

**THE GREAT LAKES WATER QUALITY AGREEMENT REVIEW**

**RECOMMENDATIONS  
OF  
THE MÉTIS NATION OF ONTARIO  
TO THE  
GOVERNMENT OF CANADA**

**DRAFT**

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# 1 INTRODUCTION

## 1.1 Métis Nation of Ontario Background:

The Métis Nation of Ontario was established in 1993 to represent Métis who are descendent of historic Métis communities in Ontario. The MNO also represents Métis living in Ontario from other communities of the Métis Nation homeland in western Canada. The MNO is the Ontario regional “governing member” of the Métis National Council which represents the Métis people, one of the Aboriginal peoples whose rights are recognized and affirmed by the Constitution Act, 1982. The first case of the Supreme Court of Canada to elaborate on Métis rights in *R v. Powley* originated in the historic Métis community of Sault Ste. Marie, Ontario.

The MNO’s *Statement of Prime Purpose* sets out the values of the Métis people, values which guide its objectives. Among others, those objectives include:

- Establish democratic institutions based on our inherent right of self-government;
- Establish and maintain a registry of the Métis citizens of Ontario
- Develop prosperity and economic self-sufficiency within the Métis Nation;
- Provide care and support which meets the fundamental needs of the citizens of the Métis Nation;
- Encourage academic and skills development;
- Establish good relations with all Aboriginal peoples;

To date, approximately 18,000 individuals over the age of 16 have applied to the MNO Registry (the first Registry of its kind within the whole of the Métis Nation). There are rigid requirements for documentation to prove ancestry from an historic Métis community. Approximately 13,000 of these applications have been approved. Currently, the MNO does not have the capacity to register children and youth although this process will be put in place when funding is available. Census Canada estimates the total population of Métis in Ontario is approximately 50,000, including children. The MNO provides its programs and services to all Métis in Ontario, irrespective of whether or not they are registered as citizens of the MNO.

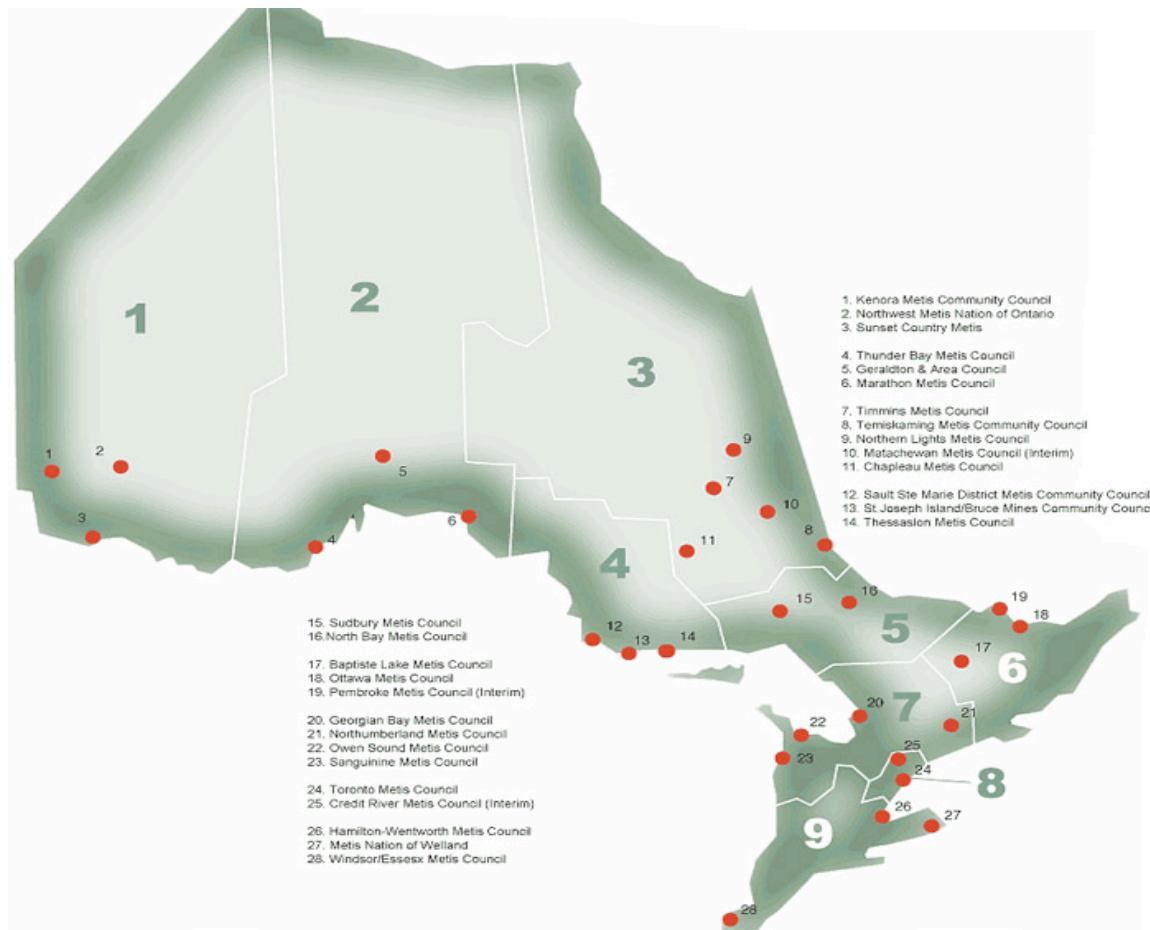
The MNO has put in place the structures and foundations for Métis governance based on its principles of democracy, equality and accountability. The Métis Nation values decisions by consensus, ballot-box elections through an Electoral Code that has established credibility and By-laws and Charters that assure accountability to its citizens, funders and partners. The structures of the MNO include the provincial governing body (Provisional Council of the Métis Nation of Ontario – PCMNO); MNO Women’s Secretariat; Métis Nation of Ontario Youth Council; MNO Veterans Council; Chartered Métis Nation of Ontario Community Councils; and Captains of the Hunt.

The PCMNO consists of 20 Métis citizens elected by province-wide ballot box elections every three years. All other province-wide bodies are elected at the same time. Chartered MNO

Community Councils must have their own Electoral Codes providing for regular ballot box elections

Métis citizens, today, live in communities throughout Ontario including major urban centres in southern Ontario. In order to deliver federal and provincial programs and services to all Métis persons no matter where they live in Ontario, the MNO has 18 offices in operation throughout the Province, (including MNO Head Office) staffed by over 180 employees for the delivery of services in the areas of, health care, education, employment and training and housing services.

**Map of the MNO Community Councils & Operations:**



## 1.2 The Great Lakes Water Quality Agreement Review

The Great Lakes Water Quality Agreement between Canada and the United States was signed in 1972 and has since been recognized as a landmark agreement. Its aim to restore and maintain the waters of the Great Lakes was heralded as forward-thinking in its approach to pollution control and abatement and groundbreaking in its level of binational cooperation. The Great Lakes Water Quality Agreement, henceforth referred to as the “Agreement”, was replaced with a new agreement in 1978. Added in the new Agreement was the important and holistic definition of the “Great Lakes Basin Ecosystem” (GLBE), which is defined as *the interacting components of air, land, water and living organisms, including humans, within the drainage basin of the St. Lawrence River at or upstream from the point at which the river becomes the international boundary between Canada and the United States*. The purpose of the 1978 Agreement, *to restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes Basin Ecosystem*, was also holistic in its approach to improving the environmental state of the Great Lakes.

The Agreement was amended in 1983 and in 1987. The 1987 review of the Agreement was extensive and included public consultation. The 1987 Agreement provided the much-needed tools to address historic pollution in the Great Lakes by prescribing Areas of Concern (AOCs) that would be the focus of restoration activities. These areas were identified as having been severely degraded by human activities. It also prescribed the development of Remedial Action Plans (RAPs), to direct restoration activities, and Lake-wide Management Plans (LaMPs) to aid in the maintenance of lake ecosystem integrity. Since 1987, the federal governments of Canada and the United States have not reviewed the Agreement, instead choosing to focus on implementation.

In 2006 the governments began the current review of the Agreement. Once again, the governments and the International Joint Commission (IJC) have made public education and consultation an important part of the review process. Included in this consultation are First Nations and Aboriginal Peoples, including the Métis Nation of Ontario (MNO).

This report highlights the MNO’s recommendations to Environment Canada for consideration during the review of the Great Lakes Water Quality Agreement. It is comprised of an analysis of the Agreement from the perspective of the Métis Nation of Ontario, including the discussion between community members during three focus group sessions in Sault Ste. Marie, Thunder Bay and Midland held in March 2007 and the minutes of which form the Appendix.

## **2 SYNOPSIS OF COMMUNITY COMMENTS**

Focus group meetings were conducted in three municipalities in Ontario (Sault Ste. Marie, Thunder Bay, Midland). The meetings included a presentation discussing the Agreement and the review and a period of discussion where Métis community members could share their concerns and observations regarding the Agreement and Great Lakes water quality. The minutes of the three meetings are in the Appendix and a synthesis of comments into main themes is below.

### **2.1 Concern for the Great Lakes Basin Ecosystem**

There were a number of consistent concerns regarding Great Lakes water quality. The most frequently voiced concern was the lack of accountability for lack of action or wrongful action within the Agreement itself. There are no repercussions for government for not living up to commitments within the Agreement. Concern was expressed that through the RAP program contaminated sites are cleaned at public expense but the polluter is not held accountable.

The other main concern with regard to water quality was the continued spills of raw sewage and the lack of secondary treatment in many municipalities on both sides of the border. The waterways are inherently linked to the community and pollution diminishes the community's ability to depend on the waterway for a traditional way of life.

### **2.2 Observations of Positive Change**

There were some observations of positive change. In particular, there was a feeling that in some cases, areas that had poor water quality now had somewhat improved water quality. One of the results of the lower contaminant load was the rapidly increasing cormorant population which has increased to the point where it is seen as having a negative impact on the fishery.

In many cases water clarity has improved to the point that weed growth is an issue in areas where it formerly was not a problem. Whether the increased clarity was a function of zebra mussel populations or a reduction in sediment and nutrient load was not known.

### **2.3 Introduction of Exotics**

Concern was expressed at the community meetings about the introduction of exotic species into the Great Lake ecosystem, particularly through the flushing of ballast tanks by trans-oceanic ships once they enter the Great Lakes. Again the issue of accountability was raised and there is widespread community concern that it happens and no one seems to be held accountable or expected to address the problem. More teeth have to be added to the Agreement so that there is a mechanism to appropriately punish the offender.

## **2.4 Water Exports and Diversions**

Concern was expressed at the meetings about the possibility of future water export either from the Great Lakes basin or from one of the upper lakes to one of the lower basins while avoiding basins in between. Water extracted should go back into the same basin. Water levels are already lower than normal in the upper lakes and this impacts on traditional uses.

Concern was also expressed about diverting large river systems in Northern Ontario into the Great Lakes and the potential impact it might have on the northern ecosystem as well as potential for harmful introductions into the Great Lakes.

