



Fishing In Your Backyard

An Urban Recreational Fisheries Strategy for the
Lake Ontario Northwest Waterfront





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The Lake Ontario waterfront offers convenient, accessible angling opportunities allowing people to connect with nature and enjoy time with family or friends.

***“Fishing in Your Backyard”** along the Lake Ontario Northwest Waterfront encourages responsible and sustainable use of Ontario’s natural resources and promotes angling, healthy habitats and accessible fishing sites throughout the Greater Toronto Area.*

Maintaining and enhancing our urban fisheries for future generations requires involvement from all levels of government, communities and stakeholders and I look forward to working with our valued partners.

Honorable Bill Mauro
Ministry of Natural Resources and Forestry

Ministry of Natural Resources and Forestry | Suite 6630, 6th Floor, Whitney Block | 99 Wellesley Street West | Toronto | Ontario | M7A 1W3



Mimico Creek Wetlands
Photo: TRCA



1. EXECUTIVE SUMMARY

Angling participation has been declining in Ontario (and across North America), particularly in urban areas where opportunities to enjoy the natural environment can be limited. The Lake Ontario waterfront has the potential to provide convenient local (shoreline and nearshore) angling opportunities that are easily accessible through public transportation. The nearshore habitat and the fish community along the waterfront are improving. These improvements include better water quality, better overall lake health, and fish that are much safer to eat than decades ago. In order to highlight fishing opportunities in the Greater Toronto Area (GTA), the Ontario Ministry of Natural Resources and Forestry (MNRF), along with five Conservation Authorities and other government agencies and partners, have initiated the development of an Urban Recreational Fisheries Strategy for the GTA.

Ontario's population is projected to grow by 28.6%, or almost 3.9 million, over the next 24 years to almost **17.4 million** by 2036. The GTA is projected to grow to over 8.9 million by 2036. Ten per cent of Ontarians currently participate in fishing. If only 5% of people in the GTA participate in fishing, this would still mean over 700,000 anglers will be active in the GTA by 2036.

The GTA is home to a large population of new Canadians, some of whom have a desire to fish, but don't know how to get started or where to go. This Strategy will help the MNRF, municipalities and other partners provide the groundwork to reach large target markets of prospective anglers.

Existing fishing opportunities are often undervalued. Common Carp, Freshwater Drum and several panfish species live along the Lake Ontario

waterfront and yet they are not often sought by anglers, despite being common species. This Strategy will enable the MNRF, municipalities and other partners to promote existing and undervalued fishing opportunities.

A considerable barrier to angler participation along the waterfront is a lack of access to fishing areas and knowledge about where to fish locally. This project is designed to: increase angler participation, enhance quality of life by improving access to local fishing areas, help mitigate issues that may result from recreational fishing, make information more easily available, foster community support and improve the fishery itself.

2. INTRODUCTION

The MNRF, Credit Valley Conservation (CVC), Central Lake Ontario Conservation Authority (CLOCA), Ganaraska River Conservation Authority (GRCA), Conservation Halton (HRCA) and Toronto and Region Conservation Authority (TRCA) initiated the preparation of this Urban Recreational Fisheries Strategy, which covers the Lake Ontario waterfront from the western border of the City of Burlington to the eastern border of Durham Region. The variety of interests in urban fishing reflects a highly valued fishery, and it was recognized that the participation and commitment from partners was essential for the development of this Strategy.

The Strategy integrates existing waterfront strategies, plans, research and analyses conducted on the north shore of Lake Ontario. It is intended to provide practical information to assist decision-makers, planners,





designers and regulatory agencies to ensure that nearshore recreational fishing opportunities, habitat restoration and quality angler-access sites are incorporated into municipal and regional waterfront planning initiatives. It is intended to raise awareness of the fisheries resource through effective marketing and promoting restoration measures to sustain a healthy fishery.

Historically, clear water streams and broad rivers meandered through densely forested watersheds to Lake Ontario. The waterfront was a rich mosaic of aquatic and terrestrial habitats, including bluffs, beaches, cobble reefs, estuaries and bays with productive marshes, wooded shorelines and meadows (Whillans, 1999). Diverse fish and wildlife communities lived in these habitats, which provided opportunities for shelter, food, spawning, nesting, over-wintering and migration.

Over the past 200 years, the pressures of colonization, port expansion, industry, transportation and recreation have changed this waterfront almost beyond recognition. With these changes came serious environmental degradation, to the extent that in 1987 the Toronto waterfront was included on the International Joint Commission's list of 42 Areas of Concern around the Great Lakes. In recent decades, considerable work has been undertaken to begin to restore natural habitats and improve water quality, with promising results as aquatic and terrestrial communities begin to show signs of recovery.

At the same time, there has been a renewed desire to increase public access to the Lake Ontario waterfront for fishing.

Ontario's lakes and rivers are a Crown resource owned collectively by the people of Ontario. Access to these public waters is, therefore, the right of

all Ontarians. Fisheries in Ontario are managed by the MNRF, and the majority of revenue required for fisheries management comes directly from the MNRF's Special Purpose Account, which is funded mainly through the sale of fishing and hunting licences.

The Lake Ontario waterfront is a unique place that helps define the GTA's character and is valued and used in many ways. In recent decades, many waterfront areas have been experiencing a transition from industrial and transportation uses to a mix of residential, commercial, cultural and recreational uses. A clean and healthy waterfront provides a much more attractive setting in which to live, work and play. Tourists are attracted to the Lake Ontario waterfront and show growing interest in experiencing nature, with angling high on their list of preferred activities.

The Lake Ontario Fish Community Objectives prepared by the Great Lakes Fishery Commission recognizes the importance of nearshore fish communities and the aquatic environment upon which they depend. The Objectives state that the nearshore fish community will be composed of a diversity of self-sustaining native fishes, including game species such as Walleye, Yellow Perch, Smallmouth and Largemouth Bass, and sunfish, among others. The Objectives encourage the expansion of these species into favourable habitats. It is also implicit that restoring nearshore environments would provide much needed habitat for all life stages of the nearshore fish community, as well as offshore and deep water species, thus contributing to the objective for pelagic fish communities (e.g., Lake Trout, Whitefish) and their prey species, which include both fish and invertebrates. In essence, better fish habitat results in better fishing opportunities.

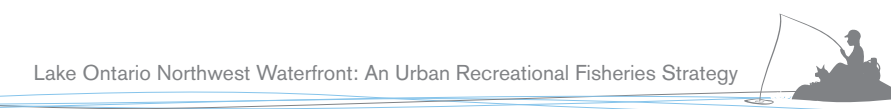
2.1 Vision

A healthy Lake Ontario waterfront provides excellent recreational fishing opportunities for residents and visitors alike. The Strategy's vision is to create a strategic framework to enhance those fishing opportunities, protect and restore fish habitat where needed, encourage people to fish the Lake Ontario nearshore waters, and support the creation of quality public access sites for recreational anglers to enjoy.

