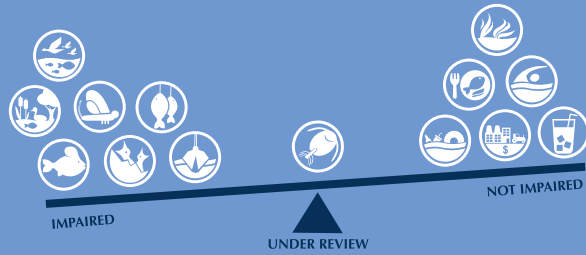




# Annual Review 2015 & 2016



# Tipping the scales of progress...



The DRCC is pleased to announce the official re-designation of the Degradation of Aesthetics Beneficial Use Impairment (BUI) and Beach Closings BUI to 'Not Impaired'! We congratulate all members of the DRCC and local community that have worked so diligently in attaining this important milestone. Over the last two decades, there have been several noteworthy upgrades to wastewater infrastructure to improve water quality in the Detroit River, including upgrades to the Lou Romano, Little River, and Amherstburg Wastewater Treatment Plants, the construction of the Windsor Riverfront Retention Treatment Basin and numerous sewer separation projects. Together, these projects have contributed to better water quality, visual aesthetics, and beaches in the Detroit River!

## Degradation of Aesthetics BUI

The Aesthetics BUI was identified as 'impaired' in 1991 due to large volumes of combined sewer overflows, discoloured water from U.S. slaughter houses, oil and grease, debris and other types of objectionable deposits. Visual surveys were conducted at 11 sites along the Canadian shoreline from 2011 to 2013. Researchers recorded the presence or absence of several variables that may indicate local pollution problems (e.g., colour, odour, debris). The results of the study indicated that there was no significant, persistent degradation of aesthetics on the Canadian side of the Detroit River.

## Beach Closings BUI

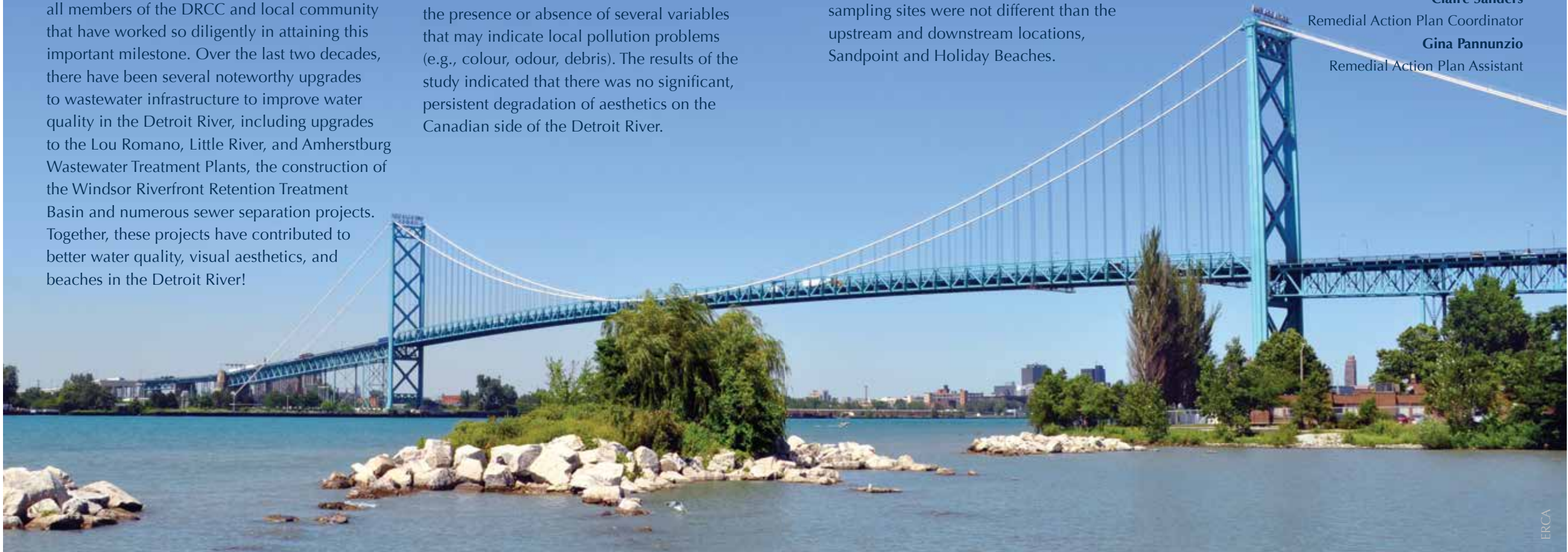
Beach Closings was initially designated as 'impaired' due to wastewater treatment plant bypasses and combined sewer overflows during heavy rainfall events. The DRCC reviewed *E. coli* bacteria data collected at two Detroit River locations (McKee Park and White Sands Conservation Area) compared to two nearby reference beaches (Sandpoint and Holiday Beach) between 2009 and 2011. Levels of *E. coli* in and near the Detroit River rarely exceeded the beach closure benchmark. Additionally, the results collected for this assessment indicate that the Detroit River sampling sites were not different than the upstream and downstream locations, Sandpoint and Holiday Beaches.

