

Pinianninga

Taimanganit 2017, tainna Nunalinni kamatsianik palâstikkinik suliangujuk katuitisimajuk Inuit katitsuijinnik, nunalimmiunik, Kaujisattinik, ammalu suliaKapvini ikajuttigejunut tukisigiamut palâstikkinik iluani Nunatsiavut nunanginni amma imâni. SivukkatigeKatausimajuk Liz Pijogge (Nunatsiavut kavamanga) ammalu Max Liboiron (Memorial Ilinniavitsuanga), ammalu iniKatlutik nunalimmi-ilinganiKajumut avatiligininimmik kamatslutik, tâнна suliangujuk takunnâlualauttik palâstikkinik iluni niKituKannik, sitjani, imaup Kângani, aputik, ammalu sikunni ottugatlutik. Ungatâni **250 inuit** tunitsilauttut tâpsumunga suliatsamut, sakKijâtitsitlutik anginippaumik, nunalimmit-pisimajumit palâstikkinik suliatsamik iluani Ukiuttattumi ullumimut.

Tâнна allaKutik naillititsijuk napvâtausimauuk pisimajunit Kanitangani **3,000 ottugattausimajunut** nanituinnak Labrador Inuit Satusattausimajop Iningani. Ammalu suliaKaKatiget Kimiggusimajunut Kaujisattilagijikkutigit allataumajumut ilinganiKajuk tâpsumunga suliajiausimajumut sakKivallialâttut.

Ilonnait Kaujigatsait katitsutausimajut tâpsuma suliatsakut namminigijauvuk Nunatsiavut kavamakkunut.

Tamanna ikajuttigennik pijagelimmat (2017–2026), tainna Nunatsiavut kavamakkut sivukkatiuvut suliatsamut sivuppalutik. Liz Pijogge asianut suliatsamosimajuk iluani Nunatsiavut kavamakkuni sulia ikajutsilangajuk Kaujisannimik ammalu Kaujimausigijaujunut ilinniavallialuni. Tamanna nalunaitsivuk tamâgennik nânninganik ammalu kajusiutigijauniattumut: tamanna nânningan ikajuttigenikkut sivukkatigetlutik Kaujisannikut, ammalu sangijottitauvalliajumut Nunatsiavut-sivukkatiutlutik palâstikkinik kamagiamut pigiasisimamjuk iluani Inuit aulatsinimmik, sivulliutigumajanginnik ammalu sivunitsatinnut.

Kenaujait: Taimangani pigianninganit jâringani 2017, tâнна suliangujuk kenaujattâsimajut Nunatsiavut kavamakkunit, Taggami Ilimanattunik Suliangujumit (CB-10, ottugatlutik pisimajumit CB-13), NunaKakKâsimajuit ammalu Taggaliginimmik Suliatsanut Canadami ammalu NunaKakKâsimajuit Nunalimmi-ilinganiKajumut Silak kamagijaunninga ((ICBCM), POLAR Canada, ArcticNet (#72), Tainna Imappik Avataligijet kamajingit Nigiunasautet ammalu kiukatattet (MEOPAR), SSHRC (#435–2017–0567), tainna Dorothy Killam Foundation, Memorial-iup MUCEP ammalu ISWEP suliangujuk, Memorial SuliaKapvinga Tulia President-inganut (Kaujisannik), Tainna SuliaKapvik Inunnu ammalu Inulimânut Kaujisattilagijinginnut (HSS) taikani Memorial Ilinniavitsuangait, taina Canada-Inuit Nunangat-United Kingdom Ukiuttattumi Kaujisapvinga Suliangujuk (CINUK) ilautigillugit tainna Nunatsualimâmi Kaujisattet kaunsallinga Canadamit (NCR), NunaKakKâsimajuit IlinganiKajunut ammalu taggami Suliatsanut NunakKatigengitumi Ikajuttigejunut ammalu Kaujisattet Suliangujuk, ammalu NSERC (DH-2022-00313).

Introduction

Since 2017, the Nunalinni kamatsianik palastikkinik project has brought together Inuit harvesters, community members, researchers, and institutional partners to understand plastics in Nunatsiavut lands and waters. Co-led by Liz Pijogge (Nunatsiavut Government) and Max Liboiron (Memorial University), and grounded in community-based environmental monitoring, the project focused on plastics in wild food, alongside shoreline, surface water, snow, and ice. **Over 250 people** contributed to this work, sustaining one of the most comprehensive, community-driven plastics projects in the Arctic to date.

This report details findings from **nearly 3,000 samples** across the Labrador Inuit Settlement Area. Community collaborative analysis, collective authorship, and shared decision-making shaped both the research process and the form of this report (see Appendix 16). Peer-reviewed scientific articles based on this work are forthcoming.

The final report is a reference text. The report is not designed to be read front to back in its entirety, but each section includes the data, background, and analysis needed to inform decisions on that topic. It is so long because we wanted to leave everything we knew, and how we knew it, in the hands of the Nunatsiavut Government and communities. Everything is here.

All data gathered through this project are owned solely by the Nunatsiavut Government.

As this partnership phase concludes (March 2026), the Nunatsiavut Government is taking leadership of the project going forward. Liz Pijogge has transitioned into a new position within the Nunatsiavut Government, where she continues to support research and knowledge stewardship. This moment marks both an ending and a continuation: the conclusion of a successful co-led research partnership, and the strengthening of Nunatsiavut-led plastics monitoring rooted in Inuit governance, priorities, and futures.

Funding: Since its beginning in 2017, this project has been funded by The Nunatsiavut Government, Northern Contaminants Program (CB-10, with sample sharing from CB-13 & M-31), Crown Relations and Indigenous and Northern Affairs Canada through the Indigenous Community-Based Climate Monitoring (ICBCM) and Marine Conservation Targets (MCT), and Regional Partnership and Research programs, POLAR Canada, ArcticNet (#72), The Marine Environmental Observation Prediction and Response Network (MEOPAR), SSHRC (#435-2017-0567), the Dorothy Killam Foundation, Memorial's MUCEP and ISWEP programs, Memorial's Office of the Vice-President (Research), The Faculty of Humanities and Social Sciences (HSS) at Memorial University, the Canada-Inuit Nunangat-United Kingdom Arctic Research Programme (CINUK) including the National Research Council of Canada (NRC) and NSERC (DH-2022-00313).



People

Ungatâni 250 inuit
sakKititsigunnasimajut
tâpsuminga suliatsamik.

Over 250 people made this project possible. Nakummek!

Tânnâ suliangujuk aulatausimajuk Liz Pijogge-mut (Nunatsiavut kavamanga) ammalu Max Liboiron (Memorial llinniavitsuanga), tâvatuak unuttualuit asivut sakKititsigunnasimajut tâpsuminga. Nakummek ilonnait ilauKatausimajunut:

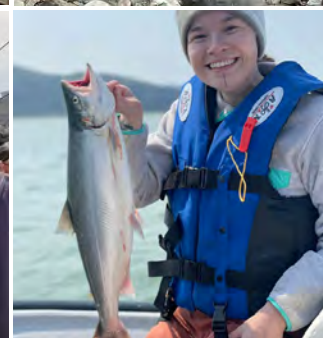
This project was coordinated by Liz Pijogge (Nunatsiavut Government) and Max Liboiron (Memorial University), but many others make this project possible. Nakummek to everyone involved:

Katitsuigiamut ottugattaujunut sikunik, aputik, ammalu imak/ For collecting samples of ice, snow, and water: Carla

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Tanya Brown, Donovan Pijogge, Snowden Pijogge, Richard Maggo, Peter Dicker, Edward Sillitt, Liz Pijogge, Chaim Andersen, Manasse Pijogge, Sydney Dicker, Kayla Wyatt, Luke Lucy-Broomfield, Louisa Lucy-Broomfield, NeusCampanyà Llovet, Malcolm Wolfrey, David Wolfrey, Edward John Flowers, Joey Angnatok, Leo Angnatok, Christian Merkuratsuk, Matt Anderson, Kennedy Winters, Taylor Shiwak,





Dane Shiwak, Inez Shiwak, Catharyn Andersen, Gary Ford, Freeman Dicker (late), Joseph Townley, Tyler Powell, Guido Rich, Natasha Healey, Michelle Saunders, Paul McCarney, Chesley Ittulak, Sue Ziegler, Caroline Ofosu, Simone Daniels, Veronica Flowers, Nathan Kennedy, Lindsey Moorhouse, Robert Conway, Max Liboiron, Peter Jefford, Charlie Obed, Simone Daniels, Ricky Daniels, Destiny Solomon, Julia Andersen, Brian Brown, Carabeth Faulkner, Jenna Jacque, Reuben Flowers, Nicholas Flowers, Elizabeth Tuglavina, Alex Bond, Geraldine Andersen, Darrel Lyall, Jerry Barbour, William Ikkusek, and Shawn Rivoire.

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SuliagijaugiaKasimajunut ammalu katitsuisimajunut ottagattausimajut Aullâsimapvimi, Tungait KakKasuanginni/ For logistics and collection of samples at Base Camp, Torngat Mountains: Meredith Purcell, Katelyn Jacque, Juliette Onalik, Kalee Andersen, Allison Halister, Chris Callahan, Bruce Rodriguez, Tom Knight, Megan Dicker, Jordan Deboer, Holly Lightfoot, Veronica Flowers, Michelle Saunders, Sid Pain, and Joe Webb.

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suliagijaugiaKasimajunut/**

For coordination and research logistics:

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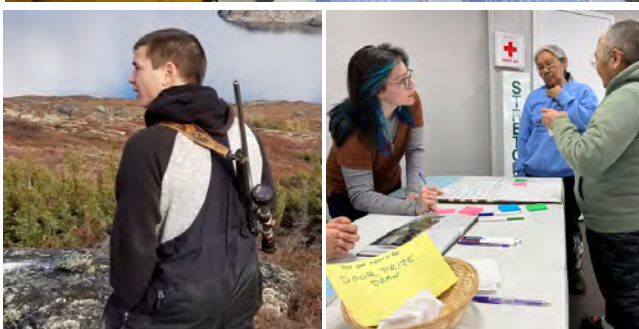
Lisa Pinksen, Peter Williams, Serena Shiwak, Addison Shiwak, Harlie Palliser, Erdanya Anderson.



katitsuisimajunut sitjami

ottugattausimajunut / For collecting shoreline plastic samples:

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kamajiusimajunut atlanut/nanunnut/ For guarding us from bears:

Eli and Herman Merkuratsuk, Donovan Pijogge, Curtis Lyall, John Andersen, Maria E Merkuratsuk, Joe Atsatata, Seth Tuglavina, Ian Winters.