### **3 THE MNO IN THE ECOSYSTEM AND IN THE GREAT LAKES WATER QUALITY AGREEMENT**

The Parties, as recognized in the current Agreement, must recognize the importance of the involvement of the Métis Nation of Ontario in the review and implementation of all aspects of the Agreement, including the gauging of progress of jurisdictions under the proposed accountability framework (section 4.1.4 of this report). MNO citizens, as Aboriginal peoples of Canada, are heavily integrated with, and therefore dependent on, the natural environment. MNO communities depend heavily on the GLBE and its water quality for drinking water; food from subsistence hunting and fishing of the basin's wildlife; employment in a wide range of primary, secondary and tertiary industries dependent on the GLBE and its water quality; and cultural fulfilment.

#### **3.1 Reliance on the Great Lakes Basin Ecosystem**

The Métis people rely on integration of the natural environment for cultural fulfillment, food, recreation and employment. The Métis Nation of Ontario, like other Aboriginal Peoples, have a history of consuming fish, wildlife, and plants; this consumption is an integral component of the Métis culture and the Métis Nation of Ontario has a vested interest in protecting and restoring the Great Lakes Basin Ecosystem to ensure that future generations can continue to benefit from its resources in a healthy and safe manner.

#### **3.2 Communities at Risk**

The members of the Métis Nation of Ontario, like other Aboriginal Peoples, are heavy consumers of fish, wildlife, and plants from the natural environment. These subsistence foods are a cornerstone of our cultural identity and are critical to our communities' health and well-being. The degradation of the natural environment, however, especially by persistent and bioaccumulating contaminants, threatens the very foundation of these cultural activities and the health of our people. The importance of these activities and resources, combined with the potential and continuing degradation of some natural resources, demands that there be some provision in the Agreement to identify "Communities at Risk".

The new Agreement should provide a mechanism to identify "Communities at Risk" where communities can be identified as depending heavily on the integrity of the GLBE and where degradation of ecosystem integrity will have deleterious effects on cultural interaction with the land and water; limitations on fish, wildlife, and plant consumption that would otherwise be historic staple foods; or limitations on economies dependent on the ecosystem. Additionally, these communities are especially susceptible to persistent and/or bioaccumulating substances that migrate through ecosystem food chains.

MNO citizens are consumers of fish, wildlife and plants and this consumption, although traditionally very important to their health, may now put the community at risk. They also often depend heavily on the integrity of the ecosystem for their livelihoods and the natural environment is integrated into their culture. As such, MNO communities around the Great Lakes should be



considered as potential communities at risk.

### **3.3 A Role in Implementation and Accountability**

The Parties, as recognized in the current Agreement, must recognize and reaffirm the importance of the involvement of the public and First Nations' members, Tribal members, and other Aboriginal Peoples in the review and implementation of all aspects of the Agreement, including the gauging of progress of jurisdictions under the proposed accountability framework (section 4.1.4). As an Aboriginal People of Canada, the Métis Nation of Ontario should have an active role to play in the implementation and review of the Agreement, including in the proposed accountability framework (section 4.1.4).

At the community meetings it was suggested that members of the MNO community could be trained for, and assist in, monitoring the state of the ecosystem.

## 4 ANALYSIS OF THE AGREEMENT

### *4.1 General Principles for the Revised Agreement*

The Métis Nation of Ontario recommends that the Parties consider six key general principles while reviewing the Great Lakes Water Quality Agreement. These general principles should be integrated throughout the Agreement and serve as major foundational themes in the Agreement. The general principles are:

- *Continued and Strengthened Commitment*
- *Integration of the Precautionary Principle*
- *Improved Integration of the Ecosystem Concept*
- *Development of an Accountability Framework*
- *Improved framework for Restoration and Recovery*
- *Simplification of the Agreement and its Language*

The remainder of this section details the above general principles, with specific reference to the current Agreement where applicable.

#### *4.1.1 Continued and Strengthened Commitment*

The Parties should continue and strengthen their commitment to the Great Lakes Basin Ecosystem and its water quality. The Parties should not, in any way, reduce their obligations under the current Agreement or weaken the current Agreement. The new Agreement should look toward the future while addressing both current challenges in the GLBE and the legacy of environmental degradation. It is time to mend the errors of the past, deal with the new challenges of the present, and protect future generations by gazing into the future.

#### *4.1.2 Integration of the Precautionary Principle*

There is a need to integrate the precautionary principle (Kriebel *et al.* 2001) into the new Agreement. Including the four central components of the precautionary principle into the new Agreement will illustrate the Parties' commitment to ensuring the integrity of the GLBE is maintained and that the GLBE continues to provide clean and safe water for future generations. The components of the principle are:

1. taking preventative action in the face of uncertainty;
2. shifting the burden of proof to the proponents of an activity;
3. exploring a wide range of alternatives to possibly harmful actions;
4. and increasing public participation in decision making.

### 4.1.3 Improved Integration of the Ecosystem Concept

In the new Agreement, the Parties must recognize that the ecological integrity of the Great Lakes Basin Ecosystem is directly responsible for water quality in the Great Lakes Basin and that degradation, in whole or in part, of the Great Lakes Basin Ecosystem will lead to degradation of water quality and beneficial uses.

The Agreement defines the Great Lakes Basin Ecosystem as the “interacting components of air, land, water and living organisms, including humans, within the drainage basin of the St. Lawrence River ...”. The Agreement further identifies the waters of the Great Lakes Basin Ecosystem as the focus of restoration and maintenance activities. While the Agreement was forward looking in 1978, when it was amended to include the *ecosystem* terminology, ecosystem concepts are largely absent from the majority of the Agreement. This is largely an artefact of the current Agreement’s historical development, but it is now time for the new Agreement and the Parties to integrate the suggestion of the *ecosystem approach*, initiated in 1978, throughout the Agreement body. Gilbertson (1997) argues that widening the Agreement to include the ecosystem approach might weaken the Agreement by moving the focus away from the Agreement’s initial focus, the release of toxic substances. While toxic substances continue to be an extremely serious concern, the integrated nature of ecosystems cannot be ignored when attempting to protect water quality that is the result of ecosystem services. In addition, the restoration of ecological systems requires consideration of the ecosystem as a whole (Urbanska *et al.*, 1997). Furthermore, Gilbertson (2000) concludes that the lack of progress in implementing the Agreement is in part due to the ambiguity of the purpose and the existence of two major focuses, (1) the focus on pollution and (2) the focus on the ecosystem. The new Agreement should address these issues by striving to integrate the ecosystem outlook throughout the Agreement and by considering pollution inputs as deleterious to the functioning of the GLBE. The benefit (value) of ecosystem services has been underscored by Constanza *et al.* (1997) and an ecosystem approach to water quality would ensure the integrity of the GLBE and that the water it provides is maintained for future generations.

The Agreement, in order to fulfil its purpose, must take an ecosystem approach to protection, maintenance, and restoration in all of its prescribed activities and objectives. Ecosystem management of fisheries has been recently summarized by Pikitch *et al.* (2004) and continues to be a topic of discussion (Hardwood, 2007). Close linkages must continue to be developed and/or strengthened between the Agreement and the Lake Community Objectives as developed through the Great Lakes Fishery Commission. The Round Table sponsored in 1990 by the Great Lakes Fishery Commission, the Science Advisory Board of the IJC, and the Lake Michigan Federation as reported in Eshenroder *et al.* (1991) made an early attempt at this approach.

Ecosystem management of ecosystems in general is described in great detail in The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management (Christensen *et al.* 1996). Here Christensen *et al.* (1996) defined ecosystem management as “management driven by explicit goals, executed by policies, protocols, and practices, and made adaptable by monitoring and research based on our best understanding of the ecological interactions and processes necessary to sustain ecosystem composition, structure, and function.”

It seems clear that, in order for the Agreement to achieve its purpose, ecosystem management terminology, theory and practises must be integrated into the core of the Agreement.

#### *4.1.4 Development of an Accountability Framework*

The Parties must develop, recognize, and ratify an accountability framework that unambiguously states the jurisdictions responsible for enacting the Agreement's purpose and objectives, the time-lines for attainment of objectives, accounting and reporting on progress, including the requirement for the development of detailed progress reporting with benchmarks, and Terms of Reference to deal with failures in progress. The accountability framework must also provide for the inclusion of the public, stakeholders, Tribes, First Nations, and other Aboriginal Peoples, including the Métis Nation of Ontario, in holding the Parties and jurisdictions accountable for the progress of their respective charges.

In addition, the new Agreement should be tabled as legislation before the federally elected bodies of the Parties, the House of Commons in Canada and the United States Senate, and signed by both the Prime Minister of Canada and the President of the United States. By elevating the Agreement to legislation that is passed by the federal governments of both countries, the Parties will make a stronger statement as to their dedication to ensuring the integrity of the Great Lakes Basin Ecosystem for the benefit of future generations.

The International Joint Commission (IJC), along with the public, First Nations and Tribes, and other Aboriginal Peoples, including the Métis Nation of Ontario, should form a new accountability body that is given responsibility for the accountability framework. Article VII of the Agreement lays out the powers, responsibilities and functions of the IJC. Currently, however, the IJC is limited to assisting in the implementation of the Agreement. While the current responsibilities and functions of the IJC should be maintained, under the proposed accountability framework the new body should be given the power to enforce commitments and infringements of the Agreement using punitive measures. Key amendments to Article VII to assist in the implementation of the accountability framework include:

1. Paragraphs 1(a) & 1(b) requires that the IJC collate, analyse, and disseminate data and information. In order to increase public engagement, the dissemination of information in a form accessible to citizens, both in form (wording, design, length) and in accessibility (availability at public libraries). While the larger reports supplied by the IJC should be continued, it seems clear that a standardized, systematic, and accessible information sharing initiative is required to inform the citizens living within the basin.
2. Paragraphs 1(c) & 1(d) charge the IJC with tendering advice to the Parties and state/provincial governments. The IJC, however, should have the ability to issue orders, under the Agreement, to which the Parties and state/provincial governments must respond with action. Failure of governments to adequately meet requirements under the Agreement is one example where the IJC could exercise this power. Continued failure to achieve prescribed goals would be enforced with punitive measures.

Article X requires the Parties to conduct a comprehensive review of the operation and

effectiveness of the Agreement following every third biennial report of the IJC (paragraph 4). The last review of the Agreement, however, was in 1987 and during the past twenty years much of the Agreement has become obsolete relative to the current needs of the GLBE (e.g. addressing the continued colonization of the Great Lakes by invasive species). Public interest in the Agreement has also seemed to fall away, due to the lack of public engagement. There is a need to adequately balance the task of a comprehensive review with the requirement to ensure the Agreement remains current in the face of rapidly changing issues. The MNO recommends that portions of the Agreement, such as the specific umbrella areas of focus listed in Section 4 of this report, be revised on an acceptable short period (e.g. every six years). Portions of the Agreement that require longer timeframes for implementation and/or demand longer monitoring programs should be reviewed at longer intervals as part of a comprehensive review (e.g. every 10-12 years). By identifying components of the Agreement that deal with rapidly changing problems and/or require rapid action (e.g. the introduction of exotic species) and reviewing these components more frequently, the Agreement will remain current and effective. These periodic reviews will also engage the public on a regular basis, thus increasing the relevance of the Agreement in the daily life of basin citizens.

