

Lake St. Clair Canadian Watershed Coordination Council
Lake St. Clair Canadian Work Plan
April 1st, 2011- March 31st, 2016

Background

The Lake St. Clair Canadian Work Plan is the third phase in the management and coordination efforts for the Canadian side of Lake St. Clair. In 2005, a review of existing scientific information was completed to provide an assessment of the Lake St. Clair ecosystem and to identify management issues. This work was published as the Lake St. Clair Canadian Watershed Technical Report (2005).

Following this effort, it was evident that the causes of the management issues identified in the Technical Report required management actions at both the Canadian and US watershed levels and there was thus a need for separate Canadian and U.S. watershed Management Plans. The Lake St. Clair Canadian Management Plan (2009) was developed to address the issues identified in the Technical Report including a list of recommendations needed to improve the state of the Lake St. Clair ecosystem.

Under the Lake St. Clair management framework, the Lake St. Clair Canadian Watershed Coordination Council (LSCCWCC) undertakes the coordination of ecosystem management activities within the Canadian portion of the lake and watershed. The Canadian Coordination Council is comprised of representatives from: Environment Canada (EC) (co-chair), Ontario Ministry of Environment (OMOE) (co-chair), Ontario Ministry of Natural Resources (OMNR), Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), Fisheries and Oceans Canada (DFO), Walpole Island First Nation (WIFN), St. Clair Region Conservation Authority (SCRCA), Upper Thames River Conservation Authority (UTRCA), Lower Thames Valley Conservation Authority (LTVCA) and the Essex Region Conservation Authority (ERCA).

Lake St. Clair forms part of the international boundary water between Canada and the United States. Its management is complex with responsibilities lying with United States and Canadian federal governments, the Province of Ontario, the State of Michigan, First Nations, and local governments. The efforts of many government programs over the last 30 years have improved the environmental health of Lake St. Clair and its adjacent watersheds. However, management programs typically have focused on specific pollution sources and habitat conservation issues, rather than the entire Lake St. Clair ecosystem. In contrast, this Lake St. Clair Work plan and the preceding Lake St. Clair Canadian Management Plan focus on Lake St. Clair and its adjacent lands as a whole rather than a sum of its parts.

Lake St. Clair Canadian Coordination Council: Guiding Principles

Vision

The LSCCWCC envisions a healthy Lake St. Clair watershed in which all levels of government, non-government organizations, associations, businesses, academic institutions, landowners and individuals work together to protect, sustain and enhance the natural environment while providing opportunities for people and communities to thrive and prosper.

Goals

- Integrate Canadian tributary watershed programs and Great Lakes basin-wide initiatives.
- Facilitate cooperation and collaboration towards environmental improvements and provide a forum to address issues and share information specifically in the context of Canadian Lake St. Clair watershed.
- Support existing resource allocations, and encourage the allocation of new resources to address issues on local, national, and international scales.

Objectives

- Identify management issues and develop recommendations pertinent to the Canadian portion of the watershed.
- To provide a basis for the development of detailed implementation strategies and action plans.

About the Work Plan

The Work Plan provides a framework for the implementation of actions required for the restoration and protection of the Lake St. Clair watershed and its ecosystem. The Plan is divided into sections where focused and coordinated efforts are most needed. Sections include:

- [Land Use Management \(Section 1\)](#)
- [Commercial Navigation and Recreational Boating \(Section 2\)](#)
- [Sources of Pollution \(Section 3\)](#)
- [Human Health \(Section 4\)](#)
- [Habitat and Biodiversity \(Section 5\)](#)
- [Fishing and Hunting \(Section 6\)](#)
- [Monitoring, Scientific Studies and Data Management \(Section 7\)](#)
- [Governance \(Section 8\)](#)

The Work Plan includes: the actions, timelines, and the recommended lead agencies responsible for implementing identified actions.

Path Forward

Forming Partnerships

The LSCCWCC will work with partner agencies to implement activities outlined in this Work Plan, and ensure that the Work Plan is reflective of the ideas and needs of Lake St. Clair partner agencies. The LSCCWCC has committed to continuing to work with partner agencies to achieve the actions identified in this Work Plan. Where possible, implementation at a binational scale will be pursued.

