CULTURAL IMPACT STUDY

ASSESSMENT AND OVERVIEW OF THE EFFECTS
OF ENVIRONMENTAL CONTAMINATION
ON THE MOHAWKS OF AKWESASNE

Taiaiake Alfred, Ph.D.

September 27, 2006
Message from Alcoa & GM:

The companies have actively participated in the cooperative natural resource damage assessment process for several years. This process has brought together federal, state, and tribal trustees and the companies to undertake the studies necessary to develop and implement a successful restoration of natural resources in the St. Lawrence environment. The companies understand that some studies, such as the cultural impact assessment study, are important to the needs of specific trustees in the assessment process. While recognizing this importance, the companies do not agree with the conclusions of this report. Nevertheless, the companies hope that the completion of this report will enable the tribal trustees to continue forward in the Cooperative Assessment process to determine the appropriate scale of restoration of cultural services.
EXECUTIVE SUMMARY

Background

This study provides an assessment of the cultural impacts of environmental contamination at the Akwesasne Mohawk Territory. It is the product of research undertaken under the CERCLA Natural Resource Damage Assessment (NRDA) process to assess the cultural impacts of environmental contamination related to multiple Superfund sites. The study is based on a review and analysis of materials related to the environmental contamination of Akwesasne and subsequent impacts on local cultural practices of the Mohawks of Akwesasne as detailed in the accompanying Anthropological Report. The materials used in the research were all previously collected and contained in the St. Regis Mohawk Tribe’s database, except for a small set of interviews conducted specifically for the project.

Objective

The major question addressed in the study is: To what degree have releases of hazardous substances by Alcoa, Reynolds, and General Motors affected the use of natural resources by the Mohawks of Akwesasne, and what impacts has this had on their cultural practices?

Conclusions

Contaminants released into the natural environment definitely include the PCBs Aroclor (1248) and Therminol, polychlorinated dibenzofurans, dioxins, polyaromatic hydrocarbons, fluorides, cyanide, aluminum, arsenic, chromium, and styrene. There is also evidence indicating a probable release of heavy metals, including lead, arsenic, cadmium, chromium, and methylmercury.

The historical baseline set for resource-based cultural practices relative to ecological conditions “but for” the release of contaminants is 1955. Virtually the entire pre-pollution population of Akwesasne, considered in terms of family units, was reliant on traditional resources and resource-based cultural practices. Virtually all activities were cultural practices related to the land, ecosystem and aquasystem of Akwesasne for subsistence at the time identified for the baseline pre-pollution conditions.

Traditional cultural resource practices have survived, but are minimally practiced today. Damage to natural resources caused by the release of hazardous substances has severely impaired the cultural uses of resources by the Mohawks of Akwesasne. The release of contaminants into the natural environment has forced Akwesasnon to drastically reduce traditional resource harvesting activities. As a result, they have, on the whole as a community, been denied the ability to provide their families with healthy foods; denied the ability to fulfill their traditional obligations toward the land, waters, plants and animals; and, denied the ability to pass on practical, theoretical, philosophical and linguistic knowledge of what it means to be Akwesasnon.

Restoration

The Mohawks of Akwesasne see restoration as the companies taking all necessary measures to restore the natural environment to its pre-industrial condition and to revive the health of the land, the river, the animals, the plants and thus the people, their culture, and their economy.
1. OVERVIEW OF METHODS AND MATERIALS USED

The *Anthropological Report* is based in anthropology but draws upon multiple sources of insight in developing its approach to “culture,” and “cultural impacts.” In a broader sense, the most meaningful and appropriate way to approach an understanding of culture is to also reject the more static and reified approaches to it as a fixed assemblage of ideas, customs, beliefs, skills, arts, laws, and economies. In order to dispense with Eurocentric interpretive tendencies, the analysis is not geared exclusively towards enumerating the contents of culture and how it is transmitted. Instead it privileges an understanding of culture that hinges on the everyday practices and processes through which the people of Akwesasne actively express and produce distinct cultural understandings of their territorial environment. Following a directive promoted by Anishnaabe environmental scholar Deb McGregor, it approaches culture as not just knowledge about Mohawk relationships with Creation, culture is the relationship; its locus is the way the people relate to creation (McGregor 2004:394). This is the basis of, and conceptual framework for, the working definition of culture used in the Report.

The Report focuses on the commonplace everyday resource harvesting activities of the people of Akwesasne and the extent to which these commonplace everyday expressions of culture through practice have been affected and changed through the release of hazardous substances into the resources depended upon for these practices. In so doing, it establishes a baseline of what these activities were prior to the release of pollutants and shows how they informed the people’s sense of self, their relationships to each other and relationship with the ecosystem they depended upon. It then moves forward in time and examines the extent to which these expressions of culture and identity through traditional resource harvesting practices have been impacted and or changed through the release of hazardous substances, rather than as a result of natural adaptations and changes in culture. The guiding questions are: Can culturally established expectations of resource
harvesting and distribution still be met? and, How have these changes affected the cultural continuity of the people of Akwesasne?