#### *4.1.5 Improved framework for Restoration and Recovery*

While the establishment of Areas of Concern (AOCs), the development of Remedial Action Plans (RAPs), and Lake-wide Management Plans (LaMPs) are signposts of positive momentum in achieving the Agreement's Purpose, the ultimate success of these efforts is being jeopardized by the lack of an accountability framework in the Agreement, the absence of unambiguous definitions for restoration terminology, and the prescription of a general, but mandatory framework for the development of RAPs and other restoration activities.

In its 2003 Special Report, the IJC found that “the general direction toward restoration was positive”, but also listed numerous concerns that included inadequate reporting, lack of accountability, lack of information on work completed and remaining, selecting natural recovery as a method of sediment remediation, the use of the term “recovery”, and the lack of restoration targets for each impaired beneficial use in each Area of Concern (IJC, 2003). These concerns underscore weaknesses in the current Agreement and beg correction in the review.

The restoration of degraded ecosystems can require considerable resources (time, equipment, finance); however, there has been unacceptably slow progress on delisting AOCs as identified under the Agreement. There is a clear need for an accountability framework that would hold accountable the Parties, state, provincial and municipal jurisdictions, and other groups charged with undertaking specific restoration activities. The framework would have some punitive capability for cases where a body charged with a specific restoration goal did not achieve its targets within the prescribed time frame. This would ensure that restoration activities remain at the forefront of governments' agendas, that sufficient funds and other resources are allotted to the restoration activities that are required to remediate the AOC, and that partnerships are formed with stakeholders in a timely fashion. It will also require accurate and timely reporting on restoration activities such that the IJC, the Parties, the public and stakeholders can gauge

progress.

Despite the Agreement's focus on restoration of the GLBE, unambiguous definitions of important restoration ecology terms are absent. The new Agreement should define key restoration ecology terms, such as *mitigation*, *reclamation*, *rehabilitation*, *restoration*, and *recovery*. These definitions are important for the success of restoration activities because their potential ambiguity (Bradshaw, 1997; Bradshaw, 1996) can lead to misguided restoration efforts, a lack of purpose and direction, and the inability to gauge progress and, ultimately, success. These definitions will aid in the development, monitoring, and evaluation of restoration activities in the Great Lakes Basin and should become a permanent and integral component of the Agreement.

An example of the lack of standardized terminology is the Canadian Government's use of the term *recovery* to identify the Spanish Harbour AOC as an "Area in Recovery". The IJC has pointed out that the terminology does not exist in the Agreement (IJC, 2003). The Canadian Government, in its 2003 report, however, does define "Area in Recovery" as a "geographic area, identified as an Area of Concern, where, based on community and government consensus, all scientifically feasible and economically reasonable actions have been implemented and monitoring continues to track the restoration of beneficial uses" (Gov. Can., 2003). The troubling aspect of this definition as an operational term, however, is that it makes no reference to the improvement of ecosystem indicators. That is, the completion of remedial activities does not necessarily indicate the "recovery" (the return to a normal state or position) of the ecological structure and function of the area, nor does it indicate the guaranteed return of beneficial uses. The Canadian Government's definition of "Area in Recovery", therefore, should be more accurately relabelled as "Remedial Actions Completed", because there is no indication that the Area is actually recovering its beneficial uses. Any attempt to define "Area of Recovery" in a new Agreement must require the development of area-specific, indicator-based targets that are based on the integrity of the ecological system and not on the completion of remedial work.

The Agreement should also include an unambiguous, yet general, framework for restoration activities, including criteria and requirements for the development of future RAPs, monitoring of restoration and recovery, and mechanisms to integrate the criteria into the accountability framework. This restoration plan framework, which will standardize and facilitate the development of future RAPs, should include the provision for local consultation as an integral part of site-specific restoration activities. The local consultation should include local traditional and historical knowledge of the ecosystem and beneficial uses. Elders are often willing to share extensive traditional knowledge regarding the state of the ecosystem and knowledge of the spatial distribution of biotic and abiotic ecosystem components. In some cases, particularly in areas of heavily industrialization, these repositories of valuable traditional knowledge might be the only information available to properly set restoration targets.

The mandatory restoration framework, coupled with the accountability framework, would ensure that restoration planning for AOCs and other areas take into account specific criteria, including human health and welfare, ecosystem integrity, and the nature of contamination. The IJC has voiced its concern regarding the unjustified selection of natural recovery of sediments as a remedial strategy in seven Canadian-only AOCs (IJC, 2003) and a mandatory restoration

framework would ensure that the most effective restoration approaches are used at each AOC. The lack of commitment to actively remediate sediment will ensure that these AOCs will continue to negatively influence the ecosystem, including humans, for many more years than if active remediation of sediments were undertaken. Often sediments at AOCs are contaminated with heavy metals or other persistent substances, and these contaminants often are bioaccumulating, carcinogenic, and/or linked to other adverse effects in humans or the ecosystem in general. The new Agreement should require the justification of selected remedial action for new and existing AOCs that clearly takes into account the functioning of the ecosystem and the health of the public as priorities over remediation cost.

There is concern that Remedial Action Plans can only be designated for Areas of Concern. Restoration activities under the Agreement should not require that an area be designated an AOC. “Minor degradation of beneficial uses or other ecosystem components” should be defined in the new Agreement such that “limited RAPs” can be established for limited-budget, limited-resource restoration. This is an excellent opportunity for community groups, environmental groups, and other volunteer organizations to contribute to small scale projects. These small scale projects will perform an important role in maintaining and restoring ecosystem integrity with in the GLBE.

In addition to the recommendations above, the paragraphs of Annex 2 listed below should be amended as indicated.

1. Annex 2, 1(c)(i) should be amended to include plants. The consumption and utilization of plants and plant parts in the Great Lakes Basin is an important cultural component of the lives of Basin residents, particularly the Basin's Aboriginal Peoples, including the Métis Nation of Ontario. The limitation of this consumption and utilization, due to contamination, habitat loss, exotic species invasion or other causes, has a negative impact on these culturally important activities.
2. Annex 2, 1(c). We recommend the addition of two impairments of beneficial uses:
  1. degradation of aquatic, semi-aquatic and terrestrial plant populations: Aquatic, semi-aquatic and terrestrial plants are an integral component of the Great Lakes Basin Ecosystem, providing photosynthetic energy; habitat; benthic, shoreline, and watershed stabilization; sediment capture; toxin sequestering and filtering; microclimate and macroclimate buffering; and are directly useful to humans (food, economy, outdoor activities and aesthetics).
  2. degradation of fungal, lichens and micro-organism populations: Fungi, lichen and other micro-organisms are an integral component of the GLBE, providing essential ecosystem services, such as nutrient cycling in biogeochemical cycles (including decomposition and nutrient fixation) and symbiotic relationships with flora and fauna. In keeping with its ecosystem approach, the Agreement should include these important classes of organisms owing to their critical roles in maintaining the integrity of the GLBE.

3. Annex 2, 2(a) states that RAPs and LaMPs shall embody a systematic and comprehensive ecosystem approach to restoring and protecting beneficial uses in AOCs or in open lake waters. The terminology “open lake waters” should be replaced with language that expands the LaMPs to include any boundary or tributary waters in the GLBE.
4. The purpose of LaMPs as stated in the Agreement is to reduce loadings of Critical Pollutants to restore beneficial uses. This wording implies that the scope of LaMPs is limited to addressing areas where Critical Pollutants have already degraded the ecosystem such that it has been designated as an AOC. LaMPs, therefore, do not appear to provide a mechanism that operates *and protects* at the ecosystem level; beneficial uses can be degraded by a wider range of influences, either in isolation or in combination, than the Critical Pollutants listed in the Agreement. The wording of the current Agreement limits the efficacy of the LaMPs to simply reducing loadings of such pollutants without considering other sources of ecosystem perturbation.

#### *4.1.6 Simplification of the Agreement and its Language*

There is a need to simplify the Agreement, both in structure and in wording, so that it is efficient and accessible to a wide audience. The numerous Annexes are laborious and potentially confusing to navigate. The Agreement's language should also be changed to a simpler, but still formal, form. This is important because of the large number of people who could, potentially, be affected by the Agreement; many of those people are genuinely interested in the GLBE and their water quality, but find the Agreement in its present form difficult to understand. The ability for the public to understand and interpret the Agreement is critical in its participation in public consultation, its participation in an accountability capacity, and its incorporation of water quality issues into daily life. By understanding the Agreement the public will become more engaged in water quality issues and the Agreement's implementation.

#### ***4.2 Specific Recommendations for the Revised Agreement***

In addition to the General Principles detailed above, there are several recommendations specific to various portions of the Agreement. These recommendations address perceived shortcomings in the current Agreement and topics of concern that are partly or wholly absent from the current Agreement.

The recommendations specific to the Agreement fall into five categories:

- *Purpose*
- *General Objectives*
- *Objectives*
- *Refocus on Key Issues Facing the GLBE*
- *Additional Concerns*

The remainder of this section details the above specific recommendations, with specific reference



to the current Agreement where applicable.

#### 4.2.1 Purpose

The new Agreement should signify the Parties' commitment with a reaffirmation and strengthening of the current Agreement's purpose. The purpose (Article II, Purpose) of the Agreement states that the "...purpose of the Parties is to restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes Basin Ecosystem."

This is a laudable goal; however, the purpose can be strengthened by explicit reference to *protection* of the integrity of the GLBE as a critical activity alongside *restore* and *maintain* (e.g. *The purpose of the Parties is to protect, maintain and restore ...*). Stressing *protection* of the GLBE as a *primary activity* underscores the importance of protective measures as a first defence against environmental degradation. The word *protect* clearly signals the need for all those responsible for the Agreement's implementation to act as stewards of the natural resource in such a way so as to avoid the situation where restoration is required when it might have been prevented. The importance of protection of the GLBE, and thus its services, as a primary activity should be integrated throughout the new Agreement.

The purpose must also stress *the elimination or reduction of any detrimental activity, pollutant, or alteration that degrades or has the capacity to degrade, in whole or in part, the Great Lakes Basin Ecosystem.*

In addition, the MNO recommends that there be established in the Agreement the capacity to designate special "Areas at Risk". There is a need to designate areas that (1) are areas that, should the assessed trends in ecosystem indicators continue, would degrade and potentially become Areas of Concern; (2) are areas that, due to the fragility of the local ecosystem, require special protection from human activities and other ecosystem stresses in order to prevent degradation.

The capacity to designate Areas at Risk are critical to the Agreement's capacity to fulfil its purpose in *protecting*, maintaining and restoring the chemical, physical, and biological integrity of the waters of the GLBE. Components of the GLBE continue to be degraded (Env. Can. & EPA, 2005) and the cessation of activities that, if left unchecked, could lead to "Impairment of beneficial uses", is critical to maintain the integrity of the GLBE. The Agreement should provide Action Plans for Areas at Risk that detail mechanisms (remediation, restoration, research, and preventative activities) and accountability (detailed progress reports, monitoring, punitive measures for failure to comply, and public consultation) to ensure protection.

