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CONVENTION ON BIOLOGICAL
DIVERSITY

Fourth meeting

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Item 5 of the provisional agenda*

**COMPOSITE REPORT ON THE STATUS AND TRENDS REGARDING THE KNOWLEDGE,
INNOVATIONS AND PRACTICES OF INDIGENOUS AND LOCAL COMMUNITIES**

Regional report: North America

Note by the Executive Secretary

1. The Executive Secretary is circulating herewith, for the information of participants in the fourth meeting of the Ad Hoc Open-ended International Working Group on Article 8(j) and Related Provisions, the regional report for North America on the status and trends regarding the knowledge, innovations and practices of indigenous and local communities, which was used as input to the executive summary of the revised phase one and phase two of the composite report on the same subject (UNEP/CBD/WG8J/4/4).
2. The has been edited by the Secretariat and an executive summary has been included. However, the views expressed in the document are those of the author and do not necessarily reflect the views of the Secretariat.

* UNEP/CBD/WG8J/4/1.

I. EXECUTIVE SUMMARY

A. *Trends in North America leading to loss of traditional knowledge*

1. A major cause of loss of traditional knowledge in North America is the damage to biological, cultural and linguistic diversity. Much of the traditional knowledge in North America relates to achieving a balance between the needs of the community and the needs of nature. However, many of the animals and plants traditionally harvested have been taken over by large scale agriculture and farming of a limited number of species (ie. Modern monoculture farming). With the loss of these economies and species comes the loss of traditional knowledge associated with them. The loss of traditional knowledge is also correlated with the loss of Indigenous languages. Languages provide a means for a people to express their relationship with each other and with their environment. As Indigenous languages disappear, people are forced to adopt foreign languages which are often not able to properly express these important relationships. If a people are not able to transpose their concepts into a new language, communities are likely to adopt new cultural frameworks and new practices.

2. The high levels of poverty in Indigenous communities strongly limits the ability for traditional knowledge to be practiced and passed-on. The average income of an Indigenous person in North America is half that of the national averages, which is not surprising given the massive land loss, cultural denigration and repression of basic rights of self-governance. The need to retain traditional knowledge loses its immediacy when basic needs are not being met. It is also difficult to practice traditional activities without the ability to buy the tools necessary for practicing traditional knowledge activities.

3. The historical displacements of Indigenous peoples away from their traditional territories continues to promote traditional knowledge loss. In a new territory, traditional knowledge of a people's old territory is of little use and knowledge of the new land is often very limited.

4. Severe reductions in population levels in Indigenous communities during colonisation had a historical as well as a present effect on retention of traditional knowledge. Colonisation often brought disease and war that spared only small portions of a community. In such circumstances, it was seldom possible for the decimated population to retain and pass-on the massive body of traditional knowledge their people historically held. Still today, the small populations of many Indigenous peoples make it difficult to generate the capacity to practice and retain the bulk of their communal knowledge.

5. Finally, the continual loss of ancestral territories since colonisation has reduced people's ability to practice and retain traditional knowledge. Similar to migration, land loss strips a people of the ability to practice those traditions dependent on land use or their connection with their traditional territories. Furthermore, the tiny tracks of land upon which many Indigenous peoples have been forced to build their entire communities and economies make it impossible to continue traditional lifestyles, especially when traditional economies rely on the use of large areas of land and/or water. Some Indigenous communities, such as many Métis peoples, have had all of their land taken from them, making the retention of traditional knowledge even more difficult.

B. *Obstacles to the Maintenance, Preservation and Application of Traditional Knowledge*

1. *Demographics*

6. The three principal demographical developments affecting traditional knowledge are the changes in gender roles, the changing dynamics between youth and Elders and the increasing levels of urbanization of Indigenous peoples.

7. Among Indigenous communities, there are widely differing gender roles – both in the past and today. Still, it is clear that traditional European gender roles have long been imposed on Indigenous communities, especially affecting who is allowed to lead and speak on behalf of their people. As women and men become distanced from their traditional roles and responsibilities, so does the traditional knowledge related to those roles is lost.

8. Young Indigenous people are losing their languages and identifying more with North American ‘pop culture’. As this trend grows, the relations between youth and Elders are becoming increasingly strained. Communication and mutual understanding is becoming more difficult, making the passing on of traditional knowledge difficult.

9. Finally, Indigenous peoples are becoming urbanized at rates that far surpass the rest of the population. This process makes the practice and retention of traditional knowledge harder, as the cities are often far from their traditional lands and traditional practices are often impossible in urban landscapes.

2. *National obstacles*

2.1 Economic development

9. Several economic development policies and strategies threaten traditional knowledge. Economic development of land and natural resources is being pursued at an unsustainable rate. Land and resources are constantly being expropriated from remaining traditional Indigenous territories – especially in the North – with little participation of Indigenous peoples in the decision-making process or in the benefit-sharing scheme. Without land, traditional activities are difficult to practice, and without the inclusion of Indigenous people in decision-making, traditional knowledge is not being used to ensure development is sustainable. Furthermore, it is important to remember that several laws and policies may not be discriminating on face value, but their implementation is often done in a way that excludes Indigenous perspectives, inadvertently enforces assimilation or, in-practice targets Indigenous peoples. An example of discriminatory targeting of Indigenous peoples is the over-policing of Indigenous areas or the criminal-justice system that is insensitive to local realities and cultures and consistently imposes harsher sentences on Indigenous perpetrators.

10. Globalization is also being pursued relentlessly, with little concern by governments of whether Indigenous interests are being protected. The result is often that agreements, such as NAFTA, tie the hands of governments so they can no longer restrict several types of trade, even if Indigenous rights may be violated. The exclusionary decision-making processes of globalisation further marginalize Indigenous peoples and remove their control over land and resources necessary for the practice and retention of traditional knowledge.

11. The new ‘knowledge economy’ is largely centred around the economic protections offered under intellectual property regimes. As of yet, these IP regimes are not flexible enough to protect traditional knowledge from exploitation. Communities often receive no benefit from the sharing of their knowledge and, in fact, are often legally prevented from using what is theirs because of patents or copyrights. In addition, the ‘knowledge economy’ values research into new genetically modified plants and animals, which can increase profit for those who ‘discover’ new products and can patent them. But Indigenous peoples worry about the effects these foreign entities will have on ecosystems, and are worried that their traditional practices will be threatened.

12. Economic development needs to be approached with the full participation of Indigenous peoples at all levels of decision-making. This is especially important in areas of resource development, and environmental management through co-management regimes over resources and protected areas.

Governments need to recognize through concrete laws and policies that Indigenous people must retain their connection to their traditional territories if traditional knowledge can be exercised and protected.

2.2 Social policies

13. The historic education policy of placing children in residential schools caused severe psychological damages to several generations of Indigenous youth. Beyond the mental trauma, residential schools caused young people to lose their languages and distanced them from their culture and traditional territories. Traditional knowledge was difficult to pass on when children spent large parts of their lives away, and were not able to communicate with Elders. Today, because of a lack of Indigenous control over education and a lack of Indigenous content in curriculum, the education system continues to be a cause of alienation of youth and a corresponding loss of traditional knowledge for many Indigenous peoples. As demonstration of the positive effects of Indigenous-led education strategies, the trend of language loss in North America appears to be slowly reversing itself. This process is bolstered by recent government initiatives, such as the Canadian Task Force on Aboriginal Languages and Cultures as well as the promise to invest \$160 million in Aboriginal languages revitalization.

14. Hiring policies requiring specific formal education credentials are also a continuing cause for loss of traditional knowledge in North America. This is particularly true for higher-level positions in areas such as environmental management and education. In order to have a successful career, many Indigenous peoples feel the need to get a non-Indigenous education, which is given more value than traditional education. More often than not, non-Indigenous education comes at the expense of the time and opportunity to acquire traditional knowledge.

2.3 Technological advancement

14. The rate at which Indigenous peoples have had to adjust to new technologies since colonisation has made it difficult for traditional knowledge to adapt to changing circumstances. Almost every facet of life has dramatically changed – from weapons of war, methods of transportation, agricultural techniques, methods of communication and energy sources. These changes have impacted the way Indigenous peoples interact with their environment. Without adequate time and resources to adapt properly to these instruments in a culturally appropriate way, loss of traditional knowledge is often the result.

2.4 Legislative and policy approaches to Indigenous peoples

15. There is an underlying racism that continues to permeate the majority of laws and policies affecting Indigenous peoples. Despite government rhetoric to the contrary, the recognition of self-government for Indigenous peoples remains extremely limited. Governments often refuse to enter negotiations, or may negotiate in bad faith. Indigenous peoples are often forced into lengthy and costly lawsuits just to have basic rights recognized. In both Canada and the United States, the day-to-day lives of Indigenous peoples are often micro-managed by the State under racist legislation such as Canada's archaic *Indian Act*. Furthermore, although the Canadian and American government's have undertaken to act as fiduciaries for most Indigenous land and resources, the governments have consistently failed to act in the best interest of the people on whose behalf they are acting. Without self-government, and without the ability to work in partnership with the government, Indigenous people are not able to enact programs or policies to protect their traditional knowledge. As the situation presently stands, most Indigenous communities remain at the mercy of the federal governments. To reverse this situation, Indigenous peoples must fully participate in drafting and implementing law and policy that affects them. As well, in areas where Indigenous peoples are the primary focus of a law or policy, Indigenous people should have full control.

3. *Local obstacles*

16. There are several factors at the local level affecting traditional knowledge in North America. These factors can be roughly divided into inappropriate land tenure systems, cultural denigration, weak and changing economies, economic social and health issues, lack of capacity and inadequate decision-making powers.

17. Policies in Canada and the United States have resulted in the privatisation of most of the once communally held land of Indigenous peoples. This has resulted in the inability to exercise control over the use of their traditional territory and are often excluded from the land where their traditional activities are normally performed.

18. Across most of North America, Indigenous peoples have been systematically converted to Christianity. The cultural changes brought by the new religion affected the maintenance of traditional knowledge. The education system also taught youth to value European knowledge systems and ways of life, leading young people to turn away from traditional lifestyles. Finally, since contact Indigenous peoples have faced racism and discrimination from large segments of the non-Indigenous population, inciting shame for one's own beliefs and traditions. Instead of ridicule or discrimination, many people prefer to reject their traditions and assimilate to the majority population and thus internalize this mistreatment.

19. Indigenous peoples in North America face poverty and unemployment levels far higher than the rest of the population. When faced with difficulties of affording basic food, housing and clothing, the hierarchy of needs necessitates that the focus turns from maintaining traditions. This problem is worsened by the reality that traditional economies of hunting, trapping, fishing and artisanry are shrinking. Traditional economies have a hard time surviving on small land bases and in a larger economic environment that favours unrelenting growth at all costs.

20. Due to many of the factors discussed so far, Indigenous peoples in North America face high levels of substance, physical and sexual abuse as well as high rates of criminality and suicide. In such an environment, many communities suffer from feelings of hopelessness, lack of self-esteem and confusion over their cultural identity. It is exceedingly difficult for communities to respond with the necessary actions to protect traditional knowledge in such a damaging social environment.

21. Since colonisation, Indigenous people have been restricted from exercising customary rights, including rights to hunt, fish, trap, gather or practice traditional ceremonies. In the past, these restrictions were justified by needs to assimilate the Natives for their own good or by the overriding need to develop and privatize the land. Today restrictions continue to be justified by economic or environmental arguments, including the 'National Interest'. Indigenous peoples have also had to deal with severe restrictions to basic human rights, such as the freedom of movement, the right to freedom of expression, linguistic freedom or religious freedom. Traditional knowledge is often the victim of such a repressed, externally controlled environment.

22. Finally, many communities are unable to protect their traditional knowledge because of a serious lack of capacity. Limited capacity is prominent in several areas, such as lack of good governance, lack of basic infrastructure, limited human, financial and social capital, a lack of Indigenous-led research initiatives or the lack of local experts available to deal with local environmental threats. Indigenous peoples who are unable to self-govern must rely on outsiders to respond to problems. These outsiders are often insensitive to or unaware of concerns of traditional knowledge, and hence traditional knowledge is not part of the problem solving processes and/or development frameworks.

23. Health problems are also preventing the retention and application of traditional knowledge. High rates of obesity, diabetes, heart disease and depression among others plague many Indigenous communities at levels far higher than the rest of the population. Without basic levels of health and wellbeing, it is impossible to practice traditional knowledge activities that often require mental and physical strength. The growing HIV/AIDS epidemic that is spreading across Indigenous communities also threatens the future sustainability of Indigenous communities. The HIV/AIDS epidemic is devastating to several communities, as other health epidemics of introduced diseases have been among Indigenous populations since Colonization.

C. Recommendations

23. In order to combat the myriad of obstacles to the retention and practice of traditional knowledge in North America, governments as well as local communities must respond in several ways. The following recommendations can be divided into actions most related to 1. national governance issues; 2. local governance issues; 3. social and cultural issues; 4. land and resources issues; and 5. local issues.

1. National governance issues

24. Governments need to recognize in a meaningful way the inherent right to self-government of Indigenous peoples.

25. Indigenous peoples need to be included in decision-making processes at all levels, especially where Indigenous land or other interests are at stake. This is especially important in environmental management, protected areas and education. As well as being included in decision-making, consultation mechanisms and prior informed consent mechanisms should be strengthened and made mandatory. Traditional knowledge should also be a mandatory consideration in decision-making.

26. National approaches to economic development, including laws, regulations, policies and negotiation strategies should integrate principles of sustainable development and use.

2. Local governance issues

26. The capacity and infrastructure of Indigenous communities need to be strengthened so that Indigenous peoples can self-govern effectively and protect traditional knowledge in a suitable way. Governments should facilitate capacity-building initiatives, particularly those intended to improve good governance, improve research skills, and increase avenues for accessing human and financial capital.

