

Impact Report 2024

GEORGIAN BAY
FOREVER



Georgian Bay Forever has been working for nearly 30 years for one purpose: to protect the aquatic ecosystem of Georgian Bay and keep its waters healthy and thriving. While this goal may be simple, it takes a multi-faceted approach in order to tackle the myriad threats currently facing Georgian Bay. Threats to the water and coastal landscape include loss of water quality due to pollution; floods, habitat loss, and

coastal erosion due to overdevelopment and industrialization; and probable catastrophic chain reactions caused by the encroachment of invasive species.

As always, Georgian Bay Forever has been directly addressing these threats, and in 2024 so far, has exceeded the starting goals for shoreline cleanups, community events, and total area of

invasive Phragmites cut. We have also contributed to research on potentially harmful algae blooms, and have helped to illuminate and educate with a feature-length documentary film about invasive species in the Great Lakes.

We look forward to adding to those numbers and achievements as we adapt and grow our projects in the years to come.

The Critical Catch

Project Overview

The Critical Catch is a program focused on the vital conservation and protection of aquatic and terrestrial species that are at risk due to discarded fishing lines and other littered fishing equipment. Through educational initiatives, waste management resources, and public outreach, we aim to reduce the presence of harmful debris in the water and on shore, engage the public, and foster a sense of stewardship among the community.

Activities and initiatives for The Critical Catch include the installation of recycling receptacles for fishing line, and

personal fishing line receptacle hand-outs to local anglers, as well as the continuation of shoreline cleanups and the Fish in the Classroom educational program, developed by Trout Unlimited, wherein students are given the opportunity to raise brook trout (*Salvelinus fontinalis*). The project's goal is to provide children with a tangible connection to their local aquatic ecosystems and to foster environmental stewardship, active inquiry, and hands-on scientific observation.

We have also partnered with Save the Waves for our citizen scientist activ-

ity and have begun the recruitment process for individuals to share with us the locations (GPS coordinates and pictures) of litter and pollution that they encounter. Recruiting citizen scientists has been a slow process, but we are hopeful that a push in the spring of 2025 will see many community members signing up to help.



Kids observing trout for the Fish in the Classroom Program



Some of the trash we have collected from Georgian Bay Shorelines



Participants at a Shoreline Cleanup



Volunteers at one of our Collingwood Shoreline Cleanups

Achievements So Far

The number of shoreline cleanups as well as the area of shoreline cleaned this year exceeded last year, with 66 cleanup events hosted, and 133.5km of shoreline covered. We have also more than doubled the number of fishing line recycling receptacles installed in southern Georgian Bay this year as compared to last, and as well more than doubled the number of personal receptacles given out to community members.

We have met our goals of ten participating schools in 2023 and 2024 for the Fish in the Classroom program, and there is currently a waiting list for the summer of 2025.

SHORELINE CLEANUPS

2024

| | |
|------|------------------------------|
| 2024 | 66 Shoreline Cleanups |
| | 945.25 lbs Garbage Collected |
| | 133,500 m Shoreline Cleaned |
| | 466 Adult Volunteers |
| | 145 Youth Volunteers |
| | 4 Summer Students |

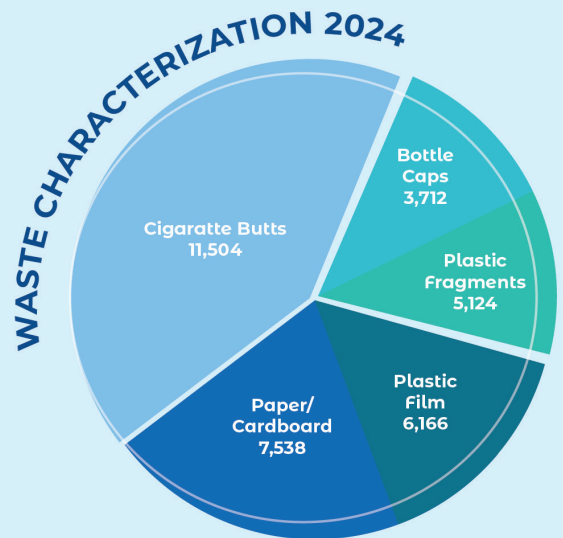
| | |
|------|---------------------------------|
| 2023 | 61 Shoreline Cleanups |
| | *1,216.84 lbs Garbage Collected |
| | 120,000 m Shoreline Cleaned |
| | 317 Adult Volunteers |
| | 150 Youth Volunteers |
| | 4 Summer Students |

| | |
|------|------------------------------|
| 2022 | 35 Shoreline Cleanups |
| | 964.19 lbs Garbage Collected |
| | 71,370 m Shoreline Cleaned |
| | 203 Adult Volunteers |
| | 62 Youth Volunteers |
| | 2 Summer Students |



