

Appendix

Appendix A. Summary of studies on microplastics in Canadian aquatic environments. MPs-microplastics.

| Location | Reported microplastic abundance | Sampling method | Key findings | Study |
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| Nova Scotia & Newfoundland and Labrador | 0–125,455 items km ² | 333 µm mesh Manta trawl | 68% of MPs were in the 0.425-5 mm size. Most common MP was polyethylene (30%) with fragment being the most common morphological type. | Smith et al. (2022) |
| Lake Simcoe, Ontario | 0.4–1.3 items m ³ (Manta trawl) and 0–70 items m ³ (grab samples) | 335 µm mesh Manta trawl and Surface water grab (4L) | 72% of particles were anthropogenic. Fibers accounted for 82% of the surface water grab samples. Fragments were most common in manta trawl samples (75%) and consisted predominantly of polyethylene (41%) and polypropylene (22%). | Felismino et al. (2021) |
| North Saskatchewan River, Alberta | 26.2 ± 18.4 items m ³ | 53 µm mesh for surface water grab. | Fibers were the dominant morphology. Most were of anthropogenic origin and chemically identified as dyed cotton or polyester by Raman. | Bujaczek et al. (2021) |
| Lake Ontario, Ontario | Mean of 800 items m ³ | 10 L grab samples taken from four sites in Lake Ontario off Toronto | >125 mm size fraction was evaluated for this study. Cellulose was the most dominant chemically, but fragment was the most dominant morph at 34%. | Grbic et al. (2020) |
| Ottawa River, Ontario | 0.1–1.35 items m ³ | 100 µm mesh Manta trawl | Sample filtered to 100 µm filter. Most mps were fibers. (>95% for bottle sampling and 73% from Manta trawl). | Vermaire et al. (2017) |
| Muskoka-Haliburton, Ontario | 1,020–2,390 items m ³ | Peristaltic pump with Tygon tubing 1- | Sample filtered onto 1.6 µm glass fiber filter. Polypropylene was the most abundant. | Welsh et al. (2021) |

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| | | 1.5L for each sample | | |
| Lake Winnipeg, Manitoba | 53,000 – 7,784,000 items km ² | Manta trawl with 333 µm mesh | Fiber was the most common type | Anderson et al. (2017) |
| Coastal British Columbia | 8 – 9,200 items m ³ | Collection via saltwater intake system of the vessel | Fiber was the most common type at (~75%). Samples filtered were collected using underway system by filtering water through: 250 µm, 125 µm, and 62.5 µm sieves. | Desforges et al. (2014) |
| Fraser River, British Columbia | 12-26 items m ³ | Filtration via 50 µm custom device at 5-8m depth | Fibers represented 80% of particles | Parizi et al. in prep. |
| Vancouver Island, British Columbia | Mean of 659.9 ± 520.9 items m ³ | Surface water collection | Sample filtered through 100 um plankton net. All water samples contained fibers, and 93% of all particles found were fibers. | Collicutt et al. (2018) |
| Coastal British Columbia | Mean of 560 items m ³ | Niskin bottle | Water samples were filtered onto 10 um PC filter. Water samples contained 94.3% of fibers. Polyester was the most dominating plastic type at 82.9%. | Mahara et al. (2022) |
| LeBreton Flats & Graham Creek, Ontario | 12-88 items m ³ | Manta trawl with 300 µm mesh or 100 µm mesh | Samples were filtered to 80 um filter. Fiber was the dominate microplastic type for both locations. Though, Fragment dominated during the dried period in 2021 sampling at Graham Creek. Majority of fibers were confirmed to be anthropogenic in nature. | Forrest et al. (2022) |