You know, and there's a place for what I call the tree huggers, the people who really embrace nature who

love nature and therefore want to protect it and I love the Jacques Cousteau quote you “protect what you love.” But you can love nature. But our job is to provide evidence based insights about the natural world. That is our job. It isn't our place to take a position. We're not advocates. We're not Nature Canada, we're not Greenpeace and thank God because it means we will always be listened to. We are a trusted, reliable source of knowledge about the natural world and I think, as long as we always feel proud of the fact that we are a trusted and reliable source of knowledge about the natural world, we provide evidence based in science, and we have extraordinary stories to tell about the natural world because of our collection and the research we've done on our collection. And that should be enough for people.

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In other words, according to the museum's current CEO the role of a natural history museum is to make research and collections relevant to visitors so that they gain “interest in, knowledge of and appreciation and respect for the natural world” but must do so without advocating what these environmentally responsible behaviours are for fear of being called “tree-huggers”. Such a negative attitude towards museum professionals passionate about educating the public about what it means to love and respect nature is problematic considering the changing role of natural history museums. As will be discussed and outlined in subsequent chapters this internal positioning is likely caused by a limited understanding of what is needed to generate pro-environmental behavior associated with responsible environmental choices.

Other important changes this year include the introduction of three new strategies to achieve Objective 2. According to the Corporate Summary 2011-2012 (p.18) these are,

Strategy 2.1: Establish a national education strategy based on the environment that addresses issues of concern to Canadians and is accessible, effective and relevant (To be completed in 2011-2012)

Strategy 2.2: Strengthen and develop approaches to respectfully dialogue with Aboriginal communities about nature. (To be completed in 2011-2012).

Strategy 2.3: Define and implement a national public education programme for the Canadian Museum of Nature that increases public understanding of the issues concerning Canadians' relationship with the natural environment. (To be completed in 2012-2013).

The year 2011-2012 also saw exciting changes to public programs influenced by its international blockbuster and other special exhibitions. Of particular importance was Whales Tohora from the Te Papa Tongarewa Museum of New Zealand. This remarkable exhibition broadened the interpretation of nature beyond that of science by featuring artifacts and stories of the Maori, New Zealand's Indigenous peoples as well as artifacts related to the history of whaling. Whales Tohora's blend of scientific research, popular culture (Whale Rider movie props) and cultural artifacts inspired CMN program staff to rethink its own programs. The activities developed for this unique exhibit sought to make links between the worldviews of Canada's Indigenous peoples and the museum's collection of whale and arctic species. These activities included a Talking Stick Workshop, traditional food game, traditional Inuit games, storytelling of the story Raven and the Whale (used with permission) and a more science-based whale bingo game. As mentioned at the outset of this document, the museum was insensitive in developing and presenting Indigenous knowledge based activities with little to no consultation or collaboration with members from those communities. And this experience led me to complete my master's degree to seek out better practices.

Other special exhibitions during this year included: Extreme Mammals from the American Museum of Natural History, and a Nature Art series with exhibits including Awesome Arctic, Preternatural and Unrequired death. This year Earth Month returned with a series of public and school activities. The month of April featured the museum's first LEAForum (leadership in environmental action forum) for high school students presented in partnership with Ecology Ottawa, Earth Day Canada, and the Sierra Youth Coalition. This sold-out one-day event included workshops by CMN scientists, inspirational environmental activists, and university professors presented for local high school students. The day's events also included a teacher training session facilitated by Ecology Ottawa. This month long festival also included the museum's second annual Environmental Film Festival presented in partnership in Planet in Focus and the Alliance of Nature

History Museums of Canada. During this year of immense change, educational programs accounted for only 5% of operating costs.

## **2012-2013**

Titled “A Vital Future” the annual report for this year more clearly identifies the role the museum plays as an important source of knowledge for Canadians living in the Anthropocene evolutionary era.

As we enter the Anthropocene evolutionary period, wherein the impact of humanity is the leading factor in determining the future course of our planet’s environment and species, the understanding of nature and the role of Canada’s natural heritage, especially the Arctic, has never been more important. In this, the Canadian Museum of nature has a central and vital role to play in Canada and around the globe. With a mission to inspire respect and understanding of the natural world, through learning from our past, engaging with our present, and planning for our future, the Museum is continuing a course of renewal to leverage its expertise and assets and deliver on its five strategic objectives: Knowledge and Discovery, Inspiration and Education; Presence; Performance; and Advancement. (Margaret Beckel, Annual Report 2012-2013, p. 4)

During this year the museum sets seven priorities with the intention of building on the museum’s previous successes since the reopening of 2010. These include:

1. Sustain the Museum’s scientific leadership, knowledge and expertise by focusing research and collections activities and communications on its two museum research centers of excellence and by maintaining its long-standing contribution to national and international bodies.
2. Invest in blockbuster exhibitions aligned with the Museum’s strengths that position it as a Museum of international first rank and implement a pricing structure consistent with international best practice.
3. Develop and implement a digital strategy to optimize the use of technology and improve the visitor experience.
4. Invest in branding, marketing and a refreshed positioning strategy.
5. Develop and implement a new business model moving from appropriation based to enterprise based.
6. Develop and launch a comprehensive advancement strategy that incorporates and aligns fundraising, marketing, communications, government relations and institutional relations.
7. Redesign the organizational structure to reflect and support the strategic direction of the Museum. (Corporate Summary 2012-2013 p. 3).

In addition to Whales Tohora, special exhibitions include Nature Unleashed on natural disasters, and photographic exhibitions including: Extraordinary Arctic, Fury: portraits of turbulent skies, and Lichens. The Museum's 20 travelling exhibits are seen by 28 communities across Canada and Winged Tapestries: Moths opens at the American Museum of Natural History in New York. New programs include Nature Nocture a program-themed nightclub which attracted record numbers of young adults, and a new lecture series called de Natura. In April instead of Earth Day programming, the museum launches the first of four annual Arctic themed festivals. The Extraordinary Arctic Festival celebrated the work and discoveries of the museum's researchers, and explored "the links between nature and Inuit culture, both traditional and contemporary, through NFB films, throat-singing, drum-dancing, stories, games, and Inuktitut language activities"(Canadian Museum of Nature, 2012). Building on the experience developing Whales Tohora activities, this cross-cultural programming fostered new partnerships between the museum and organizations including Nunavut Sivuniksavut, Inuit Tapiriit Kanatami, and the Ottawa Inuit Children's Centre. This festival also reinforced the relevancy of Strategy 2.2 to "strengthen and develop approaches to respectfully dialogue with Aboriginal communities about nature" and the museum's desire to use this dialogue to "broaden Canadians understanding and respect of Aboriginal Wisdom/Traditional Knowledge as it applies" to the museums "public discourse and offerings" (Corporate Summary 2012-2013, p. 13).

## **2013-2014**

This "Inspiring" annual report is appropriately named as it introduces the museums new strategic plan objectives and its motivations. According to the report there are five strategic objectives including the creation of four new centers and 'achieving a sustainable enterprise'. These four centers are the Center for Arctic Knowledge and Exploration, Center for Species Discovery and Change, Natural Heritage Campus Initiative and the Center for Nature Inspiration and Engagement. This last center or Nature Inspiration Center (NIC) as it is more commonly called, is the initiative

for which I developed my Appreciative Inquiry Summit as described in Chapter 5. This year is marked by the success of Nature Nocture which helped to establish a new target market for the museum and helped launch a contemporary take on public lectures in the form of webcast called natureTalks. During this time the museum hosted three popular special exhibits including: Edward Burtinsky's Oil, the Smithsonian's the Hidden Life of Ants, and returning favorite Frogs: a Chorus of Colours. New this year, the museum incorporates participatory program spaces within these special exhibitions with the goal of attracting families in Frogs, and 'Sophisticated adults' in the science lounge of Edward Burtinsky's Oil. In addition to the museum's second arctic festival (Edible Arctic) the focus on the Arctic is intensified through a collaborative partnership with Sudbury's Science North to create a new Arctic exhibit titled Arctic Voices. This exhibit scheduled to open at the CMN in the winter of 2014, is described as an opportunity for visitors to "connect with the remarkable animals that live there, the resilient people that inhabit this region, and the dedicated scientists who are helping to reveal what makes this place so unique" (Arctic Voices Exhibit Brief, 2014). Celebrating the 100th anniversary of Canada's first fossil gallery also created an opportunity to increase the presence of scientists in the museum's fossil gallery where they unveiled, with and for the public, the contents of a plaster field-jacket from around 1912. The museum's botanists and volunteers also began mounting plant specimens with visitors in various galleries as a way of promoting the Botany team's current arctic research activities. Program activities during this year were focused on increasing school program sales; adjusting to the closure of the Discovery Zone and managing its associated programs; introducing live-animal roving in the museum's galleries; and preparing special events including the Edible Arctic Festival, Nature Noctures, and natureTalks. In September 2014 the programs department was subject to layoffs including the department's Head of programs, two project leaders, and its resident artists/science interpreter. The purpose of these cuts were associated with the museum's need to become economically sustainable. However it is unclear

how the museum will deliver on its Education and Inspiration objectives without clear leadership or adequate human resources. The percentage of educational programs spending was not clearly outlined in this year's report.

### **From Discovery to Inspiration**

Since 2008 the Canadian Museum of Nature housed a space called the Discovery Zone (DZ). This space located on the fourth floor welcomed visitors to learn from Science Interpreters and participate in a number of activities. For instance visitors could take a closer look at the museum's collections using microscopes, participate in interpreter-lead workshops, and dive into self-lead activity boxes. It also represented one of the few places in the museum where families with young children could relax, learn, and have fun together. As the name suggested this space was a place where visitors could discover the wonders of natural history but also the interpersonal dimension of museum visits. Over the years public programs and one-on-one interaction with Science Interpreters helped to increase memberships, an important revenue-generating product offered by the museum. In 2012 following the distribution of the museum's newest Strategic Plan, Programs staff were told without much warning or explanation that the Discovery Zone would be closing in two weeks at end of the summer. Needless to say having already gone through a six year renovation ending in 2010, which included the renovation of the Discovery Zone, staff were shocked about this abrupt decision. An emergency fact sheet was given to staff in an effort to diffuse a stressful situation in which staff, having lost their workspace, feared for their job security (documents found in Appendix A). Lacking from this fact sheet; however, was the answer to why the wildly popular and beloved Discovery Zone was closing and who had made this decision. Soon enough it became clear that the Discovery Zone was to be replaced with a new Nature Inspiration Center, an objective featured in the strategic plan. According to institutional documents the objectives of the NIC as of January 2014 were to facilitate the following:

- Excellence in programs, products and approaches to content and experience design, development and delivery that reach new markets and generate new revenues.
- New approaches to physical and digital experience design and delivery
- New approaches to formal and informal education program design and delivery
- New approaches to travelling exhibit content, design and delivery: arctic, lichens, crystals
- New approaches to school visit engagement
- New approaches to general public programming and engagement
- New approaches to digital tools to broaden reach to new audiences and new geographic regions of Canada, and
- Celebration of excellence in nature inspiration in Canada (Appendix A).

As this long list of objectives implies the museum's new strategic direction requires developing new approaches to educational programmes at the museum. To begin facilitating this transformation, a cross-functional NIC Committee was created and meetings were held to brainstorm and research ideas for this new center. Committee members from the exhibit department began researching and re-designing the DZ to accommodate the needs of the new NIC, at the time conceived as a makerspace workshop (Appendix A). As such the Discovery Zone's popular Trading Post, which allows children aged four to fourteen to collect and exchange natural specimens with other youth, was moved with considerable effort to the Animalium in the basement. This move required Project Leaders from the Programs department to establish how their public programs would now be delivered in this new location. Having begun the task of restructuring public programs, tension between the Programs and Exhibit departments began to arise when a decision was made to change the location of the NIC to the Animalium without consulting the newly settled Programs staff. The reimagined NIC to be located in the basement required that the Animalium's live animal terrariums be moved to the fourth floor; a space adjacent to the pest-sensitive bird gallery. With the NIC now in the basement the Trading post was then moved to a poorly lit and difficult to find location at the back of the Vale Earth gallery. The uncertainty of public programming with the loss of the Discovery zone, and the temporary closure and frequent moves of the Trading post had a negative impact on museum members who expressed their frustration with the changes



and lack of services they once valued. The Trading Post eventually was moved back to its original location on the fourth floor within the new Animalium. As a result of all this shuffling it became overtly clear that improved communication between departments and management was needed to avoid the deterioration of inter-departmental relationships and future negative impacts on visitor services. Unlike in many of today's art and cultural museums, the CMNs Programs department remains at the periphery of activities and decision making is merely reactive to the changing whims of management and other departments (Czajkoski & Hill, 2008). As will be discussed in subsequent chapters, there is an urgent need at the CMN to establish the role and authority of its Programs department.

#### **Strategic Plan 2014-2019: The Next Five Years**

This current strategic plan focuses on revisiting the museum's past, reinforcing its strengths in research, and outlining its opportunities for the next 5 years. It also recognizes that while its mandate has remained the same since 1990 that the world has changed. As a result this document states a new revised Vision, Mission and Position (p.2).