945.25 lbs of Garbage Collected in 2024
Equal to the Weight of a Horse

CIGARETTE BUTTS ARE STILL THE #1 MOST POLLUTED ITEM



* The original number reported in last year's Impact Report was 1,417.84 due to a reporting error that we discovered this year.

* Only the top five most common items are shown



The Critical Catch Metrics

Shoreline Cleanups

| 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|-----------------------|-----------------------|--|-----------------------|-----------------------|-----------------------|----------|
| Goal: 10 Final: 13 | Goal: 10 Final: 16 | COVID Restrictions – no organized cleanups | Goal: 25 Final: 36 | Goal: 30 Final: 61 | Goal: 65 Final: 66 | Goal: 70 |

Amount of Garbage Collected

| 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|
| Goal: 16kg Final: 337kg | Goal: 100kg Final: 842kg | Goal: 500kg Final: 437kg | Goal: 500kg Final: 552kg | Goal: 600kg Final: 429kg | Goal: 600kg |

Fishing Line Receptacles

| 2023 | 2024 | 2025 |
|-----------------------------|-----------------------------|----------------------------------|
| Installation: 15 | Installation: 11 | Installation Goal: 30 |
| Personal Size Handouts: 225 | Personal Size Handouts: 585 | Personal Size Handouts Goal: 500 |

Volunteers

| 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-----------|
| Goal: 200 Final: 179 | Goal: 200 Final: 213 | Goal: 600 Final: 569 | Goal: 600 Final: 647 | Goal: 250 Final: 611 | Goal: 655 |



One of our fishing line receptacle installations



One of our personal receptacles for recycling fishing line

Education Event Attendees

| 2018-2020 | 2021-2023 | 2024 | 2025 |
|-----------------------------|-----------------------------|---------------------------|-------------|
| Goal: 1,300 Final: 2,800 | Goal: 3,000 Final: 4,087 | Goal: 500 Final: 1,601 | Goal: 1,300 |

Kms of Shoreline Cleaned

| 2023 | 2024 | 2025 |
|--------------|--------------|--------------------------|
| Final: 122.8 | Final: 133.5 | Goal: 6.5Km ² |

Diversion 2.0

Plastic Free Georgian Bay Members

| 2022 | 2023 | 2024 | 2025 |
|-----------|-----------|------------|-----------|
| Goal - 20 | Goal - 20 | Goal - 20 | Goal - 10 |
| New - 3 | New - 5 | New - 14 | |
| Total - 3 | Total - 8 | Total - 22 | |



Microplastics from a Seabin

This year has been the most successful yet for recruiting Plastic Free Georgian Bay members – businesses that have agreed to reduce or eliminate their use or distribution of single-use plastics. We signed on 14 new businesses this year, almost double the amount of the last two years combined, and readjusted our yearly goal from 20 to 10, based on our observations of the time it takes to recruit and onboard new businesses.

Deep Dives (Waste Characterizations)

| 2021 | 2022 | 2023 | 2024 | 2025 |
|------------|------------|------------|------------|-----------|
| Goal - 20 | Goal - 30 | Goal - 35 | Goal - 30 | Goal - 40 |
| Total - 41 | Total - 46 | Total - 76 | Total - 72 | |

We have also more than doubled our goal for Deep Dives conducted, with a total of 72 and a goal of 30. The amount of pollution captured from those Deep Dives is lower than it has been in previous years due to technical issues with our partner installations, and the amount of debris last year being uncharacteristically high in microplastic pieces.

Pollution Captured by Seabins

| 2021 | 2022 | 2023 | 2024 | 2025 |
|----------------|----------------|---------------|----------------|-------------|
| *23,237 pieces | *25,412 pieces | 18,429 pieces | **6,243 pieces | Goal: 6,000 |

* Amount reflects debris captured through the use of Seabins and Gutterbins.