In addition to the recommendations above, the paragraphs of Article II listed below should be amended as indicated.

1. Article II (a) Amend to call for the elimination of the discharge of all toxic substances.
2. Article II (b) This paragraph is now obsolete and should be replaced with a commitment

to fund the improvement of waste treatment works to (a) limit wastewater system overflow and bypass during storm events, (b) the replacement of combined sewer systems, (c) the retention and treatment of runoff using alternative treatment technologies, (d) the elimination of toxic substances, substances of concern, pathogens, pharmaceuticals, and hormones from wastewater releases.

3. Article II (c) This paragraph (i.e. “adequate control of all sources of pollutants”) is now obsolete and should be replaced with a commitment to ensure the control of all sources of potential ecosystem degradation, including, but not limited to, all sources of chemical, physical and biological pollutants, habitat degradation or destruction, or harmful resource utilization.

#### 4.2.2 *General Objectives*

Article III (General Objectives) requires several amendments if retained in its present form. This section should be restated to underscore the ecosystem approach to managing the Great Lakes, including an encompassing reaffirmation of the need to protect, maintain and restore the integrity of the GLBE. Explicit reference to the integrity of the GLBE, both in terms of ecosystem components and functioning, should be made in the General Objectives of the new Agreement.

The General Objectives should be amended to include the following objectives:

1. Free of introductions of new, non-native species that directly or indirectly enter the waters as a result of human activity.
2. Free of “Substances of Concern”, substances whose impact on ecosystem components and/or functioning is unknown or known to be deleterious, that directly or indirectly enter the waters as a result of human activity.

#### 4.2.3 *Specific Objectives*

As noted in the Guiding Principles, the Specific Objectives (currently Article IV) of the new Agreement should commit to using the precautionary principle (Kriebel, D. et al, 2001) when establishing and adapting specific objectives.

In addition to the recommendations above, the paragraphs of Article IV listed below should be amended as indicated.

1. Article IV. The Article, and the Agreement, should identify “Areas at Risk” as areas identified to be at risk of degradation due to human activities or natural phenomena and thus negatively impact the Great Lakes Ecosystem and Great Lakes water quality.
2. Article IV, paragraph 1(f). There is a need for a broader class of pollutants (*Substances of*

*Concern*) that effectively encompasses (1) substances having unknown impact on ecosystem processes and/or ecosystem components (flora, fauna (including humans), fungi, lichens and micro-organisms), (2) any substances *suspected*, but not shown, to have any negative impacts, (3) any substances that bioaccumulate, (4) any substance that may be identified as a Hazardous Polluting Substance (Annex 10 & Appendix 1), Potential Hazardous Polluting Substance (Appendix 2), or Persistent Toxic Substance (Annex 12), (5) any substance whose proponents have failed to show has no deleterious impact on ecosystem components and functions. This class of substances need to be addressed either (1) exclusively in a new Annex or (2) in a new Annex that amalgamates *Substances of Concern*, Annex 10 and Annex 12. The people of the MNO consume the fish and wildlife of the Great Lakes Basin and it is imperative that the Agreement should seek to eliminate all substances (*Substances of Concern*, Hazardous Polluting Substances, and Toxic Substances) from the Great Lakes Basin Ecosystem.

3. Article IV, paragraph 3(a) states that the Parties will consult on protecting the beneficial uses and must be replaced with an affirmation of commitment to protect the integrity of the Great Lakes Basin Ecosystem from degradation, in whole or in part. This should include a firm timeline for review and consultation.
4. Article IV, paragraph 3(b) states that the Parties will consult on the control of pollutant loading rates and must be replaced with loading rates for each lake basin. The loading rates must be accompanied by terms of reference and jurisdictional accountability in the appropriate sections of the new Agreement.

In addition to the recommendations above, the Specific Objectives in Annex 1 need to be re-evaluated and updated with current scientific knowledge in conjunction with application of the precautionary principle. All Chemical Objectives should be reduced as a matter of precaution, unless the safety of the chemical in question can be assured. The Chemical Objectives of potentially harmful, persistent and non-persistent toxic substances, and substances known to, or that may, bioaccumulate should be below detectable levels.

The Agreement should provide mechanisms to update a Specific Objective whenever current knowledge suggests that it has become obsolete. The Parties should acknowledge that emerging and continuing ecological stresses likely will make Specific Objectives obsolete, often at a more rapid pace than future comprehensive reviews of the Agreement.

In addition to the recommendations above, the paragraphs of Annex 1 listed below should be amended as indicated.

1. Annex 1 (Supplement), paragraph 2(a). The establishment and modification of Specific Objectives under Annex 1 must be a mandatory process that is embedded in the proposed accountability framework. The Specific Objectives should include a mechanism for re-evaluation and adjustment subject to advances in scientific knowledge. This re-evaluation must take place in an appropriately short time frame to allow for timely reaction to new and emerging threats to water quality and the integrity of the GLBE.

2. Annex 1 (Supplement), paragraph 2(c). The new agreement must call for the compilation and maintenance of a list of “Substances of Concern” as defined above. There will be mechanisms in place to remove substances from the list only when proponents of their use have proved their safety to the satisfaction of the Parties, the IJC, the public, stakeholders, and First Nations and Tribes, and other Aboriginal Peoples, including the MNO.
3. Annex 1 (Supplement), paragraph 3. Individual Lake Ecosystem Objectives need to be developed for all Great Lakes. The objectives should be multi-species/multi-trophic to reflect the complex nature of each lake basin. The objectives should use the indicators and indexes reported at SOLEC: State of the Lakes Ecosystem Conference (Env. Can. & EPA, 2005) and other scientific research.
4. Annex 1 should include a section devoted to *biological* objectives that details objectives for exotic species, hormones and other biological contaminants.

#### 4.2.4 Refocus on Key Issues Facing the GLBE

The revision of the Agreement should concentrate on refocusing the Agreement to address several broad issues of emerging and on-going concern. The simplification and refocusing of the Agreement should in no way weaken or reduce the provisions of the current Agreement in any way, but instead the revised Agreement should build on the current Agreement in scope and efficacy.

There is a need to realign the Agreement's focus toward its purpose of protecting, maintaining and restoring the waters of the GLBE. In order to continue its success and proceed where progress has been slow or absent, the new Agreement must address several broad issues that continue to threaten the GLBE. The Agreement is dated in its focus largely on the control of pollutants from point sources. The new Agreement must continue to address point source pollution, but move toward a greater role in addressing diffuse pollution sources. This balancing of focus should permeate throughout the Agreement. Refocusing the Agreement to address on-going and emerging issues of concern, while maintaining the strength and scope of the original Agreement, will ensure that the Agreement remains a forward-looking and inspiring symbol of binational ecological stewardship.

Amendments to Annex 11 will help ensure that the Agreement does not become obsolete as new threats to the GLBE and Great Lakes water quality emerge. The amendments to Annex 11 include:

1. Annex 11, paragraph 1(d) details the “Identification of Emerging Problems” but suggests that new and hitherto detected problems might be the result of pollution by prescribing the “development and implementation of appropriate pollution control measures”. The new Agreement should clearly state the need for surveillance and monitoring to detect not only problems related to pollution, but also other factors not related to pollution (e.g. climate

change, exotic species).

2. Annex 11, paragraph 3 should include invasive species, climate change, and habitat degradation and destruction as requiring monitoring activities.
3. Annex 11, paragraph 4 requires significant expansion and updating. SOLEC (Env. Can. & EPA, 2005) currently reports on 56 indicators in 9 categories. Such indicators should be integrated in the Agreement, along with requirements for monitoring, and remedial action to be taken when indicators suggest degradation of water quality, beneficial uses or the ecosystem.

The following issues are either emerging or continuing issues in the GLBE that, if left unaddressed in the new Agreement, will likely lead to further degradation of the GLBE and, subsequently, Great Lakes water quality. Continuing issues are the result of weaknesses or omissions in the current Agreement and/or its implementation. Emerging issues are environmental issues that have arisen after the last review or were not recognized as serious or existing during the last review. These issues serve as umbrella topics and/or key areas for refocusing the new Agreement.

Issues to address:

- i. Chemical Contaminants
- ii. Excess Nutrients
- iii. Habitat Loss
- iv. Exotic Species
- v. Urbanization and Urban Sprawl
- vi. Climate Change and other Whole-Basin Ecosystem Stresses

#### 4.2.4(i) Chemical Contaminants

The current Agreement has a history in dealing largely with chemical contaminants. A number of Annexes specifically address chemical contaminants from various sources: Annex 1: Specific Objectives; Annex 10: Hazardous Polluting Substances (including Appendix 1 & Appendix 2); Annex 12: Persistent Toxic Substances; Annex 13: Pollution from Non-Point Sources; Annex 14: Contaminated Sediment; Annex 15: Airborne Toxic Substances; and Annex 16: Pollution from Contaminated Groundwater. While there is a clear need to address pollutants from specific sources (point, non-point, contaminated sediment, contaminated groundwater and aerial deposition), the Agreement should be simplified and refocused to address chemical contaminants in a single section. A simpler, clearer amalgamation of these sections into a single section with two main subsections will aid the Parties and other bodies in carrying out the Agreement. It will also aid in public access to the content of the Agreement. The first section would address *types* of chemical contaminants, their objectives, mechanisms to add or remove substances, and prescriptions for information sharing regarding toxicity and other negative biological, chemical or physical effects. The second section would address *sources* of chemical contaminants (point, non-point, contaminated sediment, contaminated groundwater and aerial deposition) and

measures for their remediation and control. Excess nutrients, dealt with in a separate section, should deal with sources separately (e.g. non-point and point sources) because measures to deal with nutrients are considerably different than those used for chemical contaminants.

It is our recommendation that substances in Appendix 2 be considered with equal concern to the substances in Appendix 1 (Appendix 1 and Appendix 2 should be amalgamated into a single list of Substances of Concern as detailed in Section 4.1.3 of this report). Annex 10, paragraph 4(a) states the requirements for a substance to be added to Appendix 2 as a Potential Hazardous Polluting Substance. These properties include aquatic toxicity, mammalian and other toxicity, phytotoxicity, persistence, bioaccumulation, mutagenicity, teratogenicity, carcinogenicity, environmental translocation or documented information on risk of discharge to the environment. It is our position that any substance qualified to be included in Appendix 2 should be considered as serious a threat to the integrity of the GLBE, including humans, as those substances in Appendix 1. The revised list should include a provision to add any substance that is found to disrupt the physiological processes of aquatic and terrestrial organisms (e.g. pharmaceuticals and hormones) to the proposed list of Substance of Concern.