Our Vision: to inspire understanding and respect for nature for a better Canada, through learning from our past, engaging with our present and preparing for our future.

Our Mission: to create and deliver inspiring and memorable connections with nature through engaging and impactful programs of research, collections, exhibitions and public engagement in a 21st century global context.

Our Position: a national museum of international first rank known as one of Canada's foremost sources of evidence based insights, inspiring visitor experiences and real engagement with nature's past, present and future.

As previously mentioned the five priorities of the museum's next five-years are to create four new centers and to achieve financial sustainability. The table on the next page summarises the objectives of these four new centers and their broad desired outcomes (Strategic Plan 2014-2019, p.3).

Objective	Description	Outcome
Center for Nature Inspiration & Engagement. Also known as the: <b>Nature Inspiration Centre (NIC)</b>	To transform people's expectations of the CMN as a destination for discussion, connection and exploration with nature's past, present and future that advances understanding and respect for Canada's natural world.	Be a national leader and innovator in nature inspiration on-site and off-site.
<b>Center for Arctic Knowledge &amp; Exploration</b>	To transform people's understanding of Canada's arctic and its relationship with Canada as a country in the 21 <sup>st</sup> century global context.	Be a global museum leader and contributor in arctic knowledge and exploration.
<b>Center for Species Discovery &amp; Change</b>	To transform people's understanding of the relevance of species discovery and change to their everyday lives now and in the future.	Be a national leader and global influencer in advancing and sharing knowledge about species discovery and change.
<b>Natural Heritage Campus</b>	To be a Collections collaborator and partner with institutions around the world seeking to collect, preserve and digitize specimens that document the nature of Canada.	Be a global museum leader and collaborator in natural heritage collections storage, preservation and digitization.

In order to become "A National Leader in Nature Inspiration" the museum has committed to developing and facilitating the following:

- Annual summit on 21st century trends in nature inspiration,
- Promote thought leadership called on by national and global museum community,
- Celebrate national excellence: Canadian Nature Inspiration Hall of Fame.
- Launch a nation-wide series of story-telling cafes or salons across Canada.
- Site for nature inspiration experimentation/skunkworks: Centre for Nature Inspiration and Engagement (CNIE). (Strategic Plan 2014-2019, p.8)

Theorizing how these new centers would function required the creation of new cross-functional teams composed of members from multiple departments. The need to re-think collaborative work internally and to develop a framework for these centers provided me with an opportunity as a researcher to introduce and evaluate whether Appreciative Inquiry, a positive organizational change management process, could help meet the planning and collaborative needs of creating a Nature Inspiration Center. To put into context the motivations of the Canadian Museum of Nature's changing objectives it is critical to review the history, challenges and changing role of natural history museums.

## Chapter 2: History and Changing Role of Natural History Museums

### History: Cathedrals of Science to build an Empire

Whether museum professionals like to recognize it or not, national museums like those in Canada were at their inception colonial museums whose role was to display the splendour and abundance of newly settled territories to both settlers and their queen and country. Prior to the signing of confederation, the province of Canada's cultural and natural history objects were collected and curated by colonial scientists who were members of the Geological Survey of Canada. These scientists born and trained in Europe curated collections for the great international exhibitions in London in 1851 and 1852, and in Paris in 1855 (Vodden & Dyck 2006, p.10). The goal of Canada's representation at these exhibitions was "to show the world the wealth of Canada's natural resources and their potential for industrial development" (Vodden & Dyck 2006, p.10). Bearing in mind the importance of exporting goods and raw materials including wool, meat, dairy, cereals, and lumber to ensure further capital and infrastructure investment in Canada's colonies, these early exhibitions and those that would follow helped shape Canada's identity and its physical landscape (Sheets-Pyenson 1988, p.20). As Gordon Lightfoot's song Canadian Railroad Trilogy helps illustrate,

There was a time in this fair land when the railroad did not run  
When the wild majestic mountains stood alone against the sun  
Long before the white man and long before the wheel  
When the green dark forest was too silent to be real

But time has no beginnings and history has no bounds  
As to this verdant country they came from all around  
They sailed upon her waterways and they walked the forests tall  
And they built the mines, the mills and the factories for the good of us all

This passage helps describe the propaganda of the time that Canada's landscapes were empty and beckoning development prior to European settlement. The work of the Geological Survey of Canada in 1877 was to gather 'specimens of flora and fauna, make observations on the forests, collect artifacts and vocabularies, and make anthropological notes on Aboriginal societies'(Vodden

& Dyck, 2006 p.17). Given their activities and motivations, the work of these colonial scientists is important to our understanding of Canadian history and how European empires came to settle Canada's colonies.

Providing the following is a gross simplification of the development of modern science, the great thinkers of the seventeenth century including Descartes and Newton, established a new knowledge system based on empirical evidence and rational thinking with the purpose of gaining power over nature (Aikenhead & Michell, 2011). European nations relied on this Scientific Revolution to justify their worldwide exploration and colonization efforts. From the seventeenth to the nineteenth century European philosophers and scientists embraced an Anthropocentric or human-centered worldview which established "hierarchies of importance in which people have a special status within nature-above that of animals, plants and non-living things" (Aikenhead & Michell 2011, p. 52). Other hierarchies were also created from this worldview which perceived Europeans as holding a special place above other "uncivilized" peoples. These philosophies were used to justify the expansion of European immigration and settlements, and the ceasing of the "uncivilized" peoples' lands (Clifford, 1997). Consequently "museums were an expression of the western conviction in the onward march of the rational" (MacKenzie, 2009, p.1). Early exhibitions found in many colonial museums of the day, displayed European history and artifacts separately from plants, animals, and Indigenous cultures. For example in 1906 Canada's archeological and ethnological collections were managed by the Survey's palaeontologist Henri Ami, and as recently as 1909 Reginald Brock, the Survey's fourth director, held the opinion that time was running out to study Canada's disappearing Aboriginal Peoples (Vodden & Dyck, 2006).

Under the advancing settlement and rapid development of the country, the native is disappearing, or coming under the influence of the white man's civilization. The older people who are familiar with the folklore or traditions of the tribe are dying off, and the rising generation under the changed conditions is acquiring a totally different education. If

the information concerning the native races is ever to be secured and preserved, action must be taken very soon, or it will be too late (Vodden & Dyck, 2006 p.27).

Considering the contribution of scientists like Brock to the colonial agenda of the day it is ironic that these individuals would seek to record and preserve the very peoples their survey work helped push off their lands. “The extent to which Western society has historically constituted itself through the denial of the ‘other’ and violent oppression of whole constituencies of the human species is indisputable and today increasingly well documented”(Vandenberghe, 2003).

Over time museum display and interpretation practices changed as other cultures, who had been dehumanized and labeled part of nature, were eventually recognized as human beings. As a result non-European cultural artifacts were moved to cultural museums, leaving natural history museums to the collection and display of what is not anthropological. Exceptions include natural history museums who study the history and evolution of early humans including the American Museum of Natural History in New York. In Canada the National Museum’s Human History Branch, renamed the Museum of Man in Canada in 1968 managed Canada’s settler and Aboriginal artifacts leaving the Museum of Natural Sciences to the study and collection of natural history (Vodden & Dyck, 2006). Accordingly the display and interpretation practices of cultural museums have evolved over time. Twenty-first century museums have repatriated human remains and sacred objects, human cultures are no longer blatantly objectified, and museums now collaborate with source communities to develop culturally relevant exhibitions and programs. What remains however are distinct museums divided based on a perceived division between nature and culture.

## Understanding the Great Divide

Today cultural museums collect, exhibit and educate the public on diverse themes from various cultures. Similarly natural history museums collect, exhibit and educate the public about the natural world and its biodiversity. While both types of museums touch upon the other's topic area under certain circumstances their interpretation of objects remain separate based on a perceived division between nature and culture. Whether they are described as a dichotomy, a tangled web or instinctively inseparable Pilgrim and Pretty (2013) state that there are many factors that influence how we understand these terms. These factors include: our belief systems, social and institutional organizations, our norms, stories, knowledge, behaviour and languages (Pilgrim & Pretty, 2013). For instance European cultures shaped by their Christian religious beliefs tend to perceive nature as separate from culture based on the biblical interpretation that man was created in God's image and was given dominion over nature. As previously outlined this philosophy and the Scientific Revolution of the seventeenth-century 'justified' the colonization of territories outside Europe. Consequently colonial museums perpetuated a division between nature and culture based on their beliefs, and created separate exhibitions for European settler culture, and natural history with non-European cultures.

Another factor driving how different cultures perceive these terms is argued to be based on whether people's daily-lives and culture are industrialized or based predominately on subsistence living. "Many industrial cultures perceive nature and culture as two separate entities, thus the prevailing modernist view tends to be of a nature-culture dichotomy, whereby humans are seeking their dominance over nature. However, some cultures hold a more inclusive view perceiving humans as interdependent components of nature" (Pilgrim & Pretty, 2013, p.3). The view that humans are but one interdependent component in nature is a philosophy found in many North American Indigenous cultures. From the east to the west coasts many of these cultures know there to be

equality between all species or 'relations' and that all life is deserving of respect. On the east coast according to the Mi'kmaq Confederacy of Prince Edward Island,

The early Europeans thought our ancestors odd because they paid homage to not just the Great Spirit but also to the very animals and fish themselves. There was a reason. Our ancestors felt a connection to that which they gained their sustenance. They did not place people above the rest of creation, with domination over all. The ancestors believed they were a part of nature's fabric. Life was a circle and every creature had its role and place. (Ni'n na L'nu Exhibit, Canadian Museum of History 2014)

For the Huron-Wendat near Quebec,

Every expression of life, material or immaterial, demands of the Amerindian respect and the spontaneous recognition of an order that, while incomprehensible to the human mind, is infinitely perfect. This order is called the Great Mystery. To the traditional Amerindian, life finds its meaning in the implicit and admiring recognition of the existence, role and power of all the forms of life that compose the circle. Amerindians, by nature, strive to respect the sacred character of the relations that exist among all forms of life. (Sioui, 2005, p.9)

And according to hereditary chiefs from the Gitksan and Wet'suwet'en nations of British Columbia (1992),

To the Gitksan and Wet'suwet'en, human beings are part of an interacting continuum that includes animals and spirits. Animals and fish are viewed as members of societies that have intelligence and power, and can influence the course of events in terms of their relationships with human beings(...) The Gitksan and Wet'suwet'en believe that both humans and animals, when they die have the potential to be reincarnated. But only if the spirit is treated with the appropriate respect. (Atleo, 2004, p.62-63)

While arguably all cultures recognize in their own way that humans depend on the natural world for their survival, the link between human well-being and planetary health has begun to proliferate western society under the pressures of climate change and the ecological crisis. Accordingly, there has been a surge of interest and research on the worldviews of cultures whose traditions and knowledge promotes sustainability and recognize a fundamental unity between nature and culture. For instance Prilgrim and Pretty (2013) state that,

It is evident that human and environment systems are intimately linked in ways that we are only beginning to appreciate, and certain cultural and ecological components are necessary to ensure system resilience, whereby systems can absorb and cope with changes without losing critical functioning. (...) Ecocultures comprise human cultures that have retained, or strive to regain, their connection with the local environment, and in doing so, are improving their own resilience in light of the multitude of pressures they face, including global climate change. (p.11)

However it is dangerous to blindly assume that all people with Indigenous heritage live sustainably.

“Indigenous peoples must not be confused with their characterization by white society as ‘ecological Indians’ exoticized stereotypes of noble savages happily living in premodern ways and conditions within a state of nature” (Kahn, 2010 p.106). This interest in the sustainability of ‘Ecocultures’ has proliferated fields including conservation biology, environmental education, and climate change research as evident through the development of organizations like UNESCO’s Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) of which Canada is a member state. The IPBES recognizes the value of indigenous and local knowledge for their potential to help counter the erosion of biodiversity through community-based research and projects (2014). This initiative also recognizes the challenge of bridging science with other knowledge frameworks and has created a task force whose goal is “to identify obstacles and chart a path towards respectful and productive collaborations between local and indigenous knowledge holders, the scientific community and policy makers”(2014). This growing recognition of the interconnectedness of nature and culture, and the importance of diverse knowledges in the protection of biodiversity has proliferated natural history museums as evident in the CMNs Annual Reports, and is reshaping their role in the twenty-first century.



## Changing Role: Biodiversity for Sustainability

Natural History Museums today are committed to the scientific research of the planet's biodiversity and play a significant role as informal educators (Arbutnott et al.). They maintain a rich and diverse collection of natural history objects and conduct research on its collections to communicate how the world has changed and is changing. Using selected specimens, dioramas, and interactive displays they communicate to the public the process of evolution, climate change and the loss of biodiversity (Arbutnott et. al).