The research and reporting element of the Cultural Impact Assessment was begun by systematically reviewing and analyzing the materials provided in the SRMT database described herein. The materials were organized into different areas of relevance, such as the history of Akwesasne, the history and impacts of the Seaway, the history and impacts of companies, scientific reports on contaminants, and interviews. Once these materials had been reviewed, additional and supplemental academic sources were accessed. These additional sources were selected for their theoretical, ethnohistoric or methodological relevance in order to augment, enhance and further clarify the key interpretive and representational issues and objectives to be emphasized in the Anthropological Report.

It was determined that additional research was needed in order to address important research gaps, and in 2005 an Oral History Project was conducted. The Oral History Project was designed with input from all parties, including the companies, and questions specifically focused on providing concise demographic information, specific locations of practices, precise timelines and personal histories relative to resource based cultural practices. Questions were developed collaboratively with substantial input from the community and SRMT staff. The Oral History Project involved training community researchers who in turn contributed invaluable linguistic expertise in Kanienkeha, addressing vexing issues of interpretation and translation. The contributions of the community researchers to the reworking of questions greatly increased the intelligibility of interviews conducted in Kanienkeha. Collaboration with community researchers also brought awareness of other indicators and generated further means for determining socio-cultural impacts.
Efforts were made by the researchers to quantify data on socio-cultural impacts that specifically engaged resource use and to separate impacts of contamination from the impacts of the Seaway, but the data did not provide an adequate basis to support a rigorous quantitative analysis. For this reason and in response to the fundamental objection of the community to any quantification of cultural damage – the community perspective is that the data and questions do not lend themselves to quantitative analysis – quantitative aspects of the research were discontinued and are not reflected in the Report. It was concluded that the only possible and appropriate use for the information in the SRMT database and in the Oral History Project interviews at this time is a qualitative analysis.¹

2. CULTURAL IMPACTS OF ENVIRONMENTAL CONTAMINATION

The cultural impacts of environmental contamination at Akwesasne must be assessed in the larger historical and political context of the attempted genocide of indigenous peoples by the United States government and the continuing presence of cultural and social forces in American society that prejudice and threaten the very existence of the Mohawk people as autonomous and free people in their homelands. Particularly in regard to the Mohawks of Akwesasne, the industrialization of the area of their habitation and resource use was promoted by American governments and industrial corporations with complete disregard for the sovereignty, inherent and constitutional-treaty rights of

¹ In a strictly scientific perspective, the survey data and the overall protocols, framework and indicators presented in the Report may indeed support a quantitative analysis. The researchers found that it may be possible to generate statistical correlations based on variables such as resource sharing, economic conflicts, significant environmental symbols, contamination’s effect on income, causation of conflict, varieties of species harvesting, income levels, changes in diet, etc. may be possible to generate using data in the SRMT database. But the time and expense, equipment, and expertise in statistics, as well as specific training in specialized quantitative research methods required were beyond the capacity of the project as currently formed and staffed.
the Mohawk people, and with blatant disregard for the health, well-being and safety of the Mohawk people.

The specific impacts of industrialization, including those related to the release of hazardous substances in the natural environment, are part of a larger complex of the effects of dispossession, economic marginalization, and political subjugation over time. In characterizing emergent cultural change as reflected by economic integration within this time period, both assimilation and acculturation as expressed in the above definitions are arguably insufficient. This is because the prospects for the Akwesasne Mohawk people to either abruptly assimilate or to more organically acculturate have always been limited. Ironically, the expectations placed upon the Mohawk people by the dominant society to assimilate or acculturate have failed to identify the constraints which block both of these very processes. Vast inequities in the distribution of power, and the maintenance of these inequities through discrimination, racism and exclusion have continually limited Mohawk participation in external economies on several fronts. These are the very factors that historically made Mohawk participation in more mainstream economic practices unreliable, particularly with respect to trade with external communities and wage labour economic participation. In light of the potential instability of non-community based market economic practices, although community land based activities may be externally perceived as having diminished value, and tend to be de-emphasized in assumptions about wage-labour economy and opportunities, in reality land-based economic practices continued to make crucial contributions to the overall economy and remained a source of stability as external economic opportunities fluctuated.

It is an ironic fact that systemic discrimination and racism in the larger society in fact served as barriers to Mohawk participation in modern society, and contributed to the maintenance of a land-based economy and culture in Akwesasne, until recently. Despite wage employment migration to cities, factories, etc., the land-based practices such as hunting, trapping, fishing, farming, and
gathering consistently anchored the local economy and were considered by residents to be the more stable, sustainable, and reliable economic activities even when other choices became available. Local land-based technologies and expertise, co-operative labour and distribution of shared resources throughout the eras of emergent wage labour economic opportunities are resilient features of Akwesasne life. For example, despite having parents employed by the companies or despite being employees of the companies themselves, numerous interviewees tell of how they and their families nevertheless remained primarily dependent on the natural resources, and on their fishing, hunting, gathering, trapping or farming activities. This is a consistent theme running throughout the time period prior to and approaching the industrialization in the region. To the extent that Mohawk residents of the territory did attempt to integrate resource harvesting practices with consumerism and wage-labour, the traditional activities were still considered to be economically viable, before the release and effects of contaminants.