Linking to the Canada-Ontario Agreement

The Lake St. Clair Canadian Work Plan will help to ensure that Lake St. Clair commitments are included under the next *Canada-Ontario Agreement (COA): Respecting the Great Lakes Basin* (to be renewed in 2012). This will help to secure resources and support needed to

continue restoring the Lake St. Clair Ecosystem. The LSCCWCC will work with agencies involved in the development of commitments for the next COA to ensure Lake St. Clair is recognized as part of the Agreement.

Progress Reporting

At the conclusion of each work plan year, the LSCCWCC will review progress and update commitments where necessary. In addition, through the Four Party Manager's Quarterly Update Report, the Lake Erie Lakewide Management Plan Annual Update Report and 5-year Report, and the Lake St. Clair Biennial Conference the LSCCWCC will report out on the status of actions under the Lake St. Clair Canadian Work Plan.

SECTION 1 – LAND USE MANAGEMENT

Management Issues

- Detrimental impacts to water quality and quantity resulting from land use (e.g., reduced natural cover, increased imperviousness) have increased sediment, nutrient, bacterial and chemical inputs.
- Challenges exist for municipal governments to provide a balance among a healthy environment, a healthy lifestyle, and a healthy economy.

Recommendation #1.1

Support the implementation of agricultural and rural, industrial and urban beneficial management practices and programs throughout the watershed to enhance water quality, water quantity, and habitat sustainability.

Actions	LSC Specific	Timeline	Lead
Support, promote and implement rural, agricultural and urban beneficial management practices (BMPs) [e.g. buffer strips, fragile land retirement, soil erosion control structures, septic system upgrades, stormwater management, well decommissioning, manure storages and organic commodity production (farming)]. Work with existing initiatives such as local Clean Water Programs, Canada-Ontario Environmental Farm Plan, and <i>Clean Water Act</i> and <i>Nutrient Management Act</i> programs.	X	Ongoing	CAs, Ontario Stewardship
Study impacts of septic systems on water quality where issues exist in the watershed (e.g. Walpole Island, rural areas). Investigate and conduct cost assessment of alternatives to septic systems and/or upgrades.		2012-2013	WIFN, CAs
Support the development and implementation of tools that help characterize agricultural watersheds (e.g. Agricultural Resource Inventory (ARI), AGNPS, etc.) to help inform management decisions and identify priority actions.		Ongoing	OMAFRA, CAs
Protect significant natural heritage features through land acquisition and related means (conservation easements, donations, etc.).	X	Ongoing	OMNR, CAs

Complete habitat restoration and enhancement activities with an emphasis on forest, prairie and wetland habitats.	X	2011 - 2016	OMNR, CAs, Ontario Stewardship
Promote innovative agricultural drain maintenance projects as part of ongoing municipal drain management activities (e.g. restricted outlets, minimal cleanouts etc.).		2011 - 2016	OMAFRA, Ontario Stewardship
Support education and awareness activities related to urban and rural non-point source pollution remediation (e.g., compact urban form, pesticide use, ecological footprint, etc.).		Ongoing	CAs, Ontario Stewardship
Support stewardship activities that encourage sustainable land use practices for the protection of fish and wildlife habitat.		Ongoing	OMNR, CAs

Recommendation #1.2

Effectively engage the Province of Ontario and lower and upper tier municipalities to develop and promote environmentally healthy land use management planning and development standards.

Actions	LSC Specific	Timeline	Lead
Develop community-based watershed/sub-watershed management plans to identify local issues such as priority non-point source sites in the sub-watershed.		2011 - 2016	CAs, OMOE, OMNR
Encourage municipalities to incorporate existing environmental plans (e.g. watershed/sub-watershed management plans) and technical guidance (e.g. Ducks Unlimited priority areas) into Official Plans and strengthen the environmental policies (e.g. provision for greater protection of water quality and fish and wildlife habitat identified in Natural heritage policies) within the Plans.		2011 - 2016	OMNR, CAs, OMMAH, municipalities
Integrate all WIFN plans and policies into a comprehensive official plan (e.g. Capital Planning Study, Drainage Plan, Environmental Protection Plans, etc.).		2011-2013	WIFN

Promote more effective natural areas protection through subsequent revisions of the Provincial Policy Statement		2011-2012	OMMAH
Encourage the review and amendment of the <i>Drainage Act</i> to promote drain management that increases emphasis on habitat and water quality		2011-2012	OMAFRA

Recommendation #1.3

Develop adaptive management strategies to address the effects of climate change.