Natural history museums have a commanding mission- nothing short of understanding the life of the planet for the benefit of the earth and its inhabitants. Their business is the science of biological diversity. They document and study life on earth, its animals, plants, and microbes; its history patterns, and processes; and its level of organization, from genes to species to clades to ecosystems. They do so for the sake of knowledge and the biodiversity solutions this knowledge can inform. (...) This knowledge is critical to science and society- for managing natural resources, for sustaining human health, for ensuring economic stability, and for improving the quality of human life. (Krishtalka & Humphrey, 2000)

This role as a source of knowledge critical for science and society, has identified these institutions as ideal for the promotion of sustainability and the development of innovative solutions to our ecological crisis (Yuqin 2008; Arbuthnott et al.2014). Since the 1990s the Canadian Museum of Nature has enacted this role by collecting and investigating the effects of climate change on species through its Biodiversity Programme and its associated centers. According to CMN records the museum recognized that,

Pressures on the Economy, access to work, human health, and international competition are all interlinked with the sustainable management of natural resources, conservation of biodiversity, control of environmental abuse, and the incremental pressures of a burgeoning population. Yet Canadians remain unclear about how to ensure an economically successful, societally secure, and environmentally healthy country. To facilitate a 'new ethic' that understands and respects the natural world and knows how to utilize its resources in a sustainable manner; it is necessary that people learn what biodiversity is and what the effects of human behaviour are upon it. Knowledge is the essential base from which people will create positive change. Understanding of the benefits, global, national, regional, local, and most importantly personal, will drive action. Respect for the environment for which they are a part, and concern for the well-being of 'our children's children' will feed the resolve for

change. (NS/5205-3 Volume 1 Collections and Research- Programmes: Biodiversity Programme).

The goals of this programme were threefold:

1. To promote respect for the direct values and benefits the human species gains from being an integral part of the rich and singularly biodiverse living layer that makes the planet Earth its home.
2. To present the implications of changes to levels of biodiversity on the well-being of contemporary human society.
3. To create and disseminate knowledge essential for Canadians to understand biodiversity and its importance to them.

According to the museum's archives and records, the centers created to support this programme included the CMN's Center of Knowledge for Contemporary Change, Centre for Canadian Biodiversity and Centre for Traditional Knowledge. The goals of the Center of Knowledge for Contemporary Change (1995) were "to establish broad themes which will be comprised of individual and multidisciplinary studies which focus on various aspects of this theme" a maximum of three broad themes of contemporary change could be developed "one for each of the Museum's Arctic, Biodiversity, and Evolution Programs" (NS/5205-5 Volume 1 Collections and Research – Programmes: Centres of Knowledge). This center's activities would strive to answer social questions including:

- How bad are the current changes that we, and our children, are living through?
- How much of the change that is occurring is inevitable?
- How much are humans responsible for?
- Can species adjust to changes as fast as they are occurring?
- If global warming does occur, will Canada be able to grow wheat in the Arctic?
- Will native plants and animals that are in the Arctic and Antarctic now die out?

As a way of answering these important questions CMN researchers were tasked with studying diatoms, the Arctic's flowering plants, ice scours and freshwater zebra mussels (NS/5205-5 Volume 2 Collections and Research- Programmes: Centers of Knowledge).

The Center for Canadian Biodiversity's role was to help disseminate the results of scientific research to the public using various mediums. "CMN Public Programmes, Publications, and Business Enterprises will provide national and international relevant framework for integrating sustainable development and conservation of biodiversity and will seek to ensure that personal, corporate and political attitudes and practices are consistent with sustainable development." One of the associated outcomes of this center's activities was the creation of a Center for Traditional Knowledge.

The center was established as a federally incorporated international, not-for-profit foundation in June 1994. The Centre evolved from a program of activities carried out by the national Committee for UNESCO/Canada Man and the Biosphere Programme (Canada/MAB). (...) The work of the Centre is based on the premise that, when TEK and western scientific knowledge are used in an appropriate and complementary fashion, the two knowledge systems provide a powerful tool for managing natural resources and achieving sustainable development. The Goal of the Centre for Traditional Knowledge is to promote and advance the recognition, understanding and use of traditional ecological knowledge (TEK) around the world in policy and decision making for sustainable development. (CMNAC/2013-003 Box 2 of 3 Canadian Centre for Biodiversity, Folder 24).

Prior to its closure around 2005 this center created exhibitions and programs which presented issues from both science and traditional knowledge perspectives. The objectives of this center and its activities were:

- To foster and support research into the nature, scope, use and preservation of TEK;
- To promote the development and implementation of a code of Ethics and Practices regarding the acquisition and use of TEK;
- To facilitate the communication, and exchange, of ideas information, experiences and practices associated with TEK;
- To promote understanding and use of TEK through the formal, non-formal and informal education systems;
- To ensure that both traditional knowledge and western-based science are employed in a complementary manner in planning and decision making (CMNAC/2013-003 Box 2 of 3 Canadian Centre for Biodiversity, Folder 24)

The creation of this center also came in response to the museum's contributions to the International Decade of the World's Indigenous People. The museum's contributions to this decade long initiative

involved establishing the Centre for Traditional Knowledge (CTK), providing funding to the National Aboriginal Achievement Awards, participating in the Aboriginal Career Symposium in 1995 and developing an exhibit for the International Union for Conservation of Nature (IUCN) World Conservation Congress in 1996. This exhibit titled Arctic Forever: Let's Work Together to Protect the North, was created in collaboration with northern Aboriginal peoples and communities and featured the display of both cultural objects and natural history specimens. "Highlights of the IUCN Exhibit include; a display of traditional tools and clothing from the Inuit of Igloodik, a mini presentation of science and traditional knowledge in action by Makivik, and an aquarium full of Arctic marine critters with explanations by Dr. Kathy Conlan from the Museum" (CMNAC/2013-003 Box 2 of 3 Canadian Centre for Biodiversity, Folder 24). The exhibit was displayed in Montreal from October 17 to 21st 1997 and was later the museum's blockbuster for the summer of 1997. The purpose of this exhibition was to "reinforce the role of the CMN and Canada in conservation in the Arctic, advance the understanding of traditional knowledge, and promote the use of traditional ecological knowledge and science in the co-management of natural resources" (CMNAC/2013-003 Box 2 of 3 Canadian Centre for Biodiversity, Folder 24). Fun fact I was seven years old at the time and can recall visiting an exhibit on the first floor of the west wing which fits this exhibit's description.

According to the CMNs website other cross-cultural projects have since taken place including Ukaliq: The Arctic Hare in 2004, and Puijila: A Prehistory Walking Seal in 2009. The Canadian Museum of Nature thus has a history of presenting nature through both scientific and cultural lens, but has yet to complete its Aboriginal Policy scheduled to be completed in 2010 and then 2012. Given the colonial history of natural history museums it is important that today's institutions develop respectful and appropriate ways of bridging these knowledges as the objectives of the CTK reflect. Dong Yuqin (2008) a curator and contributor for UNESCO, argues natural

history museums must redefine their historical missions, show deeper concern for the protection of biodiversity and urban ecology, promote harmony between humankind and nature, in addition to supporting sustainable development activities if they are to adapt to their new role as proponents of sustainability. She argues that to do so museums must “keep up with the times” through their use of participatory methods to meet these challenges. But to take ownership of this role as a proponent of sustainability these museums must address their many challenges.

## Chapter 3: Challenges facing Natural History Museums

### Protecting Indigenous Knowledge

In their quest to better understand the effects of climate change around the world many climate scientist have traveled to Canada's north to study its Arctic. Some of these studies have recruited Inuit elders and community members in citizen science type projects as well as collected oral histories in an effort to understand climatic changes in the north (Ignatowski & Rosales 2013; Leduc, 2006, 2010). Such work has surfaced the term Traditional Ecological Knowledge (TEK) or Traditional Knowledge (TK). The use of TEK or TK along with western science has caught the attention of researchers around the globe and has resulted in studies with and sometimes for Indigenous peoples often for the purpose of developing local climate change adaptation strategies (Lebel 2013; Williams & Hardison 2013; Lefale 2010; Vlassova 2005).

Indigenous peoples are increasingly recognized to possess considerable knowledge on issues related to climate change adaptation. Studies have demonstrated the value of indigenous peoples' observations of changes in climate-related weather patterns, ocean phenomena, phenology, and fire behavior. Their knowledge of past ecological patterns can help reconstruct historical baselines. Traditional ecological knowledge of ecosystem health and species distributions can contribute to culturally appropriate adaptation. (Williams & Hardison 2013)

As previously outlined, natural history museums like the Canadian Museum of Nature also recognize the potential of TEK and collaborating with Inuit individuals and communities (Biodiversity Symposium 2010; CMNAC/2013-003 Box 2 of 3 Canadian Centre for Biodiversity Folder 24 Center for Traditional Knowledge). However, these terms including their use and interpretation pose a barrier to the reintegration of culture in natural history museums.

Deborah McGregor (2004) in her article "Coming Full Circle: Indigenous Knowledge, Environment, and Our Future" outlines how a growing interest in Traditional Ecological Knowledge (TEK) by non-indigenous peoples is deeply problematic. According to McGregor, the problem lies in part with the unequal sharing of benefits in the use of this knowledge by non-

Indigenous groups with those communities where the knowledge derives. In this sense inappropriate uses of TEK are viewed as an extension of a colonial project (McGregor, 2004). Similarly Williams and Hardison (2013) highlight the issues associated with cross-cultural knowledge exchanges for the purpose of solving climate change stating;

Indigenous peoples may be wary of sharing because of a history of exploitation, a lack of recognition and respect for their values and rights, a lack of safeguards for the control and proper use of their knowledge and associated biocultural heritage and by a lack of perceived long-term benefits to themselves for sharing. Partnership arrangements without proper safeguards may encourage them to disclose relatively unprotected knowledge associated with relatively unprotected resources. Knowledge sharing and learning from one another will be critical for finding just and lasting solutions to the climate crisis. As indigenous peoples are some of those least responsible and most threatened by climate impacts, it is the highest duty of those seeking access to their knowledge and resources to ensure they are not further harmed and that their rights and cultural values are fully respected (p.531).

Natural history museums must think critically about their motivations for pursuing their interest in and use of 'TEK' and take seriously the concerns of Indigenous knowledge keepers. Scientists interested in personal and/or cultural oral histories related to climatic changes in the north should work with communities to become "cultural-learners" and reshape their research methodologies accordingly (Archibald, 2008; Kovach, 2009).

If researchers don't follow cultural protocol and don't take the necessary time to develop respectful relationships with Elder teachers, but instead begin to pose questions, they may find that the teachers answer questions indirectly or not at all. When this happens the role of researchers as outside research experts ought to quickly change to one of research and cultural learner. (Archibald 2008, p.38)

As outlined in the introduction of this document, Archibald's four principles (Respect, Relevance, Reciprocity and Responsibility) provide a framework for rethinking research with source communities and developing respectful policies. Kovach (2009) similarly argues that non-indigenous researchers should strive to find allied approaches that are not extractive but rather are accountable to communities and their worldview. She outlines four broad ethical considerations related to "tribal paradigms" which researchers should take into account.

These considerations are:

1. The research methodology be in line with Indigenous values
2. There is some form of community accountability
3. The research gives back to and benefits the community in some manner
4. The researcher is an ally and will do no harm

Reconciling diverse knowledge frameworks isn't easy. Marie Battiste and James Youngblood Henderson (2000) for instance have identified four problems preventing respectful and mutually beneficial collaborations between scientists and source communities. Firstly they argue that Indigenous knowledge cannot be defined and does not fit into the Eurocentric concept of culture (p.35). Secondly Indigenous knowledge is not a uniform concept across all peoples, and cannot be categorized (p.35). Thirdly 'Indigenous knowledge is so much part of the clan, band, or community', that it cannot be separated from the bearer to be codified (p.36). And finally because of these characteristics it is a sensitive subject of study, and discussing it out of context may be viewed as intrusive or insensitive (p.36).

Today frameworks, guidelines and tools are being developed by governments, communities, and organizations to help outline who has access to Indigenous knowledge and for what purpose (INAC, 2001; Library of Parliament, 2004). For example Mukurtu CMS is a "free, mobile and open source platform built with indigenous communities to manage and share digital cultural heritage". This online database platform has worked with a number of communities and organizations including the American Museum of the American Indian to present information in ways that respect the cultural protocols of their collaborators. Working with communities Mukurtu has also developed Traditional Knowledge Licences and Labels to uphold such protocols; controlling who has access to information and for what purpose (<http://www.mukurtu.org>). Cultural museums play a vital role in ensuring that the dehumanizing practices of the past are not repeated whilst nature and culture are bridged. These museums with their rich collections of archeological and ethnological artifacts



contribute to the resurgence of 'Ecocultures' by collaborating and partnering with source communities in the development of relevant and respectful exhibitions, programs, and initiatives (Archuleta, 2005; Galla, 1994; Hanna, 1999; Henare, 2004; Krmpotich, 2010 ). Museum Pieces: Towards the Indigenization of Canadian Museums (Phillips, 2012) is a testament to the evolution of display and interpretation practices within cultural museums and provides countless case-studies and recommendations for working respectfully and collaboratively with Indigenous people to co-create exhibits and programs. As Phillips states in her chapter titled Towards a Dialogic Paradigm, participatory action research (PAR) is increasingly used by cultural museums seeking to democratise project planning in the creation of collaborative museum exhibits.