The data clearly conveys numerous examples of the integration of resource-based cultural practices with the external sale of resources. All of the interviews done for the Oral History Project, for example, make reference to either a personal involvement, and or the involvement of parents, neighbors and or relatives in the sale of fish as supplemental to income. The abundance of this resource was frequently characterized, as were occasional references to the sale of specific species, particularly sturgeon (and sturgeon roe), either locally in adjacent towns and cities off-reserve, or to areas even farther away.

Like fishing, the exchange and distribution of resources associated with farming was a prevalent and consistent historic feature of the local economy. The external sale of dairy products was mentioned more than the sale of other resources associated with agricultural. The products of gathering activities, including fruits, nuts and edible plants were also common sources of supplemental income. With rare exception in the community, black ash and sweetgrass gathering
activities associated with basketry was also a key source of supplemental income, whether limited exclusively to trade or sold for a monetary value. The majority of interviewees identified parents, relatives and or neighbors who made a living by basket making.

The data set showed few references to the sale of resources from trapping or hunting. We can assume (although there are a few specific references based on personal recollection) that the bulk of the resources accumulated from these activities were distributed and consumed locally. There is limited but specific reference in the data to how the skills and expertise developed from fishing also provided a secondary and separate source of income, as residents were occasionally sought as guides by non-indigenous visitors to the territory:

Alterations in another land-based cultural practice, medicine gathering, had begun to decline significantly in the years prior to the public advisory. Notably, this decline cannot be attributed to improved access to alternate health care, or to the availability of other health care options because these had yet to occur relative to the community. A demographic report on the community presented to the St. Regis Mohawk Tribal Council indicated that by the late 1970s, the use of natural medicines had declined to just 26.4% although 56.3% of the community indicated they would like “Indian medicine” as part of their overall health program (SRMT TC Minutes 5-5-79). The juxtaposition of the noted decline in usage of “Indian medicine” alongside the desire for it given the time frame suggests that changes in the ecosystem were influential.

It is both indicated in the data, and well-known generally, that many of the men at Akwesasne had been participating in the wage labor economy for several decades as high-steel ironworkers prior to regional industrialization and as far back as the 1890s. This work was, and still is, sporadic and largely seasonal and often requires extensive travel and being away from home for considerable periods. Although the per-hour wage for this work has always been comparatively high, this only compensates for requisite expenses involving lodging and food expenses in major cities and
travel costs. In the period approaching and prior to industrialization, this wage-labor participation generated income that was primarily supplemental, while resource based cultural practices for those who remained in the territory when not working, remained central. This point is not only verified in a number of the interviews, it can also be deduced from proportional estimations which indicated that as much as 50% of the community was reliant upon fishing as recently as the late 1980s (Ransom 1987).

The data showed that because of resource-based cultural practices, the depth and intimacy of peoples relationships to the lands, ecosystems and riverine environment themselves were the things that ultimately informed their initial awareness of contamination, during intervals that predated the advisory. In other specific cases, awareness of contaminants stemmed from people’s employment with the companies themselves. Although several persons interviewed did learn of contamination through various public advisories and media sources, the majority of the community was left to its own devices in seeking out precise information about what exactly contamination meant.

It is crucial to recognize that the people of Akwesasne’s awareness of contamination and the development of their understanding of the full weight of its implications on resource-based cultural practices has been emergent, cumulative and a matter of process. Although it might be tempting to attribute “awareness” and requisite changes to practices and behaviors to particular historical moments and events when external information was publicized and disseminated, to do so is to miss and to misrepresent the active participation and the will of the Mohawk people in approaching and engaging with these circumstances. Representing a history of awareness that completely hinges on the causal connection between public advisories and their precipitation of immediate changes in cultural practices is to perpetuate several misconceptions and inaccuracies. Foremost among these is the establishment of the misconception that the companies were forthright in revealing information
about their emissions and that they themselves knew and acknowledged the precarious potential of their impacts. This did not happen. In fact, the oral and written records of the community clearly show that addressing the effects of industrial contamination in this area would not be happening today had it not been for the willful and persistence efforts of community members on many fronts, working to address and advance multiple strategies for dealing with and ameliorating these circumstances. There is clear evidence of how this direct action to counter contamination is itself an important facet of the adaptation of cultural practices involving the land, ecosystems and aquasystems at Akwesasne. Public advisories therefore constituted an additive, rather than a definitive, phase of recognition and awareness. Though these advisories recommended that people take precautionary measures, they were not forthcoming in contributing to the development of resident’s understandings of the full weight of the meaning and implications of contamination. Rather, these understandings were advanced by resource-based cultural practices involving direct action.

There is a difference when residents noticed changes in the environment and when they knew why these changes had begun to occur with respect to contamination. These are really separate questions. Each can result in a distinct response with regards to noticing and knowing about pollution. The tendency in historical representations and analyses of this awareness, however, has been to conflate these responses into a single supposition that privileges the role of external agencies, and even the companies themselves, as the community’s sole informants about these circumstances, despite the fact that this is untrue.

Akwesasne Mohawks’ earliest recognition of environmental contamination can be attributed to multiple sources located in a context formed by the web of the social and knowledge networks of the community, each of which played important roles in the development of yet another dimension of the peoples’ collective knowledge base about the land and the environment. And like it had for so
many millennia, the land and the rivers themselves were among the first to begin to tell this story, while those who had cultivated a longstanding relationship with this environment were among the first to listen.