27. The education system must be reformed to allow Indigenous values to be promoted and encourage inter-generational transfer of traditional knowledge as well as traditional education.

3. Social and cultural issues

28. Initiatives should be implemented that enhance cross-cultural understanding between non-Indigenous and Indigenous peoples and to increase respect of Indigenous cultures and communities.

29. Principles of customary law should be incorporated into intellectual property and other regimes to protect against exploitation of traditional knowledge and to encourage its promotion and use with the free and prior informed consent of the knowledge holders.

30. Language revitalization initiatives with full participation of Indigenous peoples should be promoted, such as Canada's Task Force on Aboriginal Languages and Cultures.

4. Land and resource issues

30. Governments must speed up and finalize land claim negotiations and ensure negotiations are respecting principles of fairness and good faith and are in line with international standards and human rights obligations.

31. Access to resources need to be increased so that Indigenous communities can build their own resource generating streams.

32. Protection of sacred sites needs to be improved to protect traditional knowledge activities.

33. Detailed Indigenous-led research projects need to be funded on the impact of development practices, the impact of existing laws and policies, the effects of climate change and the role of gender relations in retaining traditional knowledge.

5. Local issues

34. Sustainable use and development within communities needs to be promoted.

35. Traditional knowledge needs to be promoted in the community and codes of conduct developed to regulate the sharing of traditional knowledge with those outside the community.

36. Customary law needs to be reviewed and practiced in communities.

**NORTH AMERICA REGIONAL REPORT ON THE STATUS AND TRENDS REGARDING
THE KNOWLEDGE, INNOVATIONS AND PRACTICES OF INDIGENOUS AND LOCAL
COMMUNITIES RELEVANT TO THE CONSERVATION AND SUSTAINABLE USE OF
BIODIVERSITY:**

Phase two

1. Introduction

1. Traditional knowledge is in decline in North America. The causes of this decline will be examined here. This report will commence with a review of the relationship between biological, cultural and linguistic diversity, but will primarily focus on the national and local causes of decline as requested by the Parties in Conference of the Parties (COP) decision VII/16. It is highly recommended that this paper be read in conjunction with the report from the first phase of this study (UNEP/CBD/WG8J/3/8). The first phase describes the state of traditional knowledge in North America, as well as efforts by the local Indigenous peoples, Canadian and American Governments, and others to reverse the decline of traditional knowledge. Reading these reports together balances the criticisms outlined below.

2. In tracing the history of the relationship between Indigenous peoples and the non-Indigenous peoples of North America, we will discover the causes of decline of traditional knowledge in North America and identify remedies that might be pursued to reverse this trend.

3. Much of this paper is necessarily historical in perspective. The decline of Indigenous knowledge in North America has been the result of a lengthy and continuing colonization of the continent. Many of the assumptions and practices of the colonizing governments which negatively impact the use, retention, and practice of traditional knowledge continue unabated, or have only relatively recently been recognized for the damage they cause. For example, while there are references to clearly bigoted documents of earlier generations which would no longer find favour in the twenty-first century, the present day decline of traditional knowledge can often be traced to the actions of previous generations stemming from those attitudes. The residential school system, which stripped Indigenous children of their rights to speak their language, wear traditional dress, or even live in close contact with their parents and grandparents is a classic example of this. The last residential school in Canada only closed in the 1960's. While Residential Schools no longer operate, their detrimental effects remain a culprit in the present day impoverishment of traditional knowledge, thus undermining future capacity to reinvigorate traditional knowledge.

4. It is argued here that the greatest threat to Indigenous cultures is the fundamental lack of respect afforded them. The lack of respect is demonstrated in a myriad of ways, including racist and bigoted attitudes about Indigenous peoples, denigration of Indigenous cultures, and denial of their rights. This lack of respect, generated by indifference, ignorance, and a sense of superiority, blinds the non-Indigenous majority to the unique traditional perspectives of the Indigenous peoples. Disregard for the value of these perspectives threatens not only the well-being of the Indigenous peoples who live by them, but also the well-being of the land, biodiversity and ultimately humanity itself.

2. The relationship between biological, cultural and linguistic diversity

2.1 Diversity: the key to a sustainable future

5. A diversity of genetic material is critical for the survival of a species. Without a wide gene pool, species grow weak and die. This is as true of human populations as it is for the survival of other species.

The Convention on Biological Diversity is based on this understanding and is dedicated to, among other things, the conservation of biological diversity and the sustainable use of its components.

6. While the biological facts are well understood, is cultural and linguistic diversity likewise critical to the survival of diverse species? Is cultural and linguistic diversity a necessary precondition to or coexisting requirement for biological diversity, or is it the result (human response) of biodiversity? Or are they simply a reflection of environmental and biological diversity? Certainly the diversity of cultures creates a rich tapestry of life. The foods, music, dance, poetry, and art of different peoples are the subject of curiosity, exploration, experimentation, and celebration. Intercultural trade in fact is predicated on a desire for the unique and exotic. Language is generally agreed to be a defining characteristic of culture, a fundamental element of distinction. Our arts, language, philosophies, and religions undeniably underlie human metaphysical diversity, but do they also have a role to play in sustaining our biological diversity or the biological diversity of other species with which we share a planet?

7. The Parties to the Convention would seem to answer yes – biological, cultural and linguistic diversity are all inextricably linked. Article 8(j) notes the in-situ conservation of biodiversity can be supported through respect, preservation, and maintenance of the knowledge, innovations and practices of Indigenous peoples. Clearly the framers of the Convention understood this link. Canada, for example, acknowledges the relationship: “[t]he key to making decisions that do not adversely affect biodiversity is a better understanding of ecosystems and how they are affected by human activity. This includes a better understanding of traditional knowledge and the role it might play in conservation and sustainable-use efforts” (Canada, 1998a).

8. Elders throughout North America and Hawaii speak about the changes that they have observed in their lifetimes both to the people and to the land. For example, Indigenous Elders at a meeting in Whitehorse, Canada said the level of T.K. retention of their generation was around 75% of the forebearers. The Elders estimate that the level of T.K. retention of the younger generation stood at around 25%. They link the decline of the people to the decline of the diversity of the land. The land is not being used in the same way, people are not gathering traditional foods or medicines, and new plants and animals have been introduced that compete with the existing flora and fauna. Instead of using traditional sources of food, medicine, clothing, and housing materials, Indigenous peoples, either through choice or necessity, increasingly rely on non-traditional items to fill these needs. The change in cultural experiences of the Indigenous peoples has occurred hand in hand with changes in the ways they use the land and the resources of the land. This change has coincided with a decline in the diversity of the land. The parallel between the decline of the global diversity of peoples and the decline of species on which they rely to sustain their unique cultures is apparent.

9. The connection between the decline in biological diversity and culture is not a unidirectional relationship – as drops in biological diversity causes drops in cultural diversity, so too does a weakened culture negatively affect biodiversity. The ways in which a decline in cultural and linguistic diversity causes a decline in biodiversity are considered below. For people who see themselves as a part of nature, instead of seeing nature as a tool or resource for human development, such as the Indigenous Peoples of North America and Hawaii, there may be no distinction between a loss of their culture and languages, the loss of their biological distinctiveness, and the decline in biodiversity of other species.

2.2 Loss of local languages as a factor in the loss of traditional knowledge

10. Language is widely perceived to be evidence of one’s distinct culture.

Language plays a key role in all aspects of human life everywhere. It is central to our conceptualization of the world, and for interpreting, understanding and changing it. Initially the

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language(s) we learn give us the categories to conceive our natural and social world. If an object, process or relationship has been important in the life of our people, it gets named, and by learning that word we also learn what is vital for us to know in our natural and social environment (Maffi, 1999a:21).

11. Any linguist can confirm that many important concepts contained in one language cannot be understood in another. This is understandable given the different experiences of individuals and communities. A common language allows us to share both physical and metaphysical experiences. Our language is shaped by our experience and perceptions and our worldview is expressed through our language.

12. There is some uncertainty as to how many Indigenous languages existed in North America at the time of contact, but estimates are that there were over 300 (SIL International, 2003). Almost one third of those are now extinct and many more are in serious jeopardy. Some, such as Ojibwa, with approximately 50,000 speakers or Navaho with close to 150,000 speakers may well survive. On the other hand, of the 61 Indigenous languages identified in Canada and 155 in the United States, half and two-thirds respectively had 500 or fewer speakers, which is insufficient to maintain their vitality (Morrison & Wilson, 1995).

13. The worldviews that are expressed through these threatened languages are likewise threatened. This is particularly true for Indigenous peoples of North America because of the traditional reliance on oral communication. The extinction of their language threatens the very memory of their existence as peoples. A lack of attention to the Indigenous lexicon threatens the retention of the ideas contained within it. The knowledge of their history, their great citizens, their traditional lands and ways of life, their unique worldview and their contributions to the arts, science, and human understanding are in danger of being lost entirely.

14. As the languages are lost, so are the concepts that are unique to its speakers. For example, Indigenous peoples of North America generally hold traditional views about humanity's relationship to the land and the other species with which they share the earth that are distinct from the general perceptions of the non-Indigenous majority (Knudson & Susuki, 1992; Nabhan & St. Antoine, 1993, Posey, ed., 1999). Many Indigenous peoples of North America traditionally believe that humanity is related to plants or animals; they feel a kinship to the flora and fauna. It is not uncommon to hear the Elders speak of our brothers the beaver or our sisters the birds; the moon is a grandmother and the sun a father. With such close kinship ties, Indigenous peoples traditionally felt a responsibility to care for the land and all things living on it.

The most important relationship embodied by First Nation, Inuit and Métis languages is with the land. "The land" is more than the physical landscape; it involves the creatures and plants, as well as the people's historical and spiritual relationship to their territories. First Nation, Inuit and Métis languages show that the people are not separate from the land. They have a responsibility to protect it and to preserve the sacred and traditional knowledge associated with it (Task Force on Aboriginal Languages and Culture, 2005).

15. These perceptions about a people's link with their environment are embedded in their language. The loss of the language threatens the ability to express these ideas and facilitates the dominion of the traditional European non-Indigenous views. The loss of the language constitutes a tragedy for all humanity as we collectively lose some of the richness of experience we crave. We may also be at risk of losing ideas that may help us survive the current environmental challenges, including a decline in biodiversity: "[A]ny reduction of language diversity diminishes the adaptational [sic] strength of our species because it lowers the pool of knowledge from which we can draw" (Maffi, 1999b:25).

15. At this point in the Report it is appropriate to acknowledge the importance of the work on language and culture revitalization done by the Canadian Task Force on Aboriginal Languages and Cultures. This work culminated in their 2005 report entitled “A Foundational Report for a Strategy to Revitalize First Nation, Inuit and Métis Languages and Cultures”. Through their lengthy consultations, field research and analysis of legislative and policy trends, the Task Force was able to present a comprehensive picture of the fundamental connectedness between language retention, traditional knowledge preservation and the overall wellbeing of Indigenous nations – socially, economically, psychologically and spiritually. The report presents a series of holistic recommendations, meant to fight cultural and language loss on numerous fronts. The way in which the Task Force enunciates the link between language and traditional knowledge is relevant to this report, as is several of their recommended actions aimed at personal, local and national levels.

17. The link between language retention and the maintenance of traditional knowledge cannot be overstated. Understanding this connection is fundamental if Indigenous leaders and government policy makers hope to successfully respond to the loss and exploitation of traditional knowledge in Indigenous communities. The Task Force does a good job of explaining this link in their Report and describing the multi-layered effects of language loss in an individual and in a community.

18. The first way that language loss affects traditional knowledge retention is related to the role that the syntax of a language plays in shaping a person’s conception of their relationship with the outside world. For example, whereas English sentence structure tends to focus on oneself as the focus and agent of an event or state being described, other Indigenous languages, such as Anishnabe, usually focus first on the other person, thing or event and then finishes the phrase by explaining the self’s relation to the event, person or thing. For instance, where in English you might say “I am speaking to you”, in Anishnabe you might say “you are being spoken to by me”. Although these differences might seem merely semantic, it reflects a difference in worldview and the placements of value. In English, the precondition to expressing and understanding external events is an awareness of oneself. In Anishnabe, however, one must first understand the rest of the world before the individual can understand themselves and express their place in the world.

19. The second way in which language loss affects the retention of traditional knowledge is the actual loss of words to describe important concepts to a people. Looking at a traditional Cree law demonstrates how a deficit of proper words to express an idea can prevent the inter-generational sharing of traditional knowledge. The James Bay Cree have a legal concept that can roughly be translated into English as the “law of maintenance”, which speaks of a responsibility given by the Creator to the Cree of James Bay to not only take care of the physical environment, but to also maintain a harmonious relationship with other people and the animals they depend on for survival. This law is upheld through oral traditions that teach each generation about customs affecting hunting, trapping and fishing as well as rules for personal interaction. Without the words to express these laws (or the ability of the youth to understand the Elders explaining these laws), the traditional knowledge and hence the balance normally maintained is threatened. If equivalent French or English words are not found to imbue to the younger generation the necessity of upholding these traditional laws, the youth will easily adopt a previously foreign framework of values that are more easily understood in their new language.

20. When a language is lost and an Indigenous community is forced to switch to English or French, not only are the words they use different, but also the relationship between the self and the rest of the world also shifts. This shift in worldview affects a people’s physical interaction with the world. Traditional knowledge, along with language, is the physical expression of what is valuable and how a people perceive of their relationship with and responsibility to the physical and spiritual world. As language loss promotes changes in a people’s worldview, the gap between a people and the meaning embedded in their traditional knowledge grows. When this link is weakened, so to is the knowledge of traditional activities – without meaning, the practice of traditional activities loses its importance. When a

people's connection to their value system is damaged, and when there is a loss of knowledge of how that value system is expressed, a state of tension or confusion develops between their traditional views and those views expressed in their new language. This confusion breeds emotional, social and spiritual uncertainty, which puts into doubt fundamental concepts relating to 'self' and group identity. In such circumstances, social problems are allowed to permeate.