2.2 Mission

The Urban Recreational Fisheries Strategy's mission is to:

- Build upon existing fisheries knowledge of the Strategy area.
- Integrate complementary information from adjacent regions.
- Identify strengths, weaknesses and opportunities associated with current recreational fisheries.
- Recommend strategies for improving public access and establishing clear direction among municipalities to enhance and maintain that public access.
- Recommend strategies to promote the recreational fishery by means of social marketing, signage, family fishing events, programming (camps, etc.) and building synergies between key stakeholders



2.3 Project Objectives

Through the establishment of an advisory team, project team, technical team, and stakeholders/public committee, the following objectives were identified to develop this strategy. The Urban Recreational Fisheries Strategy will:

- Guide local, regional and provincial stakeholders that have local fishing interests.
- Identify the state and health of the fish communities and provide guidance for managing recreational fishing.
- Identify waterfront areas where recreational fisheries can be promoted.
- Identify areas where recreational fisheries can be improved through opening access and/or aquatic habitat rehabilitation.
- Work with local tourism and recreation stakeholders to promote public fishing opportunities.
- Identify and use a variety of media channels to promote urban fishing and awareness of the fisheries resource to the public, including diverse ethnic communities.
- Increase the number of licenced anglers within the GTA.
- Identify and recommend methods to promote the message about Lake Ontario, fishing and the benefits of restoring and protecting habitat. Methods should focus on engaging children and youth.



3. AQUATIC HABITAT ALONG THE NORTH SHORE OF LAKE ONTARIO

The type of aquatic habitat available is a good indicator of the type of the fish that will frequent a location. There are four main habitat types along the waterfront in the GTA: open coast, sheltered embayments, river mouths and coastal wetlands. Several key parameters make up the different fish habitats: vegetation, substrate, shoreline composition, depth, temperature and water quality.

3.1 Habitat Types

3.1.1 Open Coast

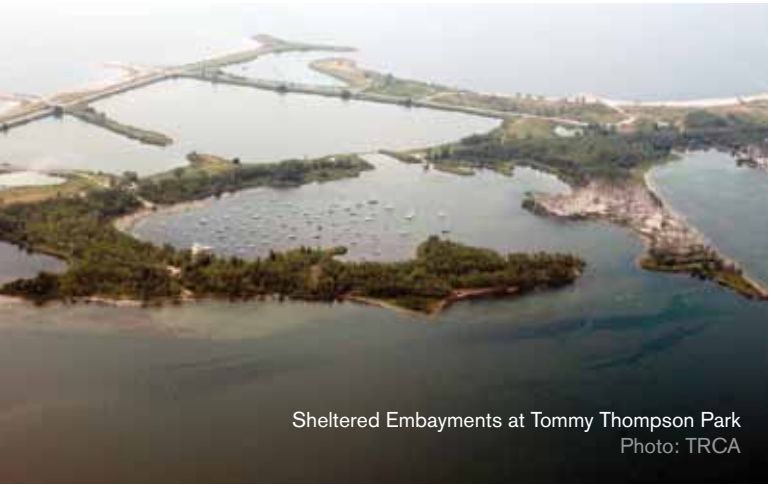
Open coast zones have highly variable water temperatures and are exposed to extensive wind and wave action, resulting in a hostile environment for vegetation and fish. Hypolimnetic upwellings of cold sub-surface waters are common, resulting in temperature fluctuations of as much as 12 °C in a few hours. The fish community in this zone tends to be transitory in nature. Rapid water temperature fluctuations can occur, and during storm events there is little shelter from wave energy. However, with improved water clarity in recent years and the increased growth of aquatic plants, Alewife have moved further offshore and native species such as Emerald Shiners have rapidly increased in numbers. Smallmouth Bass, Yellow Perch and Chinook Salmon are also commonly found in this zone. The rapid invasion of Round Goby has impacted many forage species that were once abundant in this area, and in particular Johnny Darter numbers have decreased over time.



Open Coast along the Scarborough Shoreline
Photo: TRCA

3.1.2 Sheltered Embayments

A sheltered embayment is a semi-enclosed waterbody which has an opening to a larger waterbody. Sheltered embayments are somewhat isolated from the lake and provide thermal refuges for warm water fish species. Forage fish are often drawn to embayments for the warm waters and are followed by predators. The improved water quality has allowed Largemouth Bass, Yellow Perch and other panfish such as Pumpkinseed to greatly increase in number. Other common species include Smallmouth Bass, Northern Pike, Brown Bullhead, Emerald Shiners, and the invasive Round Goby. Due to increased competition White Suckers and Common Carp have declined in abundance. Walleye also occupy this habitat, but work is needed to increase their numbers. Chinook Salmon can also be found here.



Sheltered Embayments at Tommy Thompson Park
Photo: TRCA

3.1.3 River Mouths

River mouths are the transition zone between lakes and rivers. This nutrient-rich zone is an important habitat type as it provides spawning habitat for warm and cool water species, as well as critical nursery habitat for warm, cool and cold water species. Northern Pike, White Sucker and Common Carp numbers have decreased in this zone, while Emerald Shiners and Brown Bullhead are fairly common. Migratory Chinook Salmon and Rainbow Trout can also be found here seasonally. Panfish and Round Goby are occasionally observed. Walleye also use this habitat, and efforts are underway to restore this species to the area.



Humber River Mouth
Photo: TRCA

3.1.4 Coastal Wetlands

Coastal wetlands can occur in sheltered embayments and river mouths. They are the transition zone between terrestrial and aquatic habitats. Wetlands are shallow, have warm water, are rich in vegetation and are very productive ecosystems. Many fish species use wetlands for spawning, feeding and nursery areas. In addition to abundant resident species such as Brown Bullhead, and Fathead and Bluntnose Minnows, adults of many species enter the wetlands to spawn. Common Carp have been very prolific in wetlands and when present have badly degraded the habitat quality by their spawning and feeding behaviour, which stirs up bottom sediments and uproots aquatic plants. Although small numbers of Largemouth Bass, Yellow Perch and Northern Pike are present, the populations of these species are not large enough to sustain angling pressure.