**Impacts of the Seaway and Health Issues**

The Report sought to separate and distinguish the effects of the construction of the St. Lawrence River FDR Power project and St. Lawrence Seaway from the effects of industrial contamination on Akwesasne Mohawk resource-based cultural practices. However, it is important to recall in any discussion of cultural impacts that the construction of the Seaway and all subsequent industrial development go hand in hand. They are merely different steps in the same overall plan for the industrial development of the area. The construction of the dam and the Seaway were preliminary components of an expansive, long term plan for the large scale industrialization of the region. This fact was understood by both its American and Canadian champions, Robert Moses and Lionel Chevrier, as well as by the Mohawk people affected by the “package deal” (Cole & Arquette 2004:355).

The initial changes to the environment undoubtedly resulted from the construction of the Seaway. Its construction altered the quality and character of the geography; changed the flow and quality of the water and submerged important islands and islets which, with their trees, rice, and cranberries, not only disturbed aquaculture, but changed the quality of the water and winter ice. The construction itself and resulting structures (such as dam turbines) also lead to fish mortality, soil erosion (the Seaway brought in large vessel shipping traffic and its inherent effects) and other such problems (ATFE 2004; EAGLE 1996). Thus the construction of the Seaway in-and-of-itsel had detrimental effects on the resources the people of Akwesasne depended upon. Fish became less plentiful and other aquatic species felt the effects of the changes in water flow, the introduction of
large seagoing vessels, etc. These changes were upsetting to the people who depended on the resources provided by the river. But it is important to emphasize however, that, though such changes may have effected how, when and where people went in order to fish and gather marine resources, the Mohawks could have adapted to the changes brought on by the Seaway. Mohawk culture, like all others, is not static, but continuously changes due to such naturally occurring factors as diffusion and slow variations in traditional resource availability. There is every indication from the pattern of adaptation demonstrated by Mohawks through the 1950s that as long as there was room to do so, they would have found a way to incorporate and adapt to the new technological and environmental conditions in ways directed by their culture.

Anthropologists and ethnohistorians studying the Mohawk Nation in the 20th century clearly discern the differential impacts of Seaway and industrial contaminants. With respect to the comparison of Seaway-based developmental impacts on the Mohawk communities of Kahnawake and Akwesasne, anthropologist Dean Snow makes the following discerning statement:

Akwesasne lies 50 miles upstream from Kahnawake on the St. Lawrence River. The St. Lawrence Seaway project did less direct and immediate damage to Akwesasne than it did to Kahnawake. Damage in this case has come mainly from heavy industries that grew up along the seaway just upstream (and upwind) from Akwesasne. Aluminum and other pollutants have rendered fish inedible and gardens hazardous, damaging the quality of life of Mohawks who have lived there for nearly as long as they have been at Kahnawake (Snow 1994:201-202).

The Report does not analyze or engage health impacts per se, but it does respect and integrate into its analysis the conclusion in the scientific literature that for natural resource based societies real or perceived dangers to the people’s health posed by industrial contamination have measurable effects on culture change. It explores the linkages between perceived health risks and changes in culture. Contrary to the conclusions of basic risk assessment models, community based researchers have found that adverse health effects can and do occur even when there is no physical exposure to
toxicants. This is because the people have had to give up traditional activities in order to protect
their health from toxic exposure. The overall physical and mental health impacts of such changes in
lifestyle not only result from the drastic reduction of traditional activities and the myriad of long
term intergenerational effects this has on indigenous communities such as Akwesasne, but also from
the simple fact that the food that tends to be available to replace “country foods” is generally high in
fats and sugars. Thus, the inability to access traditional foods in the case of Akwesasne has lead to
new diseases such as diabetes, stroke, heart disease, high blood pressure, cancer, obesity, etc.

Direct Effects of Contamination on Cultural Practices

The specific ways and the extent to which Mohawk cultural practices were affected by
environmental contamination are as follows:

Water, Fishing and the Use of the River

Life in Akwesasne centered around the rivers, which provided the people with their main sources of
protein - fishing as an economic and cultural activity was central to the identity of the people. The
rivers also provided the people with a source of clean drinking water, a means of transportation, and
a favorite recreation, in swimming. Being cut off from the physical and psychological and re-
creative sustenance provided to Akwesasronon by the river has impacted the people negatively in
countless ways. People miss the ability to fish and use the water of the St. Lawrence and other rivers.
People noticed changes in the water quality, including the taste and smell of both fish and the water,
and adapted their resource harvesting activities accordingly. This was done long before the official
fish advisory.

Horticulture and Farming & Basket Making
The people of Akwesasne relied on traditional horticultural and farming activities to support their subsistence, with further moneys generated through the sale of hand made baskets and locally produced and or collected food items. These activities were important aspects of the people’s lives right up to the time when pollution made such activities difficult if not impossible. Until such time, people in Akwesasne were largely self-sufficient. The ability to produce most food items through horticulture and farming (along with that acquired through fishing, hunting and trapping), provided people with autonomy and independence and the power to be in control of the changes to their traditional practices. The people themselves were in charge of deciding on the adoption or rejection of new technologies, while keeping the overall horticultural and farming practices grounded in the traditional values of how one was to interact with the earth. The physical rigor of these traditional activities further served to keep people healthy.