21. It should be noted that while it is undeniable that language loss makes it very difficult for a people to remain culturally strong, it is still *possible* to retain a sense of identity and culture within the confines of a new language. It is just that without language, you must rely more on other things such as traditional knowledge to keep the values, traditions and societal structures of a culture. The idea is that if you lose one, the other must be even stronger. There must be a strong concerted effort to translate traditional value systems and concepts into a new language. This point is important in communities where the language is already lost, or perhaps beyond the point of repair.

22. As already mentioned, the Task Force on Aboriginal Languages and Cultures suggests combating loss of Aboriginal languages and cultures at several levels. Their main focus is on measures that promote the resurgence of Indigenous languages. At the local level, they call on the need for resources to help in the creation of immersion programs (for both youth, adults and perhaps young children in the form of Maori style language nests), the development of educational resources in Indigenous languages, and the creation of language teacher training. The Task Force also calls for Indigenous control over education curriculum. Indigenous control over education is still weak in North America. For example, the Newfoundland and Labrador government has repeatedly refused Innu requests to change their school year to allow their youth to go inland during the winter to help with hunting and trapping. These young Innu do not have the opportunity, despite their personal wishes, to learn the traditional activities of their people.

23. At a national level, there is a recognized need for a National Language Organisation that can help coordinate, support and fund language-retention initiatives throughout the country. In Canada, the Federal government has promised \$160 million over the next ten years to support language revitalization. Although this is a promising step, it does not fully respond to the need for attitude changes in government, language policy negotiations on a nation-to-nation basis or the need for massive financial and human capital to implement such an enormous undertaking. \$160 million may seem like a large investment, but is actually only a fraction of the money that goes to supporting English and French in Canada.

24. The Task Force also recognizes the need for actions being taken at a family and individual level. More value needs to be placed on speaking Indigenous languages in the home and in social situations. Languages cannot survive on paper or through short conversations in a language class. Languages must be 'living'. To remain vibrant, Indigenous languages need to be the medium through which people think, dream and express thoughts and emotions. Although government actions are definitely needed to establish an environment in which languages can be promoted, huge efforts are also required within families and communities.

25. The Task Force repeatedly acknowledges the link between language retention and a continued connection with the land. To combat against language and culture loss on this front, it is recommended that the Federal and Provincial governments engage in nation-to-nation negotiations with Indigenous peoples on resource-sharing, environmental sustainability and the protection of traditional knowledge. If links to the land are to continue or be revitalized, communities need significant rights over their traditional lands and need to meaningfully participate in policies and activities that affect their knowledge of the land or the wellbeing of the land. To this extent, Indigenous peoples must also be part of government planning for implementation of the *Convention on Biological Diversity*. (p. 74-5)

2.3 Loss of biological diversity as a factor in the loss of traditional knowledge, and vice versa

26. According to government sources, there are over 350 species in Canada and over 1260 in the United States which are endangered, threatened with extinction or are of special concern (Environment Canada, 2005; US Fish and Wildlife Service, 2005). The traditional knowledge associated with these species is obviously likewise threatened. Traditional knowledge is predicated on active involvement with the environment. Divorced from the practice, the knowledge becomes abstract and loses its empirical depth. Without the opportunity to engage with the other species the traditional knowledge becomes little more than a memory and/or a museum piece.

Local language does not easily 'translate' into the majority language to which minority language speakers switch. Furthermore, along with the dominant language usually comes a dominant cultural framework that begins to take over. Because in most cases Indigenous knowledge is only carried by oral tradition, when shifts toward 'modernization' and dominant languages occur and oral traditions in the native languages is not kept up, local knowledge is lost. Due to its place-specific and subsistence-related nature, ecological knowledge is at especially high risk of being lost, as people are removed from their traditional environments or become alienated from traditional ways of life and lose their close links with nature. (Maffi, 1999b:30)

27. The 'extinction of experience' (Nabhan and St. Antoine, 1993) undermines the capacity of the people to keep the language alive. For the Yoeme of the Sonoran Desert, the disappearance of traditional ceremonial plants has hampered the retention of specific rituals. The Elders are unable to perform certain rituals due to the loss of particular species in their territory as a result of environmental destruction. As such, they are unable to pass on these rituals, many of which are teachings about the human connection to the Earth and respect for the Earth. The loss of these rituals hampers the teaching of these lessons, thereby reducing the knowledge and language of the Yoeme, which in turn fuels environmental destruction (Molina, 1998).

2.4 Cessation of cultural practices relevant to the conservation and sustainable use of biological diversity as a factor in the loss of traditional knowledge

28. Probably the easiest link to draw between cultural diversity and biological diversity is with respect to food. Archeological digs have uncovered a wide diversity of foods consumed by Indigenous peoples in North America that are foreign to European cuisine. Geneticists have identified hundreds of plant varieties and seed banks and have collected thousands of traditional crops not found in Europe. Anthropologists have documented Indigenous communities planting, tending, collecting, processing, consuming or using plants native to North America. Some of these products native to North America, such as the blueberry, pecan, and maple syrup have become commonplace in the modern North American diet. Others, such as wild rice or the Saskatoonberry remain local to certain areas. Many others, such as sorrel, avalanche lily, or herring roe on kelp have not crossed over to the European diet and some of these have fallen out of use by Indigenous people as well. Some food sources, such as the buffalo, passenger pigeon, and cod have become extinct or threatened with extinction as a result of overharvesting by non-Indigenous peoples.

29. Overharvesting does not explain all the extinctions or threats of extinction of species that have not found favour with the non-Indigenous palate, however. In fact, Indigenous peoples claim it is the lack of harvesting that causes the decline for many species (Blackburn & Anderson, 1993; Shipek, 1993; Turner, Ignace & Ignace, 2000). In other words, traditional cultivation appears very often stimulates diversity.

Native land ethics teach not to take more than you need or that the land can provide. But Native ethics as caregiving goes even further: If you don't use it, you lose it. Many (although not all) plant communities require disturbance to thrive. So, in the act of using plants, they are enhanced and conserved.

There are hundreds of examples of this in T.E.K. Every time a fire was set, corms and roots dug, the plumpest seeds collected and sown uneaten, baby beavers counted to calculate the seasonal quota, a stem-tip broken deliberately in the taking of fruits and nuts, the strongest deer let out of encircling fires during communal hunts, a tree pruned to encourage straight shoots for baskets, a fishing weir constructed which let more fish through upriver than were harvested--every time humans used the land, the land was made healthier (Martinez, undated).

30. The imposition of European foods and agricultural methods has displaced traditional foods and the capacity to harvest these foods in a traditional fashion. This in turn has imposed changes in the indigenous diet in North America, which have undermined biological diversity.

2.5 Impoverishment

31. The Indigenous peoples of North America are among the poorest in the region. In Canada, registered Indians earn less than half the average non-aboriginal income (Cooke, Bevan, McHardy, 2004). In the United States, American Indians earn slightly more than half of the average per capita income based on 1999 statistics. (US Bureau of the Census, 1995). A major reason for this level of poverty in the deprivation of their land and resources which serve as the means of production for their economic wellbeing. Systemic inequities have denied them access to alternatives.

32. The Canadian Government states that it “supports the national objective of giving First Nations, Inuit and Northerners access to a range and level of services from their governments reasonably comparable to those enjoyed by other Canadians in like circumstances” (Canada, 2003). Yet, the Prime Minister has acknowledged the “shameful conditions on reserve” (Canada, 2004). In fact, “funding for core services such as education, economic & social development, capital facilities & maintenance has decreased by almost 13% since 1999-2000” (AFN, 2004). While \$8 billion (Canadian) was spent on policies and programs related to Indigenous peoples in Canada in 2003-04, by the estimates of the Federal Government itself another \$11 Billion (Canadian) is owed in contingent liabilities (AFN, 2004). The situation is similar in the United States.

In July 2003, the U.S. Commission on Civil Rights reported that the persistent underfunding of Federal trust commitments to tribes constitutes “a quiet crisis.” In a comprehensive analysis of unmet needs in Indian Country, the study documented disproportionately lower funding for critical Indian services--including law enforcement, health care, and education--than for all other populations. In the last 25 years, federal expenditure per capita for Indians has steadily declined as compared to spending for the U.S. population at large (NCAI, 2005).

33. The amount of money contributed to Indigenous peoples, however, is not the true test of impoverishment. It is the capacity to be self-sustaining that determines the success of a people and whether they are truly impoverished. In order to determine whether a people are impoverished in the holistic sense of the word requires us to ask whether a people have access to the elements necessary to sustain themselves and hence their traditional knowledge. “Several past policies adopted by the government in dealing with the Indians have been of a type which, if long continued, would tend to pauperize any race” (Meriam Report, 1928).

34. According to the United Nations Development Program, capable government is a fundamental element of a successful society (UNDP, 1994). The Harvard Project on American Indian Economic Development also cites similar needs for sustainable development, including practical sovereignty, capable governing institutions, and a cultural match – that is a fit between the people’s perceptions of how authority should be exercised and the formal institutions established for exercising that authority (Harvard Univ, 2004).

35. In Canada, there are a number of land claims and self-government agreements that have been negotiated, notably in the north, but these remain the exception and not the rule. In the United States, *The Indian Self-Determination and Educational Assistance Act* and the *Tribal Self-Governance Act* helped to define the sovereign political powers of the Tribes, but many problems remain.

The federal pullback [in the United States] ... has left Indian Country, in many cases, without the institutions required to effectively and efficiently discharge important functions associated with their “re-empowered” sovereign status. Tribes are thus put in a situation of governing themselves while simultaneously attempting to build the entire range of requisite governing institutions, including tribal courts, tribal housing authorities, child welfare agencies, tribal wellness centers and district development agencies (Henson & Taylor, 2002).

36. In Canada this is also true for those communities that have concluded self-government agreements. The National Chief of the Assembly of First Nations has complained that First Nations in Canada are “administering their own poverty”.

37. In particular, financial support for self-government falls short. In Canada only 2% of all government funds support self-government (AFN, 2004). Even where these agreements have been finalized, the Department of Indian and Northern Affairs, responsible for implementation of the agreements, “seems focused on fulfilling the letter of the land claims’ implementation plans but not the spirit. Officials may believe that they have met their obligations, but in fact they have not worked to support the full intent of the land claims agreements” (Auditor General of Canada, 2003). In the United States, tribal priority accounts have declined by 4.4% between 1998 and 2003 (NCAI, 2005a). Contract support costs, key to financing self-government, will fall short by close \$136 million (US) in fiscal year 2005 (NCAI 2005b), despite court rulings that require the Federal Government to meet its contractual requirements (NCAI, undated). In fact, in several cases, not only is the spirit of the treaty not implemented, but important obligations under a signed and ratified modern-day treaties have not been implemented, thus forcing communities to engage in lengthy and costly law suits against the government. This further depletes a people’s resources and relationship with the government.

38. The ability to influence decision-making, as noted above, is critical to the sustainable development of a people. Indigenous peoples in North America, though wrestling for acknowledgement of their inherent right to self-government from federal authorities, remain in large part excluded from decision-making over their internal affairs. Despite the self-government legislation in the US, the Federal Government continues to hold tremendous plenary power over the Tribes. The same is perhaps even more true in Canada, as few Indigenous communities have had their inherent right to self-government recognized. Decisions affecting Indigenous peoples are frequently made behind closed doors with little, if any consultation with them. Financial allocations and intrusive legislation and policies are decided upon without input from Indigenous peoples and/or without consideration of their impact on Indigenous peoples. Indigenous peoples are rarely consulted on what crops will be planted, whether the waters can be diverted, or where a new settlement or factory will be created. As they also hold little economic capacity in North American society, they are sidelined from private sector decision-making as well, including the development of natural resources in their territories.

39. Access to power goes hand in hand with economic capacity. The connection between impoverishment, marginalization, and powerlessness is evident. But what is the connection between poverty, powerlessness and traditional knowledge?

40. Self-government is essential to the survival of Indigenous peoples. In a study on suicide in Indigenous youth in British Columbia, Canada at the University of British Columbia, it was found that one of the most important correlations for youth suicide rates in Indigenous communities was the degree of self-government in the community. Self-government was more important than factors such as education rates, employment, or location. In communities with no or little self-government youth suicide rates were as high as 140 per 100,000, 20 times the rate for their non-aboriginal peers. Notably, communities that exercised self-government had achieved statistically average rates and in some cases lower than the general population or even zero (Chandler, 2005).

41. According to the study, personal and cultural continuity are constitutive elements of a community. In other words, youth need to see a point in continuing to live in order to resist suicidal thoughts. They had to see themselves reflected in their day-to-day reality and believe they could influence their future. The study demonstrates that communities with capacity to create their own realities had the greatest capacity to generate cultural continuity and thereby reduce suicide. Interestingly enough, the study reflected on the fact that in some communities the suicide rate was below that of the general population or even zero. The authors concluded that perhaps these communities “are already in possession of highly effective forms of knowledge and practices—knowledge about how to make life worth living that could potentially be put to use by others”, an example of the value of traditional knowledge not only for the Indigenous community but potentially for the non-indigenous community.

42. The important point for the purpose of this study on the status and trends of traditional knowledge, however, is that limitations on self-government undermine cultural continuity including traditional knowledge. As we have already discovered, powerlessness and marginalization go hand in hand with poverty. The study by Chandler gives us evidence that powerlessness and marginalization also go hand in hand with a loss of traditional knowledge. As we will see below, it is the connection to the land and decision-making authority with respect to the land that is the greatest determinant of wealth and thereby retention of traditional knowledge.