** The number this year is low due to fewer Seabin installations by our partners.

We are maintaining similar goals next year for Deep Dives and captured pollution, so that we can focus as well on education and public engagement with programs like Yellowfish Road, and Microplastics in a Backpack. More funding for staff resources would allow us to grow the Diversion program.

WASTE CHARACTERIZATION 2024

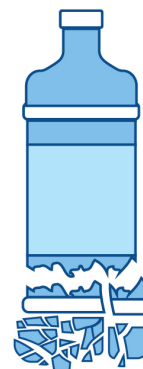
Macroplastics Captured (Big Pieces)



27 Lg Pieces
Plastic Film
68 Sm Pieces



19 Lg Pieces
Foam
50 Sm Pieces



16 Lg Pieces
Plastic Fragments
62 Sm Pieces

Microplastics Captured (Small Pieces)

Invasive *Phragmites* Management

We are proud to be the most prolific invasive *Phragmites* managers in the Georgian Bay area, and while we've been actively working to control this harmful reed for over a decade, the momentum of our Phragbusting program shows no signs of slowing down. Thanks to the intensive efforts of our students and the introduction of our DJI Matrice 300 drone in 2023, we have successfully mapped 97 new invasive *Phragmites* stands this year, for a total of 1,117 stands in the water and on the public shores of Georgian Bay that have been mapped by GBF. Due in no small part to the efficiency of our new mapping system, we were able to focus efforts on eradication, and exceeded the starting goal of three volunteer-based Community Cuts this year, and greatly exceeded our starting goal of 12,000m² of invasive *Phragmites* cut, with seven Community Cuts, and 16,133m² of invasive *Phragmites* cut.

Moving into 2025 and beyond, we plan to utilize the new resources at our disposal, focusing more attention on aerial mapping and ground-truthing invasive *Phragmites* stands in the Georgian Bay area, effectively making us the go-to resource for *Phragmites* surveying, research, and strategic eradication in the region.

The distance of shoreline mapped for invasive *Phragmites* by our team was 3,200km so far in 2024, which is equivalent to the distance from Toronto to Mexico City.



Invasive *Phragmites* Management

| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|------|------|------|------|------|-------------|
| Total Sites Mapped * | 711 | 904 | 968 | 1020 | 1117 | No Set Goal |
| New Sites Mapped | 133 | 198 | 94 | 137 | 97 | No Set Goal |
| Sites Eradicated ** | 275 | 403 | 514 | 490 | 471 | Goal: 500 |
| Sites Cut | 170 | 279 | 270 | 208 | 184 | Goal: 200 |
| Sites Controlled (Eradicated + Cut) ** | 445 | 682 | 784 | 698 | 655 | Goal: 675 |
| Sites Untreated | 266 | 222 | 184 | 322 | 462 | N/A |

* The total number of sites mapped in our data set can change over time due to variables such as multiple stands forming into one stand, or when a site is later found to be on private property, or when a public site becomes part of private property. The data set may also be reconfigured if a site was originally misidentified as an invasive *Phragmites* site and is later understood to be a native *Phragmites* site.

** The total number of sites eradicated in our data set can change over time due to variables such as spontaneous regrowth on a site, or the boundaries of a site shifting or merging.

All Too Clear



The audience during our premiere screening in Parry Sound

In the spring and summer of 2024, Inspired Planet productions completed *All Too Clear*, a documentary film about invasive quagga mussels in the Great Lakes, for which Georgian Bay Forever was the primary Canadian funder. This visually stunning and informative documentary was released first as a private screening in Toronto for Georgian Bay Forever donors, followed by the world premiere in Parry Sound, and then a public screening in Collingwood. The film has already been seen by thousands of people throughout the course of the three screenings, and will

now be viewed by countless others as it streams on demand with TVO.

The public interest and positive reaction to the film has been overwhelming. The film has won Best Feature at the Fresh Coast Film Festival in Michigan, and we have already had several requests from outside organizations around Georgian Bay to host screenings in summer 2025. Several film festivals and public speaking events have also been scheduled in the Great Lakes area, both in Canada and the US, for the remainder of 2024.

Nuisance Algae

Our Nuisance Algae project started in 2022 in partnership with Environment and Climate Change Canada, with the objective of logging critical data about the potential presence of nuisance algae in Georgian Bay. To collect this data, we recruited citizen scientists to observe and report algae sightings around Georgian Bay shores, utilized our own shoreline activities as a means of recording sightings, and deployed our underwater technologies to observe algae in the nearshore region.