The non-indigenous presence in the territory of the Akwesasne Mohawks did, of course, have some effects on their culture. Yet the Mohawks’ unchanged ability (until the late 1950s) to produce the necessities of life gave them crucial protection from the unwanted aspects of modern society. Diffusion and cultural borrowing has been shaping the world’s cultures since the dawn of mankind and has of course also shaped culture change in Akwesasne. But, as long as the change is controlled and directed by the people in question, cultural change does not equate with loss of culture (Park 2006). Until the time of the heavy industrialization the people of Akwesasne were able to assert an effective measure of control over the impacts of the outside world; this autonomous existence and balanced organic pattern of change was effectively destroyed by the industrialization of the area and the ensuing effects of its toxic by-products on the environment.

Medicine Plants and Healing
The contaminants released by the companies have also had detrimental effects on the medicinal plants that knowledgeable Akwesasro:non gathered in order to deal with many issues from increasing the milk supply of nursing mothers to treating fevers, pain, boils, toothache hair loss, etc. In some cases, the pollution led to the disappearance of medicine plants and in other cases, it changed the appearance or taste of the plants, alarming healers. Medicines also came from animal parts that can now no longer be obtained for similar reasons. While some healers still travel to distant locations in order to attempt to pick up traditional medicines, much of this knowledge is lost and what remains is at risk of being lost because traditional healing can no longer be practiced without the local availability of medicines.

_Hunting and Trapping_

People in Akwesasne also depended on hunting and trapping in order to supplement their diet and income. Because of the intimacy and detail of contact with the animals and natural environment inherent in these practices, hunters and trappers noted changes in the animals and decided against the consumption of their meat or use of their products and restricted or stopped their practices altogether well before any official advisories had been given.

_Effects of Contamination on Populations_

The knowledge of real, unexplained and worrisome changes in the plants and animals that have sustained Akwesasro:non for millennia, or even only perceived health threats due to pollution, has drastically affected cultural practices based on natural resource use. Whether people changed their way of life because of their own observations of changes in the environment or because of health advisories, the psychological effects of being cut off from the most important aspect of one’s culture and way of life are profound and innumerable. One community member is quoted in the Report as
saying: “The way I think of it, it’s like they put handcuffs on your wrists. You’re no longer free to live the way you want to live, it’s like something’s holding you back, holding you down. It often feels like that”. As this statement demonstrates, regardless of the actual measurable physical effects of pollution, the psychological effects of having been cut off from one’s way of life are devastating.

Initiatives to maintain cultural continuity in order to allow younger generations to experience and maintain important teachings and values, not to mention the transmission of language and important technical focal vocabulary embedded in traditional resource harvesting practices, are important aspects in the efforts to restoring the health and vitality of the people. The only effective way to teach children about who they are is to take them “out on the land” and let them learn by observing, listening to and copying their elders who are knowledgeable in traditional resource activities. Many indigenous communities in the United States and Canada are successful in the maintenance and transmission of such traditional skills, knowledges, values, and language. This success, however, is always contingent upon having maintained a resource base that allows them to do this.

Furthermore, it is important to note that the relationship of indigenous communities to the resources that sustain them is not based on the simple supply and demand models found in the Euroamerican approach to resource management, where the goal of sustainable resource management is simply the maximum sustainable exploitation of resources (Feit 1988, Nadasty 2003, Notzke 1994, Spak 2005). Rather, indigenous peoples see themselves as being responsible for the plants and animals and other life forms that sustain them, as is evidenced in the Haudenosaunee Thanksgiving Address. Thus, being unable to fulfill responsibilities to the environment one is responsible for has very real detrimental psychological and emotional effects – these have been observed and are clearly represented in the data for Akwesasne.
The Report demonstrates that the overall effects of the pollutants released by the companies on the people of Akwesasne and their way of life (i.e. culture) as practiced through traditional resource harvesting activities was immense. The overall reliance of families on foods and other products provided through traditional resource harvesting activities went from near total reliance in the early 1950s to minimal reliance today. The changes in culture were not the result of an organic or natural process of cultural evolution or adaptation to modernity. The Mohawks continued their traditional cultural practices up to the point they could no longer use the land and the river without observed or feared adverse effects due to the release of hazardous substances by the companies.

The following summary demonstrates how the release of hazardous substances into the environment has affected the various segments of the population of Akwesasne:

**Animals**

The animals depended upon by the people of Akwesasne are the ones who have carried the greatest burden. Animals have suffered immensely because of pollution. Unlike people, they cannot protect themselves against ingesting pollutants, but are at the mercy of all humans who mistreat the ecosystem they depend upon. Many animals have acquired sores, strange growths, or have even died because of the consumption of poisoned plants. Some of the animals living in the areas with concentrated pollutants have developed strange forms, exhibit both male and female attributes, or have other mutations that are likely the result from the release of hazardous substances into their environment. Such intergenerational effects are grave and worrisome.