These are the third and fourth BUI re-designations for the Detroit River Area of Concern and we look forward to seeing more progress in the coming years on the remaining impairments.

Are you interested in learning more about the upcoming research and remediation projects? Please download the updated 'Pathway to Delisting' document from our website or request a copy from us.

For more information and tips on what you can do to help improve our watershed and the Detroit River ecosystem, please visit [www.detroitriver.ca](http://www.detroitriver.ca).

**Claire Sanders**  
Remedial Action Plan Coordinator  
**Gina Pannunzio**  
Remedial Action Plan Assistant



The Detroit River Canadian Cleanup (DRCC) is a community-based initiative launched in 1998 to cleanup, enhance, restore and sustain the Detroit River Ecosystem.

Partnerships within the DRCC aim to promote and implement the cleanup plan called a Remedial Action Plan (RAP) to protect, enhance and restore the Detroit River in order to remove it from the list of Great Lakes Areas of Concern. The DRCC's members provide leadership in identifying partnerships and funding opportunities to support and complete cleanup goals for the Detroit River.

This document reports on accomplishments on the Canadian side of the Detroit River between April 1, 2015 and March 31, 2016.

## Table of Contents

				
<b>Education &amp; Public Involvement</b>	<b>Monitoring &amp; Research</b>	<b>Habitat</b>	<b>Point /Non-Point Source</b>	<b>Public Advisory Council</b>
<b>2</b>	<b>4</b>	<b>6</b>	<b>7</b>	<b>8</b>



Cover: White Sands beach on Bobblo Island.

# Education & Public Involvement



## Benthic Education Program

In 2015, the Detroit River Canadian Cleanup (DRCC) joined up with the Essex Region Conservation Authority (ERCA) to educate students on the importance of protecting water quality and how to use benthic invertebrates (insects) as a way to monitor environmental health. This consisted of a classroom visit, a field trip to collect benthic invertebrates within the Detroit River watershed, and a follow-up lesson identifying organisms and drawing conclusions.



Stefian Jones

## Screening of PROJECT: ICE

The DRCC's 7th annual film screening was yet another sold out event, with almost 200 people in attendance. This year's film was *PROJECT: ICE*, an award-winning documentary detailing the history, geology and science of the Great Lakes, and the importance of ice. The film explained the link between the Great Lakes and people. Whether interested in history, geology, pond hockey and ice fishing, or significant environmental threats to the Great Lakes, there's something in this movie that everyone could connect with. We were very lucky to have Executive Producer and Director, William Kleinert, on hand to introduce and provide context for his film! A big thank you to our expert panel members - William Kleinert, Dr. Henry Pollack (University of Michigan), and Karina Richters (City of Windsor) - for participating in the informative discussion following the film. They did a terrific job of making local connections to the film and sharing what they believe a changing climate means for water quality in the Detroit River and our local watersheds.