2.6 Migration

43. The migration of non-Indigenous peoples to North America has had a substantial negative impact on the Indigenous peoples and the retention of traditional knowledge. The steady influx of non-Indigenous people displaced Indigenous people, competing with them for food and shelter. Clashes of cultures often led to violence and further subjugation of the Indigenous peoples. Land was taken out of production for the purposes to which it was put by the Indigenous peoples, driving the Indigenous peoples off the land entirely or forcing them to retreat from the onslaught.

Governments saw relocation as providing an apparent solution for a number of specific problems....[G]overnment administrators saw Aboriginal people as unsophisticated, poor, outside modern society and generally incapable of making the right choices. Confronted with the enormous task of adapting to 'modern' society, they faced numerous problems that government believed could be solved only with government assistance. If they appeared to be starving, they could be moved to where game was more plentiful. If they were sick, they could be placed in new communities where health services and amenities such as sewers, water and electricity were available. If they were thought to be 'indolent', the new communities would provide education and training facilities, which would lead to integration into the wage economy. If they were in the way of expanding agricultural frontiers or happened to occupy land needed for urban

settlements, they could be moved 'for their own protection'. And if their traditional lands contained natural resources — minerals to be exploited, forests to be cut, rivers to be dammed — they could be relocated 'in the national interest'. (RCAP, 1996)

44. Under the United States Federal *Removal Act* thousands of Choctaws, Muscogees, Florida Indians, Chickasaws, and Cherokees were moved by the army from their traditional territories east of the Mississippi between 1830 and 1845. This included the forced removal of 16,000 Cherokee from their traditional territories in Georgia. An estimated 4,000 people died during the half-year it took to relocate the Cherokee to Oklahoma. The current population distribution of Indigenous peoples in the United States demonstrates the long-term consequences of this displacement, as there are very few Indigenous communities in large parts of the eastern United States (US Census Bureau, 1990).

45. The removals disrupted not only the Indigenous peoples relocated, but also the Indigenous peoples whose territories they were moved into, creating a ripple effect across the continent. This in turn undermined the practice, retention and sharing of traditional knowledge. Unfamiliar with the new locale, Indigenous peoples could find themselves as ignorant of their new home as were the Europeans.

2.7 Reduction in numbers of Indigenous peoples

46. Indigenous peoples in North America stipulate that they have been in the Americas since time immemorial, since the Earth began. In fact, their creation stories often begin with the building of the North American continent. There is evidence of human habitation in North America for over 40,000 years (RCAP, 1996).

47. The number of Indigenous peoples living in North America at the time of contact is a matter of considerable debate, with estimates ranging from 4.5 million to 18 million (Morrison and Wilson, 1986). What is certain, however, is the impact of imported diseases, which in some cases decimated up to 93% of a people's population. "A serious contagious disease causing significant mortality invaded North American peoples at intervals of four years and two and a half months, on the average from 1520 to 1900" (Stiffarm and Lane, 1992:31).

The figure of 500,000 for the indigenous population [in Canada] at the time of initial sustained contact with Europeans is perhaps the most widely accepted today, although many would regard it as a conservative estimate. The diseases brought to North America by Europeans from the late 1400s onward, diseases to which the indigenous inhabitants had little resistance, had an enormous impact on Aboriginal population levels. During 200 to 300 years of contact, diseases such as smallpox, tuberculosis, influenza, scarlet fever and measles reduced the population drastically. Armed hostilities and starvation also claimed many lives.

The extent of the decline varied from one Aboriginal nation to another and also depended, of course, on the population size before contact. However, a census estimate of the size of the Aboriginal population in Canada in 1871 places the number at 102,000. It would take more than 100 years — until the early 1980s — before the size of the Aboriginal population again reached the 500,000 mark (RCAP, 1996).

48. A declining population affects the capacity to retain traditional knowledge and positively impact biodiversity. Firstly, with fewer people, the amount of knowledge they collectively hold is reduced. Secondly, the rapid decline of the population traumatized communities, diverting their attention and energy from commonplace traditional activities to activities of flight and survival, again undermining their ability to sustain their traditional knowledge. Also, population stresses impact most significantly the

old and the young and hence intergenerational transfer of traditional knowledge and culture is drastically affected.

2.8 Loss of ancestral lands and territories

49. Many of the Indigenous peoples of North America have been stripped of their traditional territories and resources, thereby losing the ability to connect with the land on a regular basis, although some have managed to negotiate reasonable treaties with the federal governments. Fueled by a lack of respect for the needs and interests of Indigenous peoples, loss of ancestral lands is likely the single most significant cause of decline in traditional knowledge.

50. At contact, the Indigenous peoples covered the North American continent and the Hawaiian Islands. While generally more thinly populated than Europe, the entire territory was occupied, far from the explorers' claims of discovering a "terra nullius". The historic records of various Indigenous peoples generally show a picture of hospitality and support during the early years of contact – with some notable exceptions. From the 16th century until the late 18th century, the relationship was marked by cooperation in trade and military exercises. By the late 18th and early 19th centuries, however, an imbalance in the relationship took hold. Non-Indigenous populations began to outnumber the Indigenous population and economic and military success was no longer dependent on the cooperation of the Indigenous peoples. In fact, increasingly, the Indigenous peoples were perceived as a barrier to economic opportunity.

More and more, non-Aboriginal immigrants were interested in establishing permanent settlements on the land, clearing it for agricultural purposes, and taking advantage of the timber, fish and other resources to meet their own needs or to supply markets elsewhere. They were determined not to be frustrated or delayed unduly by those who claimed title to the land and used it in the Aboriginal way. In something of a return to earlier notions of the 'civilized' and 'savage' uses of land, Aboriginal people came to be regarded as impediments to productive development. Moreover, as Aboriginal economies declined because of the loss of the land, the scarcity of game and the continuing ravages of disease, relief payments to alleviate the threat of starvation became a regular feature of colonial financial administration. In short order, formerly autonomous Aboriginal nations came to be viewed, by prosperous and expanding Crown colonies, as little more than an unproductive drain on the public purse (RCAP, 1996)

51. In the late 19th and early 20th centuries laws were passed which made it illegal to leave the reserves, private property held by non-Indigenous people was declared off bounds to the Indigenous peoples, and more recently the widespread environmental contamination of the land and water empty the promise of any real value.

52. Indigenous peoples in North America feel the loss of the land deeply and bitterly.

Micmacs in Membertou [moved out of a growing municipal centre and away from the ocean's edge] have difficulty exercising their customs now because they are no longer near water. The feeling of being close to the water was taken away from the people. It's like being chained (Bernie Francis in York, 1990).

53. Moved from place to place, often at the whim of non-Indigenous dominated governments, many Indigenous people have lost their connection to their traditional territories and the ways of life associated with those areas. The Indigenous peoples east of the Mississippi River in the United States were herded along the "Trail of Tears" to central Oklahoma. This dry dusty prairie landscape was foreign to the

people of the forested hills of their ancestors. They had no knowledge of this new place and many died from malnutrition once they had arrived because they were unaccustomed to surviving in that landscape.

54. Even where the Indigenous peoples continue to reside in or close to their traditional territories, they still face restrictions in their efforts to connect with the land. In Canada, even though many Indigenous peoples have treaties that guarantee a continued right to hunt and gather in their traditional territories these rights have been constrained through the years.

At Confederation, ownership and control of Crown land and resources was assigned to the provincial partners. In the northwest, land and resources were given initially to the dominion government to enable it to sponsor settlement. That was changed in 1930, however, with passage of the natural resources transfer agreements with the three prairie provinces. In these the federal government failed to take "any precaution, apparently, to safeguard the sacred trusts which had been guaranteed to the Indians by treaty." Thereafter, Aboriginal access to off-reserve resources was controlled across the country by provinces — which, of course, had no responsibility for First Nations. Outside reserves, in trapping, hunting, fishing and in such traditional activities as wild rice harvesting, Aboriginal people faced licensing systems, provincial management programs, game wardens, and all too often fines and imprisonment, as well as the restrictions of international wildfowl conventions signed by the federal government (RCAP, 1996)

55. Through a combination of harassment, bribery, trickery and outright theft, the Indigenous peoples of North America have lost most of their homelands, even much of that initially secured through treaty.

56. Even with the acknowledgement of past wrongs, governments have failed to rectify the situation. The *1993 Apology Bill*, in which the United States Government admitted to complicity in the illegal overthrow of the Kingdom of Hawaii, has not resulted in the return of the land to the native Hawaiians. Likewise the *Statement of Reconciliation* in 1998 by the Canadian Government has not sped the resolution of land claims.

57. Without the ability to sustain a long-term relationship with the land, the people lose the intimate detailed knowledge of the land (Barsh, 1999). "Customary livelihood relations among [the Ojibway] in their work on the land have been inextricably bound to an awareness of the intrinsic value of diversity" (Chapeskie, 1999). An ongoing relationship with the land underlies traditional knowledge. "Knowledge and land are intimately bound to one another just as the natural world is alive and spiritually replete (Whitt, 1999). The relationship to the land is deeply spiritual, one of kinship, requiring the greatest respect. Severing the relationship with the land does not simply dispossess the Indigenous peoples of their economic base; it strikes at the heart of their emotional, social, and spiritual support. If, as the study by Chandler noted above demonstrates, personal and cultural continuity are critical to community well being, the continued cultural ties to the land are pivotal to the survival of the people and their knowledge.

3. *Identification of national processes that may threaten the maintenance, preservation and application of traditional knowledge*

3.1 Demographic factors

3.1.1 Gender

58. Demographic factors, including gender, age and urbanization, also influence the maintenance, preservation and application of traditional knowledge.

59. It is difficult to draw conclusions about the role of gender in maintenance, preservation and application of traditional knowledge because of the varying circumstances affecting Indigenous peoples across Canada and the US. For example, concluding that women have limited influence due to denied access to decision-making processes is true in some communities, but not others. Iroquois culture is traditionally matrilineal, and in many cases women continue to hold ultimate authority in their traditional governance systems.

60. It is equally challenging to draw conclusions about gender based job discrimination and whether this undermines the retention of traditional knowledge. Traditionally, most Indigenous peoples acknowledged the unique, but equally essential roles of men and women, with a clear delineation of tasks. There were also communal activities in which everyone helped, such as fishing, even though the men generally brought in the nets and the women generally cleaned and smoked the fish. Twenty-first century gender analysis may distort our understanding of traditional Indigenous communities, which may create confusion about the role of gender discrimination in threatening the maintenance, preservation and application of traditional knowledge.

61. That said, it is clear that traditional views on gender roles in European societies did affect Indigenous – European interactions, which has, and continues to affect gender relations. At the time of contact, Europeans favoured male authority and decision-making over female. Women, valued for their womb and domestic arts, were highly suspect if they were overly or overtly powerful. In their dealings with Indigenous peoples, the Europeans privileged men with political authority. Even in matrilineal societies, the Europeans sought the advice of the men and set the men up as authority figures, according with European social and religious patriarchies.

62. This may in turn have affected the retention of traditional knowledge and caused stress in community relations. It may have also impacted traditional knowledge that supports biodiversity. For example, in some Indigenous communities the women held traditional responsibilities to care for the earth, such as the duty to ensure the collection and storage of seeds. The women may have retained this responsibility, but have become divorced from the tools and systems necessary to exercise this responsibility.

3.1.2 Age

63. It is not possible to conclude from this overview whether gender bias undermines the retention of traditional knowledge influencing biodiversity. Further study is required.

64. Conversely, the impact of age dynamics in Indigenous communities is a regular theme among Indigenous peoples. The loss of Elders and the current growth of the younger sections of the Indigenous population clearly have an impact on the retention, preservation and utilization of traditional knowledge.

65. The Elders are libraries of knowledge. Historically, the Indigenous peoples of North America were not literate and relied on observation and oral communications for inter- and intra-generational transfer of knowledge. Today, however, Elders familiar with the traditions and who know the stories are dying and taking this knowledge with them. The next couple of decades are widely seen as critical to the retention of traditional knowledge.

66. The passing of the Elders would not be problematic, as this is the way of life, if the youth were being trained with the knowledge and ability to practice and pass of the traditions in turn. There is currently a baby boom in the Indigenous population in both Canada and the United States. This Indigenous ‘Baby Boom’ is a result of the combination of better pre- and post-natal care in recent years as

well as the tendency for Indigenous people to have larger families in comparison to the average North American. Hence the problem is not a lack of youth to train. The challenge is that the youth are pursuing other knowledge and opportunities. Elders are concerned about a lack of interest and commitment among the youth in the traditional ways. As we will see below, there are many distracting influences with which youth must contend, particularly mass media. But there are equal challenges in passing on traditional knowledge to youth that are interested in learning. The modern education system divorces the people from their traditions, including traditional ways of learning. When the Elders were young, they learned from the land, from observing others and practicing what they had seen. Children today are required to attend school, where they learn from books with little opportunity for direct observation or practice. As noted above, the loss of the traditional languages is further complicating matters. Ironically, it is also the loss of biodiversity that undermines the ability of Indigenous peoples to retain their traditional knowledge and thereby assist with the conservation and protection of biodiversity! Many Indigenous peoples have spoken of the need to find ways and means to ensure and strengthen the intergenerational retention of traditional knowledge.

3.1.3 Urbanization

67. The increasing urbanization of Indigenous peoples is a further challenge to the retention of traditional knowledge. The majority of Indigenous peoples in Canada live away from the reserves. The urban Indigenous population grew by 62%, compared to 11% for other urban Canadians from 1981 to 1991, fuelled by both high birth rates, decreases in infant mortality rates, and net migration from rural areas. However, there was no net migration away from reserves during the same period (INAC, 2004). In the United States in 1990, 51% of American Indians were living in urban areas (compared to 75% of the general American population), up over 40% from 1930 when only 10% of American Indians lived in cities, compared to 50% of the general American population.