*Children and Adolescents*
Fear of the effects of hazardous substances in the natural environment and of the effect observed changes would have on their own health and on that of their children led the people of Akwesasne to reduce their traditional resource harvesting activities. This in turn lead to unhealthy changes in the diets of children since healthy meats, fish, fruits vegetables, nuts and dairy products traditionally relied upon became unavailable, or had to be purchased at prohibitive costs. As a result of these changes in diet, along with the pollution of the land, water and air around them, the children and youth of Akwesasne’s health has been affected detrimentally and they now suffer from numerous pollution related ailments such as asthma, eczema, allergies, diabetes, changes in the timing of girl’s first period, etc. (Denham 2005). The simple fact that they have been denied their birthright of growing up within the traditional culture of resource harvesting activities and practices of their people has itself had huge impacts on Akwesasne’s children and youth. Today’s children have not only learned to fear the environment their people traditionally saw as the mother that provided for all their needs, they have also not had the ability to learn many of the resource harvesting activities that make up the Mohawk way of life. Thus as a result of the release of hazardous substances, the children and youth of Akwesasne not only cannot learn traditional activities, but are also unable to learn the terminology and ways of relating to the environment that goes hand in hand with such activities.

Elders

The loss of all traditional resource harvesting activities at Akwesasne has not only denied elders the ability to teach the children and youth the practical resource harvesting skills of their people, they are also denied the necessary setting needed to transmit the overall cultural teachings of the proper relationships between humans and animals that go hand in hand with such activities. Furthermore, the changes in diet and the decrease of traditional activities have led to a debilitating and culturally
limiting onslaught of disease like diabetes, heart disease, stroke, high blood pressure, and cancer, many of which were unknown to previous generations of elders.

*Women of Childbearing Age*

The women of Akwesasne have been at the frontline of the effects, fears, worries and changes in traditional cultural practices caused by environmental contamination. They have been psychologically affected by finding out that the breast milk they provided to their infants was laced with poison. And, while a few women had pursued outside employment prior to the reduction of traditional resource harvesting activities due to the release of hazardous substances, most women stayed at home and gardened and farmed the land, which allowed them to look after their children while working to provide for their families and transmitting culture to the next generations. Thus being cut off from the land through the release of hazardous substances into the environment has been extremely detrimental to women in their role as caregivers, teachers and providers. Not only can they no longer teach their children about their identity through the daily interactions with the land, but, being unable to grow food for their families they now need to pursue outside employment that takes them away from their children for most of the day. As the center of families and the teachers of children, the women’s loss of the ability to teach their children and grandchildren how to relate to and take care of the plants, animals and the land while providing for them through land-based activities is perhaps the most important aspect effecting long-term culture change at Akwesasne.

*Men*

While some men were already pursuing outside employment prior to the release of hazardous substances into the environment, such employment tended not to be permanent and most families
still depended on hunting, fishing, trapping and gardening for a large part of their sustenance. Thus being unable to provide for their families as fishers, hunters, trappers, horticulturalist and farmers forced men to either leave their families for outside employment or become dependent on welfare. Being unable to take their children hunting, fishing, trapping, or to teach them about plants and the land in general made it difficult for men to fulfill their traditional obligations as providers and teachers. The psychological and social-cultural effects of this forced change on the individual men and families in Akwesasne has been detrimental, widespread and profound.

Conclusions

1. The historical baseline set for resource-based cultural practices relative to ecological conditions but for the release of contaminants is 1955. The Report concludes that previous to this date the Mohawks of Akwesasne were not detrimentally affected by industrialization and maintained the capacity to adapt to cultural diffusions and changes in the natural environment in ways that were consistent with their values and the responsibilities inherent in Haudenosaunee culture.

2. When the area became industrialized in the late 1950s, the people of Akwesasne still practiced their traditional land-based economy. While some individuals did already seek out outside employment in the pre-industrial area, most families in the pre-pollution era based their overall economy on traditional land-based activities, with outside income generated by the occasional employment of individual members of the extended family to supplement their traditional economy. Until the industrialization of the whole area in the late 1950s the land and the traditional economy based on traditional resource harvesting activities was the only steady, continuous, safe and dependable source of livelihood for the people.
3. The whole of the population of Akwesasne relied on traditional resources and resource-based cultural practices up to the late 1950s. Notably, families rather than individuals constitute the key unit of measurement from which this percentage has been derived. This is in keeping with the way in which culture at Akwesasne was historically practiced.

4. At the time identified for the baseline pre-pollution conditions, virtually all of the community’s activities were based on subsistence cultural practices related to the land, ecosystem and riverine environment of Akwesasne.

5. The changes that happened were due to environmental contamination, and more specifically, the release of hazardous substances by the companies into the natural environment. The contaminants proven to have been released into the environment include the PCBs Aroclor (1248) and Therminol, Polychlorinated dibenzofurans, Dioxins, Polyaromatic hydrocarbons, Fluorides, Cyanide, Aluminum, Arsenic, Chromium, and Styrene. The scientific evidence also indicates a probable release by the companies of the following contaminants: heavy metals including lead, arsenic, cadmium, chromium, and, methylmercury.

6. People in Akwesasne observed the effects of environmental contamination and changed their cultural practices. They did not change their practices in response to official or company advisories. The data clearly shows that damage to natural resources caused by the release of hazardous substances has impaired the cultural uses of resources.
7. A small number of people in Akwesasne still practice traditional activities in spite of their fears of becoming toxic through the use and interactions with natural resources, but the overall reliance on such activities today by the families of Akwesasne is minimal.