Actions	LSC Specific	Timeline	Lead
Develop a 'Climate Change and Lake St. Clair: Expected Impacts, Mitigation and Adaptation' Discussion Paper.	X	2011-2013	EC, OMOE, CAs, WIFN
Implement the recommendations of the Climate Change Discussion Paper.	X	2013 - 2016	Based on recommendations of Climate Change Discussion Paper

SECTION 2 – COMMERCIAL NAVIGATION AND RECREATIONAL BOATING

Management Issues:

- Efforts to restrict or prevent the arrival and spread of invasive species into the Great Lakes via hull fouling or the de-ballasting of water and sediment have been limited.
- Shoreline hardening to accommodate commercial navigation and marina development, as well as to protect exposed shorelines against wave-erosion, have resulted in significant reductions in coastal habitat and altered current and sediment deposition patterns.
- The shipping traffic associated with the presence of the large petrochemical industry upstream of the lake represents an ongoing risk to ecology of the lake.
- Lower water levels, caused by climate change, will result in an increased need for dredging at marinas and docks.
- The potential expansion of the seaway system may alter existing habitat by increasing habitat losses, turbulence and wave disturbance, altering flow patterns, and disrupting the distribution of wildlife and plants within the lake, nearshore or adjacent areas.
- Knowledge of the effects of BTEX (benzene, toluene, ethylbenzene, xylenes) emissions from two-stroke marine engines on the environment is limited.

- The increased seasonal boating pressures and the popularity of jet-propelled personal watercraft that can operate in very shallow waters have the potential to increase wave action, uproot aquatic vegetation, and re-suspend bottom sediments, leading to habitat degradation at the shoreline and in nearshore areas.

Recommendation #2.1

Determine the extent of the impacts of increased seasonal boating pressures and jet-propelled personal watercraft in order to develop appropriate management actions.

Actions	LSC Specific	Timeline	Lead
Continue to monitor federal discussions on shoreline erosion and support follow-up actions.	X	2011-2014	TC, EC, DFO (CCG)
Investigate and implement protection measures (e.g. speed limits and restrictions, delineation of fish zones during spawning, migratory bird zones) for environmentally sensitive areas.	X	Ongoing	WIFN, OMNR, TC

Recommendation #2.2

Communicate and educate stakeholders about environmentally friendly boating practices, the effects of older two-stroke engines on the environment.

Actions	LSC Specific	Timeline	Lead
Continue to support awareness about environmentally friendly boating practices (i.e. courses, publications and programs) on habitat by targeted user groups (e.g., fishing, hunting).	X	Ongoing	TC, LSCCWCC
Develop and disseminate outreach/educational materials about environmentally friendly boating practices (e.g. upgrade to two-stroke engines) to increase public awareness and action (e.g. at boat launches, boat shows).	X	2011-2016	TC, LSCCWCC

Recommendation #2.3

Stop the spread of established invasive species and prevent future introductions of other invasive species.

Actions	LSC Specific	Timeline	Lead
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Support federal efforts to stop the spread of established invasive species and prevent future introductions, e.g. ballast control measures, no salties, No-Ballast-On-Board (NOBOB).		2012-2016	LSCCWCC
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Recommendation #2.4

Continue to regularly review and update Emergency Response Plans in accordance with regulations.

Actions	LSC Specific	Timeline	Lead
Support the development and implementation of Walpole Island First Nation Spills Response Plans.	X	2012 - 2014	WIFN
Continue to regularly review and update Emergency Response Plans in accordance with regulations.		Ongoing	TC, DFO (CCG)

Recommendation #2.5

Determine the effects of contaminants on the environment in order to develop appropriate management actions.

Actions	LSC Specific	Timeline	Lead
Determine the effects of BTEX (i.e. benzene, toluene, ethylbenzene, xylene) from two-stroke engines on the Lake St. Clair ecosystem.	X	2012-2014	LSCCWCC
Determine the impacts of gray water on ecosystem and establish appropriate management actions.	X	2012-2013	LSCCWCC

SECTION 3 – SOURCES OF POLLUTION

Management Issues

- Point and non-point sources of pollution are having a detrimental impact on water and habitat quality (e.g., beach closures, sedimentation).
- Out of basin sources of pollution cannot be addressed through a watershed management plan for Lake St. Clair, but rather should be addressed through national and global plans.
- The risks of chemical and fuel spills threaten fish, wildlife and natural habitat, particularly at certain times of the year (e.g., breeding, migration).

