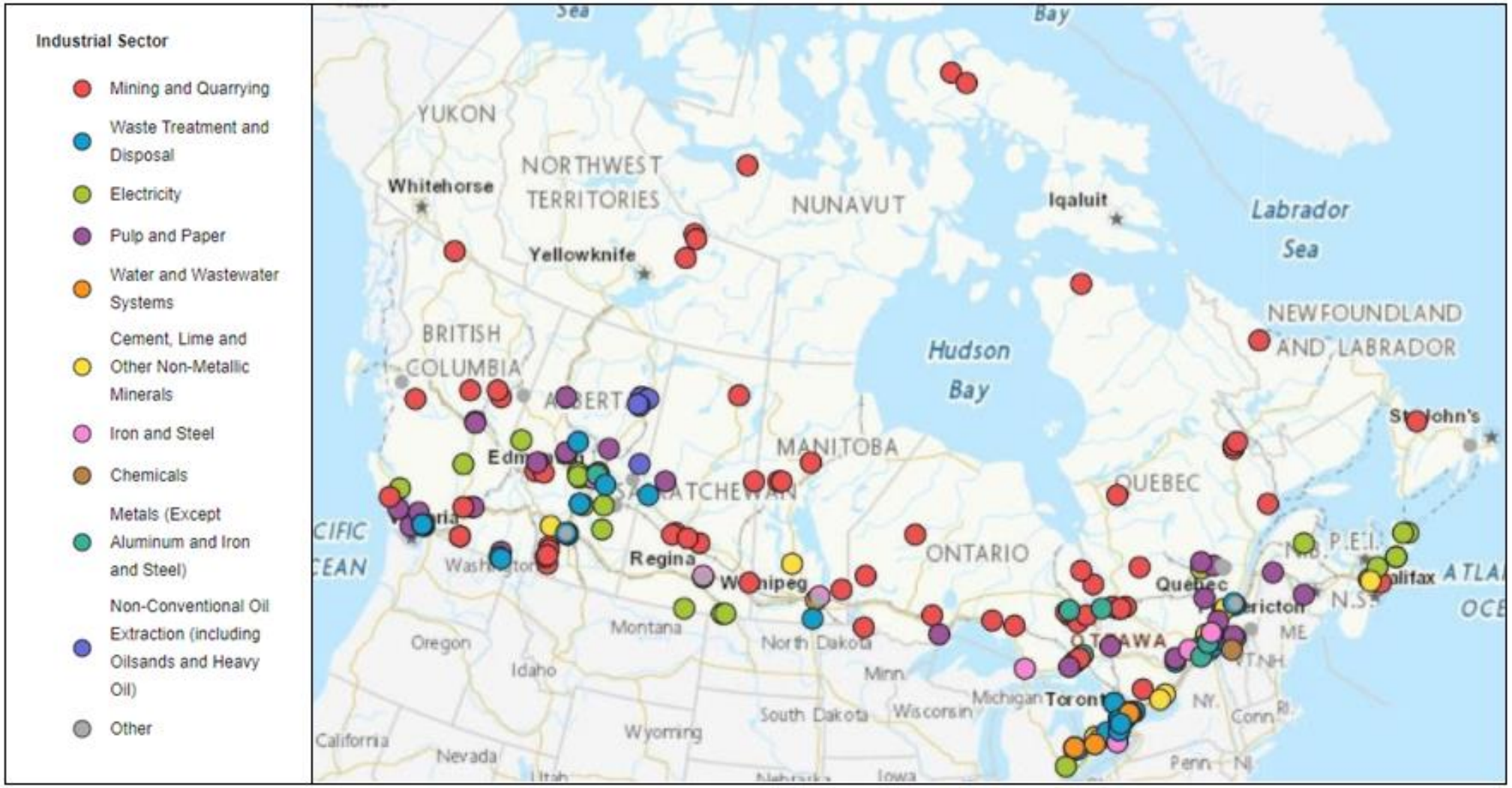