Sylene Argent

## State of the Detroit River Boat Tour

With funding from the DRCC, the Citizens Environment Alliance hosted another successful boat tour in 2015! Guest speakers included John Hartig (Manager of the Detroit River International Wildlife Refuge), Nick Schroeck (Director of the Transnational Environmental Law Clinic, Wayne State University), Phil Roberts (Executive Director of Parks, City of Windsor), and Peter Werbe as Master of Ceremonies.



## BioBlitz



The Ojibway Prairie Complex is an ecologically important area within the Detroit River watershed with incredible biodiversity. The second Ojibway Prairie BioBlitz, an event aimed at cataloguing as many species as possible within a 24-hour period, was held in July 2015. With funding support from the DRCC, over 400 volunteers and 50 and

experts scoured the area for plants, bugs, moss, fungus, birds, and mammals. The event also provided a number of family friendly activities and workshops for all levels of expertise. Results are continuing to come in as species are identified in labs by volunteers, but the count is estimated at roughly 2,400 species surpassing the 2014 total of 1,121 species! Stay tuned to find out the final number and whether or not this is a BioBlitz record for Ontario.

## 5<sup>th</sup> Annual Detroit River Evening

The Detroit River Canadian Cleanup's 5th annual Detroit River Evening was held on June 16 at the Great Lakes Institute for Environmental Research (GLIER). The event was a huge success, with close to 70 people in attendance it was our most well-attended annual meeting yet! Updates on projects aimed at restoring and protecting the Detroit River were given, and well-received, stimulating many questions from the audience. Special thanks to Jon Bondy, our guest speaker, who spoke about his lifelong experiences on the Detroit River and shared observations of the improvements he has witnessed first-hand. Jon is a local fishing guide who has been fishing the Detroit River since childhood. He has spent over 20 years guiding the Detroit River and has been featured in many newspaper and magazine articles, as well as on local and national TV.

## State of the Strait

Last year's State of the Strait conference was held at Eastern Michigan University in December 2015. The theme was "*Coordinating Conservation in the St. Clair-Detroit River System.*"



Coordinating Conservation in the St. Clair-Detroit River System

Many government managers, researchers, students, concerned citizens, and environmental and conservation organizations attended, including those involved with the Detroit River Canadian Cleanup. Topics covered ranged from, Lake Erie's Biodiversity Conservation Strategy to chironomid monitoring in the Detroit River. The State of the Strait is a binational conference that takes place every two years.

## Happy 25th Anniversary, Lil Reg!

In February 2016, the Little River Enhancement Group (Lil' Reg) celebrated 25 years of on-the-ground stewardship in the Little River watershed! Lil' Reg was created in 1991 by educators and representatives of the City of Windsor, Ontario Ministry of Environment and Climate Change, ERCA, Ontario Ministry of Natural Resources and Forestry, and the Habitat 2000 Club at the former Concord Public Elementary School. Lil' Reg "adopted" the Little River Watershed, which drains portions of the Town of Tecumseh and the City of Windsor into the Detroit River. Since then, volunteers have participated in 37 cleanups and 88 planting events, where they planted over 34,000 trees and shrubs!

*Thank you, Lil' Reg, for your tireless efforts to clean up and protect the Little River watershed!*



## Cleanup Events and Community Tree Plantings

The DRCC supports community cleanups and tree planting activities through our member organizations. Not only do these activities improve habitat quality for plants and animals, they also enhance the quality of life for local residents.

Additionally, more than 1,000 people and 40 Green Teams attended ERCA's annual Earth Day 2016 celebrations in the Little River watershed, and planted more than 2,000 trees!