Carruthers Creek Coastal Wetland
Photo: TRCA

3.2 Habitat Parameters

3.2.1 Aquatic Vegetation

Native aquatic vegetation (often referred to as “weeds”) is considered ideal habitat for most warm and some cool water species. Ray Scott, founder of the Bass Anglers Sportsman Society, perhaps summed it up best when he said: “Weeds are to Largemouth Bass, what trees are to deer.” A lack of vegetation indicates that the water is too deep (with limited sunlight and nutrient availability), the substrate is not conducive to vegetation growth or the currents are too strong for vegetation to establish a secure root system. It is important to protect aquatic vegetation, because it holds substrate, fixes carbon dioxide, produces oxygen and provides excellent habitat for fish.

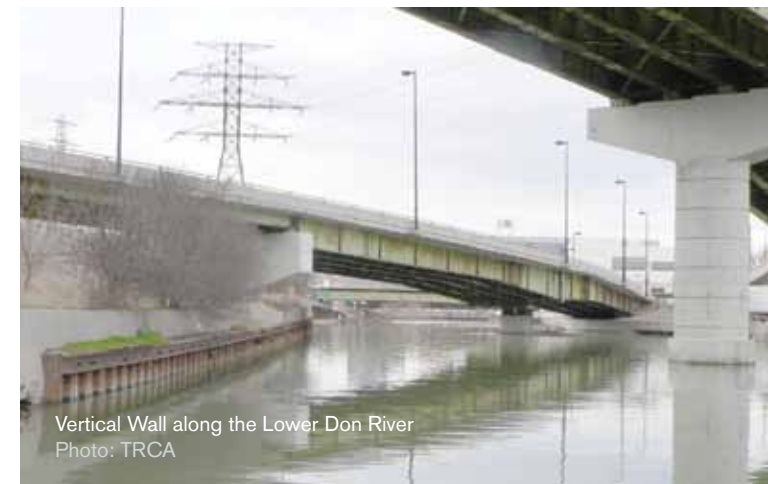


Toronto Islands
Photo: TRCA

Fish, especially young fish, are found in aquatic vegetation, because it provides protection from predators. Larger predatory fish, such as Northern Pike, Walleye and Largemouth Bass, know that vegetation attracts smaller fish, so they use it as cover to stalk their prey. Aquatic vegetation communities are not constant, because they change throughout the year and over time depending on nutrients available in the water.

3.2.2 Substrate

Substrate refers to the type of material that makes up the bottom of a lake. In the GTA, there are eight different substrate types: bedrock, boulder, shale, cobble, gravel, clay, silt and sand. The shoreline composition in the GTA consists of bluffs, low bank plains, baymouth barriers, sand/course beaches, bedrock, wetlands and artificial



Vertical Wall along the Lower Don River
Photo: TRCA

shorelines (e.g., vertical walls). Artificial shorelines like vertical walls provide poor fish habitat. Vertical walls along GTA shorelines are being improved where possible by adding habitat structure such as sloped rocky shorelines.

3.2.3 Depth and Water Temperature

The maximum depth of Lake Ontario is 244 metres, however, for this Strategy, we are focusing on the nearshore zone to a depth of 30 metres. Different fish species prefer different depths mostly because of their temperature requirements. Shoreline areas are typically warm in the summer (24 °C or above) and contain lots of aquatic vegetation. The fish typically found here are Northern Pike, Largemouth Bass, sunfish, Black Crappie, Brown Bullhead, Common Carp, Rock Bass and a variety of smaller fish species. Nearshore areas are typically



deeper and cooler than shoreline areas. With summer temperatures between 19 °C and 22 °C, Smallmouth Bass, Northern Pike and Yellow Perch are typically found in this area (Metro Toronto and Region Remedial Action Plan, et al., 1993).

3.2.4 Water Quality

Water quality can be compromised by a variety of factors, primarily wastewater treatment plants, industrial activities, and runoff from urban and rural areas. The water quality along the GTA’s Lake Ontario waterfront has improved significantly in recent years thanks to more stringent legislation and major improvements to sources of water quality degradation. Clean water with low pollutants and sediment levels contributes to healthy fish and increases diversity.



Lake Ontario water quality sampling in Ajax
Photo: TRCA



4. FISH COMMUNITIES IN THE TORONTO, DURHAM, HALTON AND PEEL WATERFRONTS

4.1 Toronto Waterfront Fish Community

The Toronto waterfront contains a mixture of different habitat types including: embayments, river mouths and open coast. The presence of the Toronto Islands and Leslie Street Spit (Tommy Thompson Park) provide an additional level of habitat complexity not found along the shorelines of the adjoining GTA municipalities. Resource management agencies have established a long-term fish community monitoring program along the Toronto waterfront. Results from this program indicate that native fish communities are recovering and becoming more diverse, moving away from a simple structure dominated by Alewife, White Sucker and Common Carp, and toward a more complex and stable structure with a healthy predator-prey balance.



There has been a large increase in the abundance of Emerald Shiners, which were followed by Smallmouth Bass out to the open coast zone. Abundance of White Suckers, a generalist species, has decreased due to competition and predation by other species. Common Carp numbers have also declined, as they were deliberately excluded from some wetland spawning habitat. Habitat improvement projects are supporting Walleye restoration efforts in the Toronto area. Other common sport fish species found throughout the Toronto waterfront include: Northern Pike, Largemouth Bass, and seasonally migrating salmonids, such as Chinook Salmon and Rainbow Trout.



4.2 Durham Region Waterfront Fish Community

Durham Region consists of all four habitat types: open coast, embayments, river mouths and coastal wetlands. The fish community in the coastal wetlands is considered to be impoverished and is dominated by generalists such as Brown Bullhead and Fathead Minnow. Although some game species are present, their numbers are not robust enough to sustain significant angling pressure. The open coast zone has a transitory fish community with a mix of cold, cool and warm water species. The embayment and river mouth zones have a more diverse fish community. There are healthy populations of bass and panfish in the embayments created by both the Oshawa and Whitby Harbours. Rivers in the region, including Duffins Creek, Lynde Creek, Oshawa Creek, Bowmanville Creek, Wilmot Creek and Graham Creek, see significant seasonal migrations of Rainbow Trout and Chinook Salmon, as well as some Coho Salmon, Brown Trout and Atlantic Salmon.

History of the Lake Ontario Fish Community

The aquatic habitat and associated fish community of Lake Ontario have changed considerably over the last several hundred years. Prior to European settlement, the north shore watersheds were covered with mature forests, and the water quality in the streams and lake was excellent. The fish communities had a healthy diversity of native warm, cool and cold water species. However, as the landscape was settled, stream, embayment, wetland, and lake habitats were severely altered through deforestation, dam construction, and dredging and filling activities. The native fish community was also impacted by the arrival of invasive species such as Alewife, Rainbow Smelt, Common Carp, Sea Lamprey, and more recently, Round Goby. A further serious stress on the fish community was overfishing.