The revised and expanded list of Substances of Concern (partly composed of the amalgamated lists in Appendix 1 & 2) should be maintained by an independent body, established by the Parties and the IJC, that will act on scientific knowledge (toxicological data) and use the precautionary principle as a guiding principle for the inclusion of new and existing substances. Inherent in the precautionary principle is the requirement for proponents of the use of a substance to prove its safety. The Parties should not be able to reject the addition of a new substance to the list without toxicological data showing that it poses no threat to aquatic and animal life, including humans.

The use of the precautionary principle and the consideration of all substances as “unsafe until proven safe” will ensure that the Agreement will successfully limit the introduction of substances into the GLBE that are later found harmful. The effects of residual, as well as on-going, diffuse, contamination are currently impacting people living in the Great Lakes basin. A small number of examples, from a growing body of research, illustrating the impact of chemical contaminants on fish consumers highlight the need to address chemical contaminants from all sources. Bloom *et al.* (2005) have found that long-term consumption of Lake Ontario sport fish contributes significantly to the burden of organochlorine compounds in New York anglers and sportsmen. Hanrahm *et al.* (1999), who examined sport fish consumption across the Great Lakes, found similar results. It has also been found that fetal exposure to DDE might decrease birth weight (Weisskopf *et al.*, 2005). The consumption of Great Lakes fish by pregnant women has been found to increase the risk of prenatal exposure of some PCB homologues (Stewart *et al.*, 1999). While lake-wide average mercury levels in sediments in the Great Lakes have decreased substantially since the 1960s (Marvin *et al.*, 2004), the consumption of fish containing mercury continues to be a concern. Fish consumption advisories are in place across the basin (Env. Can. & EPA, 2005). Cole *et al.* (2004) found that mercury levels in sport-fish consumers in five Areas of Concern were higher than in many other Great Lakes populations. In order to deal with mercury in the GLBE, Gilbertson and Carpenter (2004) advocate the ecosystem approach and call for the continual evaluation of fish consumption advisories, remedial actions on contaminated sediments and regulation of sources. A similar strategy was suggested by Mackay and Toose (2004).

Exchange of toxicological data with other testing agencies should be established between the Parties, jurisdictions in the Great Lakes Basin, and external bodies to eliminate the duplication of effort in determining properties of the substance (e.g. toxicological, bioaccumulative, and other properties). It is worrisome that the list of Potential Hazardous Polluting Substances is short, despite the fact that there is a large number of chemicals in use in industrial activities in the basin. Accelerated testing of existing and new chemicals should be a priority in the new Agreement. The Agreement should prescribe the establishment of an information-sharing network and accessible database (more comprehensive than that prescribed by Annex 12, paragraph 5(h)) to facilitate in sharing toxicological information on chemical substances. This network, by preventing redundant testing by different government agencies, will allow for an increase in the number of new substances subject to evaluation and classification.

In addition to the recommendations above, the paragraphs of the following sections should be amended as indicated.

1. Annex 12, paragraph 2(b) must define “reasonable and practical”. There is no mechanism in the current Agreement to evaluate a claim of “reasonable and practical measures”. The Agreement must prescribe what is “reasonable and practical” or call for the establishment of a body to evaluate claims by the Parties that all reasonable and practical measures to rehabilitate degraded areas are complete.
2. Annex 13, paragraph 1 should be amended to include “other nutrients” in order to stress the importance of not just phosphorus, but nutrients such as nitrogen that can be introduced via non-point sources.
3. Annex 13, paragraph 2(b) in the current Agreement calls for the development of watershed management plans, and yet this remains an area of stagnation on the part of the Parties. The new Agreement should require the development of watershed management programs, complete with timelines for completion and punitive measures. The watershed management programs should be comprehensive and inclusive of all aspects of the Agreement, not only pollution from non-point sources.
4. The remediation of contaminated sediment (Annex 14) in RAPs, particularly where contaminants are mobile, bioaccumulate, or risk disruption and subsequent mobility, should be required in the new Agreement. The lack of active sediment remediation continues to be a serious limitation on the remedial progress of AOCs and the Canadian government’s decision to use “natural sediment recovery” in several AOCs is unacceptable. The IJC has also voiced concern regarding Canada’s choice in using “natural recovery” of sediments. Contaminated sediments, until removed from the benthos, will continue to have deleterious impacts on the ecosystem, including humans. The continued exposure of the ecosystem, including humans, to substances that have known negative effects is unacceptable. It is time for the Parties to make a strong statement regarding the health and well-being of humans and the ecosystem in proximity to areas with contaminated sediments.

5. Annex 15 has led to the establishment of the Integrated Atmospheric Deposition Network. Currently there are 5 master sampling stations (one on each lake) and 10 satellite stations (Blanchard et al. 2001).
6. Annex 16 of the Agreement should prescribe public education campaigns to reduce the contamination of groundwater under both industry and private properties. Programs such as the Environmental Farm Plan need to be continued and adequate funding needs to be allocated.

#### 4.2.4(ii) Excess Nutrients

The GLWQA, since its inception and in subsequent revisions, has identified excess nutrients, primarily phosphorus, as a primary cause of ecosystem degradation, beneficial use impairments, and degradation of water quality. There has been a concerted effort to address excess phosphorus loading from point sources such as wastewater treatment facilities. The construction of wastewater treatment facilities and the upgrading of existing facilities have led to a reduction in phosphorus loading from these sources throughout the basin. For example, the reduction of excess nutrients, in part by the upgrading of wastewater treatment facilities, contributed to the delisting of Collingwood Harbour in 1994 and Severn Sound in 2003 as AOCs (Environment Canada, 2003). While the Agreement was instrumental in reducing phosphorus in the Great Lakes, there remain issues with phosphorus in the GLBE, particularly Lake Erie (Env. Can. & EPA, 2005; IJC, 2006). The IJC points out that not only do nutrient concentrations in Lake Erie frequently exceed target concentrations, but that Lakes Ontario and Huron experience nuisance algae growths from excess phosphorus (IJC, 2006). It is worrying that programs responsible for the comprehensive monitoring of phosphorus have been reduced, limiting capacity to track sources of phosphorus, despite phosphorus loading being a persistent problem in some nearshore waters (IJC, 2006).

The explicit targeting of phosphorus, while appropriate and timely during the drafting of the 1972 Agreement and subsequent revisions, needs to be expanded to include all sources of excess nutrients. The new Agreement should address nutrients explicitly and, while continuing its focus on phosphorus, expand its breadth to include all substances that might serve as nutrients (i.e. nitrogen). The Agreement must continue to address point-sources of nutrients, but take a much stronger role in reducing non-point (diffuse) nutrient sources. Examples of diffuse sources of nutrients include stormwater runoff from urban and agricultural areas, erosion where covering vegetation has been removed (e.g. logging activities), and the spreading of sludge on agricultural land. We recommend the succession of Annex 3 with a new and expanded focus that takes a strong stance in dealing with both point and non-point nutrient inputs. Continued urbanization and population growth in the GLB will only exacerbate the current problems surrounding nutrient inputs, as will the rapidly increasing number of new golf courses within the GLBE and their heavy dependence on fertilizer and irrigation.

The focus of the current Agreement on reducing phosphorus loadings by improvements to



wastewater treatment plants was an important first step toward the achievement of the Agreement's purpose, but further progress requires a strong commitment by the Parties on a number of fronts. Combined municipal sewer systems need to be retrofitted so as to separate wastewater from stormwater so that storm events no longer lead to the overloading of wastewater treatment plants. This will require a strong commitment by the Parties and other jurisdictions due to the high cost in sewer redesign. When replacement of combined sewers is prohibitively expensive or not possible, alternative technologies and practises to capture and/or delay stormwater runoff may negate the requirement for full sewer separation. Public information programs can guide property owners to dramatically decrease the stormwater runoff from rooftops and lawns, greatly alleviating the strain of large storm events on municipal waste treatment plants. The Agreement should promote the development, implementation and maintenance of stormwater retention programs. The Agreement should also define and limit, when possible, activities that may increase the input of nutrients (e.g. logging, land use conversion, removal or degradation of buffer zones, spreading of sludge, destruction or degradation of wetlands, surface hardening).

In addition to the recommendations above, the paragraphs of Article VI and Annex 3 should be amended as indicated.

#### Article VI

1. The continued release of untreated sewage in the event of storm events and power outages is unacceptable. Additionally, sewage treated to minimum requirements is a source of toxic substances, pharmaceuticals, hormones, and pathogens. To complement and strengthen the important progress made in the construction of waste treatment facilities encouraged by the current Agreement, the new Agreement should underscore the importance of treating municipal pollution to remove all substances that are known to be, or suspected to be, detrimental to the GLBE.
2. Article VI, 1.(a)(i). Existing waste treatment facilities need to be improved to remove toxic substances, pharmaceuticals, and hormones. These substances need to be recognized in the Specific Objectives of the new Agreement. Existing waste treatment facilities and sewer systems need to be expanded in such a way that severe storm events and power outages do not result in the release of untreated sewage into Great Lakes waters.
3. Article VI, paragraph 1(a)(ii). Financial resources should be provided for the required improvements to wastewater treatment facilities and sewer systems. Funding provisions should favour “green” technologies and treatment methods over less ecologically-friendly systems.
4. Article VI, paragraph 1(a)(v). Pollution from storm, sanitary, and combined sewer discharges continues to be a serious problem in the Great Lakes Basin. The new Agreement should renew and strengthen the commitment to address these issues.
5. Article VI, paragraph 1(a)(vi). The establishment of enforcement programs should be

linked to the accountability framework to ensure that programs are developed and implemented in a timely manner.

6. Article VI, paragraph 1(b)(ii). The new Agreement should build upon the progress made by the previous Agreement by requiring the elimination of all toxic substances, persistent toxic substances, and substances of concern from industrial sources.
7. Article VI, paragraph 1(b)(vii). The establishment of enforcement programs should be linked to the accountability framework to ensure that programs are developed and implemented in a timely manner.
8. Article VI, paragraph 1(e). Aquaculture is a growth industry that can pollute surrounding waters by excess nutrients, biological pollution (species introductions), diseases and pests. Programs and measures should be established to ensure the appropriate establishment, operation, and maintenance of aquaculture programs consistent with the Agreement's Objectives. At a time when non-point sources of agricultural nutrients are being addressed in Ontario through Nutrient Management Regulations it seems inappropriate to encourage feedlots for aquatic species such as salmon within the Great Lakes themselves where nutrient removal is not possible.

### Annex 3

1. Annex 3, paragraph 1. The Parties have not been successful in attaining many of the goals of phosphorus control. Anaerobic conditions have returned to parts of Lake Erie and algae blooms continue in Lakes Erie, Ontario and Huron (IJC, 2006).
2. Annex 3, paragraph 2(a). The current nutrient loading in the GLBE should be re-evaluated and reduced in light of future and current issues that will/may increase nutrient input (urbanization, increased land use intensity, increased human population, and the unpredictable effects of invasive species and climate change). New technology and wastewater treatment facility upgrading will be instrumental in these reductions. Additional reductions in phosphorus could be obtained by the use of alternative technologies by municipal waste treatment facilities discharging less than one million gallons per day. Research, guidance, and funding should be allotted to these small facilities to explore and construct alternative waste treatment systems (e.g. greenhouse wastewater treatment systems such as the Solar Aquaticum treatment plant in Bear River, Nova Scotia (Hanrahan, 1999), generic wetland wastewater treatment systems, methane digesters/generators or other “ecological engineering” systems such as those designed by Ocean Arks International (OAI, 2007)).
3. Annex 3, paragraph 2(c). The ongoing inputs of phosphorus from diffuse sources and subsequent nuisance algae blooms and degrading water quality of Lake Erie (Env. Can. & EPA, 2005) are illustrative of the need for a renewed and vigorous Agreement that deals with diffuse nutrient inputs.