8. Cultural responses to the release of hazardous substances are related to a general awareness in the community of the observed effects of the substances in the environment and as well of the reported conclusions of scientific studies. Expert knowledge of the details or the existence of specific scientific studies by community members has not been a factor in influencing changes in cultural practices as a result of the release of hazardous substances, as the conclusions of scientific studies have been widely circulated and have reverberated through social and knowledge networks in Akwesasne.

9. The release of hazardous substances into the environment of Akwesasne has forced the Mohawk people at Akwesasne to give up nearly all traditional resource harvesting activities. As a result of the drastic reduction of these activities, they have to a large extent been denied the ability to provide their families with healthy foods; had their ability to fulfill their traditional obligations toward the land, waters, plants and animals severely hindered; denied the ability to pass their practical, theoretical, philosophical and linguistic knowledge of what it means to be Akwesasro:non on to younger generations. They have been largely denied the ability to continue to live as Akwesasro:non and forced to endure rapid forced acculturation.

3. RESTORATION OPTIONS

The following options for restoration have been generated through focus-group meetings and interviews and conversations with community members over the entire course of the Cultural
Impact Assessment project. They have been discussed and vetted by the project’s Community Advisory Group. It must be noted that there is great consistency between the options put forward in the community consultations specific to this Cultural Impact Assessment and those developed in similar research for previous environmental processes. The full background and developed rationales for all of the various measures suggested by the community in the area of cultural and environmental restoration are well documented in previous reports and numerous documents listed in the SRMT library. Thus, the recommendations below are put forward in straightforward fashion and in the form of a comprehensive listing of major themes and areas for action.

The list below is a focused selection from the numerous suggestions garnered out of the community consultations and previously generated lists based on their direct relation to the cultural impacts and harms identified by the researchers in the Report. All of them are important and instrumental to addressing the harm caused by industrial contamination as described in the Report, and all have been developed by community members in response to real and present effects, and all are seen by community members to be necessary and equally important.

It should be noted that in suggesting restoration options, the community seeks cooperation with the companies and governments in advancing Akwesasne’s self-determining effort to reconstruct a viable existence on the land and the river in the context of Haudenosaunee cultural values and principles. Thus, all of the restoration options listed below are meant to convey ways in which the companies and governments can support the autonomous self-determination of the Mohawk people, not as projects to be implemented by the companies and or governments for the benefit of the Mohawk people.

There is a great sense of urgency among community members with respect to the restoration of the environment and traditional cultural practices on the land and in the riverine environment. Unfortunately, the community’s hold on their traditional culture is tenuous as a result of the damage
that has been done to the natural environment by the companies’ release of hazardous substances. Most of the people who still hold on to the knowledge so crucial to the cultural survival of the Mohawk people at Akwesasne are old. The aging and infirmity of the knowledge holders are seriously affecting the ability of the community to ensure the transmission of cultural knowledge – especially forms of transmission that require interactions on the land and the river. The restoration options below have been developed in recognition of both the urgency of the situation and of the opportunities that still exist and need to be seized upon.

It must be acknowledged that the most prevalent view on restoration in the community is that the companies should shut down operations, and begin to take measures to restore the natural environment to its original condition before their arrival. This means stopping producing pollution, and expending whatever moneys and taking whatever measures necessary to revive the health of the land, the river, the animals, the plants and thus, the people. Given that this is an unlikely outcome of the present process – the inability thus far of the companies and government agencies to ensure protection or restoration of the natural environment are taken as an indication of the limited possibilities for justice on these issues – the discussion that follows is set in a pragmatic context. Short of doing what is ultimately right and absolutely necessary, the companies and government agencies can achieve some alleviation of the cultural damage caused by their contamination of the natural environment by supporting the community in its ongoing struggle to adapt and to survive.

One of the underlying assumptions of the community’s approach to restoration is that cultural damage must be considered for its overall effect on the life of the community and must recognize that culture is practice and as such, cultural damages have affected the practices that ensured cultural continuity, self-sufficiency, and political independence. The Mohawks suffered cultural harm, and in suffering cultural harm, their freedom as individuals and independence as a
community was severely impacted as well. In this sense, cultural damage has not only cultural effects, but political and economic effects. This must be considered in designing and developing a response that hopes to be taken as appropriate and adequate. Cultural harm is economic harm. Cultural harm is also political harm. Given that addressing the political effects of cultural harm is outside the purview of the NRDA process, the approach to restoration outlined herein focuses solely on the two aspects which can be addressed within the legal framework of the process: cultural and economic restoration.

**Restoration Options**

To begin to address the cultural harm caused by their release of hazardous substances into the natural environment at Akwesasne, the companies should consider the following restoration options:

1. The top soil and other areas of contaminated ground and sub-surface areas in Akwesasne must be replaced with clean earth.

2. The community must have access to a safe, clean source of water. A new or expanded-capacity water and sewer system must be built.

3. The areas still used for traditional cultural practices by community members, and the practices themselves, must be inventoried, preserved and protected.

4. Community and governmental programs in the area of environmental protection and conservation of natural resources must be fully funded on a permanent basis.
5. Snye Channel must be rehabilitated.