The combined effects from these stresses eliminated native top-predator species (e.g., Atlantic Salmon, Lake Trout) and severely depressed populations of Lake Sturgeon, Whitefish and Lake Herring. Since the 1960s, resource agencies have initiated measures to control invasive species, and starting in the 1970s, numerous habitat restoration projects within the watersheds and coastal zones were implemented. Through these physical habitat enhancements, and additional improvements to water clarity resulting from the invasion of Zebra and Quagga Mussels in 1988, native species began to reappear and the diversity of the nearshore fish community has improved across the waterfront.

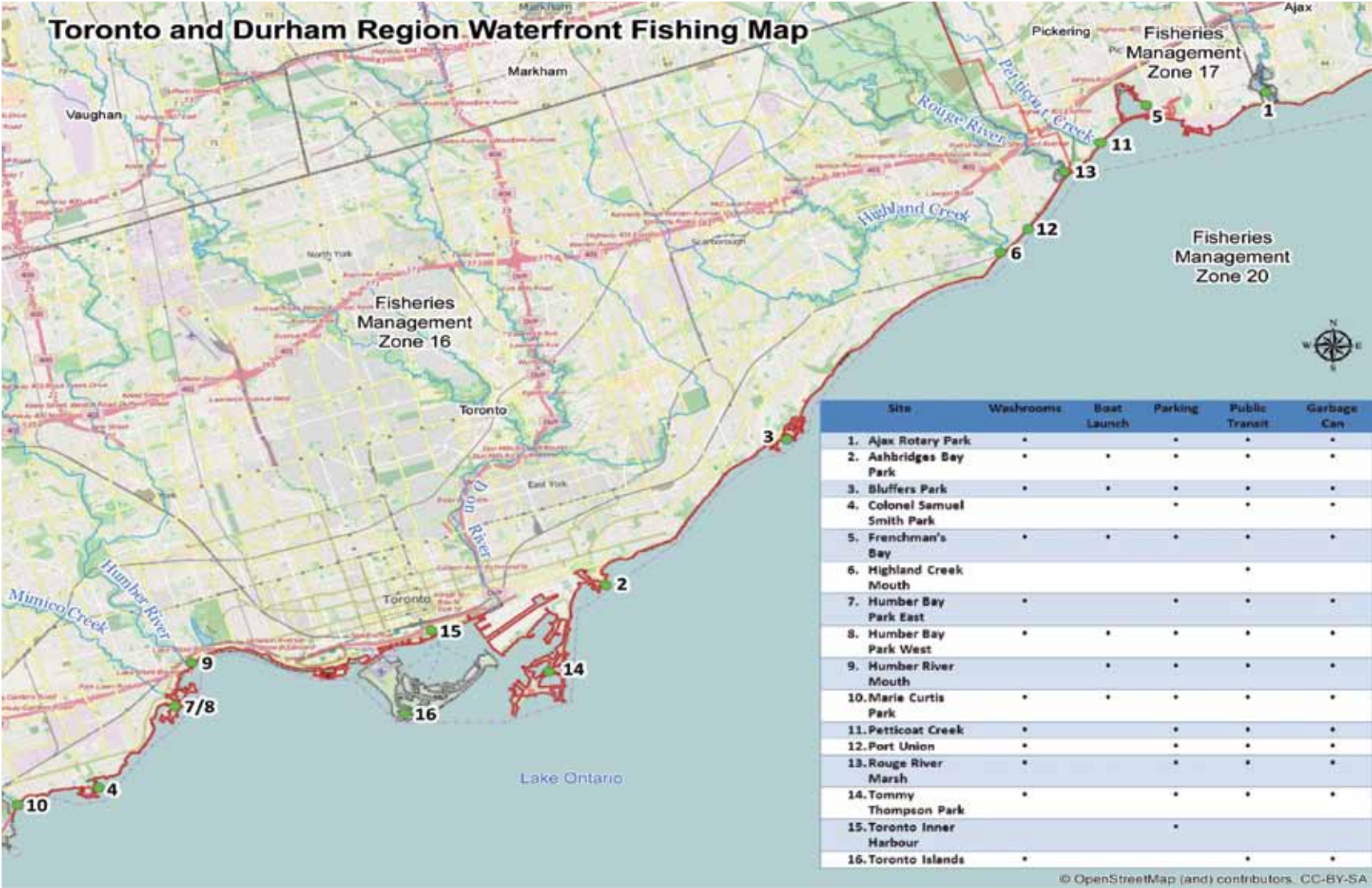


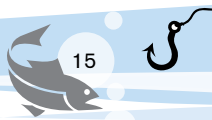
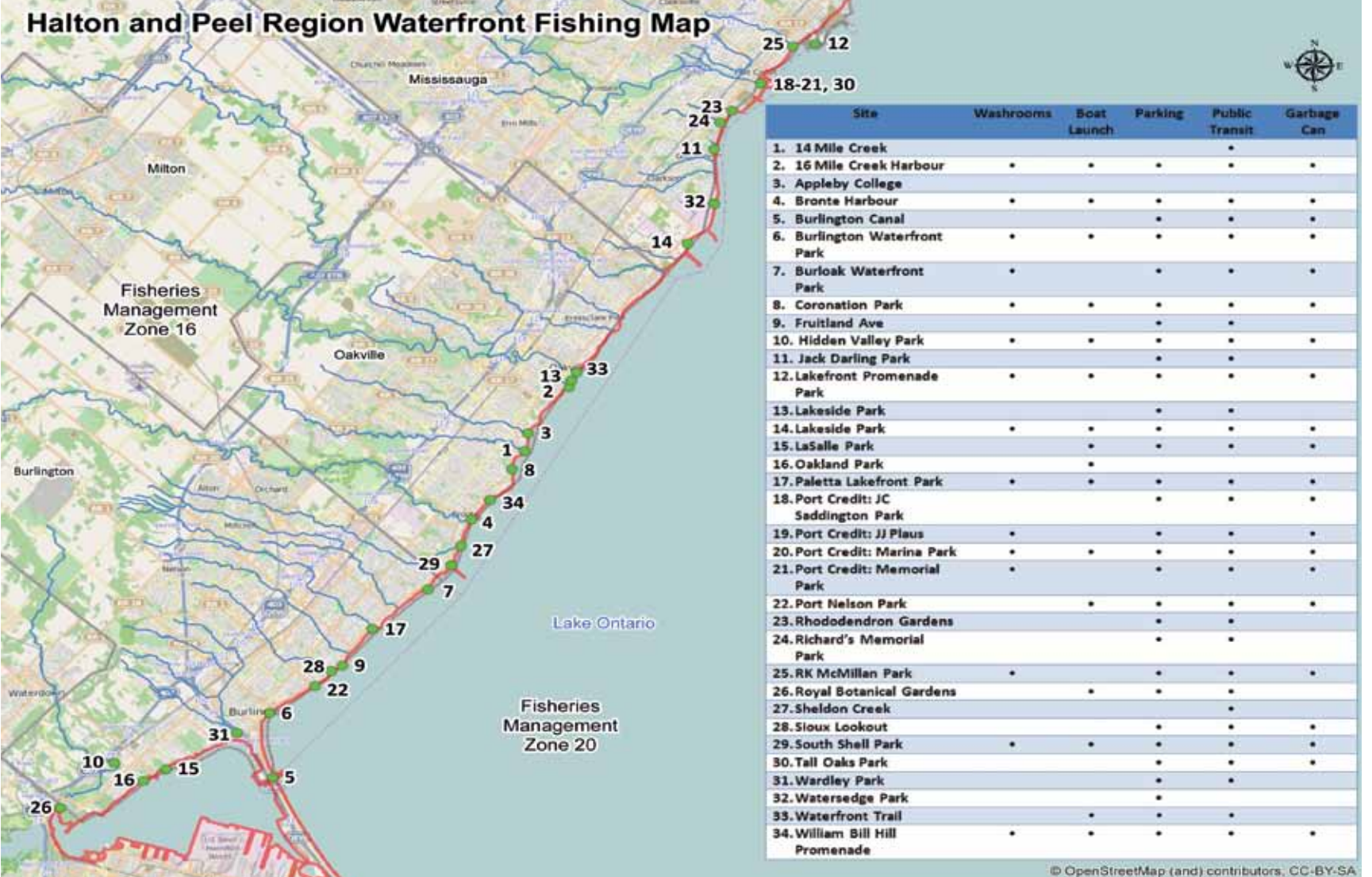
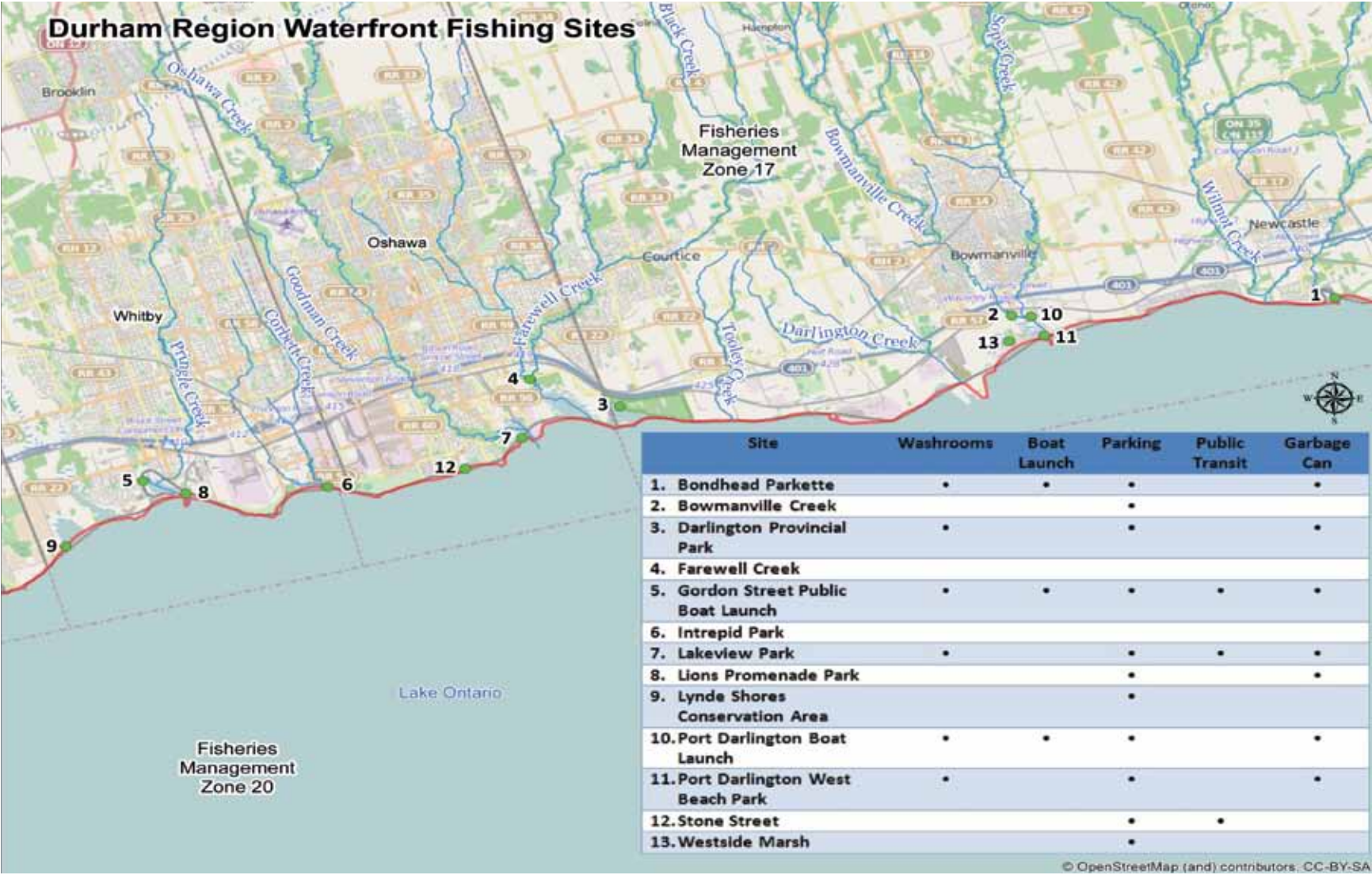
4.3 Halton and Peel Regions Waterfront Fish Community

The waterfront fish habitat in this area consists of mostly open coast and river mouths with some embayments in waterfront parks and marinas. Like Durham Region, the open coast zone in Halton and Peel has a variable fish community. The zone in proximity to the Credit River has a dynamic mix of fish species with annual migrations of cold, cool and warm water species. The spring spawning migration of Rainbow Trout and fall migration of Chinook Salmon have significant numbers of fish staging in the nearshore zone and then moving up into the river. Fish surveys in Hamilton Harbour have shown a promising initial increase in Walleye in response to restoration efforts. Other notable species that can be found throughout this waterfront include: Smallmouth Bass, Largemouth Bass and various panfish.