4. Annex 3, paragraph 4. Phosphorus Load Reduction Targets must be evaluated and set according to current scientific knowledge. The precautionary principle should apply when doubt exists as to the appropriate target load. The new targets should also have a time frame for implementation, a series of benchmarks to gauge progress, and fall under the umbrella of the accountability framework. The new targets should be established recognizing that emerging concerns in the GLBE may require further reduction in target values. Mechanisms to trigger and enforce further reduction in the face of ecological uncertainty and gaps in knowledge should clearly be established in the new Agreement.
5. Annex 3, paragraph 5(d). The new Agreement should boldly strive to limit diffuse inputs of phosphorus (and other nutrients). The current Agreement's "Level 2 measures" for non-point source control options should become the standard in the new Agreement. Mechanisms and timeframes for implementation and accountability measures should be included in the Agreement to ensure that the new measures for diffuse sources are implemented in a timely fashion.

#### 4.2.4(iii) Habitat Loss

Habitat loss in the GLBE continues to be an ongoing threat to the integrity of the ecosystem and the water quality of the Great Lakes (Env. Can. & EPA, 2005; IJC, 2006). Despite the critical role that habitat plays in the integrity of ecosystems, the Agreement is largely silent on the preservation of habitat. The exception is the listing of fish and wildlife habitat as a beneficial use (Annex 2, paragraph 1(c)(xiv)). While the Agreement underscores its importance by listing habitat loss as a Beneficial Use Impairment, the destruction and restoration of habitat should be addressed explicitly in the Agreement. Commitments to reduce and eventually eliminate the destruction of habitat within the Great Lakes Basin should be contained in the new Agreement. The Agreement should also provide a rigorous mechanism to evaluate habitat quality, the importance of the habitat area to the GLBE, and the socioeconomic gain/cost from its proposed degradation or destruction. There should also be a commitment to restore degraded and replace destroyed habitat using the revised restoration framework.

#### 4.2.4(iv) Exotic Species

Since 1840, at least 182 non-indigenous (exotic) species have established in the Great Lakes basin and the rate of introductions appears to be constant (Ricciardi, 2006). Mills *et al.* (1993), in their comprehensive review of exotic species introductions in the Great Lakes, list several mechanisms through which historic introductions occurred (intentional and unintentional release, shipping, canals) and identify 13 exotic species that have had a substantial impact on the Great Lakes. Despite the wide range of historic causes of species introduction, the vast majority of species are introduced via oceanic ship ballast water exchanges. About 65% of exotic species introductions have been attributed to ballast water released from ocean vessels (Ricciardi, 2006). A recent analysis of Canadian and American legislation for controlling exotic species in the Great

Lakes found that current legislation was fragmented at all government levels (bilateral, federal, provincial/state) and that Canada lagged behind the United States for regulating ballast water in ocean vessels (Vássárhely & Thomas, 2003). They recommended the regulation of ballast water and the restriction of some boating and shipping activities to reduce the introduction of exotic species. With increasing globalization and international trade, the introduction of invasive species via ballast water will continue. The potential negative impact of exotic species introductions has been known for some time and the Great Lakes have suffered through several serious invasions that continue to threaten its ecological integrity (Env. Can. & EPA, 2005; Env. Can. 2001; Mills *et al.*, 1993). For example, Mills *et al.* (2003), in their discussion of ecosystem stressors in Lake Ontario, highlight exotic species and climate change as forces that will likely produce stressor responses in the lake ecosystem and require continued monitoring.

There is no doubt that biological invasion of non-native species will continue to be a major threat to the integrity of the GLBE. The current Agreement is largely silent on the introduction of non-native species. Annex 6, paragraph 1(b) has that the Canadian Coast Guard and the United States Coast Guard examine the potential threat posed to the Great Lakes Basin Ecosystem by live fish and invertebrates discharged in ballast water but is now obsolete. The new Agreement needs to address the threat of biological invasion by eliminating vector pathways of non-native species. The Agreement should take a bold stance on eliminating new introductions of non-native species into the Great Lakes.

There has been no progress in slowing the introductions of new species. In 1989, the Canadian Coast Guard implemented voluntary guidelines requiring ocean-going vessels to exchange ballast water with saltwater prior to entering the Great Lakes and in 1993, the United States enacted mandatory guidelines for ballast water exchange (BWE) in its Non-indigenous Aquatic Nuisance Species Prevention and Control Act (Env. Can., 2001). Unfortunately, these measures (flushing ballast tanks with saltwater) are not sufficient to adequately deal with the threat of non-native species in ballast water. Saline treatment of diapausing eggs from ballast sediments and Lake Erie sediments has been found to not guarantee the complete destruction of dormant stages of aquatic invertebrates (Bailey *et al.*, 2005). Ricciardi (2006) found that the observed rate of exotic species introduction in the Great lakes is correlated with shipping activity, the rate of invasion has not changed following the BWE legislation and the majority of new exotic species are euryhaline (tolerating a wide salinity range) species.

In addition to ballast-containing ships, a continuing threat to the GLBE are ships that declare 'no ballast on board' (NOBOB) and are exempt from coast guard regulations for ballast water exchange. Holeck *et al.* (2003) state that over 90% of ships entering the Great Lakes during the 1990s were no ballast on board ships. No ballast on board ships, however, have residual water in their ballast tanks that can contain invertebrates and sediments that can contain cysts, spores and resting eggs of algae and invertebrates, all of which can be released during loading operations (Duggan *et al.* 2005). What's more, Grigorovich *et al.* (2003) identified 26 high-risk species (10 of which have already invaded the Great Lakes) and 37 lower-risk species (6 of which have already invaded the Great Lakes) that were likely to survive the transfer in ballast tanks and concluded that the Great Lakes were still at risk of invasion from ship-borne species. It is clear that a concerted effort must be put forward to reduce the introduction of exotic species. Holeck *et*

*al.* (2003) point out that management strategies attempting to prevent introductions of exotic species must consider the links between the exotic species and the vectors of introduction.

The new Agreement should be expansive in its treatment of exotic species. There are a number of vectors that can transmit exotic species other than ship ballast. Mills *et al.* (1993) illustrate several of these vectors, as noted above. Rixon *et al.* (2005) have found that the aquarium trade and live fish markets are also a serious potential source of exotic species and that there are few regulations to control these industries.

#### 4.2.4(v) Urbanization and Urban Sprawl

The current Agreement fails to address the emerging issue of urbanization and urban sprawl within the Great Lakes Basin. The GLB is home to over 37 million people and major centres of industry, trade, shipping, and habitation are concentrated along the shores of the Great Lakes and St. Lawrence River. The urbanization of shoreline and watershed natural areas continues due to municipal expansion, industrialization, and conversion of land for recreation. Shorelines, along with near shore areas, are particularly susceptible to destruction. Shorelines provide key habitat for fish, wildlife and plant life. These riparian zones and wetlands are instrumental in stormwater retention, the sequestering of runoff sediment, and the removal of pollutants carried by stormwater. They are also important in the prevention of erosion and subsequent sedimentation of water.

Urban sprawl continues to threaten the GLBE and the water quality of the Great Lakes. Suburban expansion continues within the basin, consuming large tracts of natural habitat, increasing the volume of stormwater runoff that must be processed by wastewater treatment plants, degrading or destroying wetlands that act as natural filters for stormwater runoff, increasing demands for water for irrigation of lawns, and increasing pollutant levels in the environment (by increasing driving distances, reducing public transit, and increasing the use of harmful chemicals for property maintenance). In addition, as identified in the community meetings, this sprawling urbanization increases the demand for more water diversions/pipelines from one Great Lake Basin to another. This increasing urban sprawl also pushes agriculture from deeper, more fertile soils to poorer quality agricultural soils requiring the addition of more nutrients. These shallower soils often lead to quicker runoff and therefore more flooding and more nutrient removal and also may result in more groundwater contamination.

The new Agreement should attempt to address the negative impacts of urbanization and urban sprawl on the GLBE and Great Lakes water quality. Specific prescriptions for the reduction of shoreline hardening, wetland destruction, and riparian habitat destruction as a result of these activities should be included in the Agreement. Commitments to slow urban sprawl, for example zoning and tax initiatives to encourage multi-unit housing (condominiums and apartments) rather than expansive housing development projects, should be included in the Agreement.

#### 4.1.4(vi) Climate Change and other Whole-Basin Ecosystem Stresses

Earth's climate is warming (IPCC 2007) and an altered climate may have dramatic impacts on all aspects of the GLBE's components and their interactions (physical, chemical, and biological), including anthropogenic stresses (Magnuson *et al.*, 1997). For example, trends in ice cover on lakes in the Northern Hemisphere indicate earlier springs (break-up dates) (Duguay *et al.*, 2006). Environment Canada and the EPA (2005) report that the amount of ice forming on the Great Lakes from the 1970s to the 1990s has been decreasing and that the greatest decline has occurred during the 1990s. Changing climate may shift species' temporal and spatial distributions, drive species to extinction (McLaughlin *et al.*, 2002), alter host-parasite relationships (Marcogliese, 2001), and increase the success of invasive exotic species (Mandrak, 1989). Climate effects may also alter physical and biological processes differently, interrupting energy flow between energy levels (Winder and Schindler, 2004). The integrated nature of ecosystem components and ecosystem functions ensures that changes in abundance of even a single species can lead to wide-ranging impacts on trophic or nutrient cycling systems.

Species with narrow temperature ranges, especially cold water species of fish and invertebrates, will suffer as basin waters warm and their habitat disappears. Warmer water temperatures may also lead to increased incidence of disease in GLBE organisms, simply due to the wider range of species (microorganisms) that will inhabit the warmer waters and watersheds. It will also allow a wider range of exotic species to survive within the GLBE.

Climate change might also influence the efficacy of chemical standards set in place to protect human health where increased variability may reduce the statistical power of monitoring programs (Crane *et al.*, 2005). This underscores the need to consider large-scale influences on the basin to ensure that the Agreement and the efforts of the Parties are not undermined by whole-basin stresses. The whole-basin stressor of primary concern is climate change, but other large-scale phenomena may also be important (e.g. “global dimming” (Ramanathan *et al.*, 1991)).

