Detroit River Canadian Cleanup **Annual Report** 2019 - 2020





A MESSAGE FROM THE DETROIT RIVER **CANADIAN PUBLIC ADVISORY COUNCIL**

In the past year the DRCC made excellent progress. The Public Advisory Council is doing its best to keep pace. City and Windsor Port Authority officials confirmed that the land expropriation and land swap needed for Ojibway Shores acquisition by the City nears completion.

The Windsor Detroit Bridge Authority forwarded \$1.5 million seed money to the city for an animals only eco-bridge to span the Ojibway Parkway connecting the Black Oak Heritage Park to the Ojibway Prairie Complex. The City set aside \$250,000 for an environmental assessment and bridge design to be completed by September 2020. At the 2020 budget deliberations, PAC presented the case for the City to include funding for eco-bridge construction in future years. At the Annual Public Meeting of the Windsor Detroit Bridge Authority in February, PAC requested that the WDBA commit to paying half the cost of the eco-bridge in partnership with the City.

The Canada-Ontario Agreement is a 50-50 funding partnership between the Governments of Ontario and Canada for Great Lakes Areas of Concern, including the DRCC. PAC sent a letter to Premier Ford and asked for a meeting with newly elected MP Irek Kuszmierczyk, encouraging both parties to renew the agreement.

Regarding the Revere Copper spill in December on the US side of the Detroit River, PAC submitted a letter to the Windsor Star applauding the excellent investigative reporting by Dave Battagello.

In October 2019, we invited reps from the US Environmental Protection Agency and the Michigan Department of Environment, Great Lakes and Energy to present at our public meeting regarding sediment remediation underway on the Detroit side of the river. They mapped hot spots of sediment contamination and are in the beginning stages of dredging or capping to improve sediment quality.

I wish to thank PAC members and friends who support our efforts, especially Vice-Chair Andy Paling, RAP Coordinator Jackie Serran, and her assistant Gina Pannunzio.

> Tom Henderson, Chair Public Advisory Council, DRCC

The Detroit River Canadian PAC is a group of citizen volunteers and representatives from non-government organizations dedicated to improving the health of the Detroit River ecosystem. If you are interested in getting involved in the PAC, please contact the RAP Coordinator at postmaster@detroitriver.ca.

DRCC Attended 21 outreach events and engaged over 6,150 people!





Two beneficial uses recommended as no longer impaired



Incredible







Wetland Habitat

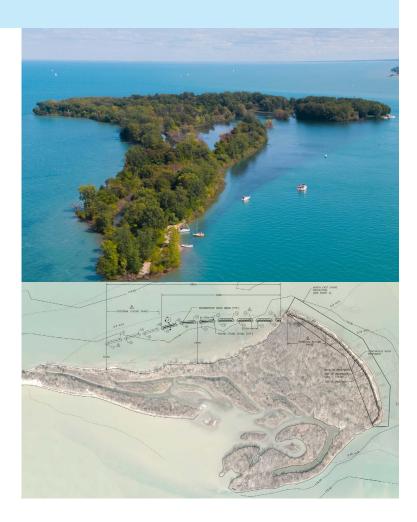


Peche Island

Progress was made towards constructing the biggest habitat project, to date, on the Canadian side of the Detroit River. With funding from Environment and Climate Change Canada, The W. Garfield Weston Foundation (via Swim, Drink, Fish), and the City of Windsor, the DRCC is collaborating on an erosion mitigation and fish habitat project at Peche Island. The project consists of a soft shoreline revetment on the northeast side of Peche Island and 9 sheltering islands on the north side of Peche Island. Once fully constructed, the project will provide approximately 105,000 m² of calm water area that fish can use to spawn and forage, and where aquatic plants can establish. Calm water areas, such as the one created by this project, are rare in the upper Detroit River. Once the calm water area is established, it is expected that it will become an important habitat area for fish and other wildlife. The DRCC is currently in the process of securing the appropriate permits for the project and construction is expected to begin in late Summer/early Fall 2020.