5. SURVEY OF ACCESS POINTS

While there is excellent public access across the waterfront, an analysis of the access network was undertaken to find opportunities to make access easier for anglers. During the development of this strategy, partner agencies conducted a survey of existing fishing access points along the Lake Ontario shoreline. Sites were evaluated on a number of criteria, including availability of parking, accessibility by public transportation, as well as garbage and washroom facilities. In total, 63 public access points exist in the Strategy area. During this analysis, a number of potential new access points were identified. These access points will be developed by local Conservation Authorities and partners with the principles detailed in the next section.







6. FISHING ACCESS POINTS

Creating opportunities for recreational angling may involve the construction of safe and accessible structures where fishing access is clearly signed. Directing angling pressures to these areas will help prevent negative impacts to sensitive areas and discourage angling where it is not permitted. Where fishing is not permitted (e.g., for safety or navigational reasons), signs should provide clear instructions on where fishing is permitted. Some high traffic areas with multiple users might be considered for complete “No Fishing” bans. These areas could be examined to see if the large influxes of people are only during certain times of the year or day. Fishing only during off-peak hours or shoulder seasons might be a viable option, and signs would communicate these restrictions.

An ideal public access point will consist of an area that includes public parking, garbage collection facilities, lighting, a quality place to fish (as per types of access points below) and washrooms. In addition, site access through public transit is desirable



Ajax Shoreline Improvement Project
Photo: TRCA

Ajax Shoreline Improvement Project

Toronto and Region Conservation Authority, working in conjunction with the Town of Ajax, installed an armoustone lookout, trail, boat launch, and fishing node at Rotary Park. Improving access to Duffins Creek, Duffins Marshes and Lake Ontario was the principal objective of this project.

These features were enhanced with the addition of both terrestrial and aquatic habitat features. The terrestrial habitat consists of riparian plantings to stabilize the existing shoreline while providing habitat for songbirds, amphibians and insects. The aquatic habitat consists of a naturalized and surcharged shoreline, which will improve structural habitat. Together, these features will provide excellent recreational fishing opportunities as the quality of foraging habitat in the area will improve considerably.



7. TYPES OF FORMAL ACCESS POINTS

7.1 Docks

Docks are fixed or floating platforms from which fishing and other activities can occur such as launching a canoe or kayak. Additionally, these structures provide excellent refuge habitat and will often attract sport fish such as bass and panfish.



Spadina Wave Deck
Photo: TRCA



HTO Park Toronto
Photo: TRCA



Toronto Islands Fishing Dock
Photo: TRCA



7.2 Shoreline Nodes

Shoreline nodes are fixed platforms typically made of stacked armourstone. They provide accessible and stable fishing areas. Adjacent shoreline or nearshore habitat enhancements (such as addition of native aquatic plants, woody debris, rocks or gravel, etc.,) also provide great homes for many sport fish.



Frenchman's Bay Fishing Node
Photo: TRCA



Ontario Place Fishing Node
Photo: TRCA



Tommy Thompson Park Fishing Node
Photo: TRCA

7.3 Shoreline Piers

Similar to shoreline nodes, shoreline piers are fixed platforms that extend out over the water from the shore.



Gibraltar Point Pier
Photo: TRCA



Port Credit Pier
Photo: CVC



Oakville Harbour
Photo: Sarah Matchett



Marie Curtis Pier
Photo: TRCA



7.4 Boat Ramps

Boat ramps are designated areas created to facilitate the launching of a watercraft. These areas are typically constructed with parking facilities, and unless otherwise stated, are intended for day use only. These facilities can accommodate vessels ranging from canoes to power boats.



Lakefront Promenade Park - Boat Ramp
Photo: CVC



Bluffer's Park Boat Launch
Photo: TRCA



Duffins Creek Canoe Launch
Photo: TRCA



Humber Bay Boat Launch
Photo: TRCA

8. HABITAT RESTORATION

Improvements can be made to each of the four habitat types: open coast, river mouth, embayments and coastal wetlands. In 2003, a group of government agencies created the Toronto Waterfront Aquatic Habitat Restoration Strategy (TWAHRS), which outlines a list of improvements that could be made to those habitat types. Some of these improvements are already being carried out by the Conservation Authorities, the MNRF, and in some cases, municipalities along the waterfront. Others are being planned for future work. Restoration activities can include creating structural habitat by adding woody material or aggregate to selected areas, improving native aquatic plant communities, reducing and restricting carp biomass, and increasing habitat quality for native sport and forage fish species. Brief information on the various habitat improvement techniques is outlined below.

8.1 Aggregate Placement in Sheltered Embayments and Vertical Seawalls

Structural habitat is created by placing aggregate at the toe of vertical walls and building up piles of aggregate against the walls. This treatment provides cover habitat for baitfish, which in turn attracts game fish. Additional habitat can be created by adding anchored logs adjacent to the piled aggregate.



Aggregate placement in a Sheltered Embayment in Mimico Linear Waterfront Park
Photo: TRCA

8.2 Log Tangles in Coastal Wetlands and Sheltered Embayments

Structural habitat is created by anchoring several logs to the shoreline bottom with aggregate or concrete. This treatment provides habitat for both baitfish and game fish.



Ontario Place Log Tangles and Boulders
Photo: TRCA



8.3 Shoreline Shoals in Sheltered Embayments and the Open Coast

Underwater habitat is created by placing aggregate and woody material on the lake bottom to form points coming out from the shore. This treatment provides spawning habitat for a variety of species.



Open Coast Shoal at the Toronto Islands
Photo: TRCA

8.4 Shoreline Profile Modification in Sheltered Embayments

Habitat diversity is created by modifying substrate elevations to form shallower habitat, creating zones for optimal aquatic vegetation growth. This aquatic vegetation provides cover and feeding and spawning habitat for many fish species.



Shoreline Profile Modification at Tommy Thompson Park Embayment A
Photo: TRCA



Shoreline Profile Modification at Tommy Thompson Park Embayment A
Photo: TRCA

8.5 Modification of Dense Zones of Aquatic Vegetation in Coastal Wetlands and Sheltered Embayments

Aggregate is placed to create openings and pockets with less dense aquatic vegetation, which allows freer fish movement and provides feeding and spawning zones.

8.6 Vegetated Shoreline Components in Sheltered Embayments and Coastal Wetlands

New aquatic and terrestrial vegetation zones are created in the riparian habitat by grading to create lagoons and small islands. This diversity of vegetation communities provides cover and feeding and spawning habitat.