68. The impact of urbanization also requires further study. Full time office jobs or work in a factory divorces the people from the land because their work is incompatible with a traditional lifestyle that promotes the retention of traditional knowledge. People learn the survival skills of an urbanite, how to ride the subway or order groceries off the Internet rather than paddling a canoe or preserving fish. The Task Force on Aboriginal Languages and Culture (2005) has found that First Nation peoples living away from reserves tend not to speak their traditional languages, threatening intergenerational transfer of the language.

69. This said, many Indigenous peoples in North America living in urban centers continue to pursue their traditions. There is a steady movement of people back and forth between urban centers and reserves. People take advantage of weekends and holidays to attend Pow Wows, participate in the spring goose hunt, or make traditional crafts. While clearly not a fully traditional lifestyle, the traditional knowledge associated with these activities and managing their traditional territories lives on.

3.2 National development policies/programmes

70. National development as understood by the non-Indigenous society has had a generally negative impact on the retention of traditional knowledge and biodiversity. The activities pursued by non-Indigenous people to advance their own economic well-being or political hegemony have frequently been at odds with the interests of Indigenous peoples. In this section both economic and social development will be considered, the later in the context in which it is often applied to Indigenous peoples – the perceived need to “civilize” the Tribes.

3.2.1 Economic development of land and natural resources

71. The economic development of North America has had a harmful affect on Indigenous peoples and the retention of their traditional knowledge, although initially the opposite was true. When the Europeans first arrived in North America they relied upon the Indigenous peoples for trade and knowledge, particularly their knowledge of how to survive in a climate and landscape different from Europe. The Indigenous people provided shelter, food and medicine to the newcomers. They also provided labour to support the fish and fur industries, knowledge and guiding to assist the explorers, and warriors in battles among European nations. Initially the system worked to the general benefit of all parties, although it must be noted that some Indigenous communities took the opportunity offered by the Europeans to defeat long standing Indigenous rivals. Over time this relationship shifted in favour of the Europeans however.

73. Opening up the land to business and immigration has always been a defining feature of the colonization of North America. Non-Indigenous people have felled trees, constructed roads and railroads, cleared pasture land, and built homes, businesses and churches in an effort to rebuild Europe in North America. They imposed upon the land their own preferences in agriculture, housing, and community structure. They grew crops they favoured, clear cut the forests for pasture, fenced farmland, dammed streams for milling, and ploughed the prairies. These activities were contrary to the way of life of the Indigenous peoples who were mainly nomadic, semi-nomadic or small-scale agriculturalists. They relied on the bounty of the land and mostly lived in sustainable self-sufficiency. Their lifestyle quickly came into conflict with that of the Europeans. Ultimately, what the non-Indigenous majority has imposed is a system that fails to provide for the long-term sustainability of the population in the territory.

74. The Europeans felt they were justified in these actions, not only for their own betterment, but for the betterment of the Indigenous peoples. There was tremendous economic opportunity that, to the European eye, was going to waste or at the very least underutilized under Indigenous tenure. There is overwhelming evidence that the Europeans viewed the Indigenous peoples as backward and slothful in not capitalizing on the wealth of the land. This lack of respect justified pushing them aside. Dislodging the Indigenous peoples from the land was the first task in developing the economic potential of North America. Civilizing them to the European standards went hand in hand with these plans for economic growth.

75. The history of Indigenous – non-Indigenous relations has been dominated by deliberate efforts to assimilate Indigenous peoples to the majority society. In Canada, a policy of enfranchisement was adopted. In exchange for giving up one's Indian status, Indigenous peoples would be granted the full rights of citizenship and given a small block of land.

Such a goal placed Canada in the vanguard of the empire-wide task of carrying the 'white man's burden', which was at one and the same time the duty of 'civilizing' Indigenous peoples, be they Maori, Aborigine or Zulu. This also became the justification for the extensive annexation of the homelands and resources of Indigenous peoples in Africa, Asia, Australia and North America. For Victorians this was a divinely ordained responsibility; for Canadians it was, at the level of rhetoric at least, a national duty. (RCAP, 1996)

76. The Royal Commission on Aboriginal Peoples in Canada linked economic and political hegemony, one supporting the other. Others have suggested that the conflict is rooted in cultural differences of perspective.

Many authors, notably Carl Jung and Aldous Huxley, have stated that Western societies fear, hate, destroy, and also revere Indians, precisely because they express the parts of our personal and cultural psyches that we must suppress in order to function in the world as we do. How could present-day America possibly exist if great numbers of people believed that the minerals in

the ground, the trees and rocks, and the earth itself were all alive? Not only alive, but our equals? If our society suddenly believed it was sacrilegious to remove minerals from the earth, or to buy and sell land, our society would evaporate. Nor could it exist if Americans believed in an economic life organized along steady-state, collective-subsistence forms, as most Indian societies are. Therefore, it is logical, normal, and self-protective for Americans to find the philosophical, political, and economic modes of Indian culture inappropriate and foolish (Mander, 1991).

77. Canada has acknowledged this in a Statement of Reconciliation issued in 1998.

Sadly, our history with respect to the treatment of Aboriginal people is not something in which we can take pride. Attitudes of racial and cultural superiority led to a suppression of Aboriginal culture and values. As a country, we are burdened by past actions that resulted in weakening the identity of Aboriginal peoples, suppressing their languages and cultures, and outlawing spiritual practices. We must recognize the impact of these actions on the once self-sustaining nations that were disaggregated, disrupted, limited or even destroyed by the dispossession of traditional territory, by the relocation of Aboriginal people, and by some provisions of the Indian Act. We must acknowledge that the result of these actions was the erosion of the political, economic and social systems of Aboriginal people and nations (Canada, 1998b)

78. Yet many of these destructive development policies and activities continue today. Currently, the United States and Canada are engaged in concerted effort to open the north to development. Recently, the United States voted to open the north slope of Alaska to oil exploration and development, despite the pleas from Indigenous peoples in the area dependent on the caribou herd for their way of life. Oil exploration, mining, and related development proceed apace in both countries. Indigenous peoples in the region find themselves caught between diminishing returns from the land and their desire to avoid the social upheaval and loss of traditional ways of life that so often comes hand in hand with such development and taking advantage of the economic boom in their territories.

79. The Task Force on Aboriginal Languages and Culture (2005) recommends that governments

[s]upport resource development, including lifestyles that foster language retention, by financially supporting: ... First Nation, Inuit and Métis people who choose to live a traditional lifestyle, as well as supporting initiatives to teach youth the skills to live traditionally or on the land.

80. The Task Force stated that the revitalization of languages is a way to heal and reconnect with the land. Economic development, particularly that reliant on natural resource extraction must be reconciled with Indigenous peoples' ability to maintain their languages and culture through the use, retention and practice of traditional knowledge. As demonstrated above, this will support the long term protection and conservation of biological diversity.

3.2.2 The new 'knowledge economy' and globalization

81. Modern economic development in North America hinges less on resource extraction and local production than on the "knowledge economy" and globalization. The consequences of these economic drivers are potentially as threatening to the retention and use of traditional knowledge as anything to date.

82. Globalization is reducing the capacity of nation states to realize and protect local interests. For example, The *North America Free Trade Agreement*, between Canada, Mexico and the United States

restricts the right of the parties to limit trade in commodities. If, for example, bulk water sales were to proceed, the party selling the water would be required to continue the sale, despite potential harm to local interests, for example in the face of local water shortages. The capacity of Indigenous peoples to rely on a stable natural environment to pursue biodiversity related traditional knowledge is thereby threatened as is their ability to influence decision-making in the exclusionist international Free Trade environment. Globalization is also responsible for the growing gap between the rich and the poor as a natural consequence of the tendency towards monopolization in capitalist economic systems. As a result, Indigenous peoples face increasingly higher hurdles in trying to catch up economically with their non-indigenous peers, which again restricts their ability to exercise self-determination including the practice of traditional knowledge.

83. The increasing reliance in North America on “knowledge” as a key economic driver also threatens the retention and use of traditional knowledge. A “knowledge economy” refers to an economy where value lies increasingly in new ideas, software, services and relationships. Knowledge is recognized as a source of competitiveness, as science, research, technology and innovation in knowledge creation become increasingly important. The United States has been the major player in promoting this agenda on the world stage, with Canada a strong ally, threatening not only traditional knowledge in North America, but around the world. The promotion of intellectual property rights to secure economic advantage, particularly with respect to genetic modification, and the subsequent impact on biodiversity is a cause of grave concern in the Indigenous community.

84. Modern laboratory techniques for genetic modification of plants and animals, including cloning, gene splicing, and so called “terminator technology” may have the potential to go seriously awry, introducing new and potentially lethal biological actors capable of destroying entire elements of biodiversity and hence any related traditional knowledge. The Assembly of First Nations in Canada passed a resolution in July 2005 protesting the development of genetically modified wild rice (*manomin*) in the United States. As noted elsewhere in this paper, *manomin* is a traditional food for some of the Indigenous peoples in North America with great symbolic importance. Introducing a genetically modified version is not only culturally offensive undermining traditional values, but also has the potential to destroy the existing biodiversity and associated traditional knowledge.

85. The practice of using patents on genetic materials, to prevent others from profiting from either new genetically modified products or new applications for genetic materials, is widely pursued and promoted in North America. This widely used Intellectually Property system also undermines the use, retention and practice of traditional knowledge. For example, if a genetically modified *manomin* is introduced, particularly one that is exceptionally hardy, Indigenous peoples who traditionally harvested this resource may find themselves overrun with a strain for which they are required to pay a royalty to harvest. This would clearly have a dampening affect on traditional knowledge.

86. It has not been possible in this brief overview to provide a detailed examination of development policies and programmes on Indigenous communities in North America. Some general issues of concern have been flagged, however. It is recommended that states undertake, with the full participation of Indigenous peoples, detailed research and analysis on the impact of development practices on the use, retention and practice of traditional knowledge with a view to ameliorating the negative impact of development on Indigenous peoples. To this effect, Indigenous peoples and governments are strongly recommended to take on board and implement the Akwe:Kon Voluntary Guidelines for the conduct of cultural, environmental and social impact assessments regarding developments proposed to take place on, or which are likely to impact on, sacred sites and on lands and waters traditionally occupied or used by indigenous and local communities.

3.3 Education, training and employment policies/programmes

87. For decades in both Canada and the United States authorities forcibly removed children from their families confining them to residential schools where they were cut off from contact with their communities and its traditions. The children were forbidden, on threat of violence, to speak their languages, wear their traditional clothes or dress their hair in traditional manners, practice their religions, or even use their Indigenous names. In the United States, this practice continued until the 1930s. In Canada, the final residential school did not close its doors until the 1960s. Thousands of children and their families were traumatized by this experience. The bond between the children and their communities was often permanently broken, as the children were unable to survive in the traditional manner or even to communicate with their families when they were returned home, often years later.

88. Worse yet was the physical, psychological and sexual abuse that were all too common in these schools. The psychological damage was severe and lingers today. Residential schools indoctrinated the Indigenous peoples with non-Indigenous religious, social, and economic values and the current school system largely continues this tradition. There are few educational materials that reference elements that would be familiar to Indigenous peoples. Children's readers, for example, are invariably about experiences familiar to urban non-Indigenous children – white picket fences, bus trips to the shopping centre, or playgrounds with swing sets. While Indigenous peoples are increasingly familiar with these as well, they do little to promote interest in traditional indigenous knowledge or experience.

89. In recent times, greater efforts are being made to develop curriculum more in tune with indigenous peoples, but without the Indigenous peoples in full control of indigenous education, training and decision-making processes these efforts are not as effective as they could be.

90. Employment policies also continue to discriminate against Indigenous peoples. The bare facts of employment for Canada and the United States bear this out. Particularly relevant is the bias in hiring practices in favour of higher levels of education. This creates a circular pattern of keeping Indigenous peoples out of decision-making positions, especially at high levels positions and in the education system, thereby undermining their ability to positively influence their circumstances.

3.4 National programmes for modernization through the development, transfer and adoption of new technologies

91. The impact of new technologies on Indigenous peoples has been profound. While the pace of technological change in the 20th century has been unprecedented, the rapidity of change for the Indigenous peoples in North America in the past four centuries has been overwhelming. New technologies include instruments of war (guns, dynamite), transportation (the horse and then the railroad, cars, airplanes), energy (water mills, steam engine, internal combustion engine, nuclear power and hydro electric developments), agriculture and food production (iron pots and steel knives to combine harvesters and biogenetics), communication (printing press, radio, television, the Internet) and natural resource extraction (panning for gold to drilling for oil and gas). The impact on traditional knowledge is incalculable.

92. The new technologies in the hands of the Indigenous peoples have changed the relationship between the Indigenous peoples and the world around them. The use of guns for hunting for example, while ensuring a more successful hunt, changes the relationship between the hunter and the hunted (Barnhardt and Kawagley, 2004).

93. Social relationships have also been affected.

I used to be a schoolteacher and when TV came to the villages I saw an immediate change. People lost interest in the native stories, legends and languages, which are really important because they teach people how to live. And it's hurting the relationships between men and women too, and between young and old. We used to honour our old people and listen to them...but that's changing fast. TV makes it seem like the young people are all that's important and the old have nothing to say (Cindy Gilday, quoted in Mander, 1991).