The overall purpose of PAR projects, as they state, is change, and it is achieved through the involvement of the whole community in the definition of goals, in the research process, and in the verification of data. Equally important, training for community members is built in at all stages of the project. Collaborative museum exhibition projects are controlled by principles nearly identical to those of PAR, and they are proving to have similar impacts on community development in the areas of education, cultural preservation, and the tourist industry. (Phillips, 2012, p.191)

Such projects create value not only for the museum by providing exhibits of relevance to their visitors, but also serves their collaborators interest in developing educational centers where future generations can learn about their culture (Phillips, 2012, p.190). Given the abundance of research on this important issue, natural history museums should review the existing literature and collaborate with communities of interest to develop culturally relevant policies. Natural history museums should also consult with their cultural counterparts who have experience reshaping research and exhibitions with source communities. The challenge of developing such policies, which respect and outline natural history museums' use of Indigenous knowledge, is but one of the many competing challenges facing natural history museum in the twenty-first century.

## Science versus Programs

As part of the rapid establishment of the natural history museum during the nineteenth-century, the Geological Survey of Canada's collection quickly began to surpass its headquarters and by 1904 had secured the land and funding needed to erect Canada's first National Museum in Ottawa. Like other early natural history museums the Survey's exhibitions attracted a growing audience of middle class people seeking museums as "acceptable" sites for leisure activities (Sheets-Pyenson, 1988, p.4). "For these men and women viewing products of nature grew in appeal as industrialization and urbanization began to threaten the natural world around them" (Sheets-Pyenson, 1988, p.4). Like many museum visitors today, people are particularly fascinated and entertained by what is rare or exotic. For example two of the Canadian Museum of Nature's most popular permanent exhibits showcase dinosaurs and a juvenile blue whale skeleton. Further linking the past and present, it can be argued that many of the challenges facing museums in the 1900 continue to exasperate museums today. Two such challenges include the need to meet the needs of diverse audiences and balancing education and research activities. Beginning around 1910 museums were recast as institutions of learning and were challenged for the first time to curate and develop programs and exhibitions with the interests of their visitors in mind (Sheets-Pyenson, 1988, p.4). This change meant that funding and resources had to be shared among two complementary museum functions.

Museums were intended to serve two distinct audiences simultaneously: a few scholars and the public at large. But it was difficult, if not impossible, to respond equally to the needs of both groups. Concentrating on scientific requirements left directors open to the charge of neglecting their responsibilities to the public. Emphasising popular education, on the other hand, suggested that museums were negligent in their research duties. The conflict between these two constantly vexed museum administrators everywhere. (Sheets-Pyenson, 1988, p.8)

In 2014 these challenges remain within new contexts. While public education has been part of museums' missions since 1910, natural history museums tend to prioritize collections and research activities and invest less time and resources into public programming. In their practice of simply "trumpeting the quality of their scientific goods" natural history museums miss an opportunity to

relate their collections and research to the daily lives of their audiences and provide these goods for the benefit of society (Krishtalka & Humphrey, 2000).

In their bold article “Can Natural History Museums Capture the Future?” Krishtalka and Humphrey “sound the call to arms” and state that these institutions require “saltational doses of the very process we study—evolution”. This proposed evolution requires that four challenges facing natural history museums be addressed: the challenge of the biodiversity crisis, the challenge of education, the challenge of public programs, and the challenge of management and leadership (Krishtalka & Humphrey, 2000). To summarize, natural history museums are running out of time to collect and research the planet’s biodiversity due to rapid species loss. Secondly, the field of museum studies and related scientific disciplines need to become interdisciplinary to answer complex questions. Thirdly, public programming needs to become increasingly relevant and accessible to visitor’s daily lives. And fourthly, museum leadership needs to be driven by CEOs with an understanding of both scientific research and business management. During the last fourteen years since this article was written, all of these challenges have begun to be addressed. Firstly it has become increasingly evident that human activities are responsible for unprecedented background extinction rates and that there is a need to mitigate these effects (Kahn, 2010; Lovelock, 2014). Secondly interdisciplinary fields and degrees have increased across many university campuses. Thirdly the use of Participatory-Action Research in public planning and museums is becoming common practice (Simon, 2007; Philips, 2012), and finally CEOs with diverse professional backgrounds (including business degrees) have been appointed and have embraced the need for active participation both internally and externally with its multiple audiences. Due to the complexity and co-dependency of these challenges I present subsequently how the challenge of the biodiversity crisis, the challenge of management and leadership, and the challenge of public programs require increased collaboration to respond to natural history museums’ twenty-first century role.

## The Challenge of the Biodiversity Crisis

Within their walls natural history museums hold evidence of the changes which have led to our Anthropocene era; an era created by the mass human manipulation of our planet's biosphere and geosphere (Lovelock, 2014). Within this new era the challenge of the biodiversity crisis (Krishtalka & Humphrey, 2000) felt by natural history museums is thus not an act of god sweeping the world, but the result of multiple complex interactions caused by the effects of globalization.

The effects of corporate globalization have been equally profound on other species, as we have experienced 1,000 times the historical rate of normal background extinction, with upwards of 30 percent of all mammals, birds, and amphibians currently threatened with permanent disappearance. In other words, over the span of just a few decades we are involved in a mass die-off of nonhuman animals such as we have not witnessed for 65 million years, and worse yet, predictions for the future expect these rates of extinction to increase tenfold. (Kahn, 2010)

This looming reality of the extent of our ecological crisis is not communicated however by institutions like the Canadian Museum of Nature. While its galleries educate visitors about the causes and effects of the last five mass extinctions, and how the age of mammals rose out of the extinction of dinosaurs and other marine reptiles, there is little to no link made between our collective actions and the current sixth mass extinction. Instead museums are busy behind the scenes researching and theorizing about whether it is possible to bring animals like the woolly mammoth and passenger pigeon back to life using their collections and new cutting edge technologies. These activities demonstrate natural history museums' partial investment in mitigating or reversing species disappearance, but conducting such studies is not time or cost efficient and lacks the ability to mitigate or address the root causes of species disappearance. In other words should these museums create a modern day ark comprised of plant and animal DNA or can they do more to conserve and protect the specimens they collect?

## Challenge of Management and Leadership

The need for museums to be managed and run by CEOs knowledgeable in both the scientific research of the institution, and the economics of business is important given the challenge of doing more with less and becoming financially sustainable corporations. In Canada the instability of the economy since the 2008 recession and pressures to eliminate existing government deficits is changing how national museums operate and are funded. The result is increased pressure on these crown corporations to become financially sustainable. This reality is reflected in the Canadian Museum of Nature's Corporate Summaries and Annual Reports from 2009 to 2014 as outlined in Chapter 1. This radical change is unprecedented for institutions which have historically been wholly supported by government and other funders, not for their ability to generate money for the state, but for their importance as centers of research and education (Genoways & Andrei, 2008). As Janes reiterates museums are more complex than the marketplace and aren't the type of organizations one creates a fortune from (2010, p.328). In response how best to develop internal, external, and cross-cultural, partnerships have become a popular topic of provincial and national museum conferences in Canada. For example the Canadian Museum Associations' 2013 national conference in Whitehorse had as its theme 'Cultural Collaborations' and attracted museum professionals from across Canada and abroad including participants from Australia and New-Zealand (Canadian Museum Association 2013). These professionals came together to share their stories about how they are collaborating with key partners including Indigenous communities, community groups, industries and other museum institutions(Personal experience, 2013). Similarly, the Canadian Museum of Nature has since 2012 increased its efforts to create partnerships with stakeholders across the country. "The Museum will reach across the country and engage visitors in exhibitions and events, to attract donors and sponsors, to attract investors and partners, to attract scientists and scholars and to engage new audiences" (Annual Report 2012-2013, p.7). Collaboration between museums

and industry have long been part of their practices. Institutions have co-developed exhibitions, shared equipment and resources, traded specimens to develop their world class collections, and industry has help fund exhibits and allocations. What is different today is the degree to which national and provincial museums are collaborating and co-creating with visitors and source communities to develop exhibits and programs.

### **Challenge of Public Programs**

To create programs and exhibits which are relevant to visitors' lives curators and educators must know what is of interest to their audiences. This requires gathering visitor information through audience observation and surveys, but it can also take the form of participatory consultations. For example the Canadian Museum of Civilization, (recently renamed Canadian Museum of History) completed a country-wide participatory project to collect from Canadians from coast-to-coast their ideas and visions for the upcoming Canadian History Hall scheduled to open in 2017 (LORD Cultural Resources, 2013). As previously mentioned cultural museums and art galleries are using participatory action research (PAR) to redefine their relationships and co-create exhibits with communities whose objects are displayed and interpreted (Phillips, 2012). Moreover, these institutions have also been experimenting with participatory practices as outlined by Nina Simon (2007).

In her book *The Participatory Museum*, Simon (2007) outlines four ways in which museums currently engage and utilize the public as (1) visitors as contributors, (2) visitors as collaborators, (3) co-creation with visitors and (4) the museum as a host of participants. Simon (2007) stresses that no method is better than another but that each are used to meet different ends. However based on Janes (2010), Krihtalka and Humprey (2000) and Yupin (2008) arguments about the changing role of NHMs there is a need for greater “co-creation with visitors” to create relevant public programming linked to the social and environmental issues we currently face. Indeed current participatory

practices in many museums are seen as ‘an addition’ to traditional ways of developing exhibitions and programs instead of a fundamental change to how museums operate (Simon 2007). For example interactive touch screens and games in an exhibition are viewed as ways visitors are invited to participate, and this according to Simon (2007) does not help address the five commonly-expressed forms of visitor dissatisfactions (p.iii). These include:

- Cultural institutions are irrelevant to my life
- The institution never changes-I’ve visited once and I have no reason to return
- The authoritative voice of the institution doesn’t include my view or give me context for understanding what’s presented
- The institution is not a creative place where I can express myself and contribute to history, science, and art.
- The institution is not a comfortable social place for me to talk about ideas with friends and strangers.

As Simon (2007) points out, “unfortunately, many cultural professionals settle for an unambitious value of participation that is not compelling to institutional directors nor stakeholders; visitors will like it. This is not a robust value. It trivializes the mission-relevance of participation projects. If you focus on participation as a “fun activity”, you will do a disservice both to yourself as a professional and to visitors as participants” (p.16). Natural history and science museums have experimented with these four types of participatory practices, and some are taking note of the makerspace movement as a way of piloting meaningful revenue-generating programs (Appendix A). Nevertheless the Canadian Museum of Nature is not as of yet accustomed to co-creating exhibitions and programs with their publics to the same extend as cultural museums. In order to catch up to their cultural counterparts, NHMs must focus on their mission instead of their internal “chatter” (Janes, 2010).

According to a recent study conducted by Arbuthnott et al. (2014) natural history museums as ‘virtual nature experiences’ may contribute to visitors ‘sense of place attachment’ and pro-environmental behaviours by encouraging ‘environmentally protective behaviour’. However museums can do more than provide knowledge to shift values and connect people to what is

important to them. Like Krishtalka & Humprey (2000), Robert Janes (2010) criticizes museums for their failure to recognize and engage with social and environmental issues plaguing the real world outside their halls. In particular Janes argues that these ‘self-proclaimed custodians of posterity’ are more invested in their internal chatter than on delivering on their missions; and by doing so are putting themselves at risk –of extinction perhaps.

Understandably, museums also suffer from unavoidable distractions, cascading thoughts, and institutional chatter. There is the continuous preoccupation with the number of visitors, the building, security, education, food, merchandise, shopping, entertainment, technology, special exhibitions, and visitor demands—just a sampling of the front-of-the-house concerns. Then there is the internal chatter, beginning with the governing authority, which may or may not be performing adequately; may have an ineffective chair; may be exercising undue or conflicting influence on the work of the museum; or may be failing to raise the necessary funding to balance the fragile operating budget. Then there is the staff, from the most senior to the most junior, who are simply human beings living out the intricacies of their lives more or less effectively – a good portion of which is done in an institutional setting. (2010, p.327-328)

In response to this dilemma Janes puts forth his argument for mindfulness in museums. He argues that mindfulness, a practice with its origins in Buddhist meditation, should be used to help museums become aware of the external events relevant to people’s lives and to refocus their objectives accordingly (2010). For Janes becoming a ‘Mindful museum’ requires:

- switching the focus away from the process of “collecting, preserving and interpreting” in favour of becoming “synthesisers” which foster understandings of the interconnectedness of the problems we face,
- becoming mindful of organizational values and the need to become committed to values which aren’t entirely self-serving (for example instead of Excellence in Peer Recognition, museums should strive to value Humility, Resourcefulness, and Transparency)
- creating multifunctional working groups which breakdown the silos currently present in many museums, and
- creating “rapid response groups” designed to drive changes in museum practices in responses to unanticipated issues and opportunities.

Janes also advocates for the appropriate use of branding activities, rethinking the cost of caring for collections, and the need to create collaborative forums as part of public programming initiatives (2010, p.330-331). As previously mentioned the CMN has already begun creating cross-functional



committees and working groups to develop centers like the NIC which respond to needs and interests of diverse stakeholders. But the museum should also embrace and be fueled by the complexity of its organization and achieving its mandate. As Krishtalka & Humphrey (2000) and Janes (2010) point out, museums are akin to the living organisms they study.

