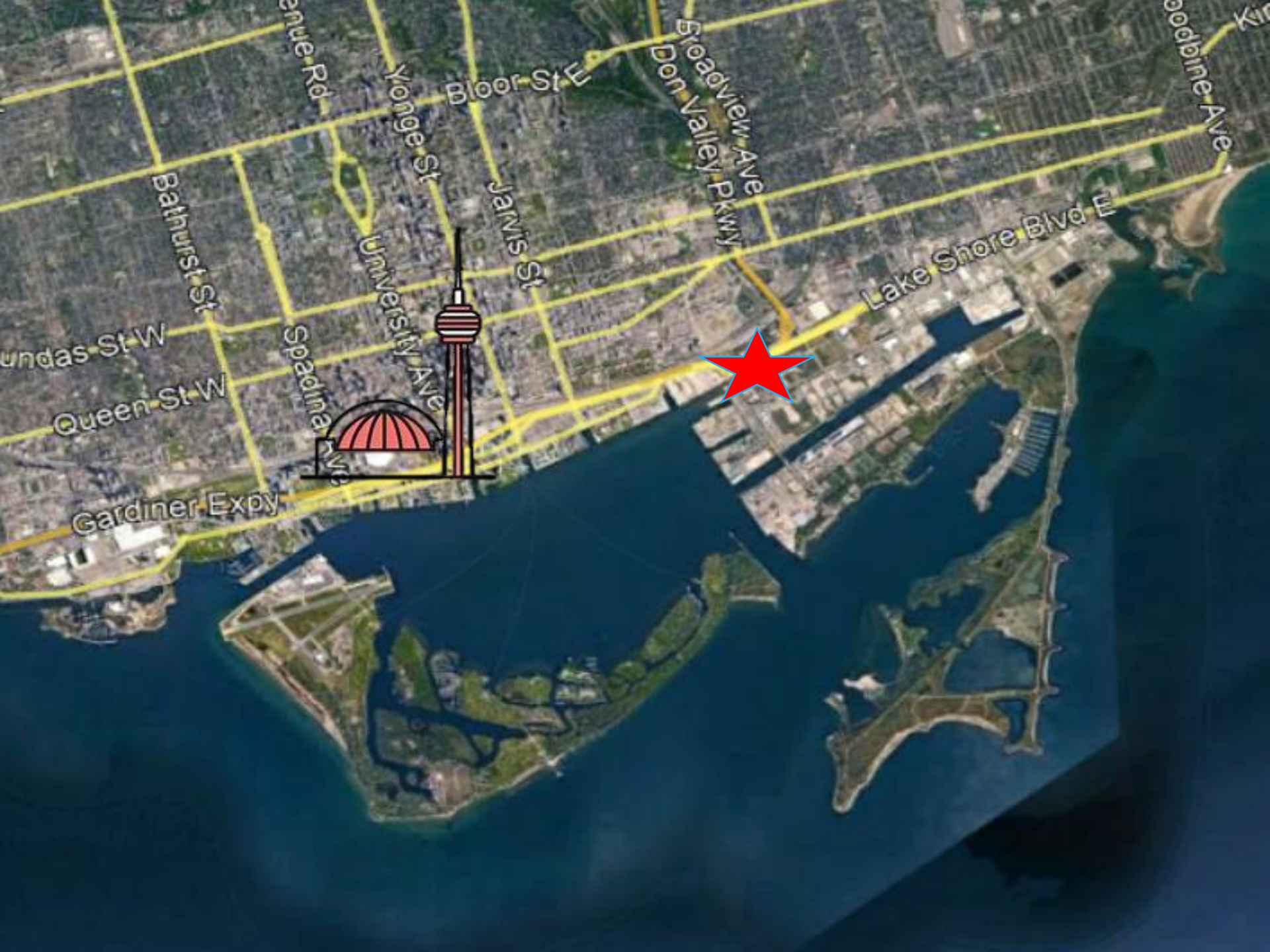


Don River Mouth Naturalization Project

Restoration of Fish Habitat in Toronto: The First Piece in a Very Large Puzzle

Regional Watershed Alliance
Angela Wallace

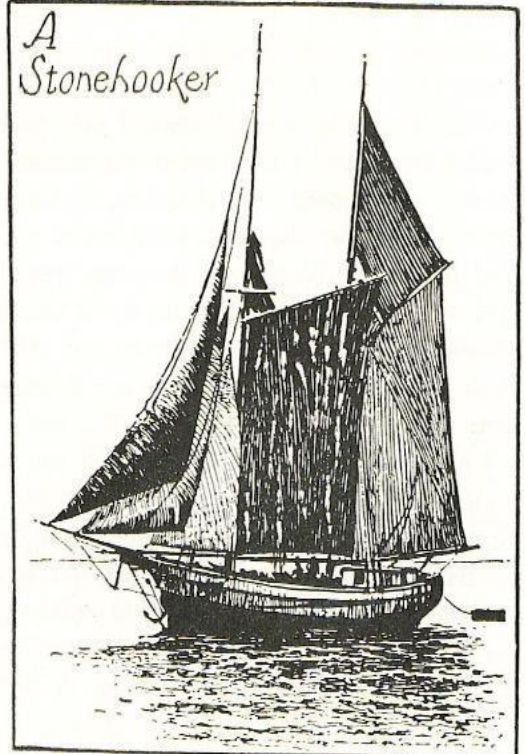