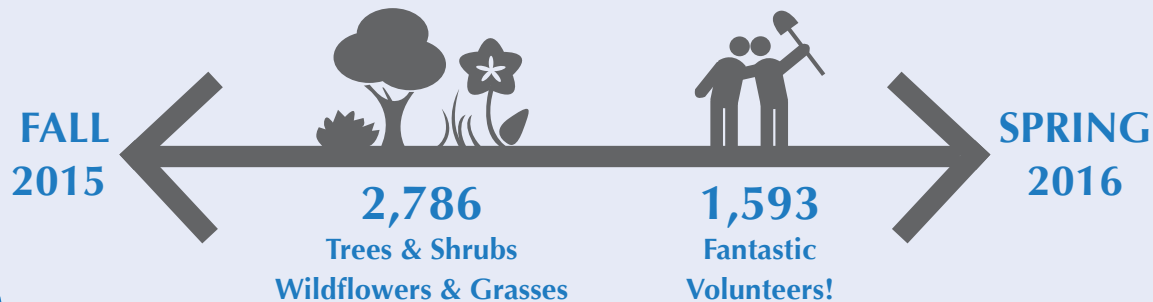


Events in fall 2015 and spring 2016 included:

- 2** community cleanups with over
- 65** people who collected
- 17** cubic yards of garbage!



Planting native trees and wildflowers restores lost habitat and increases biodiversity, while fostering environmental stewardship in the community. Below is an approximate breakdown of the number of native trees, shrubs and wildflowers planted in the Detroit River watershed in fall 2015/spring 2016, and the number of people who helped.



## Monitoring & Research



### Restrictions on Fish Consumption

When contaminant levels, like mercury and PCBs, are unsafe in fish, consumption advisories may recommend that people limit or avoid eating certain species of fish caught in certain places. In 2015/16, the Great Lakes Institute for Environmental Research (GLIER) from the University of Windsor and researchers from the University of Michigan built on their previous work in applying a new eco-sleuthing technique, known as mercury isotope analysis, to “fingerprint” sediment mercury sources. Their recent study showed that high concentration mercury hotspots in U.S. and Canadian waters could be distinguished based on these “fingerprints”. Additional sediment and invertebrates samples were collected in the Detroit River in 2015 and mercury isotope analysis was completed. In the future, these distinct mercury “fingerprints” could be used to assess what sources of mercury are getting into fish in different regions of the river.



GLIER has also been synthesizing and analyzing geospatial data in order to develop new probabilistic models for the purpose of assessing the Restrictions on Fish Consumption BUI. A geodatabase was developed to populate, store, query, share, and view BUI related data. The data will be analyzed and used to generate synthesized models via artificial intelligence approaches.



### Phytoplankton & Zooplankton

Phytoplankton (tiny plants) and zooplankton (weak-swimming microscopic animals) are key components of aquatic ecosystems, forming the base of most marine food webs. Environment Canada and Climate Change analyzed 65 archived plankton samples collected in different surveys areas. In 2015, zooplankton samples were taken at various sites along the Detroit River. These samples are currently awaiting analysis. Environment Canada and Climate Change will complete the surveys and will also do the analysis as well.