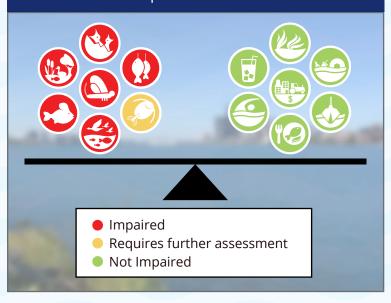
www.detroitriver.ca

A new habitat project in the River Canard is complete! The Collavino wetland is 75 acres in size and been designated as a Provincially Significant Wetland. With funding support from Environment and Climate Change Canada (ECCC), ERCA repaired the existing dyke and installed pumping infrastructure and water level control structures to manipulate water levels on the inside of the dyke. A management plan to remove invasive Phragmites australis through water control and herbicides to enhance the wetland habitat for marsh birds and other wildlife has been developed. The management plan is expected to increase native plants presence within the wetlands to improve habitat use.



BUI Update: Tipping The Scales Of Progress

Impairment Statuses



Research and Monitoring

The Detroit River offers several ecological, recreational, and economic beneficial water uses. When water quality is unable to support aquatic life and its degraded quality interferes with water use, it's called a beneficial use impairment or BUI. Using scientific studies and data, the status of these beneficial use impairments (BUIs) were assigned a status of either impaired or not impaired. On occasion, there was insufficient data to make a status determination and so these beneficial uses were deemed to require further assessment (RFA). Overall there were 14 BUIs reviewed in the Detroit River Area of Concern. Of the fourteen, 12 were identified as impaired, one not impaired, and one RFA. As of the beginning of April 2020, the Detroit River Canadian Area of Concern (AOC) had 6 impaired beneficial uses, 7 unimpaired, and 1 requiring further assessment.

With scientific expertise provided by DRCC partners such as Environment and Climate Change Canada, Department of Fisheries and Oceans, Ontario Ministry of Environment, Conservation and Parks, Ontario Ministry of Natural Resources and Forestry, the University of Windsor, and others, scientific monitoring and studies are underway to evaluate the current status of the remaining BUIs. These studies and projects are described in the following pages.



Focus: Flood Reduction

Improvements along the Grand Marais drain continue in cooperation with ERCA and the City of Windsor. These projects improve the capacity of and outlets for tributary sewer systems while reducing the risk of flooding along the drain passage. The Grand Marais Drain is a major watercourse that drains approximately 3,489 hectares of the City of Windsor and the Town of LaSalle, eventually discharging into the Detroit River from Turkey Creek. In 2019, a hydrologic model of the drain's watershed was updated to increase the predictability of flood flows and effects of climate change and identify the residential, commercial, and industrial areas that are at risk of flooding.

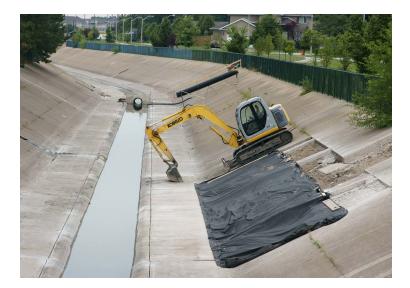
Bird or animal deformities or other reproductive problems

Environment and Climate Change Canada's wildlife toxicologists have completed three years of field work for reproductive health assessments on tree swallows for the Bird and Animals Deformities BUI. These studies evaluate hatching success and contaminant levels in their tissue. Tree swallows feed on insects that emerge from the sediment at the bottom of the river, where they may be exposed to toxic chemicals such as PCBs, mercury and PAHs. By collecting and analysing the eggs and plasma of these Tree Swallows, researchers can determine if contaminants are adversely affecting reproduction. The final year of monitoring has been completed and a draft assessment report is anticipated in 2021.