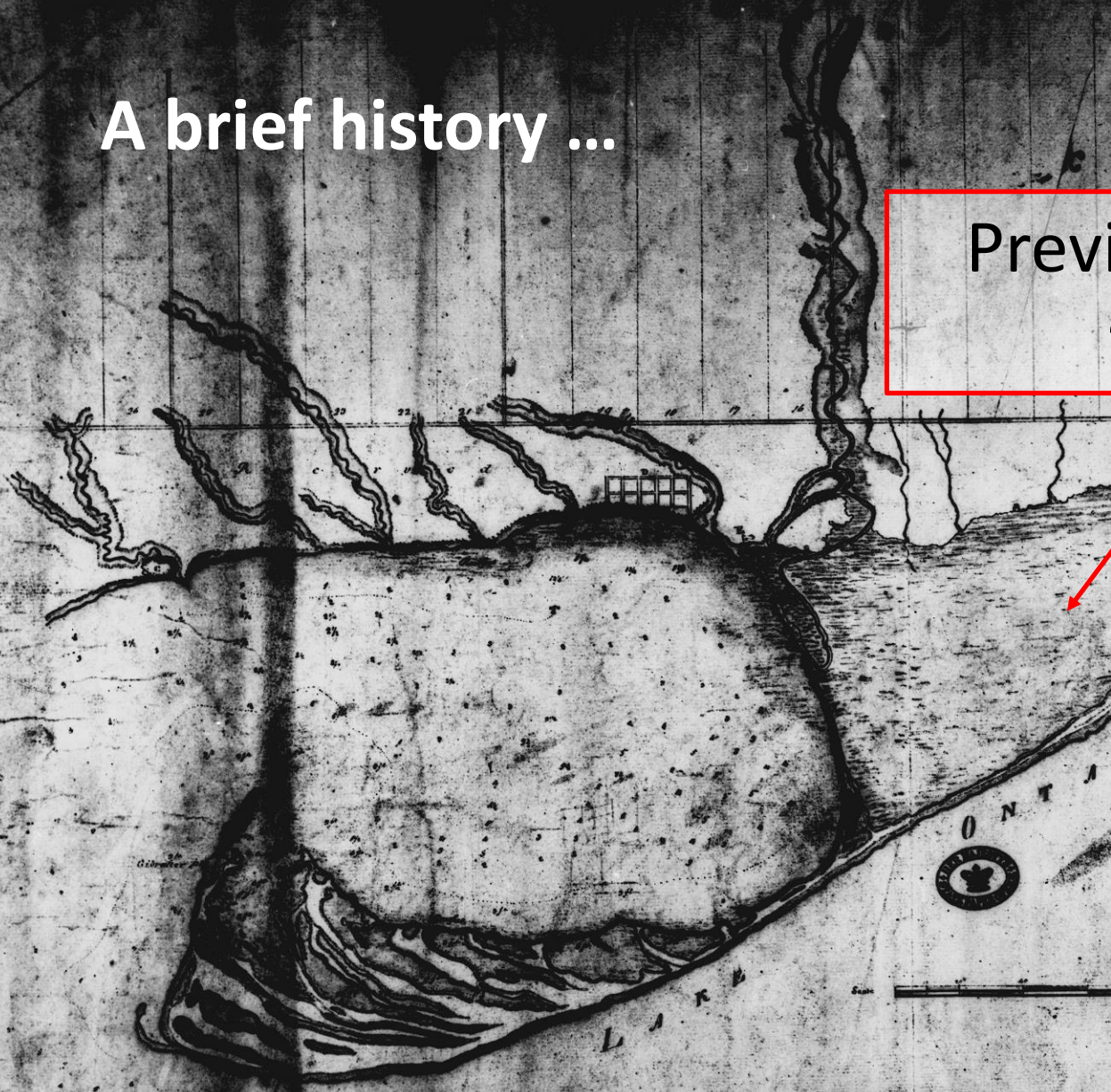
May 25, 2022



avenue Rd
Yonge St
Bloor St E
Broadview Ave
Don Valley Pkwy
Keele St
Bathurst St
University Ave
Jarvis St
Lake Shore Blvd E
Kingsway Ave
Spadina Ave
Queen St W
Gardiner Expy
undas St W

A brief history ...