Recommendation #3.1

Support the implementation of agricultural and rural, industrial and urban beneficial management practices and programs throughout the watershed to enhance water quality, water quantity, and habitat sustainability.

Actions	LSC Specific	Timeline	Lead
Continue to provide technical advice, outreach materials and assist land owners to access funding (where available) as part of ongoing non-point source and stewardship programs.		Ongoing	OMNR, OMAFRA, SCRCA, ERCA, UTRCA, LTVCA
Assess drainage ditches on WIFN for pesticides. In response, develop and implement options to mitigate.	X	Ongoing	WIFN
Identify and consult with municipalities to identify what long range plans are in place to eliminate combined sewer overflow (CSO) discharges to Lake St. Clair and its tributaries. Promote infrastructure investments (i.e., sewer separation, retention treatment basins) and source control (i.e., downspout disconnections).	X	2011 - 2016	Municipalities, OMOE

Recommendation #3.2

Support outreach and education initiatives throughout the watershed that promote sound land use management practices, environmentally friendly boating and habitat restoration/protection projects.

Actions	LSC Specific	Timeline	Lead
Provide technical transfer opportunities such as workshops, extension materials and training to promote stewardship activities by communities, landowners and youth (e.g. Water Festivals) for Lake St. Clair priority issues.		Ongoing	CAs, Ontario Stewardship
Support development of market-based incentive programs for BMPs and providing ecological goods and services.		2011 - 2016	LSCCWCC

Support Clean Water Program implementation (a rural water quality initiative that provides technical assistance and financial incentives to improve and protect water quality on farms and rural properties).		Ongoing	CAs, OMOE
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Recommendation #3.3

Develop remediation programs that address specific issues from a watershed wide perspective, and involve collaborative action by local, regional, provincial, and federal organizations.

Actions	LSC Specific	Timeline	Lead
Identify funding gaps required for remediation programs and promote existing funding sources.	X	2011-2012	OMNR, EC, OMOE, OMAFRA, CAs, Stewardship Networks
Work with the Lake Erie LaMP to support, promote and implement (where applicable) the recommendations identified in the Lake Erie LaMP Nutrient Management Strategy.	X	2011-2016	LSCCWCC

Recommendation #3.4

Eliminate regulatory exceedences from point sources of pollutants.

Actions	LSC Specific	Timeline	Lead
Continue to work with local industry and municipalities to correct any issues that may occur.(e.g. Bill 153 - "Spills Bill")		Ongoing	OMOE

Recommendation #3.5

Eliminate sources of mercury and PCBs.

Actions	LSC Specific	Timeline	Lead
Identify and quantify ongoing watershed sources of mercury and PCBs that are not being dealt with by existing regulatory programs.		2011 - 2013	OMOE, EC

Continue to support contaminated sediment remediation activities underway (e.g. St. Clair River, Pottersburg Creek).		2011 - 2014	LSCCWCC
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Recommendation #3.6

Continue to regularly review and update Emergency Response Plans in accordance with regulations.

Actions	LSC Specific	Timeline	Lead
Track the progress of industry to meet the requirements of Ontario Reg. 224/07, Spills Prevention and Contingency Plans.		Ongoing	OMOE

SECTION 4 – HUMAN HEALTH

Management Issues:

- Elevated concentrations of mercury and PCBs in fish continue to cause advisories on the consumption of fish caught in the Lake St. Clair watershed.
- Point and non-point sources of pollution are having a detrimental impact on water quality (i.e. fish consumption, beach postings, drinking water).
- Concerns with existing and emerging pollutants (e.g., pharmaceuticals).

Recommendation #4.1

Maintain high standards of treated water quality for public consumption, updating as required.

Actions	LSC Specific	Timeline	Lead
Continue to provide monitoring information to the public providing concise summarized water quality reports.		Ongoing	OMOE
Investigate the possibility of utilizing reverse osmosis at WIFN Water Treatment Plant.		2011-2012	WIFN

Recommendation #4.2

Protect raw water sources from point and non-point sources of pollution through voluntary compliance and enforcement of regulations.

Actions	LSC Specific	Timeline	Lead
Support LSC Watershed activities identified within Source Water Protection Plans.	X	Ongoing	OMOE, SCRCA, ERCA, LTVCA, UTRCA, Industry, Municipalities.
Work with dischargers to continue to meet or exceed discharge requirements found in their C of A's		Ongoing	OMOE, Municipalities, Industry
Promote BMPs that protect private wellheads.	X	Ongoing	OMOE, OMAFRA, CAs, EC

Recommendation #4.4

Encourage water conservation measures.