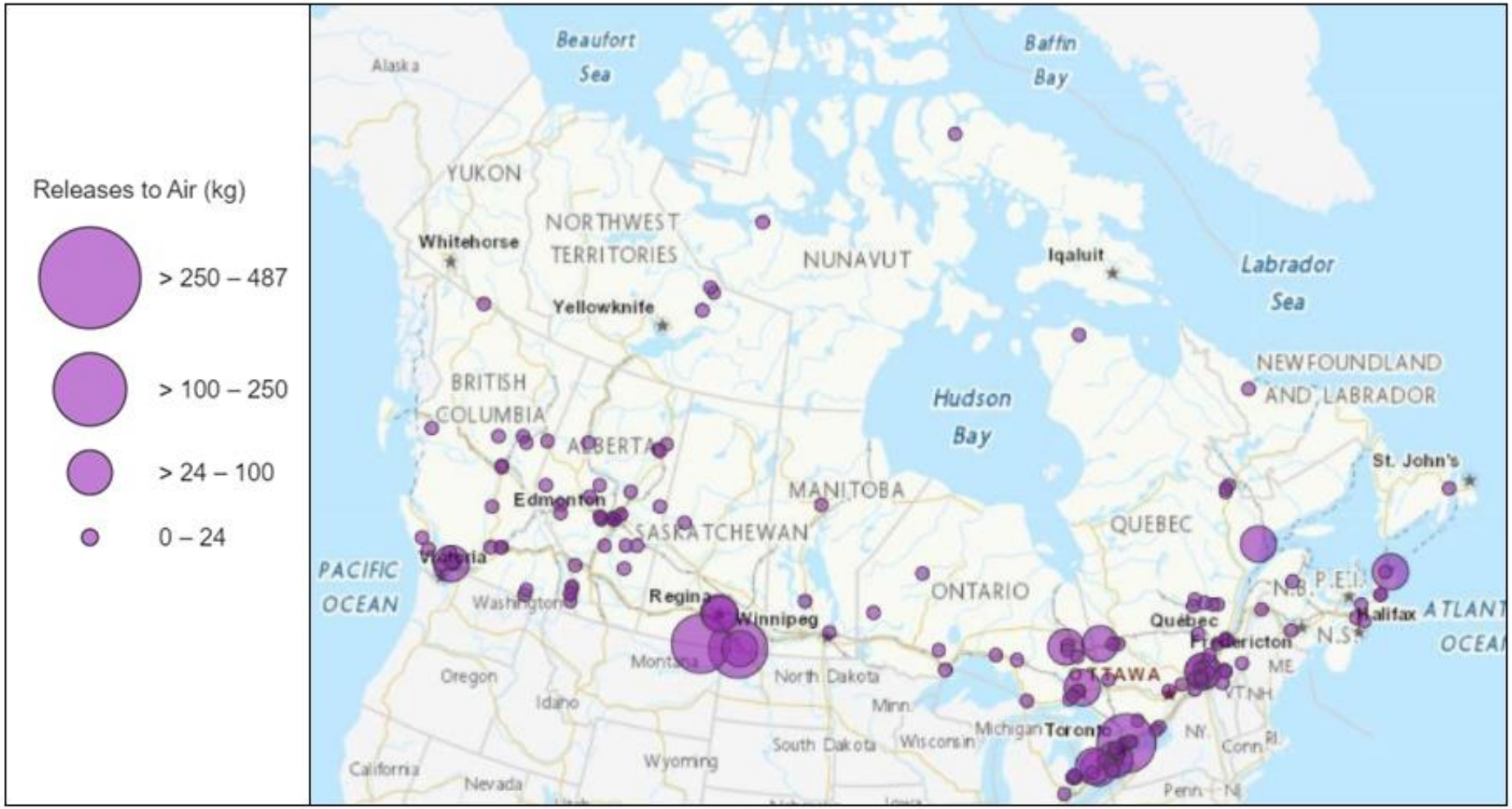
Mercury –A Global Pollutant!