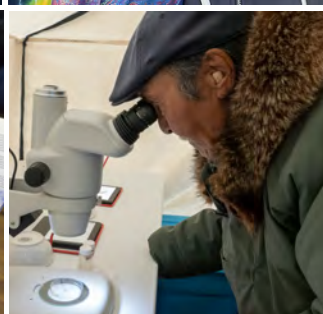
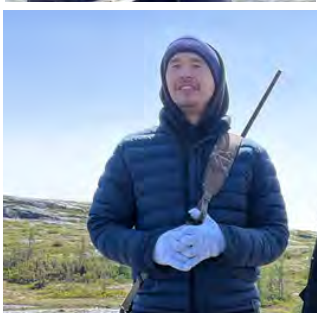
The co-authorship working group:

Katrina Anthony, James Jacque, Debbie Lyall, Inez Shiwak, Lena Onalik, Geraldine Andersen, and Paul McCarney.



KimigguKatigesimajunut imaup Kângani palâstikkisajannut, aputik, ammalu sikuk iluani Nain/ For co-analysis of plastics in ice near Nain: Darrel Lyall, Joseph Onalik, Jane Angnatok





KimigguKatigesimajunut Arvertommi & Uivak/ For co-analysis Arvertok

(Hopedale) & Uivak: Nicholas Flowers, Philip Abel, Silaqqi Jacque, James Jacque, Katrina Anthony, Valerie Flowers, Martin Onalik, Seth Tuglavina, Ian Winters, Beverly Hunter, Reuben Flowers, Elizabeth Tuglavina, Elizabeth Nochasak, Susan Nochasak, Norah Winters, as well as Hilda Hunter, Curtis Oliver, Trudy Flowers, Samantha Abel, Vanessa Gauntlett, Rachel Saunders, and Jamie Igloliorte. While the sample data from this trip is not in this report, some of the insights are.

KimigguKatigesimajunut imaup Kângani palâstikkisajannut, aputik, ammalu sikuk iluani Nain/ For co-analysis of surface water plastics in Nain:

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Ilinniavitsuanga/ For lab work at**

Memorial University:

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**Allasimajunut, Kimiggusimajunut,
âkKisuitsiasimajunut, ammalu/upvalu
uKasimajunut tâpsumunga
allaKutimmut/ For writing, reviewing,
editing, and/or commenting on this**

report: Max Liboiron, Kayla Wyatt, Paul McCarney, Katrina Anthony, Sam Morton, Edward Allen, Jess Melvin, Kelsie Senior, Liz Pijogge, Alex Flynn, Christina Crespo, Melissa Morgan, Riley Cotter, Lana Vuleta, James Jacque, Rivers Caffrey, Geraldine Andersen, Sydney Bennett, and Erdanya Anderson.

**Takutitsilaugatsi uvattinik palâstikkinik
kanajummesimajumut
pigiannisiammaginganit/ For showing us
that plastic from a sculpin at the very
start: Gus Dicker.**



Kinatuinnak Kimattaupat tapvani
tulligettitausimajunut, tammasimavugut,
pijâgingilagut. Uvatti uKalaugit ilagianiagattigu
kingullimi allajattinik allaKutimmut!
Asiangutitsigumaguvit angiutigisimajannik
ammalu nutângutitsigumaguvit allasimajannik,
Kaujittaugumavugut (taikkua ilauKatausimajut
tâvatuak uKasimajut atingit atuttauKujingitut
tamâni allatausimangitut).

Nakutsasiammagivugut ikajuttausiasimagatta
unuttualunnit inunnik sakKititsimajunut
tâpsumunga suliatsumut.

If anyone is missing from this list, it is our mistake, and we apologise. Please tell us and we will add you in the next version of the report! If you would like to change your consent form and update your authorship choices, let us know (people who participated but indicated they did not want their name used are not listed here).

Pigunnaudet: Laisanset, pigunnaudet, Kaujisagiamut maligatsangit ammalu/upvalu angittausimajut pitâgijausimajut tâpsumunga suliatsamut ilautitsivuk:

- Nunatsiavut kavamakkut Kaujisannimut UKautsigiajet kaunsallingit (NGRAC) (#NGRAC-27642343)
- Memorial Inniavitsuanga Kaujisannimut Ilautitsijumik NunaKakKâsimajuit katingaKatigejunut (RIIG)
- Memorial Inniavitsuanga Omajunik Care (17-01-ML through 22-01-ML)
- SuliaKapvik Oganniatuligijet ammalu Imappiligijet (NL-7924-19 taikkutigona NL-7924-24)

Permits: Licenses, permits, research policies and/or approvals obtained for this project include:

- Nunatsiavut Government Research Advisory Council (NGRAC) (#NGRAC-27642343)
- Memorial University Research Involving Indigenous Groups (RIIG)
- Memorial University Animal Care (17-01-ML through 22-01-ML)
- Department of Fisheries and Oceans (NL-7924-19 through NL-7924-24)

Liz Pijogge with the LADI trawl in the Tongait (Torngat) Mountains, 2020. Photo: Paul McCarney.



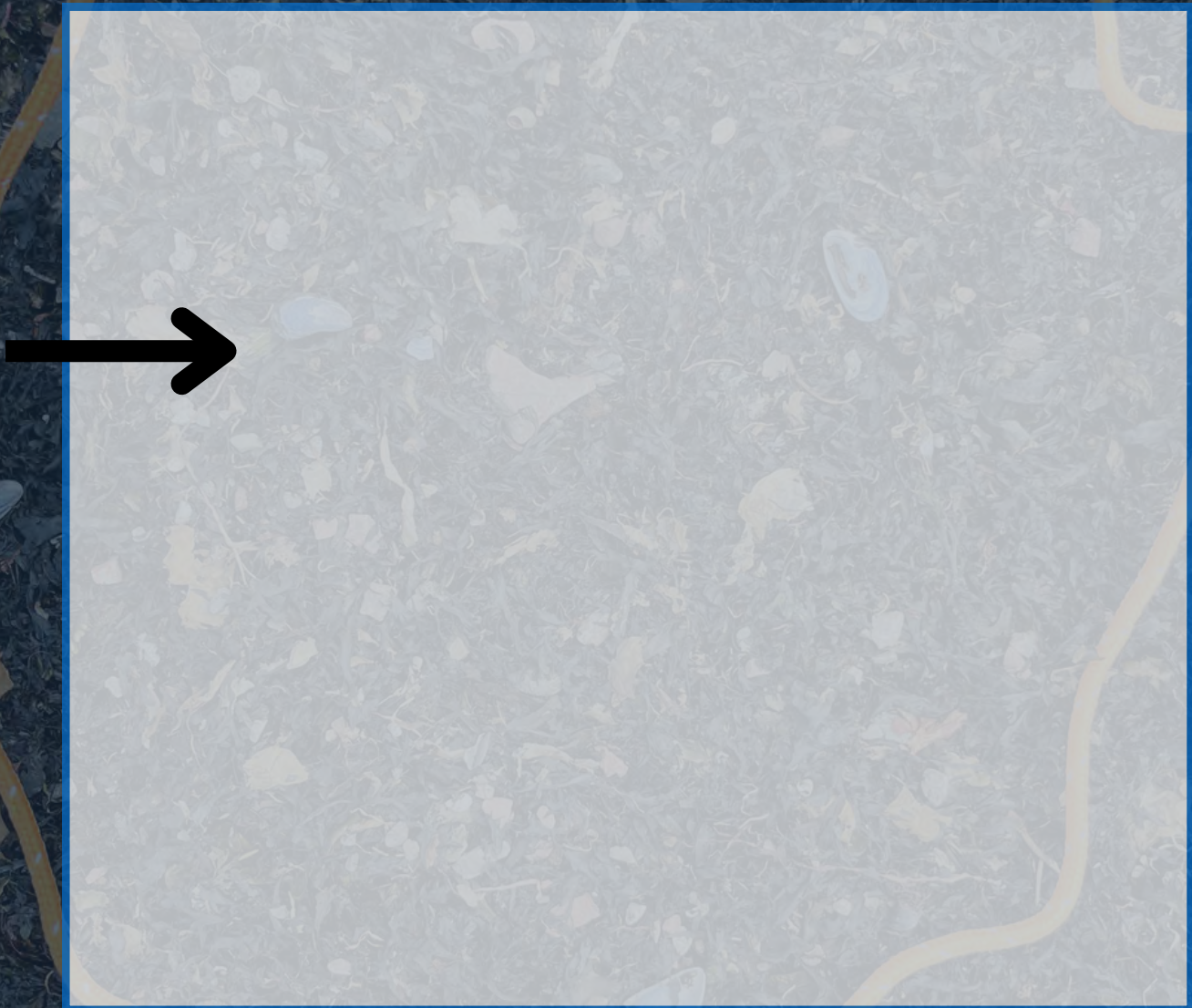
Naillitausimajut Kaujjausimajut Summary Results



Reuben Flowers shows how he prepares iKaluk (Arctic char) for smoking during an On-the-Land workshop on Uivak, near Hopedale, 2024. The guts from this fish were taken for sampling; it had no plastics. Photo: Max Liboiron.