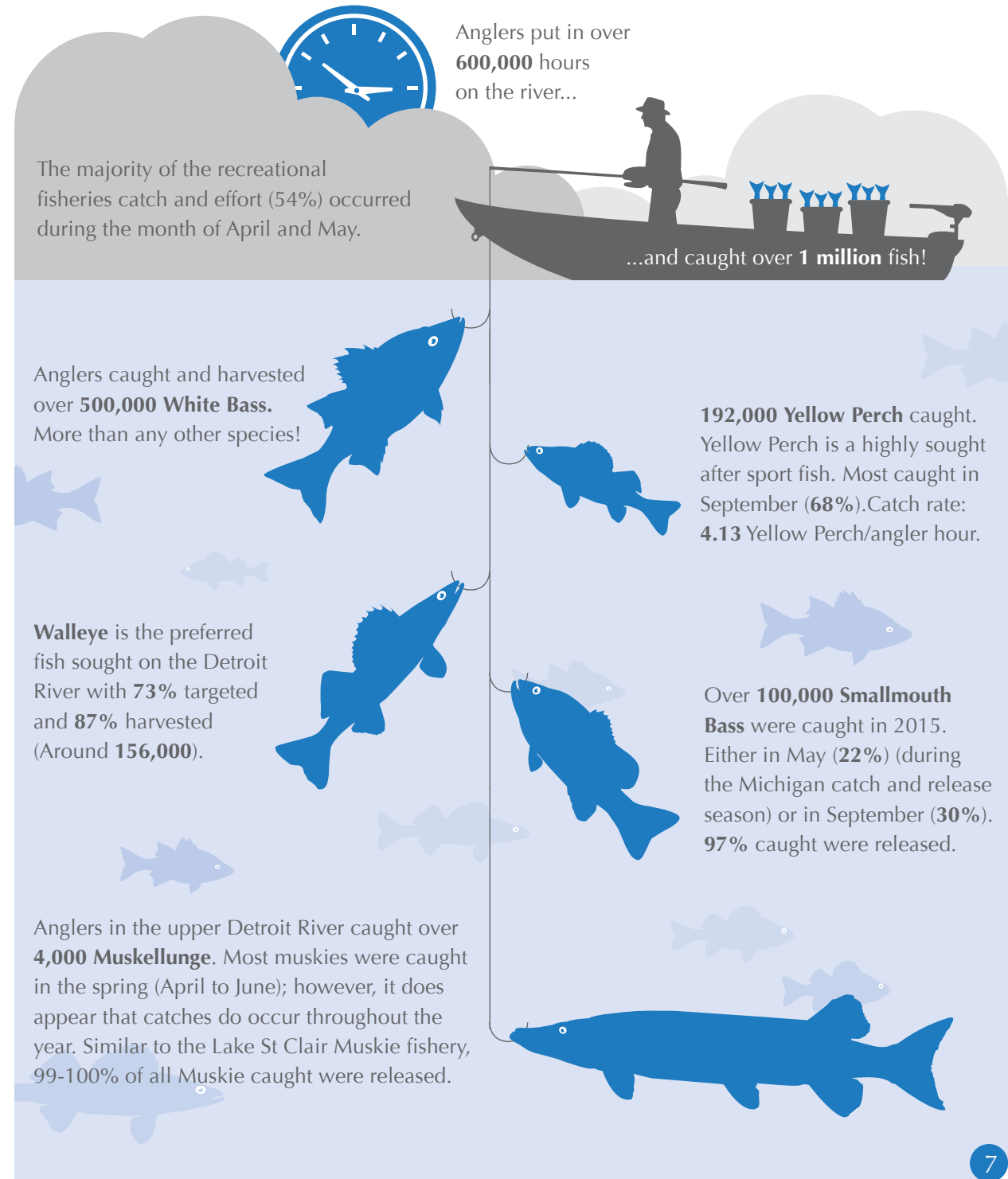
## Snapping Turtle & Tree Swallows

Due to their long life span, much of which is spent in or around water, snapping turtles provide excellent insight into environmental health. Locally, researchers monitor turtle nests to ensure turtles are hatching normally and to ensure mercury and polychlorinated biphenyls (PCBs) are not accumulating in eggs. In 2014 and 2015, there was no significant difference in hatching success or deformities between samples from the Detroit River area and samples collected at Long Point. Furthermore, PCB levels in eggs have been decreasing over time.