Actions	LSC Specific	Timeline	Lead
Engage the province and municipalities to provide incentives and educate the public on using water efficient fixtures.		2011 - 2016	OMMAH, Municipalities
Require that new developments incorporate water (& energy) efficient fixtures (via Ont. Bldg Code)	X	2011-2013	OMMAH, Municipalities, OMAFRA

Recommendation #4.5

Continue to investigate the sources and effects of non-point source pollution where they are poorly understood, and monitor the impacts of remediation projects and current legislation e.g. Ontario Nutrient Management Act.

Actions	LSC Specific	Timeline	Lead
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Investigate sources of contaminants (i.e. microbial source trackdown) and evaluate the effectiveness of remediation projects as they affect Human Health.	X	2011 - 2016	EC, OMOE, Ontario Public Health Units, WIFN
Increase understanding and support research on nutrient dynamics in the Great Lakes (e.g. human health and environmental impacts of blue-green algal toxins).	X	2011 - 2016	EC, OMOE
Track monitoring efforts to identify emerging contaminants in treated water.		Ongoing	Municipalities, OMOE, EC
Work with partners to develop remediation strategies to mitigate impacts of emerging contaminants on human health.	X	Ongoing	EC, OMOE, HC, Municipalities
Communicate and educate stakeholders about drinking water issues (e.g. "Friends of...", stakeholder forums, school programs).		Ongoing	LSCWCC

SECTION 5 – HABITAT AND BIODIVERSITY

Management Issues:

- Stressors caused by on water activities (e.g. recreational boating) to the biota during sensitive periods of their life history (e.g. breeding, migration).
- Impacts of improper land use management activities on the hydrologic and/or sediment cycles are reflected in impaired quality or reduced quantity of aquatic habitats.
- Habitat loss and fragmentation associated with existing and future land uses has the potential to adversely affect fish and wildlife populations and species diversity.
- Invasive species have, and are expected to continue to, affect the ecology of Lake St. Clair and the diversity of species that live in and around it.

Recommendation #5.1

Support outreach and education initiatives throughout the watershed that promote habitat restoration/protection projects.

Actions	LSC Specific	Timeline	Lead
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Support and provide technical transfer opportunities such as workshops, extension materials and training that support beneficial management practices (BMPs) and stewardship activities by communities and landowners.		Ongoing	OMNR, OMAFRA, CAs
Support the development of market-based incentive programs for BMPs that provide ecological goods and services (e.g. carbon sequestration and carbon trading, Alternative Land Use Services (ALUS)).		2012 - 2014	LSCCWCC
Maintain and encourage increased funding for stewardship initiatives (e.g., GreenCover, Ontario Stewardship programs and COA).		2011 - 2016	LSCCWCC
Encourage and support the awareness, use and documentation of Traditional Ecological Knowledge (TEK). For example, WIFN to identify and map the data regarding important habitats, spawning areas, etc. for fish and wildlife on Lake St. Clair.		2011 - 2016	WIFN
Encourage and support volunteer wildlife monitoring programs in the area (e.g. Marsh Monitoring Program).		2011 - 2016	EC-CWS, SCRCA, OMNR

Recommendation #5.2

Develop and implement plans addressing natural function e.g., natural heritage strategies, fish habitat management plans, shoreline management plans.

Actions	LSC Specific	Timeline	Lead
Inventory and assess strategies and plans (i.e. fish management and watershed plans) that are being implemented and identify where gaps exist.	X	2011 – 2013	LSCCWCC
Develop and implement Shoreline Plans and ensure connections to the Lake are included.	X	2011 - 2016	CAs, Municipalities
Support and encourage efforts to protect natural heritage features through land acquisition (e.g. Support the Walpole Island Land Trust Initiatives).	X	2011 - 2016	OMNR, CAs, WIFN

Recommendation #5.3

Encourage the timely completion and implementation of Recovery Strategies for Lake St. Clair's watershed species at risk.