Kangatuinnak takunnâgatta
palâstikkisajannik Nunatsiavummi, ukua
napvâluaKattasimajavut:

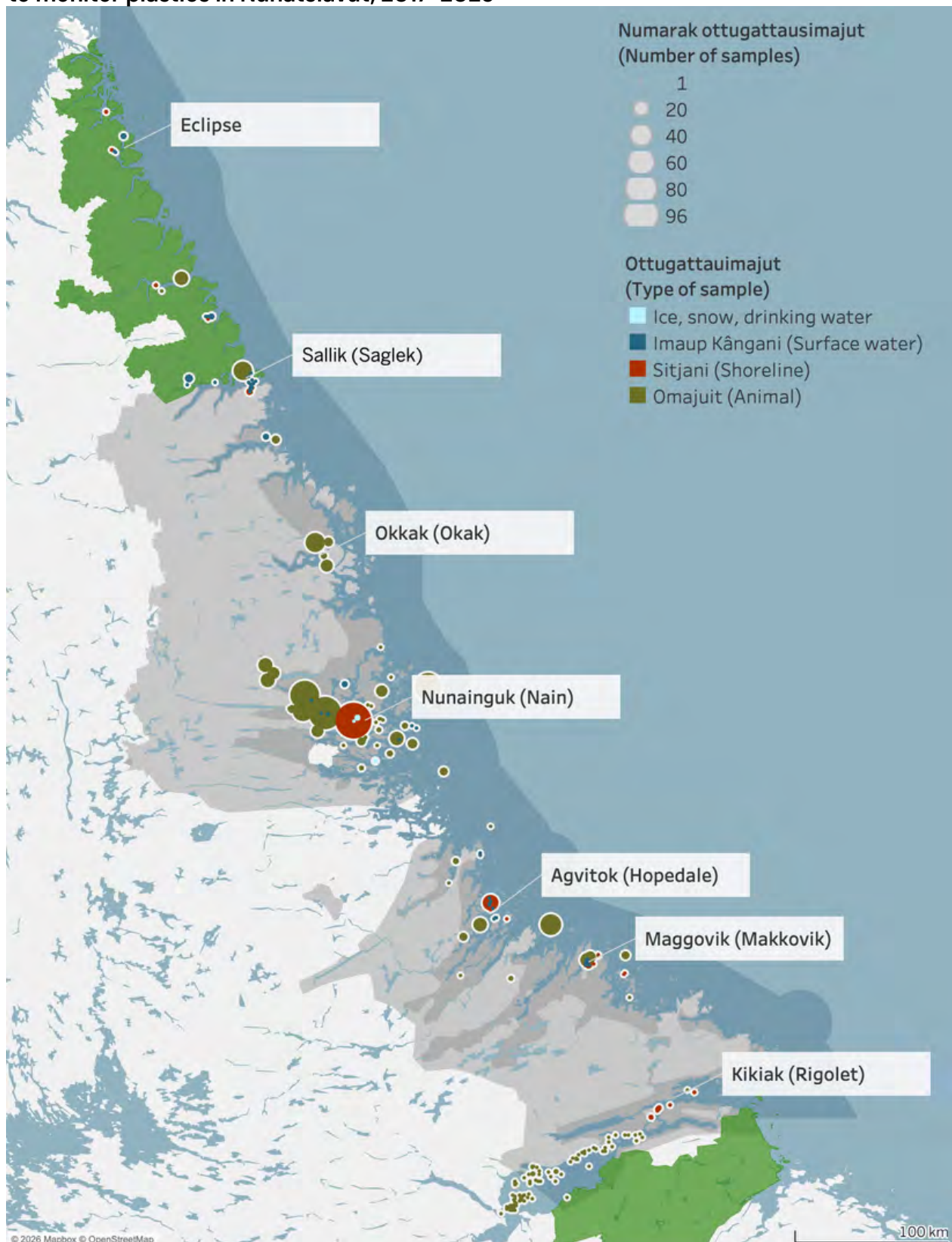
When we look for plastics in Nunatsiavut,
this is what we find most of the time:



(Sunaungituk / Nothing)

Kautamâkasâk, palâstikkiKasimangituk.
Most of the time, there are no plastics.

Figure 1: Nunanguak palâstikkinik kamagijaujut Nunatsiavummmi / All samples collected to monitor plastics in Nunatsiavut, 2017–2025



Tânnâ nunanguak takutitsijuk nani tigujausimajut ottugattaugiamut iluani tapvani allaKutimmi katitsuvigijausimajunut. Angijummaget numarait ammalu Kanuittusuatuinnait tigujausimajut ottugattaugiamut Kanitangani Nainimi tamannauluasimajuk inigijaummat Liz-imut, suliaKapvinga, ammalu sangijumik ataKatiKajuk.

This map shows where samples in this report were collected. It is also a map of relationships. For instance, the large number and variety of samples around Nain are because this is where Liz lives, works, and has strong connections.

Napvâtauluasimajut

1. PiusigijauluaKattajuk, napvâKattangilagut palâstikkisajânnik.

Unauluasimajut numarangit iluani Kaujigatsatinni unauvuk O.

2. NiKituKait Kanuingitut nigigiangit.

NapvâKattalaungilagut palâstikkunik unuluani –3/4!—ilonnanginnik omajunik ottugasimajattinik. Napvâsinnagatta palâstikkunik, mikijualosimajut ammalu ajunnasimangitut omajunut anattaugiamut. Ottuganiagatta ilimanattuKammangâmmik, ilonnait omajuit Kanuilaungitut. Inuit, Taggami, ammalu SiKinganimmit Kaujisattet iluani tapvani Kaujisannimi nigigumajut niKituKannik Nunatsiavummit.

3. Nakit piKattaningit palâstikkisajait nunalimmiunguluasimajut.

Nalunaisigatta nakit pisimakkomangâmmik palâstikkisajannik, niKiKautiuluasimajut nunalimmit pisimatlutik.

4. Palâstikka ilimanattut atjigengimagittut.

Atjigengitut inet ammalu avatinga iluani Nunatsiavummi pitaKavut atjigengitunik Kanuittoningit ammalu Katsiumangâmmik. Ikittuniungituk, sollu Kângani, ajunnatovuk uKagiamut Kanuittomangâmmik palâstikka Nunatsiavummi iluingatillugit. Angijualuk atjinguanga.

Kaujisannik piusigijausimajuk. Sauminnut: Uivak , Joni 2024. Right: Valerie Flowers, Nick Flowers, Bridget Kookooza, June 2024. Photo: Max Liboiron. Palâstikka sitjani. Talippinut: ikajuttigetlutik Kaujijausimajut , Nain January 2025. Paul McCarney, Kayla Wyatt, Mary Maggo, Liz Pijogge, Max Liboiron. Reggie Maggo, Eric Webb. Photo: Lauren Pilgrim.



Main Findings

1. Usually, we don't find plastics.

The most common number in our dataset is 0.

2. Wild food is safe to eat.

We did not find plastics in most—three quarters—of the animals we tested.

When we did find plastics, they were extremely small and easy for the animal to poop. When we did toxicity testing, animals had safe levels. Inuit, Northern, and Southern researchers in this study choose to eat wild food from Nunatsiavut.

3. Sources of plastics are mainly local.

When we can identify the likely source of plastics, they are mainly from that region.

4. Plastic pollution is highly uneven.

Different places and environments in Nunatsiavut have different types and amounts of plastic. With a few exceptions, like those above, it is difficult to say what plastics are like in Nunatsiavut as a whole. It is a complex picture.

Two co-analysis sessions in Rigolet, June 2025.

On the left, we discuss plastics and other contaminants in birds. The final conclusion was that wild food was safe to eat. On the right, we figure out likely sources of plastics we've collected on shorelines. Photo: Paul McCarney



Piujut napvâtausimajut

1. Palâstikket ânnelungitut omajunik.

Napvâlaungilagut takutsaujunut palâstikkunik ilaKitsijunik, simittisijunik, upvalu ulcerinnik omajunut. Tâna palâstikket mikijolauttut Kângiutigijausongutlutik ajunnangitumik. Ânnisongugalutlutik, senanik jârini kasâk kamatillugit takutitsijuk tamakkua attuinginnalungitut upvalu piusigijaunginnangitut nâmmalugatik sakKigiamut Kaujigatsatinnik.

2. NilaluviniKavuk, Ammalu tamanna Kanuingituk.

Nilaujait sakKinginnagaluatlutik sitjani (23%), avatimmut attuinialungitut ilimanattunit. SakKijâjut akuni takutitsitluni inuit iniKanninginnik, taipsumani sunatuinnak pannaitausimatlutik nilaujagalannit.

3. Ikittut palâstikkisajait pisimajut silatânit nunakKatigengitumit.

Aputimmi ammalu imaup Kângani, Nunatsiavut ikittunik palâstikkilet asinginnut nunakKatigengitunut Kaujisattausimajunut. Palâstikket nanigiallakiak pisimajut sakKiKattagaluatlutik, tamanna nunakKatigek atuttautuinnalungituk akuni iniggavigijaulluni. Taikkunangat ungatânit 8,000 palâstikkunik allaKutuliuttausimajunut, kisiani ikittut napvâtausimajut Kaningitummit pisimajunit, napvâtausimajut killinganit Kikittami Makkoviup saniani.

4. Piungilivallialungituk.

Senanik jârini kamagijaunninganik, palâstikket unutsivallialungitut nalletuinnanut avatimmut, ininginnut, upvalu omajunnut Kaujisattausimajunut.

Positive findings

1. Plastics are not harming animals.

We found no evidence of plastics causing entanglement, blockages, or ulcers in animals. The plastics detected were small enough to pass through the digestive system, easily. While harm may occur, nearly a decade of monitoring shows these impacts are not regular or systematic enough to appear in our data.

2. There's a lot of glass, and that's ok.

Although glass is common on shorelines (23%, compared to 50% plastic), it is environmentally harmless from a toxics perspective. Its presence mainly reflects long-term human occupation from when goods were packaged in glass containers.

3. Few plastics are from outside the region.

In snow and surface water, Nunatsiavut has fewer plastics than many other regions studied. While plastics from elsewhere may occasionally appear, the region is not collecting lots of plastics from long-range transport. Of more than 8,000 plastics recorded, only a few were clearly from distant sources. These were found on the outer edges of islands near Makkovik.