Tree swallows feed on insects that emerge from the bottom of the river, where they may be exposed to toxic chemicals. When the birds eat the insects, they can accumulate these toxins. Environment Canada and Climate Change researchers have erected 25 nest boxes at four locations along the river. These boxes will be monitored 2-3 times per week during the nesting season. Data will be collected on reproductive success (clutch size, hatching success, fledging success, weight at fledging) and contaminants in eggs including PCBs, mercury, and polybrominated diphenyl ethers (PBDEs). Together, these projects will help us to assess the Bird or Animal Deformities or Other Reproductive Problems BUI. The DRCC would like to thank all project partners including the City of Windsor, Town of LaSalle and K + S Windsor Salt Ltd.

## Results for the Detroit River Creel Survey

In 2015, a partnership between the Michigan Department of Natural Resources, the U.S. Geological Survey and the Ontario Ministry of Natural Resources and Forestry was developed in order to conduct a full creel survey of the Detroit River. This survey will help the DRCC to assess the Degradation of Fish and Wildlife Populations Beneficial Use Impairment (BUI). A creel, or angler survey, is a tool fisheries managers use to gather information on fish populations. Individual anglers are interviewed to gather information about the number of hours they fished, what species they're targeting, the size of the fish they caught, and whether they released or harvested the fish. This creel provides a snapshot of the recreational fishery measuring the effort, catch, and harvest of fish from the Detroit River. Results of the survey on the following page.



## Point / Non-Point Source



### Rural NPS Pollution Remediation Program

Over the last 19 years, the Essex Region Conservation Authority has implemented the Rural Non-Point Source (NPS) Pollution Remediation Program. Carried out as part of ERCA's Clean Water Clean Spaces program aimed at improving regional water quality and enhancing natural areas and biodiversity. The program aims at reducing rural non-point source pollution (e.g., nutrients, suspended solids and bacteria) in the Detroit River's watershed through the implementation of Best Management Practices. In 2015/16, 7 buffer strips were planted and 2 soil erosion control structures were installed. A buffer strip is a permanent strip of vegetation that traps sediment and enhances filtration of nutrients by slowing down runoff that could enter the local surface waters, thereby improving water quality. Similarly, a soil erosion control structure, like a rock chute, is also designed to help prevent surface water from carrying top soil from the field.



ERCA

ERCA is also working with municipalities to install two rain gardens this spring. Rain gardens allow rainwater runoff from impervious urban areas, like roofs, driveways, and parking lots, the opportunity to be absorbed. This reduces runoff by allowing stormwater to soak into the ground as opposed to flowing into storm drains which can cause erosion, poor water quality in our rivers and lakes, and flooding.



ERCA

## Habitat



### Fish Habitat Study

The DRCC Habitat Work Group, which is comprised of federal, provincial, local experts, and university researchers, has been working towards prioritizing areas in the Detroit River for potential fish habitat restoration projects. Many of these potential restoration actions include installing breakwaters to create slow water areas in order to encourage the establishment of vegetation, which makes good nursery habitat for young fish of many species.

Field researchers from the Ontario Ministry of Natural Resources and Forestry (OMNRF) were on the river in July and August 2015 collecting data about fish communities, vegetation, sediment, and water quality at 22 of the potential restoration sites. DRCC partners then engaged an engineering consultant to more closely evaluate the feasibility of several of these projects. In 2016, we expect to be able to develop a list of short- and long-term habitat restoration projects to work towards.

### Biodiversity Conservation Strategy Implementation

In 2013/14, as part of the Essex County Official Plan, ERCA updated the the Biodiversity Conservation Strategy (BCS) to the Essex Region Natural Heritage System Strategy (ERNHSS) to implement habitat restoration projects in priority areas of the Detroit River AOC. In 2015-16, a total of 12 hectares (30 acres) were restored to Carolinian upland forest or tallgrass prairie. All project decisions were guided by the priorities outlined in the Biodiversity Conservation Strategy and are consistent with the habitat priorities of the Detroit River RAP.