Organizations, including natural history museums, are akin to complex ecosystems. They have an evolutionary history that bequeaths structural constraints; a vital web and flow of resources, energy, and information; homeostatic mechanism that tend to keep the organizations conservative and stable; niche specialization and diversification among their personnel; successional change from new paradigms to maturity; periods of chaos; and occasional catastrophic events. (Krishtalka & Humphrey, 2000)

These organisms with their many ‘lifecycles’ are at risk of becoming irrelevant if they fail to adapt their operations and practices and become mindful post-modern museums which ‘embrace a variety of societal perspectives and values’ (Janes, 2010, p.334). As quoted in Keene (2005), these “museums are organisms that ingest, but do not excrete” (Janes, 2010, p.331). In other words museums need to get involved and reciprocate with communities and stakeholders through co-created projects to foster sustainable solutions to our ecological crisis. What is clear from these calls to action proposed by Janes (2010), Krihtalka and Humphrey (2000) and Yupin (2008) is that natural history museums require tremendous changes to their current collaborative processes. In response to this need for drastic transformation, environmental education and Appreciative Inquiry are proposed as pathways towards better practices. Environmental education can reshape the content of museum programs and Appreciative Inquiry can help build capacity for internal and external collaboration.

## Chapter 4: Environmental Education for Transformation

### Taking Responsibility

Today's ecological crisis is indeed a human crisis, it is of human cause and thus it is our responsibility as Homo sapiens to mitigate it (Lovelock, 2014). The debate about how and to what degree climate change is caused by human activities should be ignored or better yet silenced by natural history museums who claim to be 'trusted and reliable sources of scientific knowledge'. After all it is researchers like those working in museums who have since 1992 provided clear and confounding evidence that current rises in global temperatures and Co2 emissions are due to human activities particularly since the industrial revolution (Union of Concerned Scientists, 2014). While national natural history museums may feel pressured to remain within the political jargon of their government, their discomfort is more likely linked to a greater feeling of helplessness often associated with Climate Change. As James Lovelock writes in his new book *A Rough Ride to the Future*, "to reduce Co2 emissions effectively in the face of an ever-growing number of people is probably a task beyond the power of any government, democratic or dictatorial" (2014). Mitigating further increases in Co2 and other polluting activities requires that solutions come from both top-down and grassroots initiatives. Natural history museums reinvented as proposed by Janes (2010), Krihtalka and Humprey (2000) and Yupin (2008) should then play a pivotal role by facilitating the coming together of diverse stakeholders and knowledge(s) to transform visitor outlook on the current crisis.

As described by the celebrated critical theorist of education Richard Kahn, being subjected to crisis ought to be understood as a moment of 'decisive intervention... of thoroughly-going transformation' (2010). Reintegrating culture is an invitation to a transformative discussion about what it means to respect and appreciate nature from diverse human perspectives. It is a call for museums to not only study and communicate ecological degradation and change, but to do

something about these changes by working with communities to foster and create cross-cultural solutions. Unlike the previous dehumanizing practice of interpreting non-European cultures as part of nature, this twenty-first century reintegration seeks to ‘naturalize’ the perspective that there exist multiple valid ways of knowing and studying the world and that being part of nature does not make any of us less human. From a scientific perspective *Homo sapiens* are mammals and we, like other living being, depend of natural cycles, systems and relationships in order to survive- we are all part of nature. The Canadian Museum of Nature’s new Nature Inspiration Center should in my opinion be developed as a cultural center which engages diverse audiences and stakeholders to co-create exhibits and programs that connect the museum’s research to the social and environmental concerns of Canada’s multicultural population.

As a national museum, the Canadian Museum of Nature has a responsibility to connect with all Canadians and not only those with a particular interest in natural history. Reuniting cultural and archeological artifacts with natural history specimens, in the context of centers like the Nature Inspiration Center, could further strengthen and make relevant the scientific work of these institutions, and foster ‘mindfulness’ or perspectives that recognize the interconnectedness of social and environmental challenges. While the grouping of ethnological and natural history objects from the seventeenth to nineteenth century was problematic because of its use to dehumanize many Indigenous peoples, I would argue that practices of the past while wrongful at their inception ought not to be intrinsically condemned. By this I mean that while the practice of displaying humans as part of nature was once harmful given ideologies and understandings of the day, today’s global consciences of the interconnectedness of nature and culture (Pilgrim & Pretty, 2013) may find it pertinent to unite cultural objects and artifacts with natural history objects for particular exhibits. Whales Tohora from the Te Papa Tongarewa Museum of New Zealand, and the Canadian Museum of Nature’s 1996 Arctic Forever exhibit are examples of these kinds of exhibitions, and other

opportunities are presenting themselves through the CMNs continued Arctic focus. Recently the museum was entrusted with the Government of Nunavut's collection of artefacts from the King William Island site and there has been excitement from both the Government of Nunavut and the museum's exhibit department about the prospect of mounting a temporary display of these rare archeological finds (CMN, Franklins Lost Expedition, 2014). To take advantage of this upcoming opportunity, the museum must take responsibility for its role as a mindful proponent for sustainability. To transform the NIC into a vehicle of this commitment, the museum's current pedagogy and collaborative practices must be evaluated.

### **Promoting Respect for Nature**

From my experience as a Science Interpreter at the Canadian Museum of Nature, the museum tends to opt for an unambitious approach to programs. During school and public programs we create links between our scientists' research and appropriate curriculum, we use props and specimens to 'show and tell' about species, and use an inquiry-based approach to ask students to answer predetermined questions with specific answers. Such an approach is typical of science centers but it does not foster the kind of multidisciplinary critical thinking required to help students understand their contributions to the causes and effects of our ecological crisis. In other words we could be doing more to develop science and environmentally literate individuals who understand the pros and cons of globalization and its relation to climate change.

Like in the field of environmental studies, natural history museums tend to ignore the field of Environmental Education and favour instead studying the natural sciences (Kahn, 2010). In fact many if not most interpreters working at the Canadian Museum of Nature hold a degree in a field related to physical or environmental science. Arbuthnott et al. (2014) asserts that museums have used "a range of different approaches to bring nature 'to life' in ways that inspire excitement, awe, and reflection" but as Leesa Fawcett (2000) acknowledges, while feeling the 'ontological thrill of an

animal' and being awe-struck are important in protecting nature, it is not enough in and of itself. Learning the facts about plants and animals is an important part of becoming environmentally literate and the process may be inspiring, but museum programs should also problematize how and why these specimens are interpreted. Do natural history museums negatively objectify non-human bodies through their display and interpretation practices? If sacred objects can possess agency (Matthews, 2010) what about the museum's stuffed mammals? To promote sound decision making and pro-environmental behaviors museums must consider the implications of its own practices and reflect on its 'historical mission' (Yupin 2008) as it relates to the social-cultural causes of species disappearance and other impacts of the Anthropocene era. In order to facilitate the "new ethic" needed to understand and respect the natural world, and use its resources in a sustainable manner natural history museums should further investigate and articulate the various implications of environmental ethics (NS/5205-3 Volume 1 Collections and Research- Programmes: Biodiversity Programme).

There exists a healthy debate on what it means to respect nature in the field of environmental ethics. Without repeating this complex debate, both David Schitdtz(2011) and Thom Brooks (2011), state that in part our respect for nature is based on an anthropocentric view of the world. This view that humans are superior to other forms of life, assumes that respect for species is based on whether they are sentient or share capabilities which resemble our own. And that practicing respect towards nature is favourable because it is part of our humanity, satisfies us, and promotes self-awareness, and self-respect (Schitdtz, 2011; Brooks, 2011). To better understand how the Canadian Museum of Nature communicates and promotes appreciation and respect for nature one must evaluate the content of its permanent exhibits and its programs. The Canadian Museum of Nature houses six permanent galleries: the Animalium, Bird Gallery, Vale Earth Gallery, RBC Blue Water Gallery, the Mammal Gallery, and the Talisman Energy Fossil Gallery. Together these

six galleries aim to represent different elements which make up the natural world. At first glance these distinct exhibits reflect the museum's research departments and their associated silos, however upon closer investigation their themes overlap. For instance one theme that permeates the galleries is the effect of human activities on ecosystems, habitats, and the lives of species presented. For example, the Bird Gallery tells stories of how agriculture, urbanization, chemicals like DDT, and over hunting have caused devastating losses in various bird species. And the RBC Blue Water Gallery advocates for water conservation, and identifies the need to reduce ocean pollution and CO2 emissions. Indeed both the Bird Gallery and the RBC Blue Water Gallery have sections which communicate the importance of caring for species and their habitat. For example the Bird Gallery promotes care using its 'Bird Hospital' where children can dress-up like veterinarians and pretend to nurse birds back to health and set them free back in the wild. This section also provides tips for bird safety and how to make one's garden welcoming for different species. Another theme that permeates these exhibitions is how we value nature and why. These values include, for aesthetic reasons (as in the Mammal gallery with its beautiful landscape paintings), for economic functions (minerals, rocks and their uses in the Vale Earth Gallery), for symbolic reasons (how birds represent us and our provinces in the Bird Gallery), and even spiritually (the connection to water as described in quotes in the RBC Blue Water Gallery). Some of these thought provoking quotes in the RBC Blue Water Gallery include:

“Water, the first living spirit on this earth, gives life to all creation. Water, powerful and pristine, is the lifeblood that sustains life for all peoples, lands and creation.”- Indigenous Declaration on Water

« À l'échelle cosmique, l'eau est plus rare que l'or » - Hubert Reeves

« Nous oublions que le cycle de l'eau et le cycle de la vie ne font qu'un. » - Jacques Cousteau.

“Water is precious and sacred. It is one of the basic elements needed for all life to exist. All people need to be concerned about the water in our backyard and how much of it we are using and wasting” – Grandmother Josephine Mandamin Anishinabe Elder.

Both the Bird Gallery and RBC Blue Water Gallery subtly bridge cultural points of view about the importance of caring for nature alongside scientific information. In my opinion these exhibit components could be used as inspiration for the development and delivery of cross-cultural and multidisciplinary programs which ask students to consider how and why we should respect nature. These galleries completed in 2010 for the museum grand-reopening represent a time when the museum was committed to its advocacy role.

In stark contrast to the Water and Bird galleries is the Vale Earth Gallery. This gallery's messaging more closely resembles William Logan's vision for the Geological Survey's earliest museum as "a Museum of Economic Geology, displaying Canada's mineral resources and their practical applications" (Vodden & Dyck, 2006). The Vale Earth Gallery with its rock creation simulators, Canadian Mining Hall of Fame, and show-stopping specimens, educates the public about the composition of rocks and minerals and the processes that shape our planet. The back of the gallery identifies the characteristics that help geologist identify rocks and minerals and uses interactive databases and videos to map out and describe the many uses of Canada's vast mineral, oil and natural gas resources. This gallery to me continues to perpetuate the narrative used to sell Canada internationally during the Grand Expositions of the mid eighteen-hundreds; "to show the world the wealth of Canada's natural resources and their potential for industrial development" (Vodden & Dyck 2006, p.10). Indeed as a Tour Guide I have introduced potential foreign investors from Russia and Asia who were particularly interested in Canada's mining and oil resources. While these extractive industries are important to the Canadian economy they are also contributors to rising Co2 levels and species endangerment; issues CMN scientists research. In summary the museum's permanent galleries balance their purpose to provide expert knowledge about the natural world, with their role as an advocate for environmental responsibility and a source of inspiration for

visitors. They achieve this by presenting the many benefits of the use of natural resources and biodiversity and subtly introduce perspectives for respecting nature.

The field of environmental ethics provides practical and theoretical guidelines which museum interpreters should further use to help promote respect for nature. These include Aldo Leopold's Land ethic, ecofeminism, biocentrism, deep-ecology and the diverse teachings of religions around the world. Paul Taylor's Biocentrism and Species Egalitarianism for example assumes that;

- a. Humans are members of the earth's community of life in the same sense and on the same terms in which living things are part of a system of interdependence.
- b. All species including humans, are integral parts of a system of interdependence.
- c. All organisms are theological centers of life. Each is a unique individual pursuing its own good in its own way.
- d. Humans are not inherently superior to other living beings

Within the museum's Mammal Gallery, Paul Taylor's biocentrism can be detected in its interpretation and display of "What makes a mammal?" By comparing characteristics held in common between humans and other Canadian mammals the exhibit calls into question how we are a part of nature and not apart from it. These common characteristics include: Diet, Predator and Prey relationships, Social Structures, Migration, Communication, Locomotion, and Courtship and Mating. In other words the exhibit presents evidence that we like the moose, bison, and cougar are mammals which rely on our unique adaptations and social structures to survive and thrive. While not explicitly stating that because of our common characteristics "we are not inherently superior" it is not unreasonable to assume that some visitors may interpret the gallery as providing evidence for respect for Canadian mammals based on Species Egalitarianism. Another example hinting that "humans are members of the earth's community of life in the same sense and on the same terms in which living things are part of a system of interdependence" can be found in the Talisman Energy Fossil Gallery. At the back of the exhibit adjacent to fossils depicting the evolution of whales, is an illustration depicting a taxonomical tree of mammals in which humans are placed with their primate



cousins. Based on Darwin's theories of evolution and the advancements of his predecessors, the gallery illustrates that *Homo sapiens* shares a common ancestor with all other mammals on earth. Visitors with knowledge and interest in environmental ethics may interpret the galleries based on their knowledge. However in order to encourage students and the public to develop "appreciation and respect for the natural world" the museum should actively create programs which problematize and challenge values and behaviours which degrade the environment.