4. It's not getting worse.

Over nearly a decade of monitoring, the amount of plastic has changed from year to year, but there is not an overall increase in plastics in any environment, location, or animal studied.

Inet isumâlotigijaujunut

1. Puttunippaunut nigijausimajunut omajunut atjingingitamminik asinginnut Kaujisattausimajunut.

Atjingingitamminik asinginnut nenittausimajunut Kaujisannimit iluani Nunatsiavummi nigijut palâstikkisajannik. Tâna palâstikkik mikijovut ammalu takunnâlaukKugut ânnelungitut, tâvatuak immigolingajut omajuit palâstikkitaliuluat asinginnik Kaujimajaujunut. Tamanna atjigengigijanga sakKiluasimakkotuk ottagattausimannikut ammalu Kimiggutausimajutigut piusinginnik, upvalu KaujisattausimajuKangilak taikkuningatsainak avatimmik. Asiagut, piusinga ilingagajattuk Kanuk KaujisattuKammangât isumagilunnagu avatiup piusinganik. Suli Kaujigunnangilagut summaumangât, tâvatuak piusinga malittigejut nanituinnak omajunut atjingingitamminik Kaujigatsanik sakKijâgettunut.

2. Palâstikket saniani itsavinni ammalu nunalinni.

Palâstikket puttunigijangit saniani itsavinni ammalu nunalinni, nigiusimajattinik. Tamanna sakKititsijuk nunalinni anginitsauvuk avatittini palâstikkiKagiamut avatinnojunut iluanevut nunalinni aulatausongutluni ikilliumittitaugiamut.

3. Sikarevinait ilimanattovut palâstikkisajautluni.

Sikarevinet ilimanalualauttut palâstikket napvâtausimajunut iluani tapvani Kaujisannimi (n=245). Kaujimajaujut siamatitsigiamut ilimanattunik imânut ammalu piungitumik attuisot omajunut ammalu avatimmut. Huntait napvâtaulauttut sitjani, ammalu atautsik napvâtaulauttuk mitiup aKiangunganit.

4. PalâstikkisajaKavuk Hopedale-imi, tâvatuak salummasattausot.

NapvâlaukKugut palâstikkisajannik Hopedale tasingani atuttauKattajumut imijaugiamut, tâvatuak palâstikkisajait imailingasimavut 0.03 mm upvalu mikinitsamik, iluani anginingita imaup salummasaigutingitigut.

Areas of concern

1. Higher rates of ingestion in animals compared to other studies.

Compared to some other published studies, a higher proportion of animals in Nunatsiavut eat plastics. We observed no visible harm, but more individual animals eat plastics than is reported elsewhere. This difference may be more about sampling and analysis methods. In other words, the pattern may be due to how research is conducted rather than environmental conditions. We cannot determine the cause, but the trend is consistent across multiple species.

2. Plastics near wharves and communities.

Plastic levels are higher near wharves and communities, as expected. While this creates localized areas of greater environmental plastic, it also means that locals can reduce significant portion of plastics entering the environment.

3. Cigarette butts are toxic plastics.

Cigarette butts were the most toxic plastic found in this study (n=245). They are known to leach harmful chemicals into water and can negatively affect animals and ecosystems. Hundreds were recovered from shorelines, and one was found in the stomach of a Hound Duck.

4. There are plastics in Hopedale's reservoir, but they can be filtered.

We did find plastics in the ponds that Hopedale uses for water, but the plastics were 0.03 mm or smaller which is well within the size range of water filters.

Puttunippâk palâstikkisajait napvâtausimajut Nunatsiavummi Top plastics found in Nunatsiavut

1. None/SunaKangituk

The most common number in our dataset is 0.

2. Fragments/Pejasimajut

The largest share of plastics is hard fragments from larger items. They make up over a third of plastics in animals and surface water, and a quarter of plastics in shoreline quadrats.

3. Microfibres from wastewater/ AnnugânesimaKattajut

Microfibres are tiny, dust-sized, threads that come from washing clothing. They represent 43% of all plastics found in animals.

4. Food packaging/NiKinut poKautingit

A quarter of plastics on shorelines were linked back to food packaging.

5. Plastic bags/Palâstikket poKautingit

Plastic shopping bags are banned, but 12% of the shoreline plastics we found were plastic bags, such as garbage bags or food bags.

6. Fishing gear/Oganniatet piKutingit

One in ten plastics in animals and on land, and 30% of shoreline plastics by weight, is related to fishing gear.

7. Paint chips/Minguagutivininnit amejasimajut

Paint represented 10% of microplastics in animals and surface water.

8. Cigarette butts/Sikarevinet

Cigarette butts are the most toxic plastic in this study, and we know they harm animals. We found 350 cigarette butts representing 4% of all plastics that we found. A hound duck ate a plastic cigarette butt.

9. Aluminum cans/Aluminummisajait Kummujuut

Aluminum cans represented 19.5% of items on shorelines. These cans have plastic liners on the inside and plastic-based inks on the outside.



Elizabeth Tuglavina takunnâjuk palâstikkinik iluani quadrat Arvertok, Joni 2012. Atjiliugisimajuk Max 25 Liboiron. Elizabeth Tuglivina looks for plastics in a quadrat in Hopedale, June 2024. Photo: Max Liboiron.

Sâk 1: Kanuilinganningit palâstikket ilusigijangit Kanuittonningit ottugattausimajunut Nunatsiavummi, 2017–2026

Tottugattaujunut ^a	ottugaujuk angininga	Sanianettut mikinitsak	KikKananettuk numarak palâstikkinit nigjausimajut/omajuk ^b	Sanianettut angijuk	FO ^c	Pigiluangit Kanuittonningit Palâstikkinit (nalunaittaaiajut)	% plastic vs other waste materials*	Number of total plastics ^d
iKaluk	348	0	0.0	7	26%	51% microfibres Imani anijausimajunut	77%	125
natsik	152	0	0.0	7	43%	47% microfibres	73%	109
aKiggik	74	0	0.0	3	24%	50% pesimajut	97%	26
Atlantikkimit ogak	68	0	0.0	2	13%	50% pesimajut, 40% microfibres	83%	10
appak	40	0	0.0	6	13%	60% ivalutsait oganniatet piKutinginnit	83%	10
natânnavak	33	0	0.0	1	9%	nigiKattajut palâstikkisajannik	75%	3
pitsiulâk	32	0	0.0	4	22%	58% pesimajut	83%	19
ujagak ogâtsuk	32	0	0.0	1	6%	nigiKattajut palâstikkisajannik	67%	2
matsojak	32	0	0.0	2	9%	nigiKattajut palâstikkisajannik	80%	4
mitik	24	0	0.0	3	29%	91% microfibres	85%	11
Ânâtlik	19	0	0.0	1	5%	nigiKattajut palâstikkisajannik (anijausimajunut imait)	50%	1
kavaisitik	17	0	0.0	1	12%	nigiKattajut palâstikkisajannik	67%	2
suglutuk	11	0	0.0	3	46%	Akulligejut	100%	9
appak	8	0	0.0	1	38%	Ottugattaujut anginingit mikiluatlutut	100%	3
A-angik	3	0	0.0	1	33%	Nigisimajut sikarevininnik	100%	1
kanajuk	3	0	0.0	0	0%	Palâstikkinit napvâviusimangituk	0%	0
Ânâtlik	2	0	0.5	1	50%	Ottugattaujut anginingit mikiluatlutut	100%	1
pitsuilâppak	1	1	1.0	1	100%	Immigolingajuk microfibre	100%	1
niglik	1	0	0.0	0	0%	Palâstikkinit napvâviusimangituk	0%	0
nipisak	1	4	4.0	4	100%	Ottugattaujut mikiluatlutut	100%	4
Omajut ottugattausimajut	901	0	0.0	7	25%	43% palâstikkinit omajunni ukuanguvut microfibre, 53% pisimajunit anijausimajunut imanik	76%	341
imaup Kângani	51	0	*	*	69%	51% pesimajut, unuluat anitagatsanik saniani itsavinni	85%	187
sitjani	24	n/a	n/a	n/a	n/a	pesimajut	53%	7686
sitjani (quadrats)	963	0	0.0	18	13%	Piluattumik nilait (69%). Palâstikket akulligejut	24%	230
sputnik	6	0	0.0	2	33%	Ottugattausimajut mikiluatlutut	33%	2
sikuk	4	6	22.5	46	100%	91% pesimajut: mikijualovut	100%	101
tagiuKangituk ^e	6	0	0.0	3	33%	Palâstikkisajaungitut microfibres	63%	5
imijausok imak (imittavik)	15	0	0.0	2	33%	Ottugattausimajut mikiluatlutut: ilonnait Hopedale imattavet tasinginni	50%	6
Ilonnanga kitillugu	2871	0	0.0					8895

Pigiannimit pigiasiutigijauvuk. ÂkKisuttaugesimajut numarak atuttausonguniattumut Kanuk atjigengitigisimmamangât sivunittini kamagunnagiamut takuniagiamut piusivalliamangât upvalu piungilivalliamangât. SanajauKattavut sangijuKappat ottugattausonik uKatsiasongugatta numarangit utijut isumagijaujunut ottotigigialinginnut.

Anginitsaupat ottugattaujuk, KaujimatsianiakKugut sulitsiatuk Kaujigatsait. **Iluani tapvani Kaujigatsani, ottugattausimajut anginingit atânevut 24 tukisittauvut pigiasiutigijauvut ammalu inet asigiallanik Kaujisannimik. Tamakkua ottugattaujuk atingit sinannaguttausimajut naillititausimajumut sângani illuagut.**

Ilusigijangit palâstikket takutitsivuk Kanuilinganningit, anginingit, nakit pisimakkomangâmmik, inigiKattajangit, ammalu asigiallait ilinganiKajut ungatâgut pigiannimit. Atjigengitommata palâstikket Nunatsiavummi, tukisigiamik Kanuittomangâmmik palâstikket ikKanattovuk.