94. Communication systems, including radio, television, and the Internet, are a double-edged sword. They have the capacity to facilitate exchange of information on, about and for Indigenous peoples, but most of the content is for and about the non-Indigenous community. Without control of production and distribution, Indigenous peoples find themselves without the power to express themselves and instead, for the most part, are passive recipients of a foreign culture. While there is burgeoning capacity, Hollywood continues to dominate the airwaves.

95. The impact of reliance on fossil fuels and the resulting climate change is a clear example of the consequences of technological development on traditional knowledge as it relates to biodiversity. Indigenous peoples in North America have been noting changes in their landscapes for some years now, including warming trends, extreme weather events and shifts in the range of culturally significant species. These are particularly noticeable in the north and at high elevations. These changes, like any changes in the environment, impact on the ability of Indigenous peoples to pursue their traditional practices. Extensive research is required on the potential impact of climate change on Indigenous peoples, in particular on their traditional ways of life. Furthermore, because of the extensive knowledge of the landscapes held by Indigenous peoples, they must be involved in impacts research, both for their own benefit and for the benefit of the non-indigenous population. More study is also required on the impact of climate change on traditional knowledge. The Indigenous peoples are often the first to experience the impacts of environmental damage and can serve as both an early warning system, as well as helping others to prepare for the necessary responses to the impacts. This is a classic case where the retention of traditional knowledge will prove its value to the non-indigenous community.

3.5 Identification of activities, actions, policies and legislative and administrative procedures that may discourage the respect for, preservation and maintenance of traditional biodiversity-related knowledge

96. It is not possible in these short few pages to outline all policies, legislation, practices, etc., that threaten the retention, preservation and application of traditional knowledge. However, it is possible to identify typical attitudes that form the basis of these and to provide examples of the impact of these attitudes. Further, general remarks on constitutional, economic and social law and policy will provide some concrete examples of these attitudes.

97. The Royal Commission on Aboriginal Peoples in Canada identified four false assumptions that underlay government policy towards the indigenous peoples. While these were identified in the Canadian context they would apply equally across North America. They all generally stem from a lack of respect. The four false assumptions are:

1. Aboriginal people are inherently inferior and incapable of governing themselves;
2. Treaties and other agreements were, by and large, not covenants of trust and obligation but devices of statecraft, less expensive and more acceptable than armed conflict. Treaties were seen as a form of bureaucratic memorandum of understanding, to be acknowledged formally but ignored frequently. All four areas of policy or action ran roughshod over treaty obligations;

3. Wardship was appropriate for Aboriginal peoples. Hence actions deemed to be for their benefit could be taken without their consent or their involvement in design or implementation. In this respect, governments at all levels have failed their fiduciary duty to Indigenous peoples;

4. Finally, concepts of development, whether for the individual or the community, could be defined by non-Aboriginal values alone. This assumption held whether progress was defined as Aboriginal people being civilized and assimilated or, in later times, as resource development and environmental exploitation.

98. The fact that many of these notions are no longer formally acknowledged does not lessen their contemporary influence. (RCAP, 1996)

3.5.1 Paternalistic policies

99. Paternalism is a dominant element of these assumptions. The non-Indigenous population overwhelmingly presumed that the Indigenous peoples were incapable of managing their own affairs and therefore required supervision and management.

100. In Canada, in the 1870's, the first version of the *Indian Act* was adopted to govern the management of Indian affairs. Over one hundred and twenty years later, this legislation continues to serve as the primary act governing First Nations peoples in Canada. The Minister of Indian and Northern Affairs who administers the Act has the power to decide who qualifies as an Indian, the size of reserves, what activities may occur on reserve, where the children will go to school, the distribution of estates. In fact, virtually every facet of First Nations peoples' lives from birth to death is managed by the Minister of Indian and Northern Affairs under the authority of the *Indian Act*. The First Nations are granted extremely limited governing powers to issue by-laws, all of which must be approved by the Minister. These by-law making powers are strictly limited, including such matters as the regulation of bee-keeping, control of noxious weeds, construction of ditches, and the regulation of traffic. More recently, band councils have been given the power to collect taxes on immovable property on reserve. In the United States, the Bureau of Indian Affairs is the equivalent of the Canadian Department of Indian and Northern Affairs. The Bureau also serves to administer Indigenous affairs.

Since the Indians were ignorant of money and its use, had little or no sense of values, and fell an easy victim to any white man who wanted to take away their property, the government, through its Indian Service employees, often took the easiest course of managing all the Indians' property for them. The government kept the Indians' money for them at the agency. When the Indians wanted something they would go to the government agent, as a child would go to his parents, and ask for it. The government agent would make all the decisions, and in many instances would either buy the thing requested or give the Indians a store order for it. Although money was sometimes given the Indians, the general belief was that the Indians could not be trusted to spend the money for the purpose agreed upon with the agent, and therefore they must not be given opportunity to misapply it (Meriam Report, 1928).

101. In both Canada and the United States there are signs, including recognition of self-government in some spheres, that the federal administrators are prepared to loosen their grip on the management of Indigenous affairs. Even in these situations, however, the purse is still firmly in government hands, thus allowing them to maintain substantial control.

102. As has been described above, the loss of the ability to be self-governing has stolen the opportunity to pursue traditional ways of life and to practice and conserve the traditional knowledge. Without the authority to manage their own affairs, the Indigenous peoples remain wards of the state and

are unable to create governing structures that reflect their cultural identity, including their traditional teachings as they relate to the relationship with the land. The restriction on their capacity to exercise their traditional knowledge in turn undermines their capacity to conserve and protect biodiversity.

103. As unfortunate as the paternalistic attitude is in and of itself, the governments showed themselves to be neglectful, reluctant, and at times outright fraudulent in the exercise of their fiduciary duty. This is particularly true with respect to the implementation of the treaties. The Indigenous peoples signed treaties as sovereign nations with the colonial governments. These treaties, in exchange for land or for peace and friendship, guaranteed access to education, health services and resources. Most of these treaties have been breached more than honoured. This is not simply historical record but an ongoing course of action. The Nunavut government and Nunavut Tunngavik Incorporated complained to the Federal Court in 2004 that the government had breached their 1993 land claim agreement by granting over one half of the quota for shrimp to non-Nunavut interests. The agreement stipulates that special consideration must be given to the fact that northern shrimp lie off the shore of Nunavut and to the importance of the industry to the territory's economic well-being (CBC, 2004).

3.5.2 Breaches of the Crown's Fiduciary Duty

104. Governments have also been keen to divest themselves of their fiduciary responsibility to Indigenous peoples, one means of doing so being to simply refuse to recognize people as being Indigenous. Examples of this policy include the 1917 "Declaration of Policy" issued by the American Bureau of Indian Affairs severing its responsibility to Indians deemed competent to manage their own affairs. Those with less than one-half native ancestry, or those holding high school diplomas were deemed competent. In the 1940's and 1950's the American federal government further unilaterally divested itself of responsibility for over one hundred Tribes. Many of these Tribes continue to fight for federal recognition. In Canada, the *Indian Act* stipulates who qualifies as a "status Indian". Despite amendments to the legislation to reinstate women who had married non-aboriginal men and their children, the current legislation continues to discriminate based on blood quantum, leading to the potential that by 2050 no First Nations will qualify for status. The Métis, an officially recognized group of Indigenous peoples in Canada, have had little land, financial support, or recognition of their Aboriginal rights. Only in the past year has there been real movement, with the Supreme Court of Canada decision in *R. v. Pawley*, which stipulates who qualifies as a Métis. Much work is required to realize the full implementation of this decision.

105. Repeated breaches of the government's fiduciary duty has cost Indigenous peoples land, opportunity, income, and trust. Restoring the rightful property of the Indigenous peoples has often required litigation, with the only court of appeal being to the State – the fiduciary body itself. Many of these battles have yet to be concluded, some of them worth billions of dollars and the territories concerned may cover thousands of square kilometres. Despite the difficulties of receiving compensation for breached duties, however, the greatest challenge to us all will be in restoring the trust. Indigenous peoples invariably distrust government officials and are reluctant at times to even speak in front of them.

106. The impact this has on the retention of traditional knowledge takes many forms. The breach of the fiduciary duty has undermined the ability of the Indigenous peoples to exercise their traditions. Much of the original territories are gone, their natural resources are vanishing many Indigenous peoples are destitute. Those individuals and communities who are faring better are often preoccupied with lobbying, litigation and negotiations. They are so caught up fighting for their rights that they are unable to enjoy that which they are struggling to preserve. But the lack of trust between government and most Indigenous communities has undermined the ability of the non-Indigenous and Indigenous communities to move forward in true reconciliation and understanding. Without trust, the Indigenous peoples are not prepared to share their traditional knowledge for fear of further abuse including ridicule, dismissal, misuse and

even theft of their intellectual property. The Parties to the *Convention on Biological Diversity* are in the process of developing an international regime on access to and sharing benefits arising from genetic resources and associated traditional knowledge. This is intended, in part, to assist with the retention and utilization of traditional knowledge. However, without the trust generated from respect and based in experience, there can be no agreement. Furthermore, Indigenous peoples have expressed concern that an international regime for access and benefit-sharing of genetic resources cannot be negotiated with the participation of Indigenous peoples until traditional knowledge is protected.

3.5.3 Assimilationist policies

107. Hand in hand with paternalism and the failure to fulfill the fiduciary duty is assimilation. The purpose of assimilation policies was to more easily absorb the indigenous peoples into mainstream society. “The fundamental requirement is that the task of the Indian Service be recognized as primarily educational, in the broadest sense of that word, and that it be made an efficient educational agency, devoting its main energies to the social and economic advancement of the Indians, *so that they may be absorbed into the prevailing civilization or be fitted to live in the presence of that civilization at least in accordance with a minimum standard of health and decency* (Meriam Report, 1928) (emphasis added).

108. Although assimilation policies have officially become a thing of the past, assimilationist attitudes continue to find a home in the Canadian and American political and popular culture. The Conservative Party of Canada speaks of the need to ensure that Indigenous peoples are treated equally with non-Indigenous people under the Constitution of Canada. A laudable notion until one examines it more closely. Under section 35 of the Constitution, Indigenous peoples are accorded Aboriginal and treaty rights. These rights are deemed to be extraordinary rights to those enjoyed by non-Aboriginal people. However, the Conservative Party holds that the implementation of section 35 rights “must be conferred within the four square corners of the Constitution Act and the Charter, with full protection for equality rights, such as women’s rights, for both aboriginal and non-aboriginal Canadians” (Conservative Party, 2005). The section intended to provide for recognition of special rights, would be read down by the Conservative Party to only accord such rights to Indigenous peoples as would be accorded to any people in Canada, thereby gutting the intent of the legislation. Although couched in reasonable terms of “equality for all”, the plain truth of it is that Indigenous peoples and non-indigenous peoples in Canada are different. According Indigenous peoples only such rights as non-indigenous people hold in Canada undermines the capacity and will of the Canadian state to recognize and respond to these differences. This may include policies, programs, and legislation that would facilitate the retention of traditional knowledge, for example through implementation of the treaties. While the Conservative Party does not currently form the government, they are the official opposition with the next largest number of seats in the House of Commons – evidence that their positions find a significant degree of favour with the Canadian public.

3.5.4 Religious and moral conversion

109. Moral superiority, particularly that arising from religious doctrine, has also been a key element of many colonialist policies. The Indigenous peoples were not Christians at contact and pursued practices that were considered morally repugnant to most non-Indigenous people. A profound sense of righteousness has been a constant element of government policy.

Let us have Christianity and civilization among the Indian tribes...let us have a wise and paternal government...doing its utmost to help and elevate the Indian population, who have been cast upon our care...and Canada will be enabled to feel, that in a truly patriotic spirit, our country has done its duty to the red men... (quoted in RCAP, 1996)

110. While the role of organized religions in undermining traditional knowledge will be expanded upon below, it is also important to note that government law and policy often sprang from Christian religious doctrine. This manifested itself in the efforts to extinguish Indigenous spiritual practices. In both Canada and the United States, it was illegal to practice traditional ceremonies. The American *Indian Religious Freedom Act* of 1978 granted to the Indigenous peoples of the United States freedom of religion that had been enjoyed by the non-Indigenous population since the adoption of the American *Bill of Rights* in 1791, almost two hundred years earlier.

111. Both countries have adopted legislation and administration systems that deprive the Indigenous peoples of the right to govern themselves. Furthermore, the governments failed, and in large part continue to fail, to include Indigenous peoples in decision-making processes. There has been little if any consultation with the Indigenous peoples on matters that touched on their interests, including those that speak to the very core of their identities. As such, the Indigenous peoples have found themselves at the mercy of their paternalistic guardians, who have often been hypocritical in their care for the wards they have created. Blinded to the negative impact of their policies, the non-Indigenous governments often blame the victims for their situation, finding Indigenous poverty, social dysfunction, cultural decline, and occasional flares of violence at the injustice to be the fault of the Indigenous peoples, thereby justifying further interference.

112. Over the intervening years since contact, the Indigenous peoples of North America and Hawaii have been denied the right to practice their religions, to practice traditional medicine, to attend university, to vote, to hold property, to sell the products of their labour, to wear their traditional dress, to eat their traditional foods, to speak their languages, to live where they choose, to travel and associate freely, or to even hire a lawyer to bring their grievances to court. All these measures have had the overall affect of undermining respect for the Indigenous peoples, denigrating their lifestyle and perspectives, and denying them an opportunity for self-expression. Though both governments seized authority over the Indigenous peoples, they have demonstrated an appalling lack of will to exercise that authority in a manner that truly benefits the Indigenous peoples. They have demonstrated an equivalent lack of will to give up this power and to recognize the inherent right of the Indigenous peoples to be self-governing.