Facilities reporting to NPRI – 2019 releases, disposals, transfers

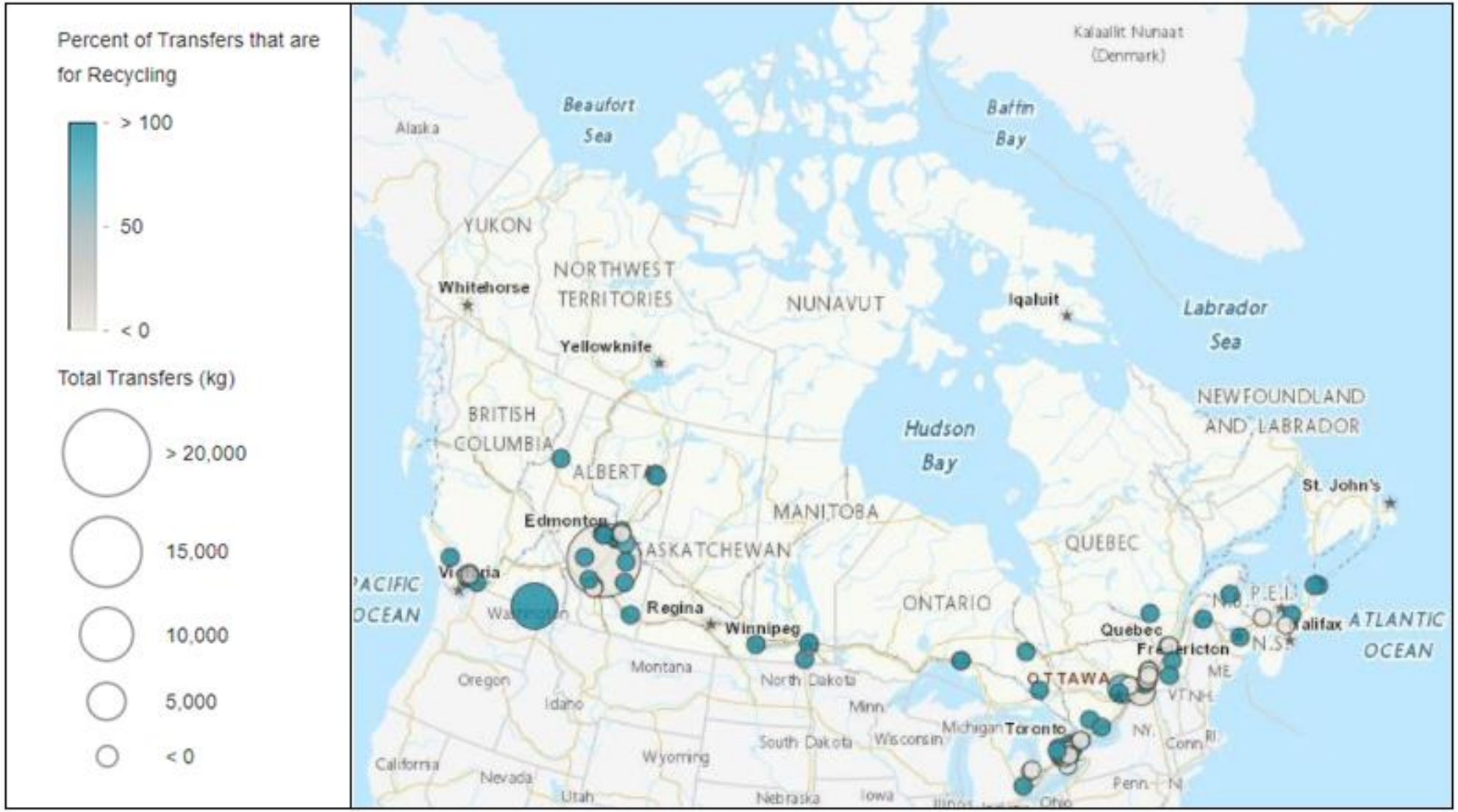


Releases of Mercury to Air - 2019

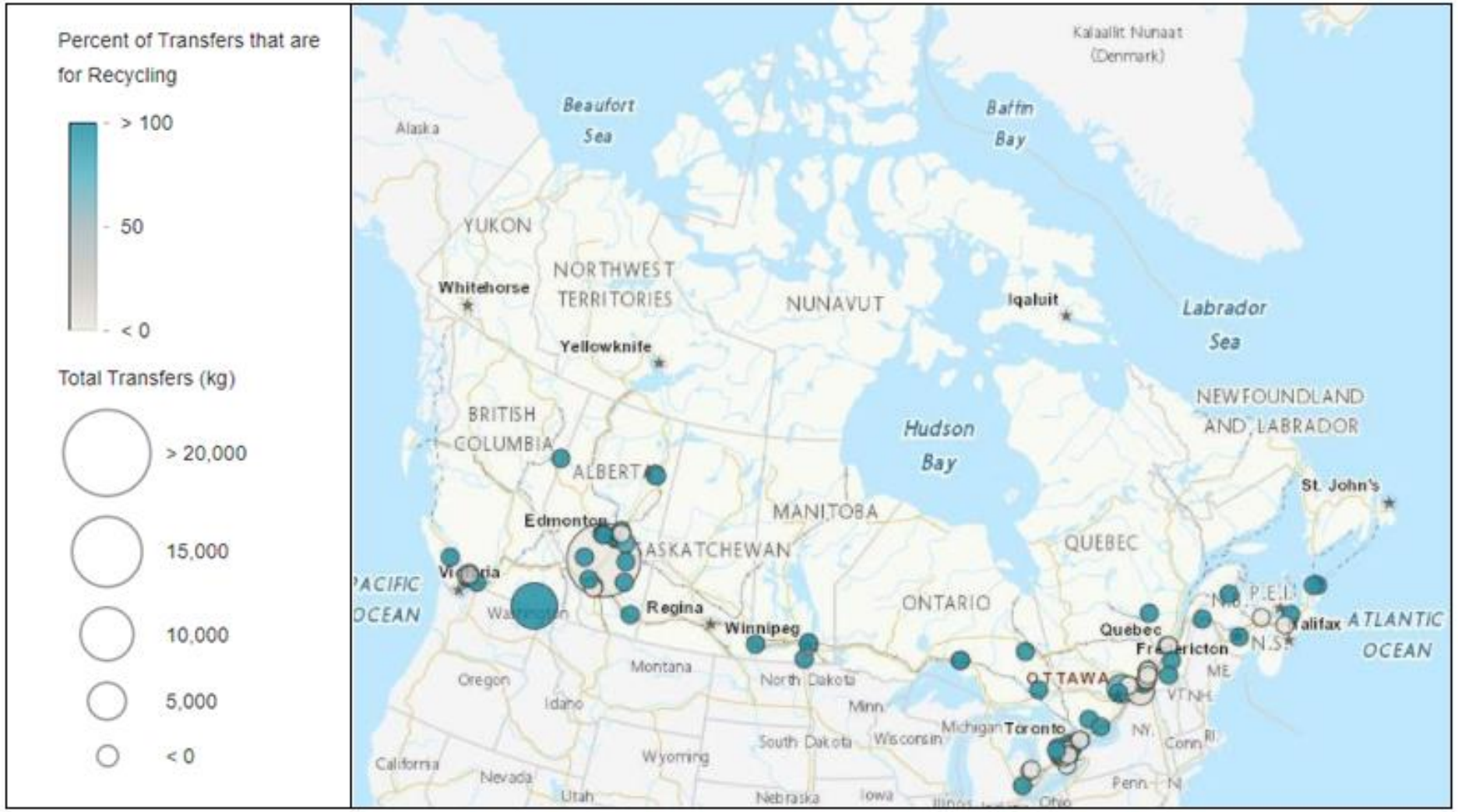