Nunanguak (Sâk 1, illuani)

75-100%	^a Ottugattausimajut ikinnasaKajunut 23-nguvut sinannaguttausimajut. Sitjani salummasaijunut, atunik "ottugattaujuk" sitjauvuk, taimaimmat kiggatuvut mikinitsamik ottugattauniattunut angininginnik.
50-74%	^b Tainna KikKanganeluattuk numaranga Kaujiausimajunut. KikKanganeluattuk O-imit tukiKavuk sunaKaluangituk asinginnut numaranut iluani tapvani Kaujisannimik, Tamanna piujualuk! TukiKattisivuk Kau tamâkasâk, napvâKattalungilagut palâstikkinik taikkununga ottugattaujuk. Sitjani saluammasainnik napvâgunnalungitut piusigijammitigut ammalu ilautitaungitut tapvani kititannik.
25-49%	^c FO% Akulaittumik sakKiKattaningit unaunguluak kangiani Kaujisattilagijet ottugasimajut palâstikkinik nigikattajunut tainna percentinga omajunut ottugattausimajunut nigisimajut atautsimillonet palâstikkinik. Nalunaitsilungait Kanuk angitigijunik (anginga pujunnut upvalu taijanik frisbee) upvalu Katsinik (1 upvalu 100) palâstikkinik nigijausimajut omajunut. Napvâsimangilagut tainna numarak Kanuttogutigijaujuk nunalimmiunut, tâvatuak atuttauluattuk metric-imut atuttautillugit kangiani Kaujisattilagijinginnut atuttauniattumut atjigengitotigianga asinginnut Kaujisattausimajunut.
1-24%	^d Numaranga ilonnanginnik palâstikkinik asianik isumaKattisijuk naillititausimajunut kititanginnik tamannauluattuk isumagijaugiaKammat kisiani ottugattausimajunut anginingit, ammalu isumagillugit imaup Kâganettut ammalu quadrats, anginingit/iningata ottugattausimajunut. Tâvatualli, takutitsisiangituk sitjani salummasainnik atuttausimammata anginitsamik numaranik palâstikkinik asiagut taikkunangat asigiallak ottugattausimajunut.
0%	^e Ilonnait tagiummengitut ottugattausimajut Hopedale-imit atuttauKattangitunut imijaugiamut.
	[*] Imaup Kângani palâstikkinik naillititausimajunut ilinganiKammata pitaKaluattunut, kitijaunialungitut. Takuniallugu ilagiagutik imaup Kâganettutunut naillititausimajunut Kaujigatsanginnut.

Table 1: Overview of plastics characteristics by type of sample in Nunatsiavut, 2019–2025

Type of sample ^a	Sample size	Minimum # plastics/ sample	Median # plastics/ sample ^b	Maximum # plastics/sample	% of samples that had at least 1 plastic	Average size of plastics (mm) ^c	Dominant type of plastic (descriptive)	Total number of plastics
Arctic char	348	0	0.0	7	26%	2.5	51% microfibres from wastewater	125
Ringed seal	152	0	0.0	7	43%	2.9	47% microfibres (wastewater)	109
White partridge	74	0	0.0	3	24%	2.4	50% fragments	26
Atlantic cod	68	0	0.0	2	13%	3.1	50% fragments, 40% microfibres	10
Thick-billed murre	40	0	0.0	6	13%	9.9	60% threads from fishing gear	10
Turbot	33	0	0.0	1	9%	1.1	Tend not to ingest plastics	3
Black guillemot	32	0	0.0	4	22%	0.8	58% fragments	19
Rock cod	32	0	0.0	1	6%	1.0	Tend not to ingest plastics	2
Scallop	32	0	0.0	2	9%	1.6	Tend not to ingest plastics	4
Common eider	24	0	0.0	3	29%	2.8	91% microfibres (wastewater)	11
Brook trout	19	0	0.0	1	5%	2.9	Tend not to ingest plastics	1
Salmon	17	0	0.0	1	12%	0.9	Tend not to ingest plastics	2
Surf scoter	11	0	0.0	3	46%	5.3	Mixed	9
Dovekie	8	0	0.0	1	38%	1.2	Sample size too small	3
Hound duck	3	0	0.0	1	33%	21.3	Ate a cigarette butt	1
Sculpin	3	0	0.0	0	0%	n/a	No plastics found	0
Lake trout	2	0	0.5	1	50%	1.0	Sample size too small	1
Brasswing	1	1	1.0	1	100%	6.1	A single microfibre (wastewater)	1
Canada goose	1	0	0.0	0	0%	n/a	No plastics found	0
Lump fish	1	4	4.0	4	100%	2.2	Sample size too small	4
Subtotal animals	901	0	0.0	7	25%	1.1	43% of plastics in animals are microfibres, 37% are fragments	341
Surface water	51	0	*	*	69%	3.6	50% fragments, significantly more waste around wharves	187
Shorelines (clean up)	24	n/a	n/a	n/a	n/a	n/a		7686
Shorelines (quadrats)	963	0	0.0	18	13%	131.5	Glass made up 69% of all waste items. Plastic types were very mixed	230
Snow	6	0	0.0	2	33%	5.5	Sample size too small	2
Ice cores	4	6	22.5	46	100%	0.3	91% fragments; extremely small	97
Fresh water ^e	6	0	0.0	3	33%	0.6	Mostly non-plastic microfibres	5
Drinking water (reservoir)	15	0	0.0	2	33%	0.3	Sample size too small; all are from Hopedale reservoir ponds	6
Total number	2871	0	0.0					8895

A baseline is a benchmark. It's a fixed number that becomes the point of comparison for future monitoring to see if it is getting better or worse. They are created when there is a representative sample size, so we can be confident the number reflects the overall phenomenon it is supposed to measure.

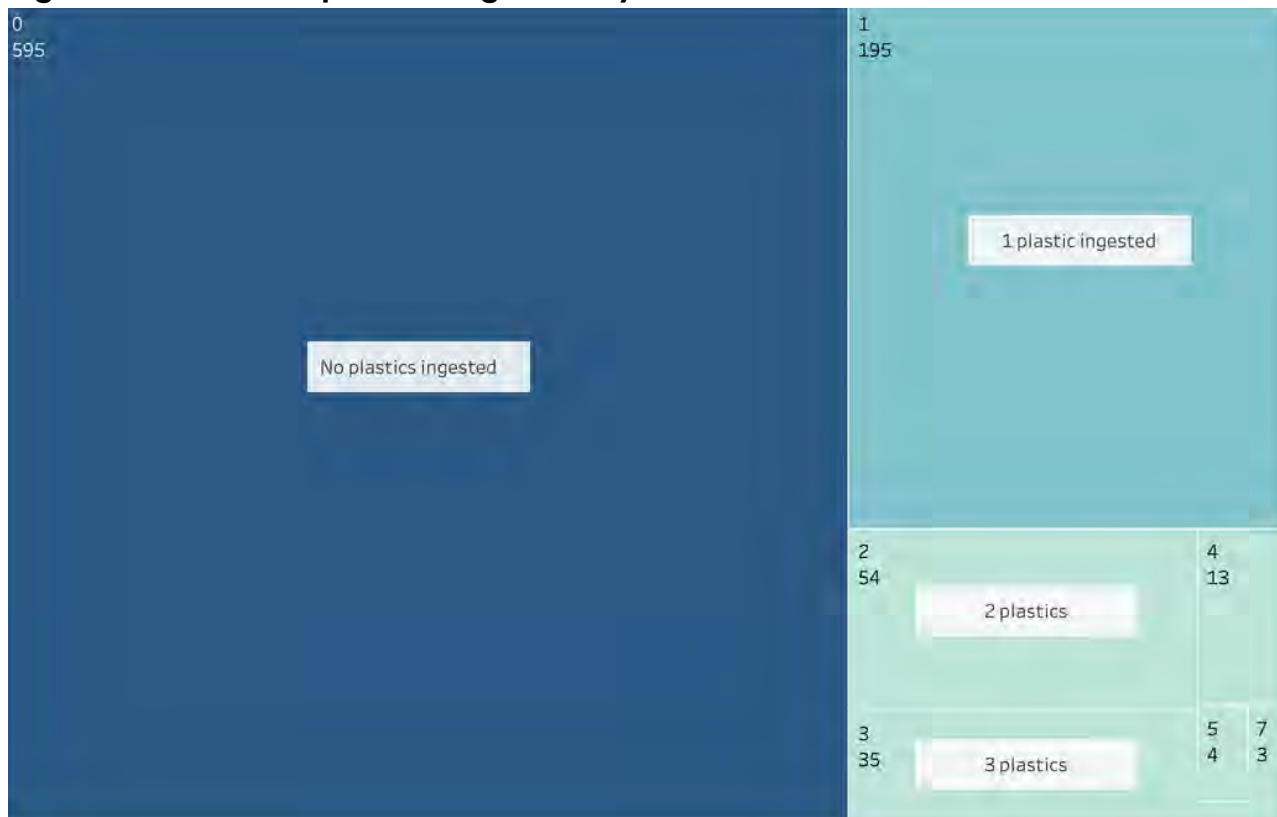
The larger the sample size, the more sure we are of the data. In this dataset, **sample sizes under 24 are understood to be preliminary and areas for further study. These sample names are greyed out on the summary table opposite.**

Characteristics of plastics describe their shapes, sizes, potential sources, distribution, and other elements beyond baselines. Given the variability of plastics in Nunasiavut, understanding what kind of plastics they are is important.