#### 4.2.5 Additional Concerns

Additional concerns with the Agreement that are not included in the above sections are below:

1. Article I, Definitions (f) The statement “...the level of environmental quality which the Parties desire to secure...” may allow the Parties to lessen their commitment and should be removed. The “protection of beneficial uses” should be retained and amended with “and the level of environmental quality required to protect, maintain, and restore the health of the Great Lakes Basin Ecosystem...”.
2. The Parties should reaffirm their commitment to the Agreement by replacing vague language in Article V (e.g. “their best efforts”) with unambiguous language tied to the accountability framework that specifies how, when, and by whom the requirements of Article V are undertaken.
3. The definition of “harmful quantity of oil”, as defined in Annex 4 and Annex 8, is not

sufficiently quantifiable to allow enforcement. The definition should include a minimum volume amount (e.g. 1 litre of oil / day) of oil. A “harmful quantity of oil” would then be the amount that either produces the effects listed in Annex 4, paragraph 1(b), or the amount that equals or exceeds the minimum amount, whichever of the two is lesser. In the spirit of protecting the GLBE, prevention of discharges (spills) should be addressed unambiguously in the Agreement. The Agreement, in Annex 4 or otherwise, should address requirements for vessels transporting oil and hazardous polluting substances. Hull, safety, and emergency requirements should be prescribed as a measure of protection.

4. Paragraph 2(b) of Annex 5 should be amended so that the discharge of wastewater in *any amount* should be prohibited and made subject to appropriate penalties.
5. Annex 7, paragraph 4, calls for research to investigate new technology and the fate of nutrients and contaminants in dredged materials. The new Agreement should clearly address the fate and effects of nutrients and contaminants in dredged materials and clearly identify requirements and limitations for dredging activities based on (1) ecological, (2) contaminant, and (3) nutrient criteria. The new Agreement should require that major dredging activities should be preceded by public education and consultation sessions, environmental impact assessments and detailed planning for removed sediments.
6. Annex 8 addresses discharges from onshore and offshore facilities. The Parties should be required to supply periodic reports on its programs and measures, existing or proposed, for the implementation of Annex 8. The IJC should be provided the power to revoke or amend planned projects if inadequacies suggest a risk of discharges from onshore and offshore facilities. The proposed accountability framework should provide punitive measures for repeated failures to prevent discharges by the Parties.
7. Annex 17, paragraph 2 should include the requirement to study the impact of whole-basin ecosystem stresses, particularly climate change, on the GLBE and water quality.

## CONCLUSIONS

The Great Lakes Water Quality Agreement is a landmark agreement that stands as a model of binational cooperation in the face of environmental degradation. For many years the Agreement was forward-looking and timely. During the twenty years since its revision, however, the Agreement has become outdated and progress toward its ultimate purpose has faltered. The current review of the Agreement gives the Parties the opportunity to address the weaknesses of the current Agreement in order to accelerate restoration and protection activities. It is also an opportunity for the Parties to address the emerging issues that face the Great Lakes Basin Ecosystem and revive the Agreement's visionary outlook. The Métis Nation of Ontario has provided comment on the Agreement in terms of its operation and its effectiveness with the hope that the Government of Canada will make the new Great Lakes Water Quality Agreement a symbol of environmental stewardship. It is our hope that the current generation will be able to proudly say that we considered the sustainability of the Great Lakes Basin Ecosystem along with the health and well-being of our children and grandchildren.



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## APPENDIX: MINUTES OF COMMUNITY MEETINGS

Sault Ste. Marie Meeting (March 21, 2007), Thunder Bay Meeting (March 26, 2007) and Midland meeting (March 27, 2007)

C. = comments from a community member

P. = comments from one of the presenting team

Presenting team: Brian Tucker, Fort Frances, John Williamson, Katarokwi Consulting and Paul Heighington, MNO, Ottawa. ( John Williamson did not attend SSM.)

Gary Lipinski, PCMNO Chair accompanied the presentation team to Thunder Bay and Midland.

All three sessions commenced with an introduction by Paul and an explanation of the purpose for the meeting. The latter two included a welcome to the evening by PCMNO Chair, Gary Lipinski. He outlined the recent Supreme Court of Canada decisions re the Crown's duty to consult and explained that these consultations were being funded by Environment Canada.

This was followed with a presentation on the Great Lakes Water Quality Agreement (GLWQA) led by Brian Tucker. He went through a PowerPoint presentation on the Agreement, its history and a series of questions that the Métis Community might have on the impacts of the Agreement on the local communities. The meeting was then opened for questions and general comments.

Discussed stresses both emerging and continuing as below:

1. Shoreline development and urban sprawl: Contributes to wetland destruction.
2. Chemical contaminants: Pollutants still being dumped into the Great Lakes, new contaminants such as flame retardants are being found in the Great Lakes.
3. Excess nutrients from both point source (e.g. sewage treatment plants, some legal spills) and non-point source (e.g. agriculture, urban stormwater run-off): Some progress has been made on adding capability in some municipalities for secondary treatment.
4. Climate change: Could be a problem for the communities around the Great Lakes, possibly lower water levels.
5. Exotic Species: Over 100 new introductions with a new one colonizing every 8-11 months. The Agreement doesn't really resolve exotics.

Discussed Areas of Concern (AOC) and the subsequent Remedial Action Plan (RAP) prepared to address the AOC. Since the Agreement was signed and RAPs addressed, only 2 of 43 around the

Great Lakes have been delisted. It was noted that the recent Federal Budget announced funding to address 2 more. At each meeting local AOCs were highlighted.

## **Sault Ste Marie**

**Held at the Historic Sault Ste Marie Community Council office 6.00 pm. March 21, 2007**

**Attendance:** 7 local community Métis Nation of Ontario (MNO) members.

**List of Attendees:** Kim Powley – Rep, Brenda Powley – Senator, Brent Mchale - Regional Councilor, Anne Trudel, Karla Lavve, John Konawalachuk, Steve Lessler - Community Council President, Michell Blas

One of the AOCs is the St. Marys River at Sault St. Marie and is largely a function of past industrialization of the river, exotic species, and sewage release.

Open Discussion.

- C. The chemical spraying along hydro lines to kill vegetation.
- C. Climate change and the lowering of water levels.
- C. The impact of forestry, particularly clearcuts, on water quality.
- C. The restoration of abandoned industrial areas.
- C. Sewage release into the river is a major concern. There is sometimes visible waste in the water.
- C. Exotic species, especially lamprey, are a concern. The government has been approached regarding alternate methods of management and obtaining licenses for harvesting.
- C. The number of cormorants is a concern.
- C. The possibility of water diversions is a concern.
- C. There needs to be a voice at the highest level to speak for the MNO on issues of the Great Lakes and water quality.
- C. The water seems to be noticeably warmer and weeds seem thicker.
- C. Lower water levels will affect fish spawning.

## **Thunder Bay**

**Held at Thunder Bay Métis Association office. 6.00 pm. March 26, 2007**

**Attendance:** 14 local community Métis Nation of Ontario (MNO) members.

**List of Attendees:** Earnest Arpin; Gerald LaForme; Robert Fleck; Cam Burgess; Jerry Faubert; Richard Faubert; Pat Faubert; John Falvo; Terry Desaulniers; Julie Ferguson; Catherine Barrie; Bob McKay, Senator MNO; Len Vaudrin. ( one name missing)

One of these AOCs is the Thunder Bay area and is largely a function of past industrialization of the harbour.

Open Discussion.

- C. The Thunder Bay harbour area has always been an important commercial fishery.
- C. Back in the 1960's there was an active Commercial fishery and the fisherman had concerns re discharge from the paper mill. Generally had large fish kill every summer downstream from the mill.
- C. Did some water samples with the Health department; showed serious contaminants.
- C. Lawyers etc were involved and said forget it, seemed to be hushed up. Couple years later the province created the Department of Water Resources.
- C. Mill would do much of the dumping at night when no one was around.
- C. All of these decisions are political so don't trust the Agreement and what is happening (when it is the same government making agreements that permit dumping).
- C. Feel that the quality of water in Thunder Bay is getting better. In the 60's I was a lighthouse keeper and there used to be a big plume of discoloured water in the harbour. Don't see it now.
- C. The city of Thunder Bay and the mill have improved their waste treatment.
- C. Fish are getting a little better in Thunder Bay now. Feel that air pollutants and acid rain are bigger concerns than the water now.
- C. Does anyone monitor aircraft discharges and dumping fuel? We hear a lot about car emissions but nothing about aircraft.
- C. Now we have Al Gore flying coast to coast with large jet warning about global warming. Use to be concerned about plane emissions when they were black. Now I think they add chemicals to lighten the exhaust so people don't see it.
- C. Why is it when Canada has some sort of pollution control/standard that it isn't the same in the U.S?
- P. This is essentially an agreement; there are no regulations with it to make the government implement the standards. Therefore little accountability for the parties to the Agreement.
- P. There is no requirements for the states to share information with the public. Canadian mills have pollution controls while some of those in the U.S. don't.
- P. What kind of report card does the community want from Environment Canada with regard to the agreement?
- P. The IJC can report based on the information they receive from the province and the states but there is no mandatory checklist.

- C. Where do we go from here?
- P. We are holding three community meetings. Will be looking at the Agreement and putting together comments to send back to Environment Canada.
- P. We shall prepare a draft report including a summary of community comments and a technical review of the Agreement. Will post the draft on the MNO website. It will go to PCMNO for review and approval and then be submitted to Environment Canada.
- C. How is the U.S. doing on pollution controls? Are their communities still dumping raw sewage?
- C. It has only been a few years since Thunder Bay has had secondary treatment. Red Rock/Nipigon still trying to get to that stage.
- C. Many communities still need to separate storm and sanitary sewage lines.
- C. What is the bigger concern – sewage or contaminants?
- C. How many places such as the Northern First Nation Communities has the Federal government put sewage discharge pipes upstream from the water intakes? Who puts an outhouse on top of a well? This has happened in a lot of the reserves.
- C. We don't hold people accountable for their decisions anymore. There is a need to bring the responsibility back to the ground levels.
- P. Are there any patterns that you as community members have observed with fish, birds etc?
- C. There seems to be a pattern now. The water levels of Lake Superior are as low as I can remember.
- C. Cormorants are now a problem. Their numbers have exploded. Use to see 6-8 per year now hundreds. They seem to be having a big impact on perch and herring numbers in Black Bay.
- C. There are a lot of geese nesting in Thunder Bay now. They never use to stay. Lots of them in the parks. Their waste affects the water quality. There needs to be a selective harvest in the city.
- C. Exotic species. What is creating this issue?
- P. The main vector is thought to be trans-oceanic shipping and the dumping of ballast water. Explained dumping the ballast tank and flushing it in salt water before entering the seaway.
- C. Concern was expressed with large clearcuts. They are like huge golf courses. Concern with the cumulative effects of defoliants and other sprays
- P. The agreement makes passing reference to forestry but has no targets. There is nothing to hold people accountable. The IJC issues a biannual report which sort of acts like a report card.
- P. This review is the first full public review in 20 years. Hopefully there will be a public and political will to act on the results of the review.
- C. Unfortunately many government departments are laying-off employees so there is less program staff to monitor the environment and the Agreement.
- P. The map with the Agreement shows a large area around the Great Lakes i.e. the basin so impacts of activities there are also included in comments and that catches the forestry aspect.
- C. Need performance measures and targets in the Agreement and then the communities can

track if information is available. Agreement needs an enforcement component to keep the two countries on track.