Constructed Island at Tommy Thompson Park Embayment B
Photo: TRCA



8.7 Stream Habitat Estuary Hooks

A variety of sizes of stone are placed in a hook shape adjacent to a vertical wall or high bank. These hooks are designed to remain in place during storm flows. This treatment provides bottom structure and relief from flows, thereby creating staging areas for fish passage. It also entrains sediment, increasing aquatic vegetation.



Humber River Estuary Hooks
Photo: TRCA



8.8 Surcharged Open Coast Groynes

Stones in a variety of sizes are placed in the shallow nearshore zone. This material will be reworked by wave action to create shoals, bars and beaches. This provides improved spawning habitat for various fish species.

8.9 Reptile/Amphibian Habitat in Sheltered Embayments and Coastal Wetlands

A variety of treatments are used in both the aquatic and terrestrial components of the riparian zone. These include placing sand, boulders and log tangles to provide breeding habitat and cover for reptiles and amphibians.



Map Turtle using a Log Structure at Humber Marshes
Photo: TRCA

Common Carp Exclusion Gates

These exclusion devices prevent large, destructive Common Carp from entering sensitive habitat in embayments and coastal wetlands. The aquatic vegetation in previously degraded zones can recover, and healthy aquatic vegetation zones are protected. Many fish species can then use this habitat for spawning, feeding and cover.



Tommy Thompson Park Cell One Carp Exclusion Gate
Photo: TRCA



Open Coast Groynes along the Scarborough Shoreline
Photo: TRCA



9. WATERFRONT STEWARDSHIP

There are many benefits that municipalities and cities can realize by implementing measures that attract anglers to their Lake Ontario waterfront. Economic contributions made by local anglers may not be as high as out-of-town tourist-anglers, but even local anglers purchase bait, food, tackle, equipment and transportation. Many anglers who get their start fishing from shore become tempted by offshore fishing opportunities and purchase boats, motors and electronics. Visiting angler-tourists tend to spend more on accommodations and meals, so tourism departments gear their marketing campaigns to reach this demographic.

Anglers contribute to their communities well beyond economic activity. The majority of anglers care deeply for the resource and strive to protect and conserve the fishery for future generations. They become excellent stewards and watchdogs of the resource. The MNRF manages the fishery to provide recreational fishing opportunities for all anglers and in return these anglers provide funding for this work through their licence dollars. They also contribute both financially and through volunteer work to conservation programs such as the Atlantic Salmon Restoration Program.

Angler groups contribute their time to stocking fish (Rainbow Trout, Chinook Salmon and Coho Salmon). The MNRF's Lake Ontario Management Unit monitors the fishery, and creel surveys are commonly used to help determine angler-success, which in turn provides valuable data on the state of the fishery. This information is obtained directly from participating anglers, and when combined with other sampling methods (e.g., trap netting, electrofishing), helps managers assess whether changes

in fishing regulations are required. Angler groups such as the Toronto Urban Fishing Ambassadors, Pickering Rod and Gun Club, Mississauga Bassmasters and the Chinese Anglers Association also provide outstanding support and commitment to local GTA urban and family fishing events along the waterfront. For example, every summer there are no-cost fishing events held during the MNRF's Free Family Fishing Week program at Toronto Islands, Frenchman's Bay and Grenadier Pond.

The MNRF and partners are committed to attracting more urban youth to become lifelong, devoted and conservation-minded anglers. The Canadian National Sportsmen's Show, for example, provided funds to purchase thousands of fishing rods every year that are distributed at no cost to kids at different family fishing events. The MNRF partnered with other agencies to bring forward the Children's Outdoor Charter whose goal is to get children outside to discover the wonders of nature. In many cases fishing can become the ideal vehicle to do just that. Locally, the MNRF has partnered with the City of Toronto to help establish Kids Fishing Day Camps at Toronto Islands. In 2013, MNRF's Learn To Fish (LTF) Program for kids and families began in several of Ontario's Provincial Parks (including Darlington near Oshawa). These LTF sessions proved so successful that by 2015 a mobile LTF unit and crew began to visit other sites and venues across the GTA and beyond. Additionally, the MNRF Aurora District (whose boundaries reach from Burlington in the west to Clarington in the east) also coordinates the GTA Recreational Fishing Committee, which includes representatives from major stakeholders such as the Ontario Federation of Anglers and Hunters (OFAH), City of Toronto, various Conservation Authorities and fishing related clubs that host family fishing events. The goal of this committee is to promote the GTA's urban fishing opportunities, especially for children.

10. ANGLER BEHAVIOUR

There are 1.26 million licenced anglers in Ontario, the majority of whom reside within the 416 and 905 area codes. Although many travel outside of these regions to fish, urban opportunities close to home are often too good to pass up, so many anglers fish locally as well. This may result in certain fishing areas becoming concentrated with many anglers. These concentrations of anglers are generally short-lived and are especially prevalent during peak salmon or trout runs along some of the busier tributary rivers of Lake Ontario.

Even along the many sections of the waterfront with public access that see relatively little fishing pressure, fishing with respect for the resource and others is important. Angler behaviour goes well beyond the need to follow fishing regulations, provincial and federal laws and municipal bylaws. In fact, many are just common sense, courteous principles that do not require or warrant legislation. With this in mind, this Urban Recreational Fisheries Strategy has put together the following Code of Conduct specific to anglers fishing the Lake Ontario waterfront. It is hoped these top ten guidelines prove useful not just for anglers, but for cities and municipal officials along the waterfront as they manage access and recreational activities along these shores.



Photo: TRCA



Photo: TRCA



Photo: TRCA



Photo: TRCA



Family Fishing Events
Photo: CVC





1. Support and obey all MNRF fishing regulations

Regulations, such as closed seasons, limits and gear restrictions are in place to manage fisheries now and for the future. Acquaint yourself with these regulations and the fish species you can catch here: <http://www.ontario.ca/travel-and-recreation/fishing>.

2. Report resource abuse

The MNRF has a 24/7 hotline where the public can report natural resource abuse. Call 1-877-847-7667 (1-877-MNR-TIPS). We can all help ensure that those who break the law do not spoil future angling opportunities along the waterfront.

3. Keep fishing areas clean

Leave an area just as clean as or cleaner than when you found it. Dispose of unwanted fishing line, old coffee cups or soft plastic baits properly. Visit used fishing line recycle depots when available. Littering reflects badly on all anglers and may impact municipal and public support for urban angling.