Phytoplankton and Zooplankton

From July to November 2019, scientists from the Department of Fisheries and Oceans Canada sampled 8 sites in the Detroit River to assess phytoplankton and zooplankton community composition in the water column to inform the Degradation of Phytoplankton and Zooplankton Populations BUI. Plankton are small (usually microscopic), floating organisms that live in freshwater and marine ecosystems. Phytoplankton include diatoms, desmids, and algae and require photosynthesis to live, while zooplankton are small animals that feed on the tiny phytoplankton. Together, phytoplankton and zooplankton make up an important part of the aquatic food web.

The scientists examined the type, biomass, and productivity of zooplankton, phytoplankton, and microbes within the river. Researchers are in the process of interpreting the additional data collected and will prepare a report in the spring of 2020 summarizing their findings including any changes in the abundance and diversity of the zooplankton and phytoplankton communities.



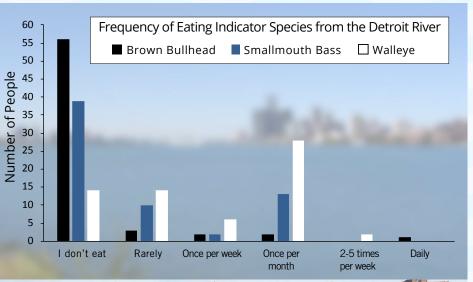


Restrictions on Fish Consumption

When contaminant levels, such as mercury and PCBs, are high in fish, consumption advisories (Guide to Eating Ontario Fish) may recommend that people and/or sensitive populations (e.g., children, pregnant women) limit or avoid eating certain species of fish caught in specific areas of the Detroit River. Researchers from the Great Lakes Institute for Environmental Research (GLIER) at the University of Windsor have been conducting several studies to identify whether consumption advisories for our indicator species (e.g., walleye, brown bullhead, and smallmouth bass for sensitive populations) are similar to other non-AOC Great Lakes sites. To assess this BUI, GLIER developed the Detroit River Fish Consumption Hazard Assessment Model to predict contaminant (PCB & Mercury) bioaccumulation that would lead to consumption advisories. They have also collected field data to "fingerprint" sediment mercury sources. Their studies have shown that mercury concentration hotspots can be determined using these "fingerprints".

In addition to field and modelling data, the DRCC launched a fish consumption survey in 2019 to collect data on what people catch and eat from the Detroit River. So far, majority of anglers captured in the survey eat fish from the river (4 oz

to 8 oz each meal about 1 to 4 times per month, on average). Most anglers prefer to pan fry, grill or bake the fish they catch and the most common fish consumed from the Detroit River according to the survey are walleye, yellow perch, white perch, and large and smallmouth bass. The fish consumption survey will be incorporated into the assessment of the Restrictions on Fish and Wildlife Consumption BUI.





Loss of Fish and Wildlife Habitat and Degradation of Fish and Wildlife Populations

Coastal Wetland Assessments

Researchers have assessed the condition of coastal wetland habitat and communities at selected sites in the Detroit River watershed from 2011 to 2018. Researchers looked at water quality, submerged aquatic vegetation, aquatic macroinvertebrates and breeding marsh bird communities. Here's what these assessments reveal:

- Water quality has generally improved in three of the five coastal wetlands

Additional wetlands were monitored for marsh birds in the summer of 2019, so stay tuned for updated results! This information will help inform our fish and wildlife populations and habitat BUIs.

Sub-criteria

The Habitat Work Group have been identifying sub-criteria to determine if the delisting criteria for the Fish and Wildlife Populations and Degradation of Habitat BUIs have been met within the Remedial Action Plan. Many actions and monitoring programs reveal things are improving! Sturgeon egg and larval production, monitored since 2007, show a self-sustaining population for Lake Sturgeon. Biodiversity indices scores are unchanging and stable for marsh birds and fish communities. Also, hatching success evidence from wildlife monitoring is being taken into consideration.