- C. Shipping needs to be addressed as introduction of exotics still happening and need treatment for the exotics.
- C. What happens for oil shipping? We don't need a Valdez situation on the Great Lakes. Need regulations perhaps double-walled hulls.
- C. Concern with live ammunition weapon training by the U.S. Coast Guard on the Great Lakes.
- C. Very concerned re. water levels and water diversions. Diversion through Lake Nipigon impacts on Northern Ontario and Lake Nipigon not just Lake Superior.
- C. Concern re water bottling and the potential for export of water from the Great Lakes basin.
- C. People from the communities need to be included to make sure actions planned are actually being accomplished.
- P. Accountability and responsibility for action in response to spills is an exception in the Agreement. It does specify action and names a rapid deployment response team and responsibilities.
- C. In 1967 the US government had plans to divert the Moose River back through Lake Nipigon to pipe water to places like Arizona.
- P. There is another International Agreement with Ontario and Great Lake States re. water export from the Great Lakes.
- C. Anecdotal comments about creosote build up in the harbour from a railway tie treatment plant. Build up in the basin sediments. Believed to have since been cleaned up. How do companies get away with polluting?
- P. Now there is more diffuse pollution versus actually dumping. As the population increases it gets worse.
- C. Now 1 in 5 fish seem to have tumours. They never use to have them.
- P. Some contaminants more problematic to deal with than others; e.g. heavy metals like mercury. If don't remove them they will stay in the sediments and food chain for a long time. Get bio-magnification as they accumulate and concentrate as they move up the food chain.
- C. Road salt and where does it go? The fact that it eventually ends up in Lake Superior is a concern. Are there not alternatives or perhaps people should slow down and not need salt.
- C. When it comes to pollution like many things we hassle the little players but ignore the big ones. In the sled dog world a big dog can pull more than a small dog but we tend to "whip the small dog and let the husky run free". There needs to be responsibility across the board.
- C. Discussion about Sturgeon Lake northwest of Lake Superior. Commercial fished it for over 40 years. Used to be able to leave nets with no problem for 2-3 days. Now if more than 1 day the fish go soft. Need to lift daily now. All kinds of weed growth where there wasn't any before. The same is true for Black Bay.
- C. Feel that the excess heat from the Atikokan generating plant helps to produce weed growth on the lake there.



- C. Used to see more commercials about not polluting. Not as common today. Need to get the word out there in the way of education.

## **Midland**

**Held at Georgian Bay Region Métis Nation of Ontario office. 6.00 pm . March 27, 2007.**

**Attendance: 10,** 8 MNO members and 2 representatives from MP Garfield Dunlop's office.

**Names of attendees:** Ruth Wagner-Millington Senator, Moon River Council; Ruth Quesnelle; Lisa McCran; Louise Goulding; Anita Tucker; Larry Ferris; Pauline Saulnier; Scott Carpenter. Also Joan Lawrence and Marjorie Roach from MP Garfield Dunlop's office

Welcome and introduction was the same as at Thunder Bay and led by Brian Tucker. A couple of the slides were changed to represent the AOC around Georgian Bay versus Thunder Bay. Outlined that the two (2) local AOCs, for which RAPs had been prepared, have both been delisted after concerns have been addressed.

The two are 1) Severn Sound, which was delisted in 2003, but monitoring is on-going and 2) Collingwood Harbour which was delisted in 1994 after it was dredged and contaminated sediment removed.

- C. The question was asked whether these were the only two Areas of Concern identified for all of Georgian Bay?
- P. The answer was yes, these are the two identified.

The presentation concluded with a review of the key questions with regard to the Review of the GLWQA.

Gary Lipinski stated that this was "our opportunity to voice concerns with the agreement".

The meeting was opened for comments from the community.

- C. Liked the slides and captions and found that they helped us to follow the presentation.
- C. Need to remember at these local meetings that the waterways are in a sense our roads as we use them to get back and forth to our houses on the islands.
- C. We often need to dredge near our docks to allow for boat traffic as the water levels drop.
- C. Concern was expressed about the agreement for a pipeline from Georgian Bay for water to feed the urban sprawl.
- C. Comment from one of the representatives from Garfield Dunlop's office that there is already a "big pipe" that pipes drinking water down from Georgian Bay to York Region.

- C. Who approved the pipe and the water-taking? Why take water out of Georgian Bay when we already need to dredge to use our docks because of low water levels?
- C. The question was asked whether the dredging of the St. Clair River that deepened the channel results in more water flowing out of Lake Huron.
- P. Could not give a definitive answer. Not sure if Lake Huron has an agreed upon water level but suspect that there is an acceptable range identified through the International Joint Commission (IJC).
- C. Heard that the plan now is to install some weirs in the St. Clair River to allow sediments to precipitate out of the water column by slowing down the water flow. The sediment could then be dredged.
- P. Unfortunately the GLWQA is simply an agreement not legislation and has no teeth to hold agencies accountable.
- C. Can we comment on dredging issues.
- C. Balm Beach area- the beach gets closed for pollution a lot more frequently than when I was younger.
- C. The same is true for large clumps of green algae. See it a lot more now than we used to.
- C. Concern was expressed about the large dumps of raw sewage along with storm water when get heavy rains and the impact of these on the water quality and ability to use the water.
- C. Last summer there was a large dump of raw sewage in the ST. Mary's River yet no one was held responsible. At Echo Bay just east of Sault Ste Marie the beach experienced a large algae bloom and kids experienced severe rash and swimmers itch.
- P. Explained that swimmers itch is from a parasite that normally is hosted by water birds.
- C. Need to focus on human health and protection of humans when there is a raw sewage spill/overflow. When a spill occurs, take responsibility and alert the local population.
- C. Who is accountable when these happen? There is a true lack of governance. Can MNO be part of holding government accountable and take a role. Need to convey this in the report.
- C. Walpole F.N. has a program in their schools and kids are trained to do water monitoring.
- C. Can have NGOs given special status to continue to monitor the GLWQA and be environmental watchdogs.
- C. Need a platform to critique the appropriate government body.
- C. What actions were taken at Collingwood to allow the AOC to be delisted and who paid for the clean up?
- P. Usually with RAPs there is a multitude of funding sources including all levels of government and some NGOs. The recent Federal budget announced funding for a couple of RAPs. But generally governments pay the majority. Usually the industry that caused the problem is long gone. Around the shore, agriculture has reduced the non-point nutrient load through reduced fertilizer use and buffer strips for addressing grazing cattle.
- C. What does the Agreement have in place to address exotic species such as zebra mussels?
- P. There is nothing in the agreement. Discussed the concept and requirement for Great Lakes ships that are trans-oceanic to flush their ballast tanks before entering the Great Lakes. Also discussed the difficulty to enforce this and also the safety issue of empty ballast tanks.

- C. There has been a cargo tax collected on shipping for years and we understand it was to address pollution. Can that funding not be used to address exotics?
- C. UV light and chlorine flush apparently kills zebra mussels: are they trying this?
- Will the revised agreement consider the impact of a future water/river diversion in Northern Ontario into the Great Lakes and hydro potential and the potential export of water?
- P. Consider the state of the Great Lakes. How do you find the water quality? Is it different than in 1972?
- C. It is hard to find a reference point as it seems to vary annually with water levels and seasonal temperatures. It seems to be more variable now.
- C. The species around the edge of the water have changed. We seem to have more leopard frogs in the marshes now and a lot more bullfrogs.
- C. Also there seems to be more snakes showing up along the shoreline possibly because of the increase in numbers of frogs.
- C. See more weeds in the water now where before there were hardly any now they come right to the surface.
- P. Sounds like you are describing Asian milfoil, which is an introduced species.
- C. There use to be clouds of baitfish in some of the bays and there are a lot less now.
- C. We are still seeing logging debris washed up on shore from the bottom of the bays.
- C. Fish are in different spots now because of the shallower water. Can't fish the traditional places. Is it because of water temperatures, light, clarity with zebra mussels or ...?
- C. How is the report going to be written?
- P. Paul explained the report, proposed format, that it will be posted on the MNO website. That there will be recommendations as part of the report. The renewal will represent a new era of the Agreement.
- C. If Collingwood is delisted as it is now ok, then have problems with the standard that is being applied. There is still raw sewage floating around the harbour.
- C. Need accountability within the Agreement or linkages between the Agreement and legislation such as the Fisheries Act.
- C. Concern with the number of cormorants now. What is the linkage between their population level and vegetation and fisheries.
- P. The increase should probably be seen as a "positive sign" of an improving environment. The question is "how many is enough"?
- C. Have been swimming at Edwards-Georgian Beach for 20 years. The water was always clear. Was a lot of filamentous algae on the rocks which has now been replaced by a brown slime on the rocks.
- C. Does the GLWQA look at areas outside of the 43 AOCs?
- P. Yes. It includes all of the lakes and the basin around them.
- C. Is Lake Simcoe being included? There is so much development occurring around it.
- C. Staff from Garfield Dunlop's office commented that there is \$12 million in the latest federal budget to address water quality in Lake Simcoe.
- C. Concern was expressed about the impact of population growth around the Great Lakes in

areas such as Barrie, Wasaga Beach etc.

- C. This increased growth results in more water usage and fertilizer to keep lawns green.
- C. Concern was expressed that in Victoria Harbour a large dock was built on a pike spawning area. There needs to be more awareness. Expansion versus pre-approval.
- C. Need to consider traditional and local knowledge when assessing awareness of habitat and when protecting or restoring habitat.
- C. To what standard do we restore an AOC. To before settlement or to a more recent standard?
- C. Since Aboriginal people have special rights to harvest, should they not have a special interest in the Agreement? Need recognition as stewards.
- P. Aboriginal groups have received special funding for consultation as part of the review. That is where the funding has come from for these sessions.
- C. Our people are more connected to the land and water and are at greater risk to contaminants that accumulate in fish etc that we consume.
- C. We need to talk about communities that are more at risk.
- P. Paul stated that the funding agreement with Environment Canada recognizes the government's duty to consult and our special relationship with the land. We need to keep the Great Lakes clean for us to have vibrant communities.
- C. Very concerned about the possible export of water both from the Great Lakes but also from the Georgian Bay basin to Lake Ontario Basin through urban sprawl. With dropping water levels can't keep exporting water.
- C. Concern expressed on the impacts of falling Great Lakes water levels on wells and ground water as well as all the new wells.
- C. If extract ground water there is less to flow to the Great Lakes.
- C. Need something in the building codes to address water usage and flows.
- C. Is separating gray and black water being considered as part of sewage treatment.

Questions forwarded after the meeting.

- What exactly makes a harbour or waterway to be considered polluted (i.e. AOC) under this Agreement?
- When are waterways considered for monitoring? Are all waterways monitored and for what are they monitored?
- Can we get data for the waterways around our area from the tests that are being conducted?