Lucie Sauvé (2007) in an article reviewing international guidelines for environmental education notes that "the current curricular reforms do not support critical inquiries into the causes and consequences of globalization, and its underlying assumptions" (p.38). Currently the museum's school programs focus primarily on increasing science literacy by teaching students a grossly simplified scientific method, and how to identify and categorize specimens. These programs include:

- Billy the Beaver
- Water in our lives
- Rocks and Minerals
- Soils
- Plants
- Our Local Biodiversity
- Live Freshwater habitat
- DNA detective.

As a Science Interpreter I am proud of the museum's existing programs. However given the challenges facing natural history museums including the need to make programs relevant to visitors lives and becoming an expert and proponent of sustainability, new programs should supplement the museum's offerings. For instance Rocks and Minerals, Soils, Water, and Plants introduce students to each topic's associated cycles, components and properties but at no time helps students make the connection between them. Consequently these workshops do a poor job of communicating a realistic understanding of how elements of any given ecosystem are interconnected. In addition the

programs seek to connect the given topic to the work of museum scientists, an important part of the museum's purpose', but according to Janes (2010) programs should also be linked to larger issues of concern to students. So what would happen if the Canadian Museum of Nature's programs more accurately presented the complexity and interconnectivities of the natural world, and the causes and effects of globalization through the lens of its scientific discoveries? What if such programs also introduced the many perspectives of what it means to live sustainability and to respect nature? As an institution with the mandate to "increase interest in, knowledge of, and appreciation and respect for the natural world", could we, should we, not develop exhibits about the ugly side of environmental degradation, of massive species lost, of global pollution? Or about the history and evolution of ecological thought in Canada? The possibilities are truly endless if only we find ways of working together. To this end science interpreters and museum scientists must recognize each other not as competing priorities but as symbiotic organisms. As a Science Interpreter working in an institution invested in scientific research, one might assume that I work closely with scientist but this is rarely the case. Creating programs that communicate researchers' discoveries in appropriate ways for the general public, or school programs which link researchers most recent work to school curriculum objectives occurs but rarely. Such programs are developed for special occasions like Science Days but this type of collaborative program development is not currently common practice internally (Personal Experience). Instead program staff members learn about what researchers are doing at the same rate and at the same time as the broader public, when it is posted on the museum's blog for example. Employees of the Canadian Museum of Nature are increasingly invited to learn about current research during lunch-hour lectures, but interpreters should be equally involved in informing and educating scientists about their expertise in interpretation.

By creating exhibitions and programs which proactively make connections between various subjects including science, history, and geography, museums may find it easier to attract teachers

seeking interdisciplinary lesson-plans which promote critical thinking. Such a critical approach to school programs may result in more inspiring visits helping to shift education from the dominant banking-model to an education that transforms (Alan Dyer, 2007). Within the context of Canadian Museum of Nature, the Nature Inspiration Center provides an exciting opportunity for scientists to work with Science Interpreters to develop cross-cultural exhibits. One means of insuring that natural history museums remain true to their mission and purpose while broadening the subject area covered in their programs and exhibits is to make better use of environmental education pedagogies.

### **Multidisciplinary and Cross-cultural Environmental Education**

According to the North American Association for Environmental Education,

Environmental education (EE) teaches children and adults how to learn about and investigate their environment, and to make intelligent, informed decisions about how they can take care of it. EE is taught in traditional classrooms, in communities, and in settings like nature centers, museums, parks, and zoos. Learning about the environment involves many subjects—earth science, biology, chemistry, social studies, even math and language arts—because understanding how the environment works, and keeping it healthy, involves knowledge and skills from many disciplines. (NAAEE, retrieved 2014)

EE also involves questioning and deconstructing the term environment and what it means to live well in a place, “the environment becomes a place with dynamic cultural, social, economic, political, historical contexts and perspectives that frame and construct the ecological processes within them”(Cole, 2007). To be relevant to student’s lives, educators have sought to broaden their lens of inquiry to reflect their students’ cultural context. Growing from the increased interest in ‘EcoCultures’ (Pilgrim and Pretty, 2013) and need for inclusive pedagogical approaches to environmental education (Kapyrka & Dockstator, 2012) Indigenous Knowledge has been championed within the Canadian education system.

In the spirit of reconciliation, the twenty-first century has seen a number of ministries and departments of education in Canada recognize Indigenous ways of knowing nature as fundamental content in school science. (...) With the guidance of First Nations, Inuit, and Metis communities in Canada, each province and territory determines what Indigenous

knowledge will appear in its science curriculum. Conventional science content will continue to be taught, but it will no longer be presented as the only legitimate way to understand nature. (Aikenhead & Michell, 2011, p.3)

One way of reconciling distinct knowledge systems has been to identify the common ground between science and Indigenous Ways of Living in Nature (IWLN) and to acknowledge the benefits or gifts of each (Aikenhead & Michell, 2011 p.115-120). Notably Albert Marshall, a respected Elder of the Mi'kmaq Nation theorised Two-Eyed Seeing as “learning to see from one eye with the strengths of Indigenous ways of knowing and from the other eye with the strengths of Western ways of knowing and to using both of these eyes together” (Hatcher et al. 2009, p.146). Considering our global ecological crisis many young people are becoming aware of and attracted to Indigenous approaches because they seek to understand their world without harming it (Kovach, 2009 quoted in Kayrka & Dockstator, 2012). Such approaches to environmental education may thus be considered relevant and of interest to the Canadian Museum of Nature’s growing youth audience.

However this does not mean that a “shallow integration” (Kayrka & Dockstator, 2012) of Indigenous knowledges reminiscent of the museum’s Talking Stick Workshop should be allowed or repeated. What is needed rather is for Science Interpreters to become grounded in the field and practices of environmental education including place-based pedagogy, critical pedagogy and co-create with communities to develop programs which foster Two-Eyed Seeing. Also Richard Kahn’s (2010) ecopedagogy is particularly relevant as it is defined as a radical approach to environmental education derived from the work and influence of Paulo Freire’s critical pedagogy and is a global project concerned with nature preservation, how human societies are impacting natural environments, and represents a new model for a sustainable civilization which requires making changes to our economic social and cultural structures (p.18-19). Such a pedagogy should be adopted by natural history museums given their interest in the conservation of biodiversity, the promotion of respect and appreciation for the natural world, and their role as proponents of

sustainability in society. “North American ecopedagogy requires reimagination in the same way that Freire demands his own pedagogy be reinterpreted and reconstructed in order to reflect the varying cultural and historical contexts in which it was situated”(Kahn, 2010, p.21). By adapting ecopedagogy based on Canada’s multicultural context and the various teachings and protocols of these relevant to natural history museums.

For the Canadian Museum of Nature which is invested in becoming an expert in Arctic knowledge, a better understanding of Inuit Qaujimajatuqangit is important to ensure respectful research, exhibition and program activities. Museum employees can thus begin by reviewing the work of researchers including Lewthwaite & Renaud (2009) who have worked in Nunavut communities to develop culturally relevant science programs. According to Lewthwaite & Renaud’s research there are at least eight principles of IQ.

1. tunnganarniq (respecting others and relationships),
2. pijitsirniq (serving and providing for family and community, especially for organizations within the community and who they serve),
3. aajiiqatigi- jnniq (ensuring that all aspects of community development are fostered through decision-making through collaboration and consensus),
4. pilimmaksarniq (development through practice and action ensuring that members of the communities are full and meaningful partners community and social development activities),
5. piliriqatigiinni (working together for a common cause),
6. qanuqtuurniq (being innovative in seeking solutions),
7. avatittinnik kamatsiarniq (respect and care for all aspects of the environment), and
8. inuuqatigiitsiarniq (fostering good spirit by being open and inclusive). (2009, p.155-156).

Such principles should be considered in collaboration with members of the Inuit community when creating an appropriate museum policy for the respectful addition of Inuit knowledge within research, exhibitions, and programs. Furthermore the museum should do more to engage with the local Algonquin community on whose territory the museum is situated (Kayrka & Dockstator, 2012).

## Indigenizing the Nature Inspiration Center

Envisioned as a collaborative cultural center the Nature Inspiration Center could engage with diverse visitors and stakeholders to stimulate dialogue about what it means to respect and live well with nature across Canada. In this pursuit participants may be asked to consider how their unique cultural heritage informs their interpretation of nature. I define the term ‘indigenizing’ as the process of recognizing ones traditional teachings; of returning to the roots of ones origins. Within every human culture, regardless of its origin, there is a link between a physical place or places and the culture’s teachings about how to survive and live well with others, human or non-human. I owe my own understanding for this need to rethink traditional knowledge from my experience in a fourth year environmental studies course at the University of Ottawa taught by Rarihowats Four-Arrows and Sonia Wesche, and from reading authors including Taiaiake Alfred and George E. Sioux. It is through my own cultural-learning activities that I am empowered to consider what traditional knowledge my lineage and ancestry possess. What can my mixed heritage of French, Russian, Irish, and British contribute to sustainability? What can I learn from the land and from those whose territory my relations settled on? Indigenizing is thus about critical reflection how engaging many knowledges can create an environment for positive change, not only in the physical environment but between peoples. Taiaiake Alfred in his book *Peace, Power, and Righteousness; an Indigenous Manifesto* uses a different definition of the term Indigenizing but I agree with his argument that dichotomizing knowledge systems is deeply problematic, and that views are not fixed (p.44). “Challenging mainstream society to question its own structure, its acquisitive, individualistic values system, and the false premises of colonialism is essential if we are to move beyond the problems plaguing all our societies, Native and white, and rebuild relations between our peoples” (Alfred, 2009, p.44). Along these lines we ought to all, regardless of our backgrounds, think critically about the causes of the ecological crisis and the ‘gifts and powers’ that all individuals can contribute. “It is

more hopeful to listen to the way traditional teachings speak of the various human families; they ask that we consider each one to be gifted and powerful in its own way, each with something different to contribute to the achievement of peace and harmony”(Alfred, 2009, p.45). Similarly Jim Bourque contributor to the Centre for Traditional Knowledge’s book ‘Our Future Through Our Past’, recognizes that,

Our access to and use of knowledge has been influenced by our individual and collective needs, abilities, belief structures and by technological change. History shows that our knowledge expands and contracts in response to our changing needs. The current global development agenda is one of the greatest challenges the human race has ever faced. The need to draw upon all of our collective sources of knowledge has never been greater. (CMNAC/2013-003 Box 2 of 3 Canadian Centre for Biodiversity, Folder 24)

In the spirit of reconciliation, the image I envision to illustrate how various knowledge systems could interact within a natural history museum is inspired by Susan Dion’s book *Braiding Histories* (2009) and the Two-Row Wampum. The metaphor used describing the treaty relationship between the Dutch and the Kanien’Kehaka depicted on the Two-Row Wampum describes two boats traveling down the same river sharing the waterway together while each possessing its own integrity (Alfred, 2009, p.76). Different knowledge systems (each with their own integrity and validity) represent strands in a braid. Alone each strand is strong and self-sufficient but woven together they gain strength. I envision the top of the braid as representing a time before our cultural dispersal; our connection to each other as part of life on earth.

Throughout history, people have always understood that we are deeply embedded in and utterly dependent on the natural world. In stories, songs, and dances, cultures around the globe have celebrated being part of their surroundings. In a world where everything is connected to everything else, any action has repercussions and so responsibilities accompany every deliberate act. Acknowledgment of that responsibility has also been explicit in the rituals of every society. (Suzuki, 2003, p. I)

As the next chapter will outline in more detail, the way we choose to perceive any given situation is powerful and has implications for our immediate and long term actions. So we have a choice. We can celebrate our diversity and embrace the complexities of our challenges by building on our

successes to date. Or we can get bogged down with the enormity of our task and throw our arms up in defeat. Multidisciplinary approaches to EE as envisioned above could facilitate programs and exhibits which connect Canadians to their local and national environments by uncovering the histories of the places we call home. By becoming adept at such the museum could become a key player locally and nationally in the creation of collaborative projects which respond to social and environmental issues. Take for example the development of a community garden.

Imagine for a moment a museum whose scientific expertise informs a community garden on its property which serves its Programs department as an outdoor classroom, and the community as a local source of affordable fresh produce. Imagine if this garden classroom was designed in consultation with Ottawa's First Nation School and other members of its community, as a way of teaching the public about the history of colonization and traditional agricultural techniques. What if students from this school and others were part of the planning and design process? What if various cultural associations were asked to create elements for an international garden section? Imagine combatting bee devastation with the introduction of a museum hive and teaching the public about urban bee keeping and how to create bee friendly garden. Imagine students taking their workshops outdoors and cutting cross-sections of soil to study its strata, fishing for benthic creatures in a shallow pond, creating a dichotomous key of the trees on the property. What if this garden was the starting point of 'Nature Walks' a new city-tour on various themes including birding open to the public year-round. The garden could be sponsored and funded by local nurseries and landscapers, and plants could be identified using cutting edge mobile technologies. The opportunities are endless and could increase museum visitation and profits while adding value to the lives of individuals and communities. Such exciting opportunities are relevant and achievable if the museum builds its capacity for collaboration.