Two wetland projects were also initiated in 2015/16. One project was a 0.24 hectare (0.6 acre) wetland in the Detroit River watershed, which included a 0.20 hectare (0.5 acre) buffer of native meadow and prairie grass species surrounding it. The other was 0.19 hectare (0.48 acre) in size in the Canard River subwatershed and included a 0.40 hectare (1 acre) buffer of native species surrounding it. A third 0.10 hectare (0.25 acre) wetland in the Canard subwatershed will be constructed in the summer of 2016.

As Essex County has lost over 95% of the original wetlands, these features are important for creating wetland habitat for a diversity of wildlife (specifically birds, reptiles and amphibians), supporting all aspects of their life cycles including feeding, resting, breeding, and nesting. Since 2000, a total of 1,024 acres (414 hectares) of land has been restored in the Detroit River watersheds through this program!

**“One of the best approaches to planning for climate change is to conserve as much healthy, intact and interconnected habitat as possible.”**

~ Nature Conservancy of Canada, Spring 2016

Ojibway Shores with its connection to the Ojibway Complex fits the bill. At the first annual meeting of the Windsor Detroit Bridge Authority in February 2016, I asked Acting Chairman Dwight Duncan whether Ojibway Shores could be ceded as parkland for the environmental damage resulting from the construction of the new Gordie Howe Bridge and Plaza. No firm commitment was made but his words indicate optimism. Also encouraging were similar vibes from Minister of Transport Marc Garneau. A local MP said that progress continues behind the scenes.

A second Bioblitz took place on the Ojibway Complex in 2015. The new findings along with ERCA studies on Ojibway Shores were turned over to the Windsor Port Authority. Hopefully these studies will bolster the argument that Ojibway Shores needs to remain in its natural state.

The PAC keeps encouraging the City of Windsor to rezone as parkland a 12.14 hectare (30 acre) connector of land between Ojibway Shores and the Black Oak Heritage Park from its industrial zone designation. This issue will likely be settled once the fate of Ojibway Shores is determined.

The Kennette controversy continues without resolution. Mr. Kennette wants to infill 22,500 cubic metres of stuff into the Detroit River adjacent to Ojibway Shores. The project would create a dock where none now exists.