Legend (Table 1, opposite)

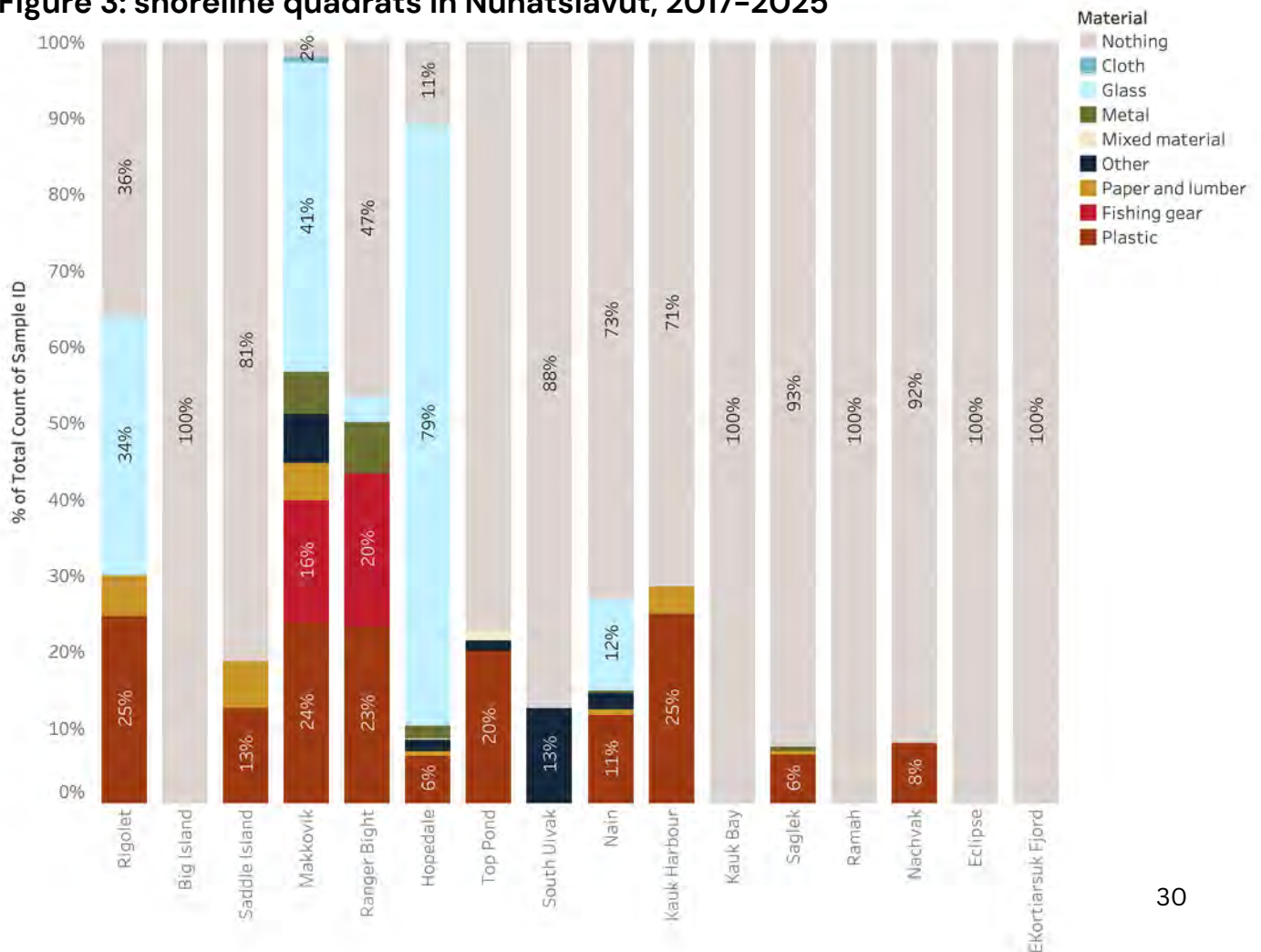
75-100%	^a Sample categories that have fewer than 24 instances are greyed out. For shoreline clean-ups, each "sample" is a shoreline, so they are representative even with smaller sample sizes.
50-74%	^b The median is the middle number in a dataset. Medians of 0 mean that there are more zeros than any other number in the study. This is a very good thing! It means most of the time, we don't find plastics for that type of sample. Shoreline clean-ups cannot find zeros due to their nature and are not part of this calculation.
25-49%	^c This measurement is of the longest axis (length) of the plastic. It's in millimeters. Averages are sensitive to a few large pieces, so this measure is higher than the median.
1-24%	^d Number of total plastics is somewhat of a misleading summary statistic because it should be considered only with sample size, and in the case of surface water and quadrats, the volume/area sampled. However, it does clearly show that shoreline clean-ups are based on a significantly larger number of plastics than other types of sample.
0%	^e All freshwater samples are from Hopedale ponds that are not used for drinking water. [*] Surface water plastic summaries are based on concentration, not count. See the section on surface water for summary information.

Figure 2: Number of plastics ingested by animals in Nunatsiavut, 2017–2025



Above: most animals do not eat any plastics, while eating one plastic is the second most common scenario. Below: the grey portion of the bar indicate that nothing was found in the shoreline quadrat.

Figure 3: shoreline quadrats in Nunatsiavut, 2017–2025



Even though most of the time we look for plastics, we do not find any, the absence of something is difficult to focus on and represent. The two graphs opposite highlight two key sources of zeros in the data.

The top image (Figure 2) shows the number of animals that ate a specific number of plastics. The largest, darkest share—595 animals—ate zero plastics. 195 animals ate one plastic. 54 animals ate two plastics, and so on, in ever diminishing amounts.

The bottom graph (Figure 3) highlights the percent of shoreline quadrats that had no plastics (grey) or things other than plastics like glass and metal. A quadrat is a way to quantify the number of items in square meter of ground. This graphic shows that most quadrats had no waste items at all. Even the places within communities—Rigolet, Makkoik, Hopedale—had more glass than plastic, and glass is not harmful to the environment.

Because this report is on plastics, in the following pages we talk a lot about plastics. But keep in mind that most of the time, there aren't any. We have tried to highlight the absences, low numbers, small sizes, and overall low concern as much as possible, recognizing that the format of a plastics report is skewed to over-represent presence.

participants berry picking (left to right) Kate Ortenzi, Sukatti Lidd, Magali Houde. September 1st 2022. Photo: Laura M. Martinez-Levasseur.



NiKituKait Kanuingitut nigigiangit

Ilonnait omajuit Kaujisattausimajut nigisimalauttur palâstikkisajannik, unuluat immigolingajut omajut pitinnagit. IsumâlotiKalungilagut isumagillugit ânnitaugiamut attuiniakKotunut: palâstikket mikijutuinnaumata – mikinitsait raice-ikulummut – ammalu anattausongutillugit. Ungatânin 900 omajunut Kimiggutausimajunut, simipviusimalaungitut, aKiattunguasimajut, upvalu ulcerilet ilingaiKajunut palâstikkinit. Atgengitogasuamut, pogutak niKilik Kimattausimajut sâmi katitsuisongujuk pujunnik-angitigijunik palâstikkinit iluani ikkiamit taikkuningangat omajunut nigigalajunut. (Catarino et al.2028).

Sulot 50+ aKigginit, Appaliatsiak, ammalu Mittinnit tigujausimajunut Nain-iup saniani ottugattaulauttur ilimanattuKammangâmmik ukuninga, mercury, kikiatsajak, tuKunnatuk, ammalu cadmium. Atautsik kisiani pitaluviniKasimajuk kikiatsajannik, nigisimakkogami tipvuajop sakKunginnit. Puttuninga kikiatsajannit pigajasimangituk nigisimajanginnit upvalu avatimmit. Asigiallait timmiat pitaKasimammijut ilimanattunik kikiatsajannik, ammalu sutaijajut timmiat malunnautiKasimangitut sunamillonet. Takutitsilaungitut isumâlotigijaungitunik, ammalu timmit nalunaitsilaungitut pitaKanninginnik. Tamanna suliangujuk suliagijaulauttur ikajuttigetlutik Dr. Alex Bond taikani Natural History Museum (UK). Nakummek ilonnasi ilauKataulaugatsi iluani KimiggutuKaniammat katimatsinimmik Rigolet-imi.

Tânn asia Kaujisannik takunnâlaummijuk naujaummijunut (Northern fulmars (*Fulmarus glacialis*) ammalu napvâviulauttur PCB-inik (Polychlorinated biphenyl) attuilugani numaranik palâstikkinit omajut nigisimajanginnik (Provencher et al. 2018: 1). Naujaummijuit (Northern fulmars) nigiluaKattajut palâstikkinit ammalu anginitsanik palâstikkinit asinginnut omajunut iluani Kaujisasimajattinik (van Franeker et al., 2011). PCB-Kangipat taikkunani naujaummijuit (Northern fulmars), nigijungilagut tamannaunianninganik asinginnut omajunut.

Max, Liz ammalu asigiallait Kaujisattet tâpsuminga suliangujumut nigisimajut omajunik nigisimajut tâpsumangat Kaujisannimit.

Atjinguak puijivinik igajut nunami taikani Uivak saniani Hopedale, igajik Nicholas Flowers. Joli 2024.
Atjiliugisimajut Max Liboiron, mamatsalauttumut.