Actions	LSC Specific	Timeline	Lead
Complete an inventory of recovery documents (i.e. recovery strategies, management plans and action plans) that exist in the Lake St. Clair Watershed (federal and provincial), identify where the gaps exist and support the completion of these strategies.	X	2012-2013	OMNR, EC
Support the engagement, consultation and outreach for First Nations to ensure that there is an opportunity to share and consider the incorporation of Traditional Ecological Knowledge in species at risk recovery documents (i.e. recovery strategies, management plans and action plans).		2011 - 2016	OMNR, EC
Establish <i>Ecosystem Circles</i> to discuss Species at Risk, and review associated Recovery Strategies/Action Plans.		2011-2012	WIFN

Recommendation #5.4

Track the extent of habitat alterations and species composition at a Lake and tributary watershed scale.

Actions	LSC Specific	Timeline	Lead
Conduct an inventory of existing Lake St. Clair Watershed aquatic and terrestrial habitat mapping data (e.g. SOLRIS to track wetlands/riparian/upland communities) and identify priority areas and where gaps exist.	X	2011-2013	OMNR, WIFN
Identify important wetland habitats, spawning areas, etc. for fish and wildlife on the lake (OMNR, DFO, and EC). Overlay boat use with important habitats to identify possible areas on the lake that may be susceptible to habitat degradation.	X	2012-2013	LSCWCC
Identify and assess existing monitoring and assessment programs (i.e. fish and benthic community monitoring programs; habitat evaluations/assessments for fish and wildlife (e.g. wetland habitats, spawning areas), in the Lake St. Clair watershed and track progress in meeting identified goals.	X	2011 - 2016	OMNR, OMOE, DFO, CAs, EC-CWS, WIFN
Investigate options for improving fish access to dyked wetlands at WIFN and develop recommendations.	X	2011-2016	WIFN

Recommendation #5.5

Stop the spread of established invasive species and prevent future introductions of other invasive species.

Actions	LSC Specific	Timeline	Lead
Monitor invasive species from a fish community perspective.		2011 - 2016	OMNR, DFO, OFAH
Support monitoring and implementation of control programs for all invasive species (e.g. Zebra and Quagga mussels, Round Goby, Phragmites and Sea Lamprey) in the Lake St. Clair watershed.		Ongoing	OMNR, DFO, OMOE, CAs, EC

SECTION 6 – FISHING AND HUNTING

Management Issues:

- Declining waterfowl use of some traditional feeding and resting areas has been linked to increased fall recreational boating and fishing activities.
- Current levels of fishing and hunting are not detrimentally impacting on the fish and wildlife communities that reside in Lake St. Clair, however, spring and early summer fishing activity may harm populations of smallmouth bass if reproduction is interrupted.

Recommendation #6.1

Continue to provide sustainable fisheries, wildlife, and waterfowl resources within the Lake and watershed.

Actions	LSC Specific	Timeline	Lead
Encourage ethical hunting and fishing practices in youth through activities such as youth days and the hunter safety course.		2011 - 2016	OMNR
Support and promote the use by anglers of the Guide to Eating Ontario Sportfish.		Ongoing	OMNR, OMOE
Support WIFN's fish consumption guideline study.	X	2011 - 2014	WIFN
Monitor fish and wildlife populations to ensure annual harvests (commercial and recreational) are sustainable.		Ongoing	OMNR

Recommendation #6.2

Support outreach and education initiatives throughout the watershed that promote sound fishing and hunting practices.

Actions	LSC Specific	Timeline	Lead
Support existing programs and the distribution of materials that promote sustainable fishing and hunting. Compile a list of existing programs and make available to Lake St. Clair Canadian watershed partners.		2011-2012	LSCCWCC & Partner agencies (e.g. OFAH; Ducks Unlimited Canada)

SECTION 7 - MONITORING, SCIENTIFIC STUDIES AND DATA MANAGEMENT

Management Issues:

A program or policy approach to watershed research, monitoring, and reporting, is not as effective as a coordinated, ecosystem approach.

Recommendation #7.1

Develop a coordinated comprehensive program for scientific research, monitoring, and reporting.

Actions	LSC Specific	Timeline	Lead
Identify existing research and monitoring programs (i.e. CSMI, HEC, LEMN) in the Lake St. Clair Watershed and identify where gaps exist.	X	2011-2012	LSCCWCC
Work with program partners to enhance Lake St. Clair monitoring and research initiatives and identify additional needs to address gaps.	X	2012-2013	LSCCWCC
Report out on research and monitoring results in the Lake St. Clair watershed (i.e. Through LSC Binational Conference; Lake Erie LaMP 5-year updated Report, Lake Erie Millennium Network Conference).	X	Ongoing	LSCCWCC
Ensure that the Lake St. Clair Watershed is represented in ongoing monitoring and research processes and committees for the HEC and Lake Erie (i.e. Lake Erie LaMP Cooperative Science and Monitoring Initiative).	X	Ongoing	EC

Recommendation #7.4

Track the source, transport and fate of contaminants on the environment in order to develop appropriate management actions.