113. Government policies, procedures and legislation have had the cumulative effect of undermining respect for traditional Indigenous knowledge. Not only has the government's action been evidence of the lack of respect on the part of the majority non-Indigenous population, but they have also had the effect of undermining Indigenous peoples' respect for their own culture. Told often enough that black is white, one begins to believe this must be true. In other words, in the face of unremitting discrimination a community develops a low sense of self-worth, which becomes a self-fulfilling prophecy. This will be examined at greater length below.

114. This report has reviewed the major reasons for the decline of traditional knowledge, innovation and practice. However, there is a level of detail which is impossible within the constraints of the report but which is necessary to understand in order to fully respond to the decline of traditional knowledge in North America. It is recommended that States produce a more detailed review of the causes of decline of traditional knowledge, with the full and effective participation of Indigenous peoples. Such a review would complement the final Composite Report, in determining the most destructive activities and finding the most promising solutions in particular circumstances of each country and community.

4. *Identification of processes at the local community level that may threaten the maintenance, preservation and application of traditional knowledge*

4.1 Territorial factors and factors affecting communal lands

115. The *Dawes (Allotment) Act* of 1887 was a deliberate effort to break communal holding of lands by the Indigenous peoples of the United States. The lands were allocated back to Indian people who were required to apply for a parcel. Land that was not applied for fell to the control of the United States Government. This land was invariably leased or sold to non-Indigenous people. Again this was pursued in an effort to “civilize” the natives. The rhetoric of the time is telling in this regard.

To bring [the Indians] out of savagery into citizenship...we need to awaken in him wants. In his dull savagery, he must be touched by the wings of the divine angel of discontent...Discontent with the teepee and the Indian camp...is needed to get the Indian out of the blanket and into trousers – and trousers with a pocket in them, and with a pocket that aches to be filled with dollars!

Here is an immense moral training that comes from the use of property. Like a little child who learns the true delight of giving away only by first earning and possessing what it gives, the Indian must learn that he has no right to give until he has earned, and that he has no right to eat until he has worked for his bread. Our teachers upon the reservations know that frequently their lessons...are effaced and counteracted by the [Indians] old communal instincts and customs...We have found it necessary, as one of the first steps in developing a stronger personality in the Indian, to make him responsible for property. Even if he learns its value only by losing it, and going without it until he works for more, the educational program has begun (Dr. Merrill E. Gates, president of Amherst College quoted in Mander, 1991: 275-276).

116. Senator Dawes held similar views, advancing the legislation as a means of creating selfishness.

The head chief [of the Cherokees] told us that there was not a family in that whole nation that had not a home of its own. There was not a pauper in the nation, and the nation did not own a dollar...Yet the defect of the system is apparent. They [the Indians] have got as far as they can go, because they own no land in common...There is no enterprise to make your home any better than that of your neighbor's. There is no selfishness, which is at the bottom of civilization. Until this people consent to give up their lands and divide them among their citizens so that each can own the land he cultivates, they will not make much progress (Mander, 1991: 276).

117. Once the land was divided, much of it was lost by the Indigenous peoples due to fraud perpetrated by the non-Indigenous population. The *Allotment Act* was responsible for the estimated total loss of about 90 percent of the Indian land base in the United States.

118. In Hawaii the “Great Mahele” of 1848 had a similar effect. The islands were divided into three parts: land for chiefs and aides, land for kings and their heirs, and land for the Hawaiian Government. A new law in 1850 allowed commoners to claim private property. Only 1 percent of the total land mass of Hawaii was claimed, the rest was taken up by non-native Hawaiians, particularly missionaries. In 1887 the *Reciprocity Treaty* between the Hawaiian government and the United States gave non-Indigenous sugar plantation owners freedom from sugar export tariffs and gave the United States ownership of Pearl Harbour. An army mustered by the plantation owners coerced the replacement of the Hawaiian constitution with one that permitted only large property owners the right to vote. By this point in time the non-Indigenous population held most of the land. In 1898 following an attempt by Queen Liliuokalani to reassert sovereignty the plantation owners, supported by American troops forcibly deposed the monarchy and the islands were annexed by the Americans. In only fifty years the Hawaiians had lost their lands (Mander, 1991).

119. It has not been only pure land loss that has proven problematic for the retention of traditional knowledge, but conflicting concepts of land ownership and the imposition of foreign land tenure systems that compound the problem.

For the Ojibways from Wabigoon, the notion of ‘owning’ manomin [wild rice] fields is more than just alien; it is offensive in the deepest cultural and spiritual sense... This is because the Ojibway people of Wabigoon do not see themselves ‘controlling’ manomin as a ‘resource’; rather, they conceive of themselves in relation to ‘it’ in a kindred way... Ojibway people must now exist in a ‘land use’ context where the Government of Ontario has imposed its authority over most of the ‘resources’ of their ancestral lands (Chapeskie, 1999).

120. As noted previously, alienation from the land interrupts the practice of the traditions and this is most pronounced in land-based (territory) peoples. The loss of the connection to the land is the beginning of the end of traditional knowledge. The World Council of Indigenous Peoples in 1981 summed it up: “An Indian without land is a dead Indian” (Brody, 1990:123).

121. In Canada and the United States, Reserve lands or Reservation lands are held by the federal government in trust for status Indians. The statutes (ie. Canada’s *Indian Act*, or the American *Indian Reorganization Act*) and bureaucracy surrounding the use of these lands have traditionally been and continues to be an important barrier to self-determination, access to capital, economic development and retention and use of traditional knowledge. One of the important ways it does this is by restricting an individual or a community from using their land or resources as security to obtain capital in order to develop a sustainable economy in culturally appropriate ways. These restrictions effectively mean that Indigenous communities remain dependent on either government assistance, or on non-Indigenous investors who often develop businesses that are culturally inappropriate (in terms of business structure, management structure or the products or services offered). This dependency undermines a people’s ability to protect and practice their traditional knowledge. Furthermore, the lengthy and expensive bureaucratic processes required to develop Indian lands, as required by these statutes, stifles economic development. For example, the micromanagement by Indian and Northern Affairs Canada results in the simplest application for a mortgage or a leasehold taking over a year to process. This discourages Indigenous communities and possible investors, thus further limiting a prosperous and innovative community that uses their traditional knowledge to adapt to a modern economy.

4.2 Cultural factors

122. As noted above, the non-Indigenous governments and religious institutions imposed restrictions on the practice of traditional customs including dress, religion, and language. The education systems were particularly intrusive, depriving Indigenous children of access to their cultures. Indigenous peoples have been told for centuries, directly and obliquely that they are worthless, their knowledge inferior, their customs laughable.

123. Little wonder that some Indigenous peoples have begun to believe this is true. There are many stories told by Indigenous peoples of how their parents hid the truth of their heritage from their children in an effort to shield them from abuse. The psychological need for acceptance is very strong in humans and so in an effort to blend-in out of self-preservation, Indigenous peoples in North America have adopted many customs of the non-Indigenous population, replacing their traditional ways with those of the newcomers.

124. The sheer numbers of cultural references of the majority non-Indigenous population have dulled the impact of traditional Indigenous customs. Most businesses are owned by non-Indigenous peoples, most law is made by non-Indigenous politicians and judges, most radio and television shows are about non-Indigenous peoples, most theatres, art galleries, and clubs showcase non-Indigenous talent, most books are written by non-Indigenous authors about non-Indigenous people and issues. In the capitals of both Canada and the United States, one would be hard pressed to find much evidence of the original Indigenous inhabitants of the area.

125. The intervening years of cultural disruption and the loss of the Elders and their collective warehouse of knowledge has at times created a gap in the knowledge about particular practices. For instance, some Indigenous peoples knew how to prepare poisonous foods so that they were safe to eat. As this knowledge was partially lost, Indigenous peoples became reluctant to eat those traditional foods. In a search for reconnection with the traditions, some Indigenous peoples have adopted traditional practices of other Indigenous nations, sometimes with little understanding or awareness of those traditions. Hence, there has been a blurring of traditions across Indigenous nations, a homogenization of practice, which has accompanied an Indigenous Cultural Renaissance that finds its origins in the 1960s and 1970s following the Civil Rights Movement..

4.3 Economic factors (including the relationship between poverty and ecosystem stress)

The income of the typical Indian family is low and the earned income extremely low. From the standpoint of the white man, the typical Indian is not industrious, nor is he an effective worker when he does work. Much of his activity is expended in lines which produce a relatively small return either in goods or money...The number of Indians who are supporting themselves through their own efforts, according to what a white man would regard as the minimum standard of health and decency, is extremely small. What little they secure from their own efforts or from other sources is rarely effectively used (Meriam Report, 1928).

126. The primary impact of economic factors on traditional knowledge is undermining the capacity of the Indigenous peoples to survive and thrive on their traditional subsistence economies. In most cases in North America, this is no longer possible. The traditional economy, based in most part on small scale farming or hunting and gathering has been completely destabilized by alienation from the land, destruction of traditional food sources, restrictions on access to traditional lands and resources, and the disruption to the ecosystem.

Until the oil invasion, the Cree had maintained a life of self-sufficiency by hunting and trapping. Only 10 percent of the band members were on welfare. But in the early 1980's, as the oil companies roared into the Lubicon land, the native economy went into a steep decline. The Cree had taken an average of two hundred moose each year before the oil development, but they could only find three in 1984. The total value of hunting and trapping fell to one-tenth of its traditional levels. By the mid-1980's, an estimated 90 percent of the band members were dependent on welfare (York, 1990).

127. Some Indigenous peoples continue to pursue some of their traditions to supplement their income from other sources. As noted in phase one of this report, hunting and fishing are still pursued in many communities as a daily activity or during occasional visits to the bush. However, few rely fully on the land for all their needs. Welfare and employment in the mainstream economy supplement or have completely replaced traditional pursuits for economic support. This obviously limits the opportunities for Indigenous peoples to keep their traditions alive and relevant.

128. Often too, the traditional Indigenous economies are discounted or entirely ignored (Tobias, 1993). It has long been presumed that Indigenous peoples are not making use of the land, for the non-Indigenous people do not see culturally relevant evidence that the land is being put to good use. The *Mitchikabibikok Inik* (Algonquins of Barriere Lake) in the early 1990's had only 23 of 450 people in the community with full time employment. However,

[t]he 90% unemployment rate is offset by reliance on the traditional economy... in a given year, the land provided the community with 60,000 kgs of edible meat (780 kgs per household and 130 kgs per person). On average each household harvested meat at a value of \$6,623. Families

burned an average of 10.5 face cords of wood, which gives a fuel value of \$48,000. In addition, non-meat resources from the bush added at least \$845 per household. The estimated value of goods taken by the Algonquin economy was \$575,245 a year from the land base. (Algonquin of Barriere Lake, 2001).

129. Failure to account for existing land use undermines the ability of Indigenous peoples to continue to pursue their traditional economies and thus keep the traditional knowledge active, vibrant and relevant.

130. Beyond this, however, the current economic paradigm further undermines the retention and practice of traditional knowledge and the protection and conservation of traditional knowledge. Modern economic theory and practice promotes growth demanding ever increasing returns on investments. Over-consumption and development are promoted over sustainability. Economic development, constant growth, and conspicuous consumption are promoted, increasingly to the detriment of the balance between humanity and the ecosystem. This is contrary to Indigenous peoples' traditional perspectives. Living in a sustainable fashion on the land meant having respect for the land. As the Indigenous peoples relied on the land for their own well being, they understood the importance of living within the capacity of the land. The non-Indigenous population, for the most part, viewed and continues to view the world differently. Modern commercial demands have dislodged the Indigenous peoples, undermined their traditional economies, and damaged the environmental systems on which the traditional economies relied. The Indigenous peoples have often been left with little choice but to become likewise engaged in the modern economic system to survive in the modern world.

4.4 Social factors (including demographic, gender and familial factors)

131. The social factors that lead to the diminution of traditional knowledge find their roots in the causes discussed above. The underlying social upheaval and dysfunction resulting from cultural denigration, loss of self-government and self-esteem, and displacement from the land in turn can spur greater deprecation of traditional knowledge.

132. In 1963 and 1964, Manitoba Hydro flooded 2,200 square kilometers of land. Prior to the flooding "crime and vandalism were practically non-existent...The community prior to the flooding had no marked social problems, but rather a high degree of coherence" (York, 1990). The Indigenous communities affected received \$10,000 (Canadian) in cash for compensation for the loss of their territory and economies. Today, largely as a result of the flooding,

[t]here's a very hostile attitude in the community. Our young people are always beating each other up. My people don't know who the hell they are. They live month to month, on welfare...Our way of life and our resource base has been destroyed. We were promised benefits from the hydro project. Today we are poor and Manitoba Hydro is rich. The crime and violence, that gang warfare, are the price we pay for Hydro's vision of progress (York, 1990).

133. Indigenous peoples in North America experience greater social stresses than the majority population. This includes higher incarceration rates and for longer periods, higher suicide rates, higher rates of death from violence including domestic violence, and higher rates of drug addiction and alcoholism. Individuals dealing with these stresses are sidetracked from the normal exercise of their traditions. The longer this highly agitated state continues the more difficult it is to maintain a sense of normalcy.

134. In some cases emotional stress has spurred greater attention to the traditions. In others, however, the emotional stress is compounded by memories of shame associated with the practice of the traditions and so the traditional practices offer no comfort in times of need.

4.5 Constraints on the exercise of customary laws relevant to the management, conservation and sustainable use of biological diversity

135. Indigenous peoples in North America and Hawaii were wholly self-governing at contact. They had highly complex governing systems including systems of justice and decision-making. These were not lawless societies, but structured, orderly, and productive. In fact, the United States constitutional system is based largely on the system of government operated by the Iroquois Confederacy. Even the symbol of the United States, the eagle, was borrowed from the Indigenous community. The Indigenous peoples, living within the constraints of their local geography, are acutely aware of the limitations of the supply of food and other necessities. Highly specialized governance and decision-making systems were in place to ensure that a harmonious balance was maintained, facilitating the well being of the people and the ecosystem on which they relied. There were restrictions on taking too much or wasting what was taken, and regulation on when and where hunting or gathering was to take place.