Wild food is safe to eat

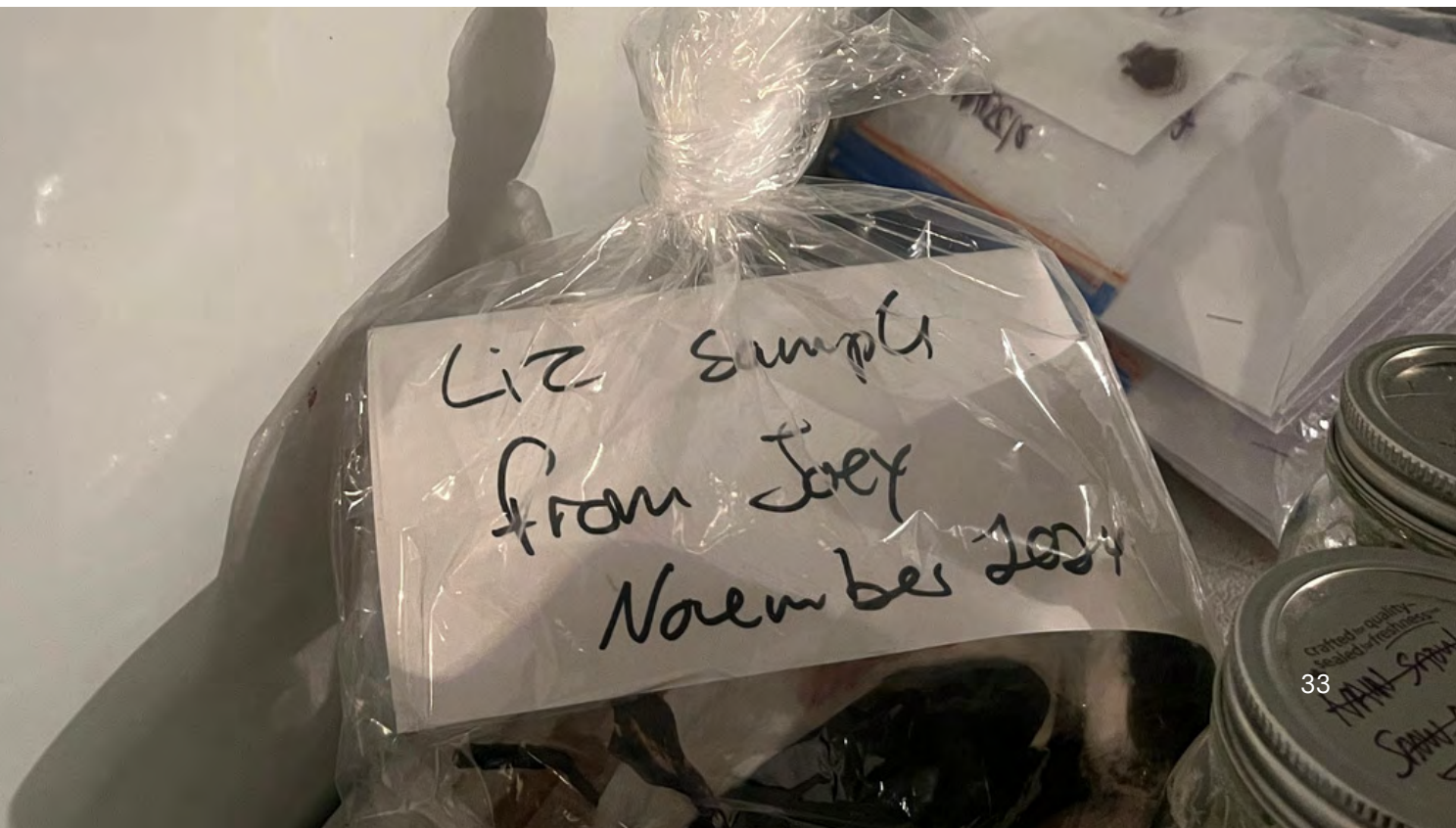
While all species studied can ingest plastics, most individual animals did not. We are not concerned about harmful effects: the plastics found were tiny—usually smaller than a grain of rice—and small enough to pass through digestive systems. In over 900 animals examined, we found no blockages, false fullness, or ulcers linked to plastics. For comparison, a plate of food left on a kitchen table can collect more dust-sized plastics from indoor air than these animals are ingesting (Catarino et al. 2018).

There are two studies that look at chemicals linked to plastics from animals in Nunatsiavut. Feathers from over 50 Partridge, Turrs, and Eider ducks caught around Nain were tested for mercury, lead, arsenic, and cadmium. Only one had a high level of lead, which was likely from eating a shotgun pellet. The level of lead could not have come from its diet or the environment. No other birds had concerning levels of any heavy metal, and many birds had no detectable levels at all. This work was conducted in partnership with Dr. Alex Bond at the Natural History Museum (Tring, United Kingdom). Nakummek to everyone who participated in the analysis workshop in Rigolet.

The other study looks at naujaummijuit (Northern fulmars/*Fulmarus glacialis*) and found that PCB (Polychlorinated biphenyl) levels were not influenced by the number of plastics an animal ate (Provencher et al. 2018: 1). Naujaummijuit (Northern fulmars) eat more plastics and larger plastics than any other animal in our study (van Franeker et al., 2011). If PCBs don't transfer from plastics to naujaummijuit (Northern fulmars), we don't expect it to happen with other animals.

Max, Liz and other researchers on this project eat animals from this study.

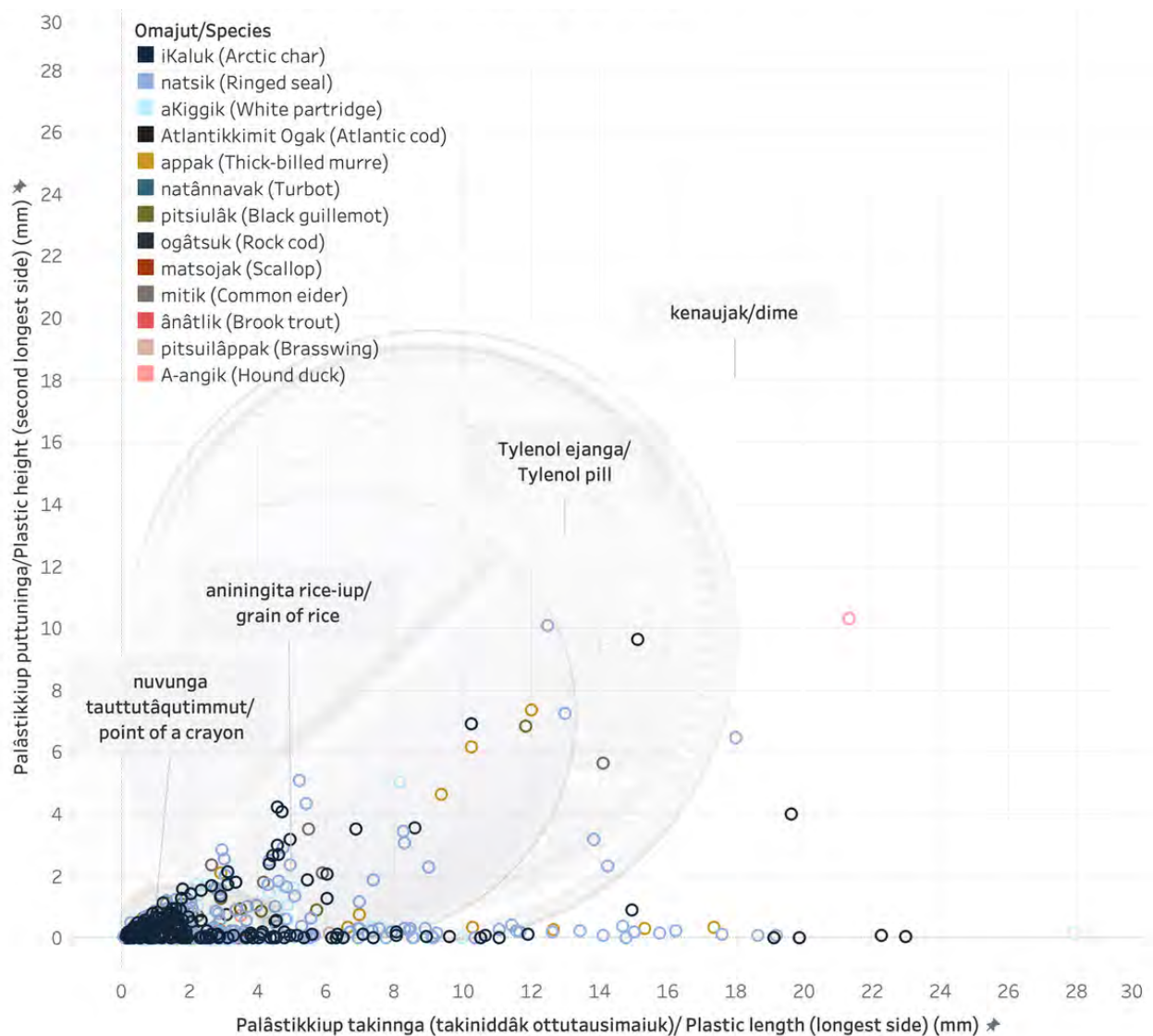
Sample of a dovekie left in the Nunatsiavut Research Centre for Liz, from Joey Angnatok, 2025. Photo: Max Liboiron.



Unuluat palâstikket nigijausimajut
omajunut atuttaukattajunut
niKituKannut mikijovuk.

Most plastics ingested by animals
used for wild food are tiny.

Figure 4: The size of each plastic ingested by an animal in Nunatsiavut, 2017–2026.



This graph shows the size of each plastic by charting its longest side (bottom axis) against its second longest size (left axis) compared to common items.