Actions	LSC Specific	Timeline	Lead
Determine the effects of upstream pollution on Lake St. Clair. Maintain and review tributary (i.e. St. Clair River, Sydenham River and Thames River) monitoring programs and ensure timely delivery of results.	X	2012-2013	EC, OMOE, CAs
Synthesize existing sediment contamination data and determine need for a sediment monitoring program in the Lake St. Clair Watershed.		2013-2014	EC, OMOE

Recommendation #7.5

Determine the effects of contaminants on the environment in order to develop appropriate management actions.

Actions	LSC Specific	Timeline	Lead
Assess the quality and impacts of contaminants (e.g. pharmaceuticals, endocrine disruptors and other contaminants) on aquatic habitats.		2015-2016	EC-CWS, WIFN, OMNR, DFO
Develop and support ongoing wildlife consumption studies and guidelines.		2015-2016	HC
Support studies that research the relationship between human health and the consumption of fish and wildlife.		2011-2012	OMOE, WIFN

Recommendation #7.6

Continue to investigate the sources and effects of non-point source pollution where they are poorly understood, and monitor the impacts of remediation projects and current legislation e.g. Ontario Nutrient Management Act.

Actions	LSC Specific	Timeline	Lead
Track non-point source projects and provide annual reports on the status to key stakeholders. Use Environmental Farm Plan, SCRCA, UTRCA, ERCA, LTVCA, Walpole, and RLSN uptake.		Ongoing	LSCCWCC

Determine the relative contribution of out-of-basin sources (e.g. atmospheric deposition) of contaminants, and historical sediment contamination.	X	2015-2016	EC, OMOE
Study and map all drainage outfalls into Lake St. Clair. Determine their sources and what is being discharged from the outfalls.		2012-2013	LSCCWCC

SECTION 8 – GOVERNANCE

Recommendation #8.1

Regularly report to Lake St. Clair Canadian Watershed stakeholders. .

Actions	LSC Specific	Timeline	Lead
Develop Communications Strategy for Lake St. Clair. <i>Promote the land-lake connections in resource management planning.</i>	X	2011-2012	LSCCWCC
Report out on Lake St. Clair activities through Lake Erie LaMP Update Report (every 5 years) and SOLEC (every 3 years) and Lake St. Clair Biennial Conference		Ongoing	EC, OMOE
Complete annual/biennial highlight reports as per Four Agency compendium for distribution to the public and partners.	X	Ongoing	LSCCWCC
Continue to provide information on Lake St. Clair through websites (i.e. SCRCA Website, Environment Canada's Great Lakes website and the Friends of the St. Clair River website).	X	Ongoing	LSCCWCC
Educate Lake St. Clair Canadian partners about Lake St. Clair governance structures, and agency roles and responsibilities (e.g. WIFN's Treaties).		2011 - 2016	LSCCWCC

Ensure Invasive species outreach and education information (e.g. Invasive Species Awareness Program) that raises awareness regarding the vectors of invasive species, preventative actions that can be taken and the negative impacts these species have on fish and wildlife populations is properly disseminated to key groups in priority areas.	X	2011 - 2016	OMNR, OFAH
Support the use of standardized sub-watershed report cards established by Conservation Authorities.		Ongoing	CAs
Update the existing Lake St. Clair Canadian mailing list and distribute current information (i.e. Lake St. Clair Canadian Watershed Management Plan & Lake St. Clair Canadian Work Plan).		2011-2012	LSCCWCC

Recommendation #8.2

Consistent programming and sustainable funding from government is needed to support beneficial management programs over the long-term (e.g., 10-25 years). This can in part be achieved by ensuring all implementation priorities are well developed for the next Canada-Ontario Agreement and federal Great Lakes Program cycles.