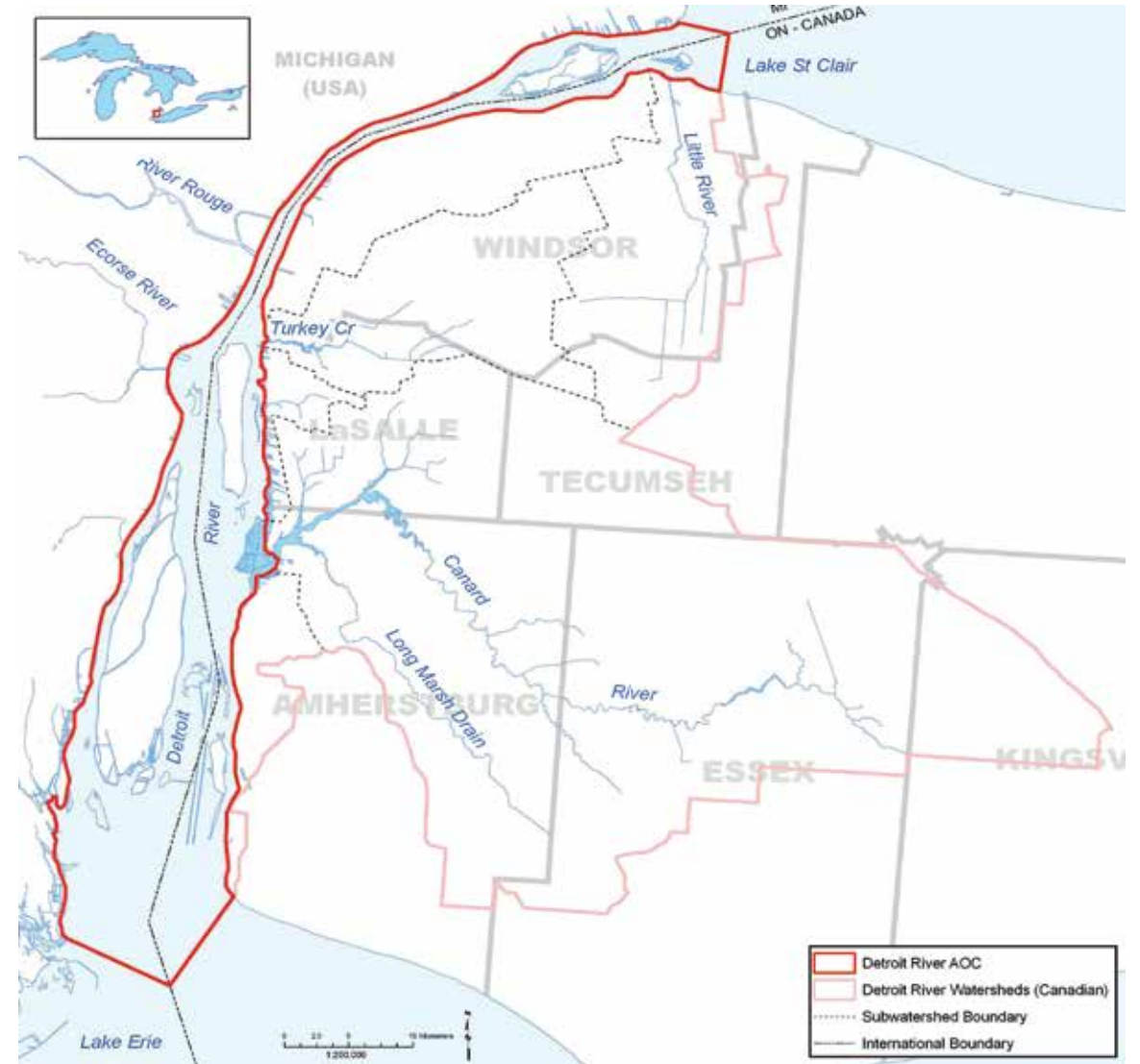
On a sad note, the Windsor Airport Board has informed the environmental community that due to safety concerns, no more tree planting on airport property will be permitted. For the time being, the complete joining of the Shooting Range and Eastern Woodlands is only a pipe dream.

I thank the dedicated members of the Public Advisory Council who have worked so well together over the past twelve years. Members continue to fight for a better and cleaner Detroit River. Our Remedial Action Plan Coordinator Claire Sanders deserves accolades, continuing the fine tradition of her predecessors.

Respectfully submitted,

Tom Henderson, Chair  
Gord Harding, Vice Chair

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.



## Acronyms

AOC	Area of Concern	GLIER	Great Lakes Institute for Environmental Research
BCS	Biodiversity Conservation Strategy	NPS	Non-Point Source
BUI	Beneficial Use Impairment	PAC	Public Advisory Council
DRCC	Detroit River Canadian Cleanup	PBDEs	Polybrominated diphenyl ethers
ERCA	Essex Region Conservation Authority	PCB	Polychlorinated Biphenyl
ERNHSS	Essex Region Natural Heritage System Strategy	RAP	Remedial Action Plan



## Canadian and U.S. Areas of Concern in the Great Lakes Basin



An Area of Concern is a location in the Great-Lakes - St. Lawrence River Basin that has been identified as severely polluted or degraded.

### **Detroit River Canadian Cleanup**

311-360 Fairview Avenue West, Essex, Ontario N6M 1Y6 ~ 519-982-3722  
 postmaster@detroitriver.ca ~ www.detroitriver.ca

Funding for the production of this report was provided by Environment Canada and the Government of Ontario.