• Submerged aquatic vegetation in DR coastal wetlands is considered good and comparable to Lake St. Clair. Aquatic macroinvertebrates were generally considered to be in good condition in different DR coastal wetlands. Marsh bird abundance and diversity in the coastal wetlands has been generally low over the last eight years of sampling. However, scores did improve in 2017 and 2018, following a four-year decrease from 2013 to 2016.

Focus: COMMUNITY OUTREACH AND TREE PLANTINGS

The DRCC participated in 21 events, festivals, community plantings, presentations and other engagement opportunities between the spring of 2019 and end of winter 2020. Through these efforts, thousands of individuals celebrated ongoing restoration efforts, learned about cleanup history, and engaged first hand with fish communities, wildlife, Detroit River

islands and sub-watersheds, the DRCC program and more!

Restoring lost habitat in the Detroit River watershed increases biodiversity and environmental stewardship with residents. Through events held in the fall of 2019 and spring of 2020, approximately 2,800 native trees and shrubs were planted with the help of 1,460 fantastic volunteers and 10 community partners. Additionally, more than 1,300 people and over 50 Green Teams attended the annual Earth Day celebrations in the Little River watershed and planted more than 2,200 trees!



Detroit River Coalition

A group of passionate environmental organizations on both the Canadian and American sides of the Detroit River have come together to form the Detroit River Coalition (DRC). The Detroit River Coalition is made up of several river and tributary facing organizations from Michigan and Ontario that work together to promote the appreciation and conservation of the diverse natural heritage of the Detroit River from a binational and watershed perspective. The formation of this coalition is an exciting new development for the river, which is a Great Lakes Area of Concern, and all those who live within the Detroit River's watershed. The river is truly a shared resource that brings the people of two nations together, and the formation of this coalition recognizes this.

The coalition is made up of the Detroit Riverfront Conservancy, Belle Isle Conservancy, Green Living Science, Friends of the Detroit River, Friends of the Rouge Watershed, and the Michigan Department of Natural Resources (Milliken State Park and

Harbor and the Outdoor Adventure Center) on the American side, and the Detroit River Canadian Cleanup and Essex Region Conservation Authority on the Canadian side of the river. Watch www.detroitrivercoalition.org for future coalition events!



Ensuring Long Term Growth and Survival at Community Restoration Sites

Over the past several years, the DRCC has partnered with ERCA for the annual Earth Day community tree planting. These trees help the DRCC achieve its goals by improving water quality and providing habitat for wildlife and plants in the Detroit River watershed. In preparation for the large 2019 Earth Day community planting, members of the How to Crew received in-depth tree planting and care training to assist with implementing the planting plan at the spring celebration. The How to Crew assists ERCA by providing quality control measures during community planting events to ensure the long term growth and survival of the trees. They are on hand to help volunteers troubleshoot planting seedlings, balled and burlap evergreens, and potted hardwoods as well as checking proper planting techniques, mulching, tree guards and more.

Following the community planting, during National Forest Week in September 2019, the DRCC and ERCA hosted a citizen science survey workshop to collect tree health and growth data from a sample of the Earth Day trees planted in the spring. This information is helpful in understanding how well the trees are growing and what adjustments could be made to further ensure long term growth and survival at community restoration sites.





A Plastic Ocean Film Screening

A Plastic Ocean is an award-winning feature length documentary that explores the fragile state of our oceans and uncovers alarming truths about the consequences of our disposable lifestyle. A Plastic Ocean documents the global effects of plastic pollution and highlights workable technologies and innovative solutions that everyone – from governments to individuals –

can do, to create a cleaner and greener ocean. Sir David Attenborough calls a Plastic Ocean "One of the most important films of our time."

Over 150 people attended the public screening held on March 3, 2020, which was followed by a panel discussion with experts on plastic pollution, recycling, and reducing waste, including Heather Taylor from Essex-Windsor Solid Waste Authority who is a specialist in waste diversion, Mercedes Lavoy, a PhD student from University of Windsor, studying the movement and removal of microplastics in wastewater treatment plants, and Kelly Laforest from Caesars Windsor, who implements company initiatives to reduce waste and conserve energy and water.