## Chapter 5: Appreciative Inquiry

Perhaps we shouldn't be displeased with the "environmental ethics" we have or the "business ethics" or the "political ethics" or any of the myriad of other codes of conduct suggested by our actions. After all, we've created them. We've created the stories that allow them to exist and flourish.

They didn't come out of nowhere. They didn't arrive from another planet. Want a different ethic?

Tell a different story (Thomas King 2003 -The Truth about Stories).

As previously outlined, natural history museums face a multitude of challenges including: protecting Indigenous knowledge from wrongful use or appropriation; the tension between research and education; the challenge of the biodiversity crisis; the challenge of management and leadership; the challenge of public programs; and the need to overcome these challenges to become a mindful museum which is a source of sustainability solutions. At the heart of a solution to these challenges is collaboration. Particularly, collaboration is required to develop appropriate Indigenous knowledge policies which inform collaborations in research, exhibit design, and program development. These activities require that individuals who may have never met or worked together find ways of communicating their ideas and motivations. In addition there may be language, cultural, and departmental barriers which demand patience and openness to overcome. A means of fostering positive and respectful relationships, whether internally with the museum or with external stakeholders, is Appreciative Inquiry. Maureen McKenna an Appreciative Inquiry practitioner and consultant argues that, "as critical as it is for humans to change the way we "fuel" and renew energy to our physical world, it is also critical that we change the way we "fuel" our human interactions. To do so we must change the way we interact within our organizational environments and in our personal lives. (2013)

Facilitating the organizational changes required for these institutions to address their challenges necessitates change methods which; give life to an organization, empower and bring together staff from diverse departments, and cultivates a positive learning environment. As with any collaborative or co-creative project, there is no guarantee that things will go smoothly. Creating a

cultural center within a science institution is a delicate progress which requires that all those involved develop a consensus about how and why this transformation will take place. Those involved must consider issues of ownership, distribution and access to information, cultural protocols, and balancing multiple perspectives. In spite of these challenges, Appreciative Inquiry provides a platform from which museums and their stakeholders can begin reflecting and planning its transformation.

### What is Appreciative Inquiry?

Since 1998 the field of positive psychology (Seligman & Csikszentmihalyi) has grown in responses to a need to better understand how we can live healthier, happier and more productive lives (Whitney, 1998). For example this field studies the effects of human emotions on wellbeing and happiness and has informed the development of positive organizational change methods which build strengths, virtues and resiliency. One of these methods is Appreciative Inquiry developed by Dr. David Cooperrider and his researcher partners from Case Western Reserve University (Whitney, 1998).

Appreciative Inquiry is the cooperative, co-evolutionary search for the best in people, their organizations and communities, and the world around them. It involves systematic discovery of what gives life to an organization or community when it is most effective, and most capable in economic, ecological and human terms. AI involves the art and practice of asking questions that strengthen a system's capacity to apprehend, anticipate, and heighten positive potential. The inquiry is mobilized through the crafting of the 'unconditional positive question,' often involving hundreds or thousands of people. AI interventions focus on the speed of imagination and innovation instead of the negative, critical, and signaling diagnoses commonly used in organizations. The discovery, dream, design, and destiny model links the energy of the positive core to changes never thought possible. (Holman, Devane & Cady 2007)

Appreciative Inquiry (AI) has been used and studied in many sectors. It has been used within government agencies like the United States Navy, corporations including McDonalds, Philips, Hunter Douglas, Fairmont Minerals, and institutions including school boards, hospitals and museums. The success of this organizational change method comes in part from its generative approach to problem solving. Rather than viewing organizations as a 'problem to be solved' AI

views these same organizations as ‘a mystery to be embraced’ (Holman, Devane & Cady 2007).

“Rather than dwelling upon problems related to change, AI encourages individuals to adopt a positive constructive approach to managing change” (Dematteo & Reeves, 2011). In other words AI demands that organizations be considered “a mystery to be embraced” rather than “a problem to be solved” (Holman, Devane & Cady, 2007, p.76). This approach is informed by AI’s five guiding principles; the constructive principle, the poetic principle, the anticipatory principle, the simultaneity principle and the positive principle.

## **5 Guiding principles of AI**

The Constructionist Principle states that organizations are shaped and maintained through their social interactions including the language they use and the relationships they foster. This principle emphasizes that the stories and questions we tell ourselves is the material out of which the present and future of organizations are conceived and constructed (Whitney, 1998; Cooperrider et al. 2008). As Thomas King put it “Want a different ethic? Tell a different story” (2003). The Poetic Principle affirms that we have a choice in how we interpret these stories. “The choice of inquiry can focus on the nature of alienation or joy in any human organization or community. One can study moments of creativity and innovation or moments of debilitating bureaucratic stress” (Cooperrider et al. 2008). The Anticipatory Principle recognizes that we are constantly projecting ahead of ourselves, and what we anticipate guides our actions. “One of the basic theorems of the anticipatory view of organizational life is that the image of the future guides what might be called the current behavior of any organism or organization” (Cooperrider et al. 2008). The Principle of Simultaneity affirms that ‘inquiry is intervention’ since the ‘seeds of change’ begin with the first question asked and that these questions are fateful (Cooperrider et al. 2008). And finally but most importantly The Positive Principle recognizes that “organizations as human constructions, are largely affirmative systems and thus are responsive to positive thought and positive knowledge” (Cooperrider et al. 2008). If organizations

choose to use positive questions, images and topics of study they will move in a positive generative direction. This principle accounts for the use of affirmative topic questions and language used by AI consultants in the planning and facilitation of AI workshops and summits. Participants are encouraged to strengthen their ability to communicate in affirmative ways; building up ideas during brainstorming and other related activities. This practice develops participant's ability to choose and recognize positive affirmative topics, questions and responses over negative narratives.

### **The 4-D cycle**

Using these five guiding principles, Appreciative Inquiry is used or done through a 4-D cycle which involves Discovering the Best of What Is using paired interview activities which ask that pairs ask each other 3 or 4 questions. This activity not only increases familiarity and relational bonds between participants but also helps to draw out individuals 'strengths', 'best experiences' and 'ideal future' for the organization or project in question. After a meaning making activity which brings together and summarizes all participants strengths and best experiences, the group will move on to the second phase; Dream. In the second phase participants make meaning from the responses to their ideal future and an affirmative visioning activity takes place to determine what could be? With a collective ideal future envisioned, the process moves on to the third Design phase. In this phase participants must use their dream to design what should be? Appreciative Inquiry does not seek to create a utopian world and recognizes that what could be and what should be will differ based on the available resources and timelines for example. The design phase thus helps organizations develop a design which is as close to their dream as possible. In the final phase called Destiny, the organization develops a plan of action to ensure the momentum and learning that took place during the workshop or summit will be sustained through to the completion and evaluation of the project. The graphic on the subsequent page illustrates the 4-D cycle and its phases.



Appreciative Inquiry is a highly adaptable method which has been used in many sectors and for many applications. Practitioners have used AI to facilitate organizational culture changes, community development and transformations, organizational renewal, in the pursuit of excellence and customer satisfaction, organizational restructuring, mergers and

acquisitions and in everyday employee engagement and management (Whitney, 1998; Cooperrider et al. 2008). As such this organizational change method is ideal for natural history museums undergoing simultaneous changes to their internal structures and their mandate-which together are changing their practices internally and with stakeholders. The CMN could also draw on other guiding principles like those of Inuit Qaujimajatuqangit to inform and develop their collaborative framework in consultation with Inuit collaborators. Appreciative Inquiry has also been used in educational settings to change the culture of school boards and departments, and is proven to reduce teacher isolation, improve social and emotional support, create opportunities for professional development, and foster closer ties with families and communities (Dickerson, 2011). Within the context of the CMN such benefits are conducive to the changes required for the development of effective cross-function teams and the successful implementation of their projects.

## Chapter 6: Appreciative Inquiry at the Canadian Museum of Nature

### Background

Two interventions were facilitated in order to evaluate whether Appreciative Inquiry could build the necessary collaborative corporate culture, needed to overcome the museum's many challenges. The first took place on February 24th in the form of an introductory workshop on Appreciative Inquiry and Open-Space Technology- another participatory planning process. I chose to structure this introductory workshop based on the museum's two on-going projects; the Edible Arctic Festival and the Nature Inspiration Center. This initial intervention drew eight interested participants from diverse departments including Programs, Exhibits, Guest Services, and Research & Collections. From the success of this first intervention came an opportunity to work with department directors and upper management to create a one-day Appreciative Inquiry Summit for the NIC Committee. This committee was tasked with designing the center's new space in line with its many functions and objectives.

### Method

During both interventions I introduced the principles and process of AI to participants by facilitating activities based on the 4-D cycle. Participants in both cases conducted paired interviews to get to know their colleagues and identified their individual 'strengths', 'best experiences' and 'ideal futures' for the museum's priorities and objectives. Participants were asked to evaluate their experience and Appreciative Inquiry's potential within the museum using questionnaires and surveys. In line with the principles of AI, questions focused on drawing out the positive by asking participants what they valued most and what would be needed to implement AI further within the organization. The introductory workshop's questionnaire evaluated what participants valued about Appreciative Inquiry, Open-space Technology, and the overall workshop. The NIC Summit was evaluated using two surveys; an initial survey distributed at the end of the summit, and an in-depth

survey sent by email two weeks later. The response rates for summit's evaluations were 85% for the initial survey and 62% for the in-depth survey.

## Results

The following section provides an overview of the results of both interventions. Appendix B and C on the UBS key provided contains copies of my interventions' PowerPoints, handouts, questionnaires and surveys, completed analysis of results, and pictures.

### Introductory Workshop

The outputs of the introductory workshop included a list of participants' strengths, best experiences, and ideal futures for the Edible Arctic Festival and the NIC, and brainstorm posters representing the issues of interest brought forth by participants. Participants identified themes from their 'best experiences in collaborative projects' as including:

- a shared yearning to learn
- Commitment to working together – knowing that everyone's contributions are essential to the success
- Optimistic investment in achieving project goals
- Breaking new ground
- Pursuing a belief
- Taking on new challenges
- Trusting yourself
- “no one else is going to do it for you”

They identified their strengths and assets as,

- Tenacity
- Diplomacy
- Inclusiveness
- Vision
- Self-confidence (trust yourself)
- Enthusiasm
- Finding connections between everyone in a team
- Being mindful
- Everyone involved benefits from the project
- Knowing visitors and serving and allowing space for their stories

While participants identified themselves as being tenacious, inclusive, and mindful as individuals, participants reported that they valued AI because it facilitated an opportunity for employees to get to know each other's ideas and experiences, and that it created common ground from which projects could be built on. As one participant expressed,

“It [AI] would be great because I felt it allowed inclusion of people who are not usually asked to contribute or who don't have their voices valued a lot in the organization. I could see this being very useful for interaction between departments because it allows so much equality” (Participant number 6)

Participants also identified the value of AI as a process for project planning and development.

“I could see using an Appreciative Inquiry approach to lay the foundations for designing collaborative projects as well as for preparing myself for independent work or for my role in a team. It provides a good mental framework for approaching projects of various natures” (Participant 2).

“AI would be most useful in the conceptual-development + implementation phases of the new Nature Inspiration Center. As well as for any big new direction for a project or in a team” (Participant 4).

“I think it will be a very useful approach to leading teams- especially for establishing project goals and how we will work together” (Participant 3).

In relation to the development of the Nature Inspiration Center, participants identified the following characteristics from their 'ideal future' for the center. Nature Inspiration Center should be...

- A platform for fostering collaborative opportunities for building knowledge
- Inclusive
- Inviting
- Changing perceptions
- Removal of red tape/freedom to experiment
- Place to innovate/ breaking ground.

While only two participants were members of the NIC Committee, all enjoyed being asked their opinion on the new initiative, and the discussion generated during our summary of participants' ideal future helped to highlight some of the issues preventing the present realization of the NIC they envisioned. The following five challenges in the form of questions were developed by participants.



1. How can we collaborate more effectively with our researcher & collections staff to learn from each other?
2. How can we (CMN) revolutionize the museum experience + evolve in a unique way? (Internal and external)
3. How do we best collaborate with our visitors?
4. What can be done to increase the profile of the CMN as a national resource and historically important institution?
5. Typically we involve Aboriginal content by making their knowledge/culture relevant to us. How do we make our content relevant to them? (Think of them as an audience rather than content.)

These questions demonstrate the extent to which employees of the CMN recognize the need greater collaboration between departments in order to make the museum's activities relevant to its visitors.

Question one identifies the need for greater collaboration between scientists and interpreters, question two recognizes the need to evolve and innovate and question three highlights a lack of experience co-creating with visitors. Question four speaks volumes about the museum's recognition that it must become an institution useful and relevant to Canadians, and question five helps to illustrate the current practice of using 'TEK' to the museum's advantage and the need to reshape the CMNs relationship with source communities. These questions along with participants' ideal future for the NIC provide support for developing the NIC as a collaborative cultural center. This short AI workshop successfully created an environment where participants from different departments recognized the museum's challenges and how they could work together to begin thinking about solutions. In particular the paired interview activity helped to begin building bridges between department members who normally would not get opportunities to work together. Also the typical institutional 'chatter' focused on barriers to change was replaced with discussions focused on the mission relevance of the strategic plans opportunities and what participants could do to support these exciting projects. While this first intervention primed a few employees about the potential use and benefits of AI, the larger summit did not in my opinion live up to Appreciative Inquiry's full potential within the organization.