Actions	LSC Specific	Timeline	Lead
Identify and secure funding to help promote and implement rural beneficial management practices (BMPs) including buffer strips, fragile land retirement, soil erosion control structures, septic system upgrades, and manure storages. Work in unison with existing programs such as Clean Water and Environmental Farm Plans.	X	2011 - 2016	EC, OMOE, OMNR, OMAFRA
Identify and secure funding for habitat and restoration activities through programs such as the Habitat Stewardship Program and Provincial Stewardship Funds.	X	2011 - 2016	LSCCWCC

Recommendation #8.3

Support a balanced approach between voluntary compliance and enforcement of regulations.

Actions	LSC Specific	Timeline	Lead
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Work closely with Conservation Officers, WIFN and police to ensure regulations are enforced.	X	2011 - 2016	LSCCWCC
Review C of As to determine whether reduction in targets would reduce cumulative impacts.		2015 - 2016	LSCCWCC
Ensure voluntary compliance through First Nation traditional knowledge and customary laws.	X	2011 - 2016	WIFN

Recommendation #8.4

Encourage greater integration amongst the various public sector participants whose decisions affect Lake St. Clair.

Actions	LSC Specific	Timeline	Lead
Maintain and enhance the Lake St. Clair Coordination Council, including engaging new stakeholders, partners as required.	X	Ongoing	LSCCWCC
Enhance coordination with other regional scale resource management initiatives affecting the Huron-Erie corridor, including the Lake Huron Initiatives, St. Clair Remedial Action Plan (RAP), Detroit River RAP and Lake Erie LaMP.	X	Ongoing	EC, OMOE, OMNR
Develop a municipal engagement strategy for Lake St. Clair to ensure municipal awareness and understanding of the management plan.	X	2012-2013	LSCCWCC
Develop a First Nation engagement strategy to ensure awareness and understanding of the LSC Canadian Work Plan.	X	2012-2013	WIFN

Recommendation #8.5

Continue to work with U.S. partners to ensure a coordinated binational focus on Lake St. Clair watershed management issues.

Actions	LSC Specific	Timeline	Lead
Continue to work with US partners to coordinate and host the Binational Lake St. Clair Conference, highlighting issues and activities in Lake St. Clair.	X	Ongoing	EC, USEPA,

Ensure the Lake Ct. Clair Watershed is included as part of the geographic scope of the binational Lake Erie Binational Conservation Strategy and ensure that there is representation from the Lake St. Clair Watershed Coordination Council during the development of the Strategy (e.g. Committee members, etc.).	X	2011-2013	EC, OMNR
Continue to provide input into the Four Agency Working Group and Management meetings to ensure Lake St. Clair issues are being dealt with binationally.	X	Ongoing	EC, OMOE
Ensure coordination with U.S. agencies and stakeholders to the maximum extent possible.	X	Ongoing	EC, MOE, OMNR

ACRONYMS

AGNPS - Agricultural Non-Point Source Pollution Model
ALUS - Alternative Land Use Services
ARI – Agriculture Resource Inventory
BMP – Beneficial Management Practice
CA – Conservation Authority
CCG – Canadian Coast Guard
COA – Canada–Ontario Agreement
C of A – Certificate of Approval
CSMI – Cooperative Science and Monitoring Initiative
CSO – Combined Sewer Overflow
CWS – Canadian Wildlife Services
DFO – Department of Fisheries and Oceans Canada
EC – Environment Canada
EFP – Environmental Farm Plan
ERCA – Essex Region Conservation Authority
GIS – Geographic Information Systems
HC – Health Canada
HEC – Huron Erie Corridor
LaMP – Lakewide Management Plan
LEMN – Lake Erie Millennium Network
LSCCWCC – Lake St. Clair Canadian Watershed Coordination Council
LTVCA – Lower Thames Valley Conservation Authority
MDNR – Michigan Department of Natural Resources and Environment
NOBOB – No Ballast on Board
OMMAH – Ontario Ministry of Municipal Affairs and Housing
OMNR – Ontario Ministry of Natural Resources
OMOE – Ontario Ministry of the Environment
OMAFRA – Ontario Ministry of Agriculture and Rural Affairs
RAP – Remedial Action Plan
RLSN – Rural Lambton Stewardship Network
SAR – Species at Risk
SCRCA – St. Clair Region Conservation Authority
SOLRIS – Southern Ontario Land Resource Information System
TEK – Traditional Ecological Knowledge
TC – Transport Canada
US EPA – United States Environmental Protection Agency
UTRCA – Upper Thames Region Conservation Authority
WIFN – Walpole Island First Nation