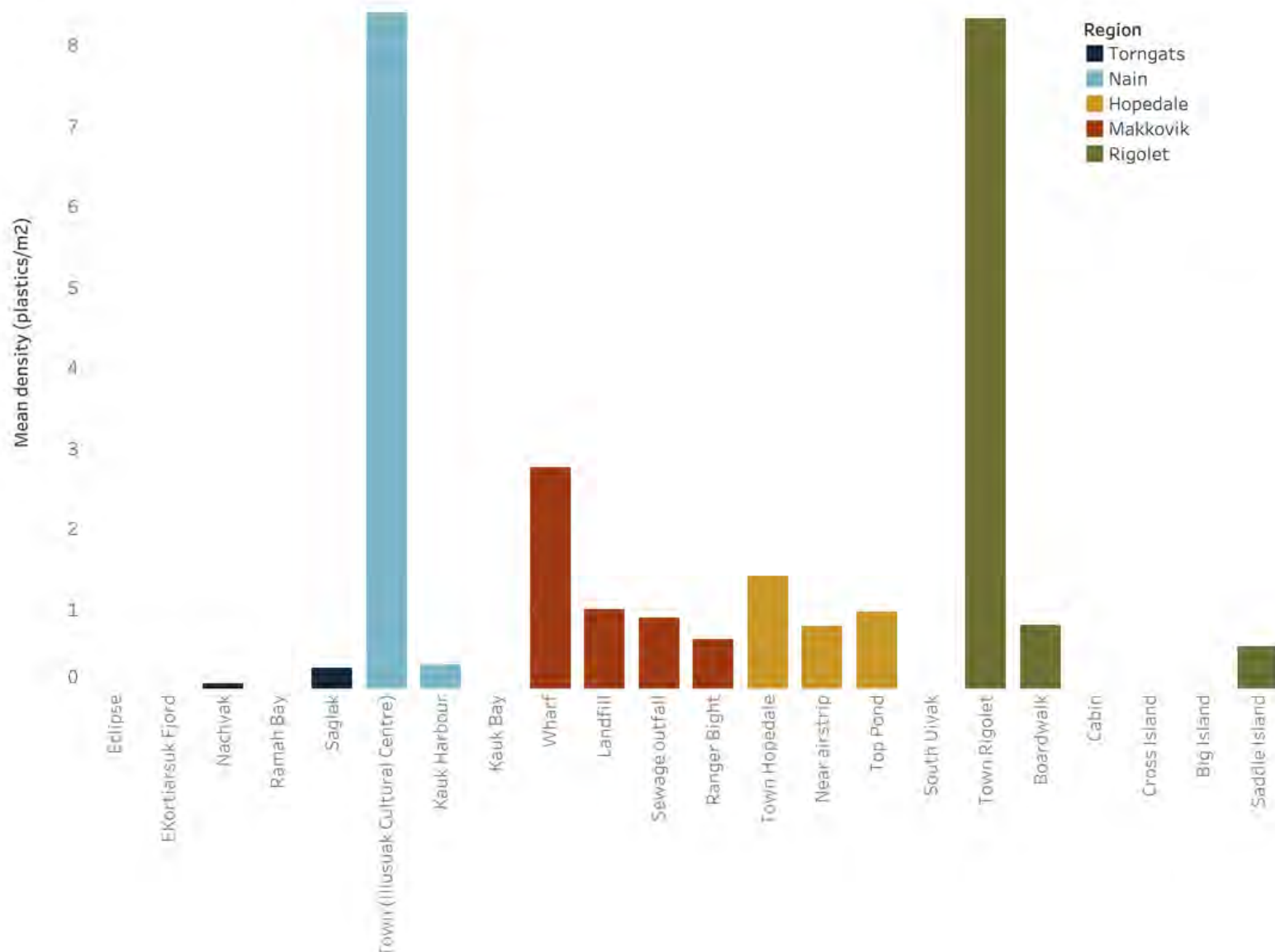
Most of the plastics are smaller than a grain of rice, of which more than half are smaller than the point of a crayon. A few are larger, with the largest being the size of a dime on one side (but these are flat and long). The largest item is the pink dot from the Hound duck– that is a cigarette butt.

Nakit piKattaningit palâstikkisajait nunalimmiunguluasimajut

Sources of plastic are mainly local

There are more larger plastics closer to permanent communities. In water, concentrations of plastics are highest near wharves. On shorelines and in water, concentrations of plastics are much higher near permanent communities. Away from communities, we find plastics where people go off hunting. You can reduce plastics in the environment by returning home with your garbage, including cigarette butts and shotgun shells while out on the land and water.

Figure 5: The average concentration of plastics on shorelines, from north to south (2017–2025)



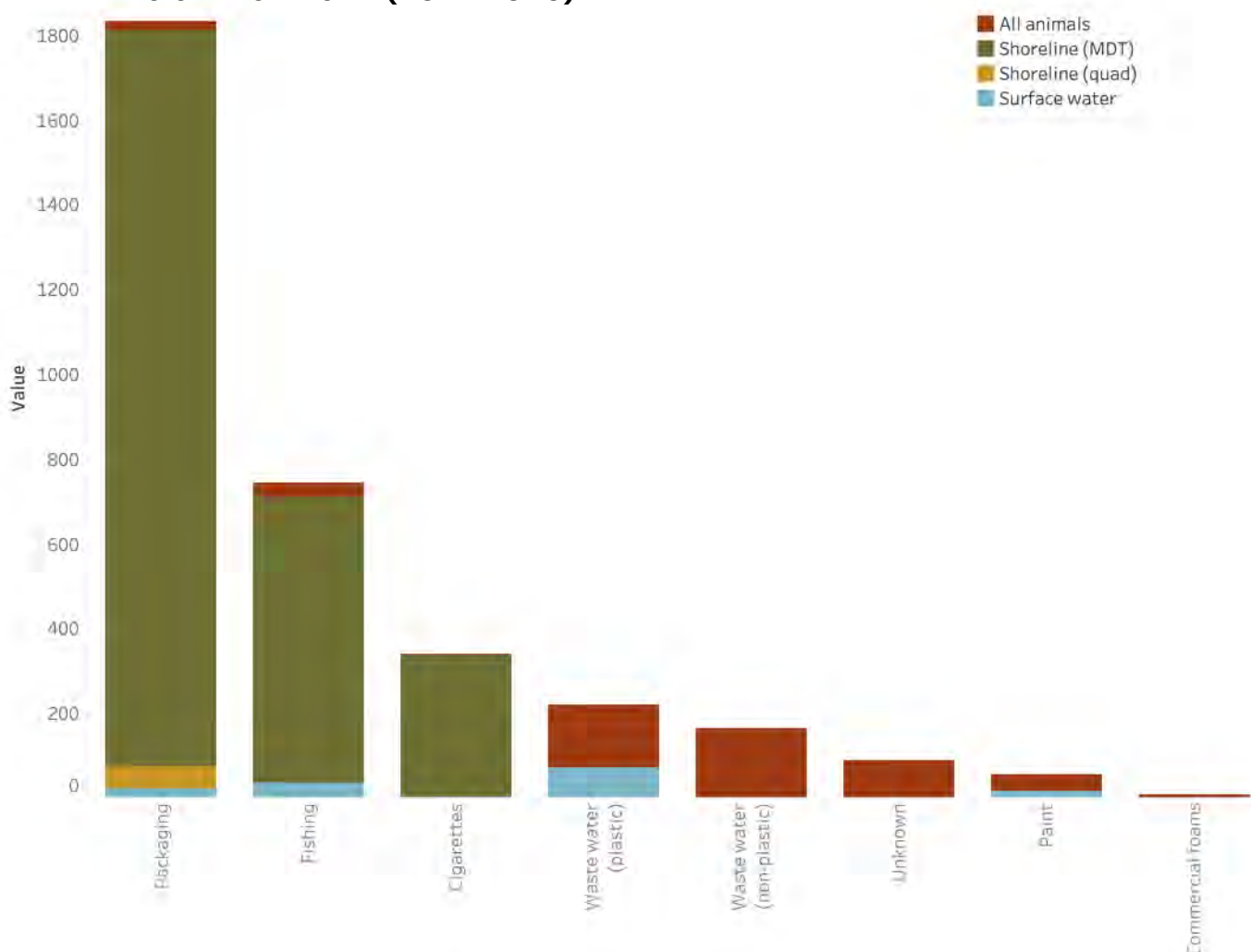
As we move farther from communities, the lower the concentration of plastics on shorelines. The two tallest spikes are from the middle of communities. Quadrats focus on smaller plastics and plastics that have caught in the scruff at the back of the shoreline, so the plastics are likely to have been in a location for a longer time and are a good representation of plastics in the area.

There are a few places facing the Labrador Strait that catch “come from away” plastics. Out from Makkovik near Long Tickle, both southern-based researchers and local people have found plastics from Nunavik, the United States, Kalaallit Nunaat (Greenland), and other European locations. However, these account for a small amount of plastics in Nunatsiavut.

It is difficult to identify where microplastics come from because they are usually tiny fragments of something larger, so the following are only for plastics we think are very likely to come from a particular source:

- Most identifiable plastics are from **packaging**, although this is also because we find them on shorelines, a technique that gives us the most plastics.
- **For animals, the great majority of ingested plastics are microfibres** that come from laundry wastewater (these could be local or come from away).
- **In surface water, plastics from laundry wastewater, fishing gear, and food packaging** are the most plentiful identifiable sources.
- **The most toxic type of plastic found are from cigarette butts**, which leach toxins into the environment after they are discarded. Please gather your butts.

Figure 6: The number of plastics from likely sources, by where we find them in the environment (2017–2025)



This graph shows count data so the big green bars show that most of the plastic we sampled was from shorelines, and that most of the shoreline plastic we sampled originated from packaging. Notice how there is no green in the wastewater bar, for example, because we can’t find microfibres in shoreline surveys.

“

As a hunter, I want to see shotgun shells made of pressed paper like they used to be. I still want to hunt, but I don't want to pollute.

– Nick Flowers, Hopedale
(June 2024)

”

When we say the source of plastic pollution in Nunatsiavut is mostly local from land activities, we mean communities are just the last stop in a longer supply chain of plastics. Plastics truly only come from one place: industry. Nunatsiavummiut often do not have a choice about whether food packaging or other items are plastic.

However, there are still some local ways we can stem the flow of plastics in Nunatsiavut away from our waters and lands. This includes not leaving anything on the land or in the water that doesn't belong there, including food wrappers, cigarette butts, shotgun shells, and discarded fishing gear.

Shotgun shell on the path over Mount Sophie near Nain, 2020. Photo: Max Liboiron



Palâstikkisajait ilimanattoningit angijumik atjigelungitut

Plastic pollution is highly uneven

Different places and environments in Nunatsiavut have different types and amounts of plastic.

For example, when we do shoreline monitoring, the places we go influence the data. Figure 7 (page opposite) is a graph of the types of plastics we find in different places. In Rigolet, you can see a large share of lumber and paper—this is because we went along the boardwalk, and we counted all the extra lumber and cutoffs from construction. There is also a huge share of metal. We cleaned up in front of Jacqueline Winter’s house, where someone used to build and burn boats. There were thousands of nails there, which we counted (!!!). If we had stopped before Jacqueline’s house, the results would be very different.

This means that some of our monitoring isn’t a baseline for all of Nunatsiavut, and when one is, we have proven it holds across time and space. A baseline is the starting point or reference in a monitoring study that you use to compare later measurements and see if things have changed. Any true baselines are in the baseline section. Anything that holds true across Nunatsiavut is in the summary findings on earlier pages.

Left: Jacqueline Winters and her son, Mylo, helping the cleanup in Rigolet, 2025.
Right: These are some the nails we cleaned up in Rigolet, 2025. Photos: Max Liboiron