We recruited over one hundred citizen scientists, and while sightings were reported, they confused heavy pollen on the water for algae wash-up, sug-

gesting that more training is required for laypeople to make accurate observations. GBF conducted sixty shoreline cleanups over the study period with staff trained to identify algae, and as well, shoreline businesses and municipal marinas contributed their observations. We also used our AUV and ROV to help fill in data gaps regarding the presence of nuisance algae in the nearshore waters of Georgian Bay. Between the various reporting methods, there were no instances of algae at the nuisance level on shore or nearshore during the study period.

Based upon these observations, it does not appear that nuisance algae has a

significant impact on shoreline communities in Georgian Bay at this time. These findings are important, however, for improving our understanding of the interactions, mechanisms, and expression of nuisance blooms in the study area.



Footage from our ROV of the nearshore area at Sunset Point in Collingwood

Technology Toolkit

Our Remotely Operated Vehicle (ROV) was used to inspect underwater sites for possible trash presence. This device can collect photos and video, and has a grabber claw to grasp and remove garbage. During 2024, our first survey year, we inspected 15 sites in southeastern Georgian Bay, including areas inhabited by cottagers, popular boater bays, areas adjacent to national park docks and water access, as well as some areas of interest identified by side-scanning sonar-detected features

of interest during missions conducted with our Autonomous Underwater Vehicle (AUV) and our sonar equipped workboats.

ROV Stats – 15 sites inspected, 3h14m19s of lakebed inspection video recorded, and 44 underwater photos collected.

Drone Stats – 9 days of use during the summer and fall, 293ha (or 2.93km²) of area covered, 174.5km of distance in flight, and 17,490 images collected. See

the previous page for information on how we use the drone to map invasive *Phragmites*.



Footage from our ROV of a Georgian Bay Lakebed

Education

Microplastics in a Backpack

| 2022 | 2023 | 2024 | 2025 |
|---------------------|---------------------|---------------------|----------|
| Goal: 7 Final: 3 | Goal: 7 Final: 7 | Goal: 7 Final: 7 | Goal: 10 |

The Microplastics in a Backpack program teaches students about the impacts of humans in the environment. The program focuses on Grades 1-10, and aims to bring attention to microplastics in the daily lives of the participants. Utilizing digital microscopes, students examine various samples of materials from daily life, such as dryer lint, sand, and water, for microplastics and microfibres. This program also encourages venturing into the environment to show how humans have shaped the nature around us.

Envirosapes

| 2022 | 2023 | 2024 | 2025 |
|----------------------|----------------------|---------------------|----------|
| Goal: 7 Final: 10 | Goal: 7 Final: 11 | Goal: 7 Final: 7 | Goal: 10 |

The Enviroscape program aims to educate students from Grades 1-10 about the impacts of pollutants on watersheds, and the various ways to make positive changes to benefit overall water health. The Enviroscape itself is a tabletop landscape that simulates different daily environments such as a subdivision of homes with new building, farmland, water treatment facilities, and forests. By teaching participants about the different effects each location has on water health, the Enviroscape program facilitates creating ideas on how to divert and reduce pollutants before they impact the environment.

Yellowfish Road

| 2022 | 2023 | 2024 | 2025 |
|---------------------|---------------------|---------------------|----------|
| Goal: 7 Final: 7 | Goal: 7 Final: 7 | Goal: 7 Final: 7 | Goal: 10 |

Yellow Fish Road teaches students about storm drain pollution by bringing awareness to storm drains in their community. Participants paint bright yellow fish next to the drains with the words "Rain Only", symbolizing that only water should be going into them. The goal is to educate the students, while also creating a symbol for members of the public to recognize, which may prompt them to ask questions about how storm drains function in their infrastructure.

Looking Forward

The beauty and grandeur of Georgian Bay can be deceiving. It may look the example of a healthy and wild ecosystem upon first glance, but as researchers, activists, and environmental advocates, we know that the problems facing Georgian Bay and the surrounding water go much deeper.

We thank the donors whose generous support we depend on for allowing us to keep working on solutions to the problems, and remedies to the threats facing the water and the ecosystem of Georgian Bay.