136. Hand in hand with the denigration of Indigenous culture has been greater and greater restrictions on the rights of Indigenous peoples to exercise self-government. Limitations to basic rights became rampant, affecting the right to association, freedom of travel, rights to hunt for particular species or in particular areas, and rights to participate in economic, social, or cultural activities.

137. Most critical, however, was the restriction on the right to participate in decision-making. As wards of the state, Indigenous peoples in both the United States and Canada were denied the right to make decisions for themselves, and their counsel was ignored or shut out from decisions made by non-Indigenous decision-makers or their descendents. As wards of the State, their rights were reduced to those of children or the mentally insane. The State assumed the fiduciary duty of making decisions on their behalf.

138. The restriction on decision-making authority has undermined the retention of traditional knowledge in relation to biological diversity. The advice of the Indigenous peoples to change this perspective, to reverse the destruction, has often fallen on deaf ears.

4.6 Lack of capacity to manage contemporary threats to biological diversity resulting from development, over-use and socio-economic pressures generated outside the community

139. The lack of financial, human, research and infrastructure capacity is a common refrain among Indigenous peoples in North America. As noted above, they have the least economic opportunities and lower education attainment. This makes it challenging for them to hire expertise on complex issues or to engage themselves on issues such as resource development in their territories, responding to environmental contamination, or assisting with orderly and sustainable development. Issues of concern to Indigenous peoples are rarely the topic of research in mainstream academia and financial support to purchase necessary equipment or build and maintain infrastructure is limited. There are few Indigenous owned and operated laboratories to undertake environment related testing and few Indigenous communities have the financial wherewithal to pay laboratory fees for independent testing. There are few Indigenous doctors, laboratory technicians or environmental researchers and of those many are required to work for non-Indigenous organizations to earn a living. There are few research centres dedicated to Indigenous peoples issues, limited funding available to support Indigenous environmental research and little ability to disseminate the results of the research or to ensure that the research is having a positive impact on policy.

140. Indigenous peoples also rarely have the capacity to respond on their own to environmental degradation that threatens biological diversity. They have no means to clean up oil spills, they have little by way of training to manage toxic compounds safely, they have no equipment to clear a streambed

blocked with mining rubble, they have no financial resources to hire people to replant trees. Without the capacity to monitor the environment or changes in the environment the Indigenous peoples are stymied in their efforts to raise the alarm about environmental concerns or to have their concerns taken seriously. Without financial and human resources or the necessary equipment they are limited in the responses they can undertake on their own.

141. This lack of capacity to undertake research, conduct laboratory studies, or conduct environmental monitoring and testing is premised on the demand of mainstream non-indigenous society that Indigenous peoples present their concerns in the scientific language of the dominant society. Words of the Elders, who have not only seen the changes first hand, but who also carry centuries of knowledge passed on over generations about the land, are normally deemed inadequate and usually ignored by those trained in the European scientific paradigm.

When the dams went up, and later as the state [of Oregon] sent a parade of biologists to the stand in U.S. vs. Oregon, the Indians realized they needed their own experts who relied not on traditional Indian wisdom but on facts and figures that would hold up in court (Winthrop, 1999).

142. Again, presumptions of superiority influence perspective.

4.7 The impact of HIV-AIDS on the maintenance of traditional knowledge systems

143. The HIV/AIDS epidemic is only the most recent epidemic affecting Indigenous peoples in North America. Before AIDS it was small pox, influenza, measles, polio, and tuberculosis. Millions of Indigenous peoples have already died from these diseases. Most of the damage was done long before HIV/AIDS.

Before contact the Abenaki ...may have numbered as many as 40,000 divided roughly between 20,000 eastern; 10,000 western; and 10,000 maritime. Due to early contacts with European fishermen, at least two major epidemics hit the Abenaki during the 1500s: an unknown sickness sometime between 1564 and 1570; and typhus in 1586. The major blow came in the decade just prior to English settlement of Massachusetts in 1620, when three separate epidemics swept across New England and the Canadian Maritimes. Maine was hit very hard during 1617 (75% mortality), and the population of the eastern Abenaki fell to about 5,000. The western Abenaki were more isolated and suffered relatively less, losing perhaps half of their original population. The new diseases continued to take their toll:

*smallpox 1631, 1633, and 1639;
unknown epidemic 1646;
influenza 1647;
smallpox 1649;
diphtheria 1659;
smallpox 1670;
influenza 1675;
smallpox 1677 and 1679;
smallpox and measles 1687;
and smallpox 1691, 1729, 1733, 1755, and 1758.*

The Abenaki population continued to decline, but after 1676 they absorbed thousands of refugees from southern New England displaced by settlement and the King Philip's War... After another century of war and disease, there were less than 1,000 Abenaki remaining after the American

Revolution. The population has currently recovered to almost 12,000 on both sides of the border. (Sultzman, 2004)

144. The toll on the population was matched by the toll on the traditional knowledge of the people. Depopulation of North America from disease facilitated western expansion by the non-Indigenous population further undermining the capacity of the survivors to sustain themselves and their traditions.

145. Today, Indigenous peoples in North America continue to suffer high rates of disease and illness. They have lower life expectancies, particularly those living on reserves, and have higher rates of diabetes, tuberculosis, HIV-AIDS, and oral, visual or mobility impairments. Suicide, drug, solvent and alcohol abuse, physical and sexual abuse, and violence are also more prevalent in indigenous communities. This obviously has a negative impact on the individual and collective capacity to exercise traditional knowledge.

146. But sickness and ill health are also the result of the inability to exercise traditional knowledge, thereby forming a vicious circle. Much of the poor health in Indigenous communities is attributable to poverty and despair from a general lack of capacity to influence one's environment. As we have seen above, suicide rates, for example, are directly attributable to the lack of self-government. Cultural match, including the opportunity to exercise one's traditional knowledge is critical to the success of Indigenous governments. Without recognition by the dominant non-Indigenous community of the value of Indigenous knowledge and willingness to divest itself of power over the Indigenous peoples, the Indigenous peoples will continue to suffer the consequences of lack of self-determination, including poor health and premature death.

4.8. Impact of organized religions on traditional knowledge and practices

147. The impact of organized religion is a sensitive subject. Religious evangelicals and missionaries were active since the early days of contact. Many have been successful in converting substantial numbers of Indigenous peoples to their faith. The converted would likely challenge notions that organized religion has had a negative impact on their lives, including on their traditional knowledge. While they would likely admit that it has influenced the exercise of traditional religions, they would likely reject notions that this influences their relationship with the land and traditional practices associated with the protection and conservation of biological diversity. Others, particularly those not converted, may argue that in fact the decline of traditional Indigenous spiritual practices undermines the relationship with the land and facilitate the adoption of attitudes that are contrary to the preservation and conservation of biological diversity. It is not possible to offer a definitive answer here.

148. This said, from time to time, particular religious groups or individuals have had a profoundly negative impact on Indigenous peoples, including on the retention of traditional knowledge. Churches, like other elements of a society, reflect the public perceptions of the day. As such, churches have shared, with other powerful institutions in the colonization of North America, in the abuse of Indigenous peoples. We have seen many examples of evidence of a negative stereotype of Indigenous peoples that has been prevalent in the non-Indigenous societies. The churches were no different.

Mormonism teaches, among other things, that dark skin is a punishment from God. The Book of Mormon says "...after they [the Indians] had dwindled in unbelief, they became dark, and loathsome, and a filthy people, full of idleness and all manner of abominations." If Indians accept the Mormon church, however, "...many generations shall not pass away among them, save that they shall be as white and delightful people." (Mander, 1991:274-275)

149. The moral superiority this displays underlay much of the religious institutions dogmatic efforts to rid Indigenous peoples of their “superstitions” and to “civilize” them to the ways of the Europeans. The religious orders in Canada ran the residential schools and the early child welfare programs that were responsible for such despicable treatment of the children that came into contact with them. The Government of Canada supported and encouraged the religious orders to pursue “aggressive civilization”, following the example supplied by the Carlisle Indian Industrial School in Pennsylvania. “...Indian culture is a contradiction in terms...they are uncivilized...the aim of education is to destroy the Indian” (Davin Report, 1879).

For twelve years I was taught to love my neighbour – especially if he was white – but to hate myself...I was made to feel untrustworthy, inferior, incapable and immoral. The barbarian in me, I was told, had to be destroyed if I was to be saved. I was taught to feel nothing but the shame for my ‘pagan savage ancestors’ ... When I had been stripped of all pride, self-respect and self-confidence, I was told to make something of myself... (Jane Willis in York, 1990).

150. The role of the churches in promoting negative images of the Indigenous peoples, both to the non-Indigenous society and to the Indigenous peoples themselves, was central in undermining respect for Indigenous peoples and devaluing the spiritual elements of their traditional knowledge, many of which are central to the relationship with the land and the protection of biological diversity.

151. The lack of respect for traditional spiritual practices also helped to facilitate the non-Indigenous hegemony and further undermine the capacity of Indigenous peoples to pursue their traditions. The San Carlos Apache have lost their battle against the Vatican to construct an observatory on *Dzil nchaa si an*. According to a Tribal Council Resolution, the mountain is “of vital importance for maintaining the integrity’ of cultural traditions”. Reverend George Coyne, Director of the Vatican Observatory countered that “We are not convinced...that Mt. Graham possesses a sacred character which precludes responsible and legitimate use of the land...there is to the best of our knowledge no religious or cultural significance to the specific observatory site” (Martin, 1993). Of course, the only way that the Apache could hope to win this argument is if they could use the religious perspective and arguments of the Vatican to reverse two thousand years of Christian religious dogma.

5. Conclusion

152. The challenges in promoting the retention of traditional knowledge are myriad and many are deeply embedded in societal and economic structures imposed on North America. The collective impact of these structures on the environment, in particular, has substantially and perhaps irreparably dictated the decline of traditional knowledge. Finding ways and means, as well as the will, to reverse this trend is essential if the traditional knowledge and the wealth of its teachings are to remain vital and relevant.

153. That said,

A moment’s reflection must force acknowledgment of the phenomenal resilience of the Native people of North America. From the moment of European contact, their identity and survival have been under siege. Storms of oppression, racism, disease and attempted extermination have blown over American Indians as fiercely as over any people in history. Yet, with a tenacity that breeds its own offspring in the face of odds so stacked against survival for the last 500 years, America’s Native peoples enter the 21st Century self-defined by their tribal identifications today as Muckleshoot or Hopi or Omaha or Swinomish or Seneca or Lakota or Seminole or Wampanoag or Penobscot or Delaware or Chickasaw or Lumbee...and on and on through an incredible diversity of culturally and politically distinct communities. To be sure, strains on personal, family and community identity and living conditions threaten to rent Native America. But at the dawn of the new millennium, the Indian voice is rising, population is growing rapidly, economic

/...

muscles are being flexed, and the winds of extermination and deidentification (sic) are being weathered. (Henson & Taylor, 2002)

154. We must make every effort to ensure that this is truly the dawn of a new reality for Indigenous peoples and not merely the last hurrah. It is essential for both the survival of the Indigenous peoples, non-indigenous peoples and all other species including non-indigenous humans. Outlined below are a number of recommendations for improvements that maybe considered by the Parties to the *Convention on Biological Diversity*.

6. Recommendations

6. National governance issues

155. Governments need to recognize in a meaningful way the inherent right to self-government of Indigenous peoples.

156. Indigenous peoples need to be included in decision-making processes at all levels, especially where Indigenous land or other interests are at stake. This is especially important in environmental management, protected areas and education. As well as being included in decision-making, consultation mechanisms and prior informed consent mechanisms should be strengthened and made mandatory. Traditional knowledge should also be a mandatory consideration in decision-making.

157. National approaches to economic development, including laws, regulations, policies and negotiation strategies should integrate principles of sustainable development and use.

7. Local governance issues

158. The capacity and infrastructure of Indigenous communities need to be strengthened so that Indigenous peoples can self-govern effectively and protect traditional knowledge in a suitable way. Governments should facilitate capacity-building initiatives, particularly those intended to improve good governance, improve research skills, and increase avenues for accessing human and financial capital.

159. The education system must be reformed to allow Indigenous values to be promoted and encourage inter-generational transfer of traditional knowledge as well as traditional education.

8. Social and cultural issues

160. Initiatives should be implemented that enhance cross-cultural understanding between non-Indigenous and Indigenous peoples and to increase respect of Indigenous cultures and communities.

161. Principles of customary law should be incorporated into intellectual property and other regimes to protect against exploitation of traditional knowledge and to encourage its promotion and use with the free and prior informed consent of the knowledge holders.

162. Language revitalization initiatives with full participation of Indigenous peoples should be promoted, such as Canada's Task Force on Aboriginal Languages and Cultures.

9. Territorial factors

163. Governments must speed up and finalize land claim negotiations and ensure negotiations are respecting principles of fairness and good faith and are in line with international standards and human rights obligations.

164. Access to resources need to be increased so that Indigenous communities can build their own resource generating streams.

165. Protection of sacred sites needs to be improved to protect traditional knowledge activities.

166. Detailed Indigenous-led research projects need to be funded on the impact of development practices, the impact of existing laws and policies, the effects of climate change and the role of gender relations in retaining traditional knowledge.

10. Community-level issues

167. Sustainable use and development within communities needs to be promoted.

168. Traditional knowledge needs to be promoted in the community and codes of conduct developed to regulate the sharing of traditional knowledge with those outside the community.

169. Customary law needs to be reviewed and practiced in communities.

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