Caesars Windsor Codegreen Little River Cleanup

Caesars Windsor CodeGreen volunteers, Essex Region Conservation, City of Windsor, University of Windsor students, and the Little River Enhancement Group participated in the Caesars Windsor Codegreen Cleanup along the Little River corridor. In 2019, volunteers removed eight shopping carts, one lawn chair, one bike, one garbage pail, two recycle bins, garden hoses, two tents, wood, one aquarium, a stove pipe baffle and an additional 52 bags of landfill and recyclable materials from the banks and channel! Thank you to all the volunteers who came out! We can all do our part to keep the Detroit River and its watersheds clean.





US Sediment Remediation Update

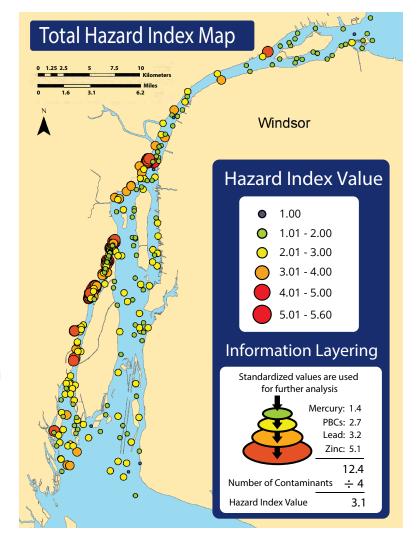
The DRCC Public Advisory Council hosted a presentation on the progress of sediment remediation efforts on the American side of the Detroit River. The presentation highlighted the projects American partners are tackling to improve sediment quality, which improves the overall ecosystem health of the river system.

In 2012, a comprehensive study was led by the Friends of the Detroit River to compile information about known contaminants at 65 locations in the Detroit River. The study characterized sediment on the US side of the river, including the quantity of contaminants at these sites. This project provided a basis for the US Environmental Protection Agency and the Michigan Department of Environment, Great Lakes, and Energy to create a prioritized list of sediment remediation projects.

The estimated total quantity of sediment that needs to be remediated from the U.S. side of the Detroit River is approximately 6.5 million cubic yards. Generally, where sediments were present in the nearshore, they were contaminated, and contaminants were highest near historical industrial and municipal outfalls. Some of the remediation work has begun and progress is being made, but partners and funding opportunities need to be identified for large scale remediation to occur. Thanks again to our U.S. counterparts for this presentation outlining the progress they've been making on the U.S. side of the river!



Acronyms	GLIER MECP PAC PCB PAH	Area of Concern Beneficial Use Impairment Combined Sewer Outflow Detroit River Canadian Cleanup Environment and Climate Change Canada Essex Region Conservation Authority Essex Region Natural Heritage System Strategy Great Lakes Institute for Environmental Research Ministry of Environment, Conservation, & Parks Public Advisory Council Polychlorinated Biphenyl Polycyclic Aromatic Hydrocarbon
Aci		
	RAP RTB	Remedial Action Plan Retention Treatment Basin



DRCC Partners

- Environment and Climate Change Canada
- Ontario Ministry of Environment, Conservation, & Parks
- Essex Region Conservation Authority
- Ontario Ministry of Natural Resources and Forestry
- Fisheries and Oceans Canada
- Canadian Wildlife Service
- City of Windsor
- Town of LaSalle
- Town of Amherstburg
- UNIFOR Local 200
- Citizens Environmental Alliance
- Essex Field Naturalists' Club
- Windsor Port Authority
- University of Windsor
- Brighton Beach Power
- Aamjiwnaang First Nation
- Caldwell First Nation

...and many dedicated citizens like you!

Funding provided by ECCC and the MECP.



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