### NIC Committee AI Summit

On June 3rd 2014 the NIC Committee, the interim VP of Experience and Engagement, and CEO Margaret Beckel participated in my one-day Appreciative Inquiry Intervention. Titled “Harnessing the Power of Discovery to Design 21st Century Museum Experiences” this summit’s primary goal was to facilitate a process which would allow the NIC Committee to begin designing the NIC’s physical space. In consultation with ‘my clients’ the Director of the NIC and the Interim VP of Experience and Engagement, the issue of whether to focus on the NIC space or the process of how users would use the space came into question. Given my experience and the outputs of the introductory intervention it was clear to me that how and why the NIC would be used by departments should be a topic of importance for the summit. However, pressures to have the basement renovated and established as a useable Nature Inspiration Center as soon as possible demanded that the summit focus on establishing the physical design of the space. In my position as an occasional Science Interpreter conducting research with my superiors I was challenged with asserting my expertise in my role as a master’s student whilst not pressing the boundaries of my working relationships. In order to balance management’s desire to design a physical space, with the need to determine the process of how the NIC would function and serve the museum’s departments, I chose to create a Design Phase activity which required participants to think about who and how the space would be used with different audiences or stakeholders in mind; and to design the space accordingly. These proposed audiences included: schools and teachers, international tourists, national tourists, Scouts and other organized groups, environmental non-governmental organizations, seniors, Aboriginal Peoples, and diverse ethnic segments. Informing the design of this new space were three pre-determined objectives for the NIC established by the CEO as interpreted by the Interim VP of Experience and Engagement.

Firstly, the NIC will be used to continuously improve the museum's existing products/experiences, to develop extensions of existing products/experiences, and to create new innovative products/experiences

Secondly, participating in the piloting and development of products and experiences would itself be an experience visitors wish to take part in.

Thirdly, once the NIC's product development process is successful it could be marketed and be made available to other industries as a product and method of the Canadian Museum of Nature (Appendix C).

These objectives informed the development of the summit's activities and agenda. As with the first intervention this summit's goal was to introduce the NIC Committee to AI and to use its 4D Cycle to build familiarity between participants, highlight the committee's existing strengths and resources and facilitate collaborative dreaming about the ideal future for the NIC. Given the NICs pre-determined objectives I chose to ask participants to provide their three wishes for the NIC rather than their individual ideal future. A list of thirty-five wishes was created which included both physical design elements and desires for the NICs process and functioning.

### **NIC Committee's Three Wishes**

1. Surround by content- lots to keep us busy
2. Place is cool and hip
3. Contributions from users are valued
4. That we don't take the easy way out- participatory practices are not always easy.
5. It's a comfortable place
6. private space for users - introvert/ work individually
7. View on our collections display as part of decor
8. Exciting place to work together
9. Sharing how people respect nature
10. Co- creative and reciprocal
11. CMN staff Awareness of NIC goings on
12. NIC is aware of community activities/needs
13. We are proud of what we do in the NIC
14. Diverse cultures are represented/have a place
15. Live facilitated interactions
16. Activities engage our 5 senses and people can tell their stories
17. NIC is a Destination
18. NIC will help define us at the CMN
19. Open Corporate Culture - allowed to fail and try again

20. We make so much \$\$\$\$ that we don't have to worry about making other programs revenue generating
21. NIC is a Social Space both internally and externally for the broader community
22. We have a place to recharge - Coffee station hospitality
23. Stakeholder inclusion which then become ambassadors of the NIC
24. Busy place! Lots happening
25. Dishwasher
26. People come to us with their ideas
27. It's a Lively and Dynamic, engaging space
28. It's a place for people -HUB for staff, community and diverse groups
29. Many age groups use the NIC and it is not isolating
30. We have a place to demonstrate outputs of the NIC
31. NIC is an extension of the CMN as a whole
32. What we do is In-depth and not superficial
33. Includes introverts
34. We do things with accuracy and focus
35. A place for open-ended discovery

As evident from this list, the committee seeks to create a physical space which facilitates collaborative projects between departments and diverse audiences and stakeholders. In the process of sharing and recording everyone's wishes participants began to recognize that they held common ideas about what the NIC should be. From the prototypes generated with this list in mind, committee members responded positively to cross-cultural initiatives and dreamt up design elements which celebrated Canada's multicultural context. However the need and importance of developing appropriate policies for bridging diverse knowledges was not explicitly recognized as a priority issue during the Design Phase. When asked to consider Aboriginal Peoples as potential audiences/collaborators, the idea of hosting a Storytelling festival was developed. This prototype suggested that scientists and Aboriginal Peoples share stories related to several types of specimens to compare, share and create connections between traditional knowledge and science. If developed with the guidance of appropriate policies, such initiatives could facilitate the type of multidisciplinary approaches to EE needed to make programs relevant to social-environmental issues and the interest of visitors. This scenario illustrates how the committee further engaged question five identified during the introductory intervention. Also of interest was the prototype generated for the 'diverse

ethnic segments' audience. The idea for this prototype was "Celebrating Canada's Diversity" and sought to celebrate both Canada's biodiversity and cultural diversity. Interpretation and display sections for this prototype included "Nature from my home" and "Nature is my culture" in addition to a story sharing zone and a global garden in the solarium. Both the Rapid Idea Generation scenarios for the Aboriginal Peoples audience and the diverse ethnic segments audience were challenging new audiences for the committee to consider. Regardless participants were successful in creating prototypes which strengthen support for the NIC as a collaborative cultural center.

According to the initial and in-depth surveys distributed to participants, this summit was considered to be a success by participants based on the following criteria:

- It responded to the primary goal and objectives of the NIC,
- They benefited from the summit's activities whether personally or professionally,
- They would consider using AI again with colleagues and with some stakeholders;
- That the summit itself was well organized and professionally facilitated, and
- The activities of the summit successfully supported the development of the Nature Inspiration Center by providing a process which:
  - Improved familiarity and communication between participants
  - Identified the committee's dreams and vision for the center
  - Prototyped the design for the space based on various uses and stakeholders, and
  - Helped identify measurements of success for the NIC.

Created collaboratively, the outputs and recommendations generated from this summit were subsequently implemented by the Director of the Nature Inspiration Center to establish the next steps of the center's development. The collaborative activities of the summit's 4-D cycle generated the following data to inform next steps:

- A list of the NIC Committee's strengths, assets and themes from their 'Best Experiences' in a collaborative project,
- The committee's ideal future for the NIC in the form of their collective wishes,
- The creation of two aspirational vision boards representing this ideal future,
- Summaries of departmental resource assessments to inform design, and
- Eight design prototypes based on various potential audiences.

While 100% of participants responded that they valued AI and would use it in the future, the biggest challenge of facilitating and planning this summit was the uncertainty about whether or not the outcomes would be accepted and implemented by upper management. In other words did the NIC Committee have the necessary resources, support, and authority to control the development of the Nature Inspiration Center? Given the initial success of the summit I wanted to know what would it take to build further momentum internally using AI. Along these lines I asked participants in Question 14 of the in-depth survey to consider “what internal changes would improve your ability to adopt and use Appreciative Inquiry at the CMN”? The following was identified by participants in response to this question:

“Greater interaction between working groups.”

“A sense that the final word can be given to the working group responsible for the initiative.”

“The biggest change would be having more support for establishing cross functional teams. Presently, anyone embarking on this squishes it in on top of everything else they do. We need to be given/allowed the time for team work if we want these projects to succeed. We also need to include external clients and stakeholders in the process.”

“In adopting this institution wide, I’d like to see things like an inventory of relevant strengths incorporated into scope documents (when we propose new programming/exhibits/etc).”

“Having this in the tool box with a framework and basic outline for implementing an AI workshop.”

“There would have to be better internal communication when issues arise and more opportunities for coworkers to communicate with one another.”

“That’s a huge question! Buy in and a willingness to actually collaborate among staff are essential and unfortunately there is a long road ahead to get us all at the same point. I look forward to the challenge!”

“Time to do such things.”

As reflected in these responses, the Canadian Museum of Nature is not as yet accustomed to working effectively across departments and requires greater support from management and leadership to ensure that cross-functional committees are provided with the necessary time and

resources to further build their collaborative capacities. Overcoming the many complex and co-dependent challenges facing natural history museums requires a paradigm shift to transform how these museums operate. Appreciative Inquiry offers these institutions a process for shifting the internal chatter (Janes, 2010) away from discussions about what is wrong with the organization, and fostered instead a positive generative approach to change based on the museum's strengths, assets and best experiences. As Participant 6 from the initial survey expressed, "I did not miss the negative talk at all. I thought I would but I didn't. There was a good variety of activities, from lecture to hands-on maker. Working from our strengths was amazing. I'm sold! It was great to develop practical solutions to the space." Appreciative Inquiry as presented in the two interventions I facilitated was unable to respond to the needs of overcoming all the challenges facing natural history museums at the Canadian Museum of Nature. Nevertheless these interventions were successful in the promotion of internal collaboration, which is crucial to developing new approaches and practices to meet the museum's twenty-first century role.

If the museum can further develop its capacity for internal collaboration, through paired interview activities for example, its cross-functional committees may become truly innovative through co-created projects never before possible. Indeed participants recognized the potential of AI and 100% indicated that they would recommend it to others in the museum sector. As one participant who self-identified as an Exhibit Designer and Project Manager states:

"It just a simple matter of results. As stated in the workshop if a negative approach is used in order to simply solve each problem or put out fires as they are called here...we will never build anything truly new and innovative. But if we keep open minds and are flexible we can solve any puzzle we encounter and hopefully start initiating the creation of our own puzzles. Jump in with both feet without knowing its safe, easy or even feasible. Great risks can bring great rewards"

## Chapter 7: Maintaining Momentum

Motivated by a culturally insensitive workshop, I have demonstrated how my four Plan of Study components have informed by understanding of the challenges facing natural history museums. I have provided an overview of the history and changing objectives of the Canadian Museum of Nature and its commitment to making its research expertise relevant to visitors. By interviewing the current CEO and analysis corporate documents, records/archives, and permanent exhibits, I uncovered the tension between the museum's roles as a source of knowledge, a source of inspiration and its role as an advocate of environmentally responsible behaviours. To better understand the context and motivations of Canada's national museum, I presented the historical purpose of our first national museum and the work of its scientists. Its history linked to the Geological Survey of Canada and the activities of its colonial scientist have shaped the history of our country. Their beliefs and activities perpetuated a division between nature and culture and created today's national museums. But this difficult history is also a source of inspiration for the contemporary bridging of nature and culture. Museums like the Canadian Museum of Nature driven by their interest in Indigenous and local knowledges are required to develop appropriate policies if they wish to respectfully communicate the importance of these knowledges to the conservation of biodiversity. These policies must reflect the values and cultural protocols of collaborators and outline natural history museums' responsibilities to reciprocate with source communities who share their knowledge with scientist, interpreters and curators.

Taking responsibility of its role as a proponent of sustainability demands that natural history museums reflect on their historical missions and work towards becoming mindful museums in touch with the social-environmental issues outside their halls. These research institutions must become synthesizers of multiple knowledges to further address the Biodiversity crisis caused by the effects of human activities. This immense paradigm shift requires collaboration more than ever before. To



more clearly educate and inform the public about the causes and effects of climate change and species disappearance, interpreters must problematize the causes of globalization. This requires that interpreters adjust their existing interpretative practices and become knowledgeable environmental educators. Environmental education and its many pedagogies and approaches offer science interpreters a window into new possibilities for school and public programs. In support of this new framework, scientists must find time in their busy schedules to learn from interpreters and support initiative like the NIC which seek to help visitors develop appreciation, respect and even love for the natural world.

As outlined in this document it is not enough to teach visitors about the facts. Canadians are concerned about Climate Change and Waste and are seeking answers and solutions to our ecological crisis. This means linking the amazing research stories of scientists to environmental issues closer to home and working with communities to develop local solutions to global challenges. The Canadian Museum of Nature has an amazing history of successful and relevant programs and must simply invest the time and resources into building on its corporate strengths to adapt its practices. In fact this Major Research Project would not have been possible if not for the openness, passion, expertise and wiliness to embrace change of all those involved from the most senior to its most junior. Appreciative Inquiry is an participatory action research method capable of shifting the internal “chatter” away from what is wrong with the organization, to a positive discussion about how to facilitate the “saltational doses of evolution” needed to overcome the museums biggest challenges as we enter the Anthropocene era. To maintain momentum for the CMNs evolution the NIC committee should consider using AI with its volunteer committee and with its potential community collaborators, and should be used and adapted to meet the urgent need to finalize the museum’s Aboriginal knowledge policy.

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**Appendices are found on the UBS key submitted with this document.**

**Appendix A: CMN Background and Planning Information**

**Appendix B: Intervention 1: Introduction to AI**

**Appendix C: Intervention 2: NIC AI Summit**