Previous wetland
~490 ha

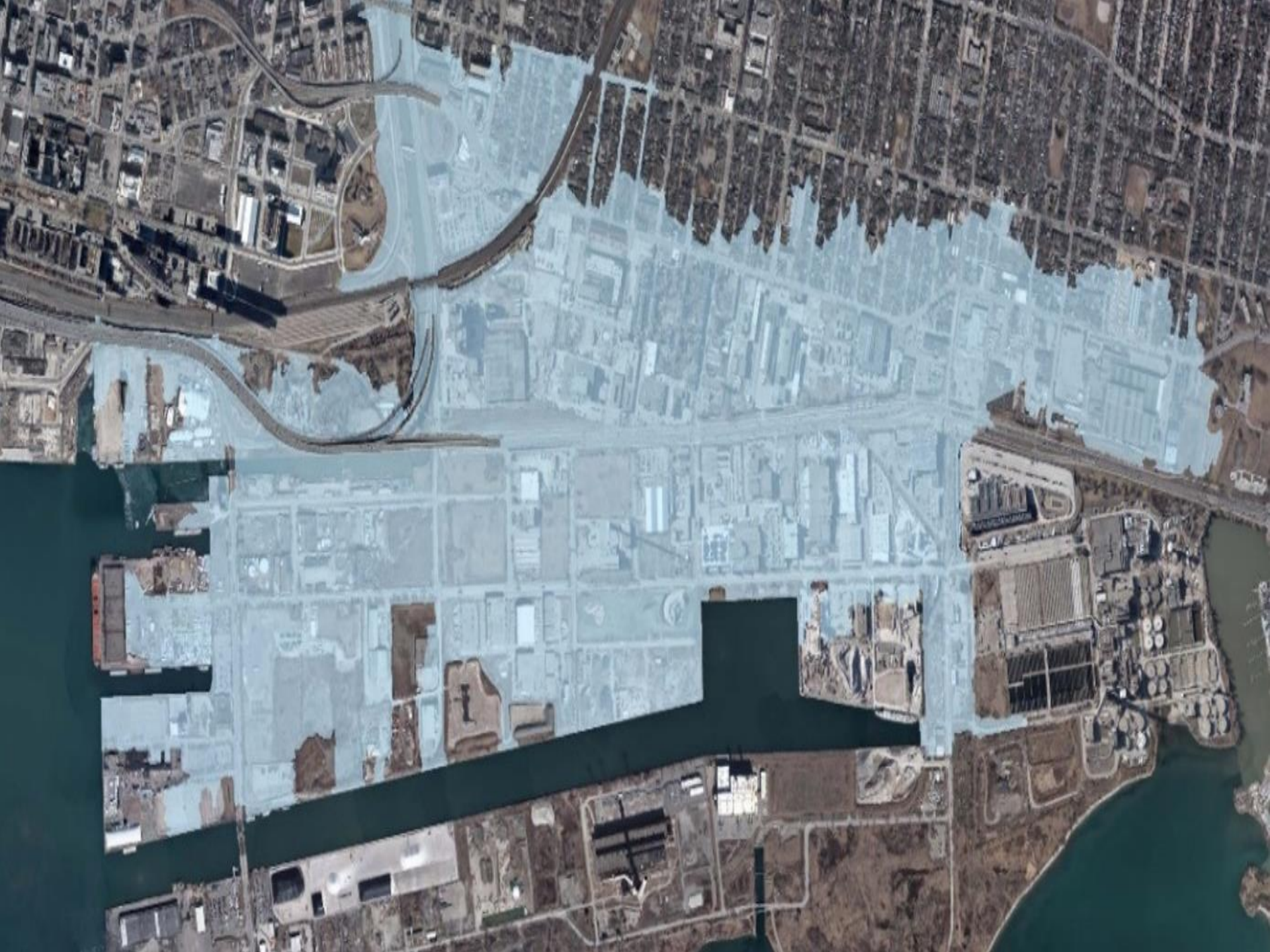






90 ° bend





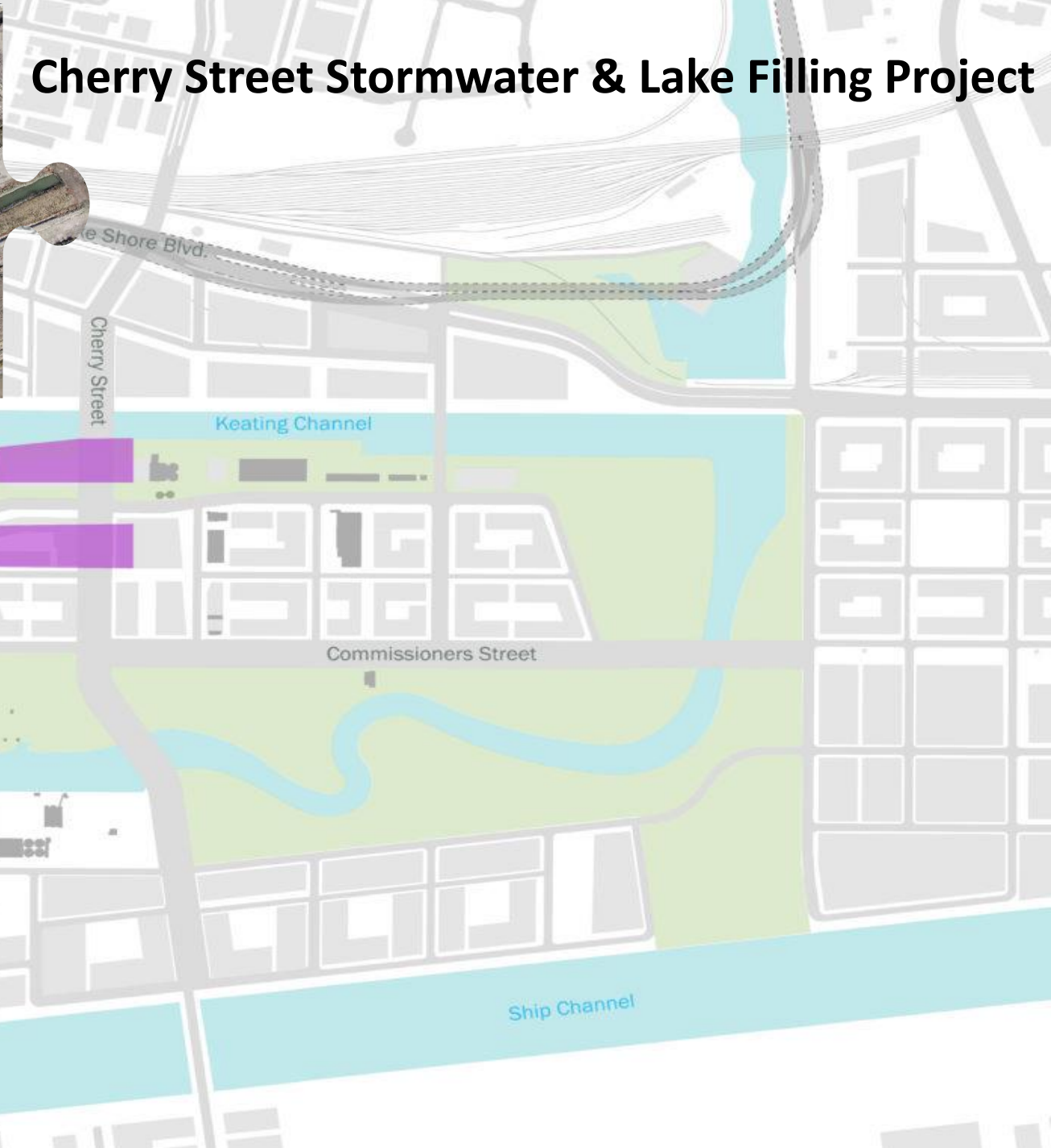


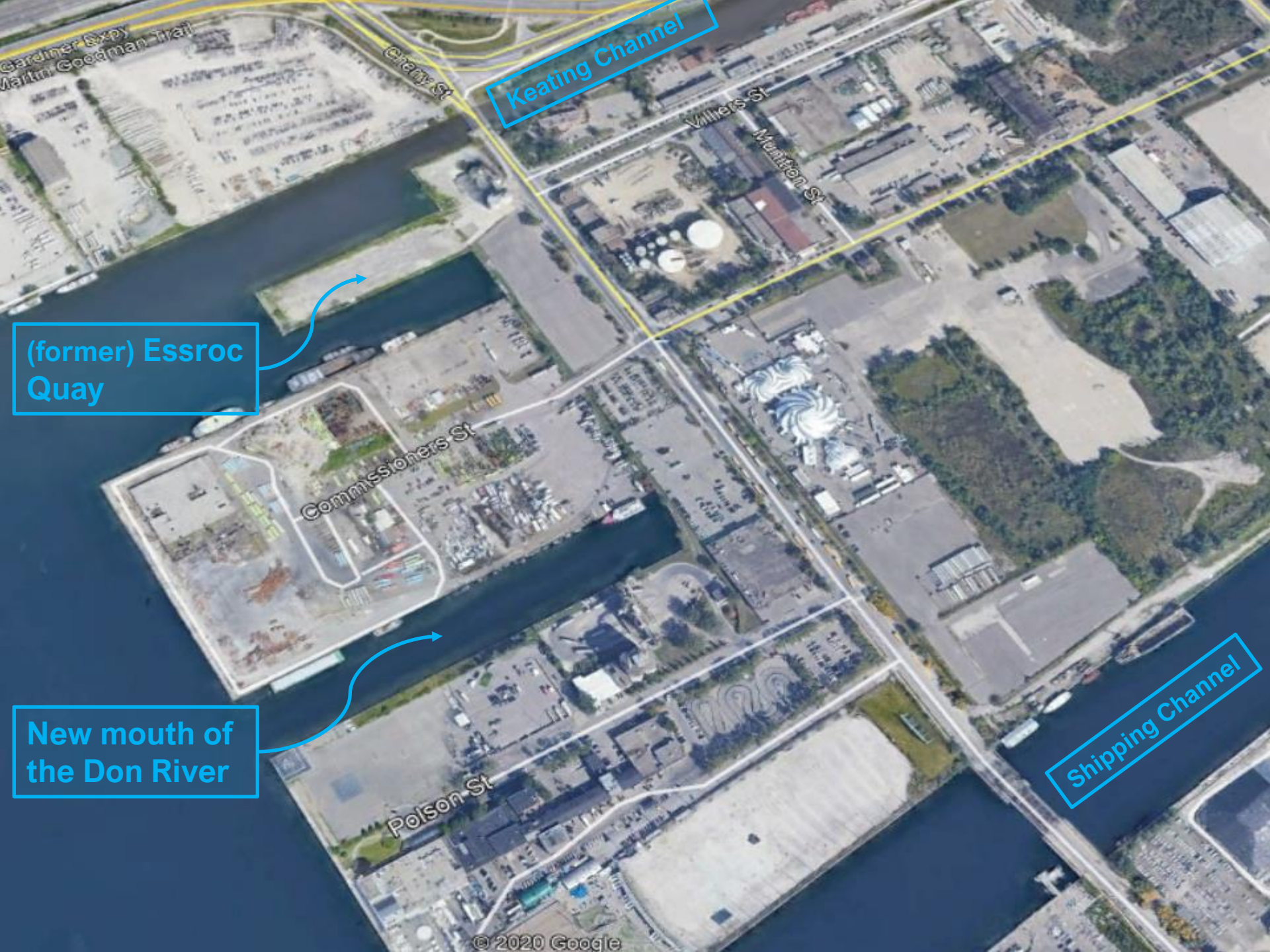
Habitat Restoration

- 1000 m new river
- 13 ha new coastal wetland
- 4 ha terrestrial habitat



Cherry Street Stormwater & Lake Filling Project





Keating Channel

(former) Essroc Quay

New mouth of the Don River

Shipping Channel

Lake filling began December 2017





- Project substantially complete November 2019
- Drone image September 2020

Connecting
Shoreline

North Cove
5090 m²

West Cove
3750 m²





NORTH COVE SPRING 2020



habitat stone

anchored wood habitat

anchored wood habitat

stacked boulder wall

habitat stone

armourstone

boulders

gravel beach

NORTH COVE NOVEMBER 2021

(close-up of anchored logs and boulders)