4. Consider other anglers and waterfront users

The actions of even one or two anglers could reflect poorly on the entire activity of recreational fishing along the Lake Ontario waterfront. When fishing in these busy urban areas, be respectful of other anglers and shoreline users. This is likely the most important thing anglers can do to ensure continued access to fishable parts of the urban shoreline. If you fish from a boat, have it ready to go before you back it down the

ramp. When you take it out, move it quickly out of the way so that others can use the launch area. If you fish from shore, don't cast your line too close to another angler's line. If your neighbour has a large fish on, reel in so that both your lines do not become entangled.

5. Know where you can fish legally

If unsure, check with the local municipality before you fish a certain area. A list of known public access sites, open to fishing within the Burlington (west) to Clarington (east) area can be found on the MNRF's Fish on line site at http://www.web2.mnr.gov.on.ca/fish_online/fishing/fishingExplorer_en.html. Respect the rights of landowners where you can fish, whether it's private property or owned and managed by the local municipality.

6. Understand your rights as an angler

Under the MNRF's Fish and Wildlife Conservation Act - Section 13 (1) 1997 (F.W.C.A.) it clearly states that it is illegal to interfere with anyone who is engaged in lawful hunting, trapping or fishing.

7. Prevent the spread of invasives

- a) If you use live bait, save and re-use it next time or dispose of it well away from the water instead of dumping it into the lake. Never use gobies for bait!
- b) Don't move fish (including baitfish, aquarium fish or sport fish) from one water body to another. In addition to being unethical and illegal, it could do irreversible damage to the fishery.

c) Clean, Drain and Dry: Be certain that your boat and trailer do not carry any unintentional hitchhikers, such as nuisance plants or Zebra Mussels.

d) Drain livewells, standing water from lower units of outboard motors and pull the drain plug to remove bilge water before leaving the ramp.

8. Share your knowledge and enjoyment of the sport

Take others fishing and show them how much fun it can be. Try to introduce young anglers to urban fishing. Through your own behaviour, demonstrate a strong respect for the resource so that they too will want to protect it for future generations.

9. Provide proper care and handling of the fish you catch

Whether you harvest or release a fish that you have caught, proper handling techniques are important. If you choose to release a fish you have caught, minimize handling and return it quickly to the water. See more tips here: <http://www.ontario.ca/travel-and-recreation/fishing-limits-size-restrictions-and-catch-and-release>. If you choose to harvest the fish you have caught, see the Guide to Eating Ontario Fish here: <http://www.ontario.ca/environment-and-energy/guide-eating-ontario-fish>. The site offers tips for preparing your catch and information on consumption guidelines for Ontario sport fish.

10. Become involved

Anglers can be some of the finest stewards and ambassadors of the resource when they join clubs and associations dedicated to conserving our waterways, enhancing our fisheries and promoting this wonderful outdoor activity.



Rouge River
Photo: TRCA



11. RECOMMENDATIONS

This Urban Recreational Fisheries Strategy makes the following recommendations for municipal and provincial officials, stakeholders and others tasked with managing this recreational activity.

1) Maintain public access with no net loss of existing public fishing areas

Through this Strategy, cities and municipalities will be encouraged to protect existing areas to ensure they remain open and easily accessible for recreational anglers. Cities and municipalities will also be encouraged to work with Conservation Authorities and the MNRF to identify and develop new fishing access points across the network. If a site is removed, project partners will work with municipalities to ensure others are created in its place.

2) Expand fishing opportunities with improved access

New fishing access opportunities require the involvement of a wide variety of stakeholders to be successful. They often require a coordinated approach to include public amenities such as parking, garbage collection, construction and habitat restoration. Cities and municipalities along the Lake Ontario waterfront should consider the addition or enhancement of major fishing piers in order to attract visitors and local residents alike to these specific locations. These piers are common sites in many US cities abutting a major waterfront and have proved to be major attractions.

3) Improve the quality of the fishery

The project partners have identified the state and health of the fish communities through the Strategy, but recognize that there is always room for improvement. Additional and enhanced habitat restoration, stocking, adaptive fishing regulations, and even ongoing research to better understand the fish community are all potential means to increase the quality of the fishery. This Strategy recommends partners continue to work together to improve the quality of the fish community and to share data with cities and municipalities to adaptively manage the fishery and its public access areas.

4) Strengthen partnerships

Recognizing the need for strong relationships between resource managers and the public, the project partners will actively work with local tourism and recreation stakeholders to promote public fishing opportunities. They will continue to use a variety of media channels to promote urban fishing and awareness of the fisheries resource to the public and diverse ethnic communities.

5) Promote angling in the Strategy area

By increasing the number and quality of public access areas, the project partners anticipate that the number of licenced anglers along Lake Ontario's north shore will increase due to improved accessibility. The continued promotion of fishing events, particularly youth and competitive fishing events, have become primary methods to promote the message about Lake Ontario, fishing and the benefits of restoring

Toronto's Waterfront Fish that are safe to eat

The water quality in Lake Ontario has improved to the point where you can now safely eat most fish species you catch in Toronto. Keep smaller fish rather than larger fish of the same species for eating.

meals
per
month

General
Population

meals
per
month

Women of child-
bearing age and
children under 15

Bluegill



0-1
0

Yellow Perch



0-1
0

Brown Bullhead



0-1
0

Largemouth Bass



0-1
0

Brown Trout



0-1
0

Rainbow Smelt



0-1
0

Common Carp



0-1
0

Pumpkinseed



0-1
0

Rock Bass



0-1
0

Northern Pike



0-1
0

White Sucker



0-1
0

Walleye



0-1
0

White Perch



0-1
0

For more detailed information please consult the 'Guide to Eating Ontario Sport Fish'
www.ontario.ca/fishguide

For information on Fishing licences and the Ontario Fishing Regulations please contact
the Ontario Ministry of Natural Resources:
www.ontario.ca/fishing

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and protecting habitat. Project partners also recognize that recreational fishing is not practiced or even accepted as a wholesome outdoor activity by 100% of the population. This Urban Recreational Fisheries Strategy encourages agencies, municipalities and cities to realize that some complaints may occur with enhanced fishing opportunities. However, the same could be said for enhancing other outdoor recreational opportunities for the public, such as cycling, hiking, skateboarding, and even bird-watching.

6) Improve signage

This Strategy encourages clear signage to indicate where public fishing is permitted. In the event that fishing is not permitted in popular fishing areas, signage indicating where fishing is permitted should be erected. The use of No Fishing signs and/or bylaws that prohibit fishing should only be used when safety or navigational impairment by boaters is threatened. In areas where safety is a concern and fishing is restricted (e.g., near high-pedestrian traffic areas or where other users far out-number anglers), consideration should be given to permitting fishing in those same areas during shoulder seasons or off-peak hours.

12. REFERENCES

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Rouge River
Photo: TRCA