6. All homes, public buildings and facilities in Akwesasne must be provided with electricity free of charge.

7. An endowment must be established to fund scholarships to support Akwesasne Mohawks in higher education in fields of study related to traditional culture, the natural environment and land-based practices, including agriculture, aquaculture, forestry, environmental sciences, and resource management.

8. A commercial fishing fleet and a large-scale aquaculture enterprise must be established and supported with the necessary expertise, material aid and funding to ensure the reintegration of Akwesasne into the fisheries market at a competitive position as well as a system for storage and distribution of food fish for consumption within the community.

9. Agricultural must be restored as a viable economic activity in Akwesasne. The community must be provided with the necessary training, capital and clean land areas so that an agricultural sector can be reestablished and the community can re-achieve self-sufficiency (in conjunction with the revitalization of its fisheries) in its food supply.

10. Affected wetlands and other specialized and micro-environments must be rehabilitated, and domesticated sweetgrass used in basket-making and the areas of cultivation of medicine plants used in traditional healing must be reestablished.
11. The community must restore knowledge and the reintegration of traditional culture in the area of child-rearing and in the addressing special needs (knowledge and training and support) of children and families whose health and social relations and behaviors have been affected as a result of contamination.

12. A comprehensive community-based traditional knowledge education program to restore cultural knowledge and promote the resurgence of land-based cultural practices among the Mohawks of Akwesasne must be established.

13. Addictions treatment and prevention facilities and programs that promote the regeneration of traditional healing practices to address the effects of the decline of healthy, extended family relationships due to the effects of contamination must be established.

14. The Thompson Island youth camp must be guaranteed stable and long-term funding.

15. A Senior’s Center, including a full array of associated programs and services, must be built.

16. The Akwesasne Freedom School must be re-located to clean ground and fully funded in all its operations on an ongoing basis.

17. A large-scale community-based language restoration initiative to supplement existing programs must be established, supported with the necessary material assistance, finances, staff training and technological capacity.
18. Fitness, recreation and sports facilities and public health initiatives must be established, with a special focus on water safety, recreational swimming and water sports.

19. The companies must establish integrated and experiential education programs for their employees on the history and culture of the Mohawk people and the effects of industrial contamination on the environment and on the Mohawk community.

20. The Akwesasne Task Force on the Environment’s (ATFE) Kaniatarowaneneh Research Institute and other community-based research initiatives designed to conduct research and develop programs to protect and restore the environmental and cultural resources within Akwesasne must be fully funded on a long-term basis. Specific funding needs include:

   a) Construction and administration costs (including salaries, research funds, new facilities with office space, laboratory, a boathouse and dock);

   b) Community Environmental Education Project Fund (includes continued support for ongoing projects such as the development of educational units and curricula; funding for materials such as the ATFE calendar which describes elements of creation such as traditional medicines; developing educational materials about the Superfund sites, remediation and restoration; developing materials to support the life skills on the land program; and funding and supporting environmental youth camps;

   c) Sustainable Forestry Program (includes continued support for ongoing projects such as the Black Ash tree program, a sustainable economic development project that has examined ways in which black ash trees can be grown and replenished within Akwesasne). Other ongoing programs include distributing fruit and nut trees and berry bushes and sponsoring community education workshops about growing, pruning, grafting and caring for trees;

   d) Medicine Plant Restoration Program (includes continued support for ongoing projects such as restoration of sweetgrass plots and wild rice areas in Akwesasne, and the development of a medicine garden);

   e) Community Environmental Health Education & Outreach (includes support for ongoing efforts to educate the community of Akwesasne and the general public about the ongoing health and environmental studies related to toxic substances);
f) ATFE Environmental Laboratory (this program includes support for staff, equipment, supplies and materials to expand an existing small laboratory so that it is capable of conducting contaminant immunoassays and capillary chromatography for congener specific PCB analysis of sediment, soil and biota);

g) Biological Monitoring Program (includes studies to examine ecosystem health in Akwesasne following the construction and operation of the St. Lawrence-FDR power project);

h) Community Sustainable Projects Fund (this program will to work with businesses and home owners in Akwesasne to explore and implement measures to support sustainable, pollution free, waste limiting and energy saving technologies);

i) Sustainable Agriculture Program (includes continued support for organic gardening projects begun by ATFE, such as an annual seed, plant and tree give away); and,

j) An interpretive center for a habitat education program.
REFERENCES

The following list includes all materials used as references and cited directly in the Anthropological Report:


-----*Portraits of "the whiteman": Linguistic play and Cultural symbols among the Western Apache.* Cambridge: Cambridge University Press, 1979.


-----*Wisdom sits in places: Landscape and language among the Western Apache.* Albuquerque: University of New Mexico Press, 1996


32


Great Law of Peace: What are the Symbols of the Haudenosaunee?


Hough, Franklin B. *A History of St. Lawrence and Franklin County from the Earliest Period to the Present Time.* 1853.


------. “Indians on infested island reserve fight pollution enemies their own way.” *Globe and Mail*, Tuesday, August 30, 1977.


SRMT TC Minutes attachment - History of Akwesasne n.d/n.a.

SRMT TC Minutes 9-20-77

SRMT TC Minutes 5-5-79

SRMT TC Minutes 2-6-82

SRMT TC Minutes 11-5-83