WEST COVE NOVEMBER 2021

harbour overlook

low lacustrine vegetation

carp gate

anchored wood

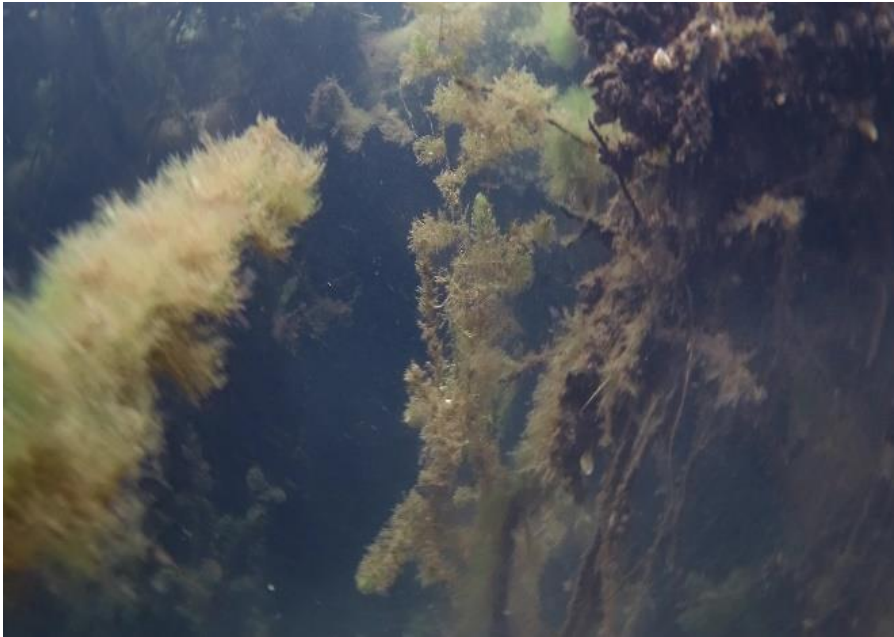
armourstone

armourstone

causeway

carp gate







Fish: post construction monitoring

- Traps (minnow & Windemere)
- Electrofishing
- Underwater video

4.3.1 Observation of three native fish species using the created fish habitat in each of the onsite offsetting locations.

Fish in the Keating Channel

- 2008-2017:
 - Boat electrofishing
 - 3 transects
 - 144 samples
 - 20 no catch (14%)
 - Predominantly: Emerald Shiner, Gizzard Shad, Alewife



Gizzard Shad



coolwater, 30% total fish, 58% samples

Emerald Shiner



coolwater, 42% total fish, 49% samples

Alewife



coldwater, 22% total fish 39% samples

Common Carp



warmwater, 2% total, 24% samples

7 fish species:

– 5 native, 2 non-native

Bluegill, Largemouth Bass, Pumpkinseed, Rock Bass, Spottail Shiner
Common Carp*, Round Goby*



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North Cove

8 fish species:

– 7 native, 1 non-native

Bluegill, Largemouth Bass, Northern Pike, Pumpkinseed, Rock Bass, White Sucker, Yellow Perch, Round Goby*



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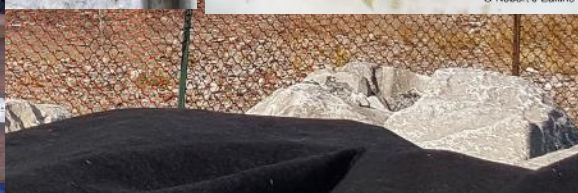
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West Cove



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11 fish species:

– 10 native, 1 non-native


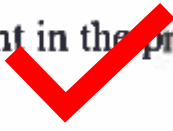

Alewife, Bluegill, Brook Silverside, Gizzard Shad, Largemouth Bass, Northern Pike, Pumpkinseed, Rock Bass, Smallmouth Bass, White Sucker, Common Carp*



Connecting Shoreline



On-site Offsetting

- 4.3 Offsetting criteria to assess the implementation and effectiveness of the offsetting measures: All fish habitat offsetting measures shall be completed and functioning according to the criteria below and as set out in the Cherry Street Offsetting Plan, including:**
- 4.3.1 Observation of three native fish species using the created fish habitat in each of the onsite offsetting locations.** 
 - 4.3.2 Physical materials used to create onsite fish habitat remain present in the project area, a minimum of two years, and continue to function as fish habitat.** 
 - 4.3.3 A minimum of 80% of the onsite designated aquatic vegetation area is alive and successful, for a minimum of two years.** 



Summary

- Successfully constructed two fish habitat coves and rocky shoal fish habitat
- Both coves being used by fish including 3 warmwater species not caught in the Keating Channel during the 10 years prior to construction
- Increasing habitat complexity appears to an important piece of improving fish habitat in Toronto Harbour



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