Releases of Mercury to Water - 2019

Disposals of Mercury - 2019

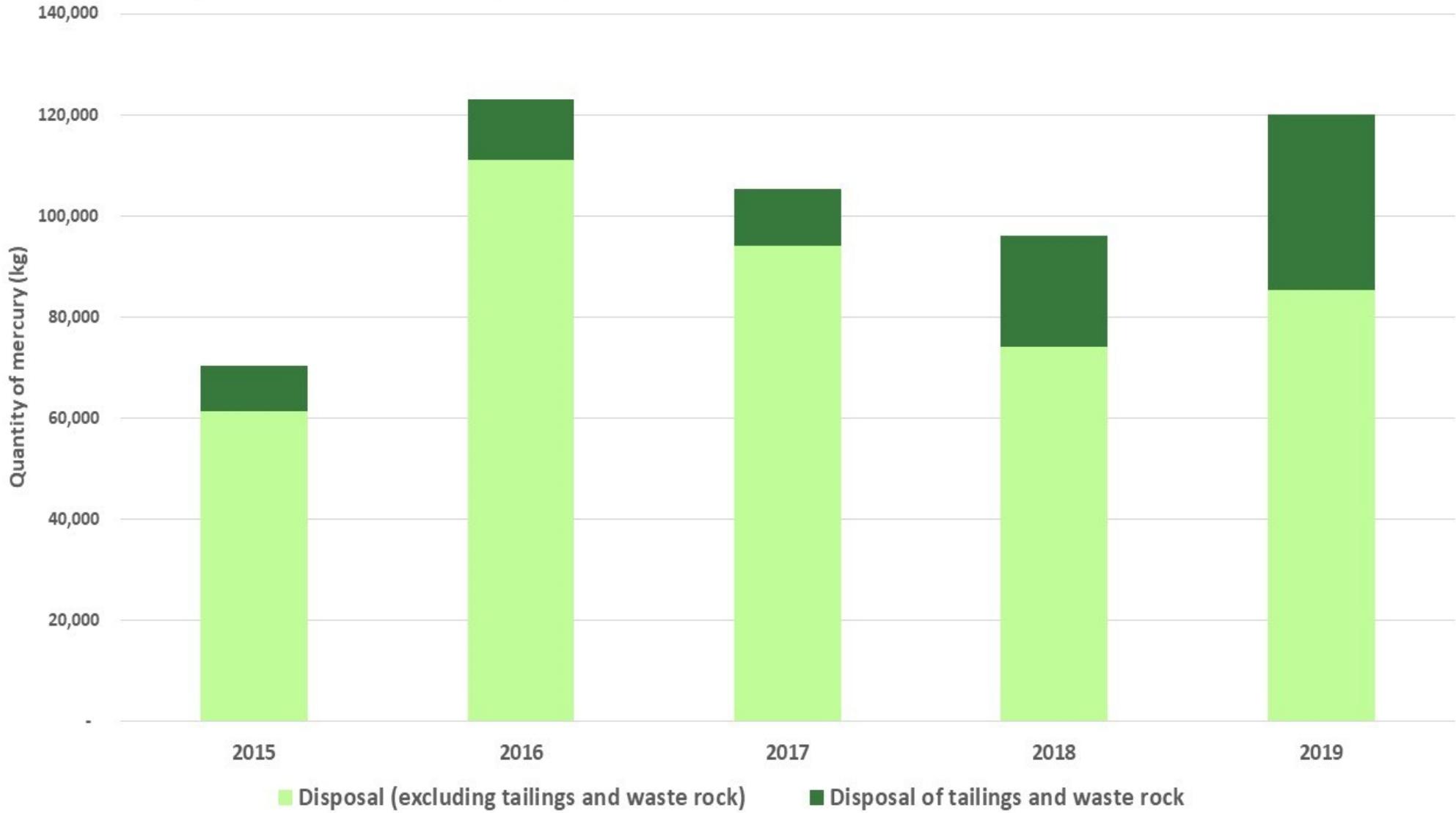


Transfers of Mercury - 2019



Note: The majority of this mercury (80,348 kg)was transferred off-site for treatment prior to final disposal and belongs to the waste treatment and disposal sector

Disposals of mercury reported to the NPRI from 2015 to 2019

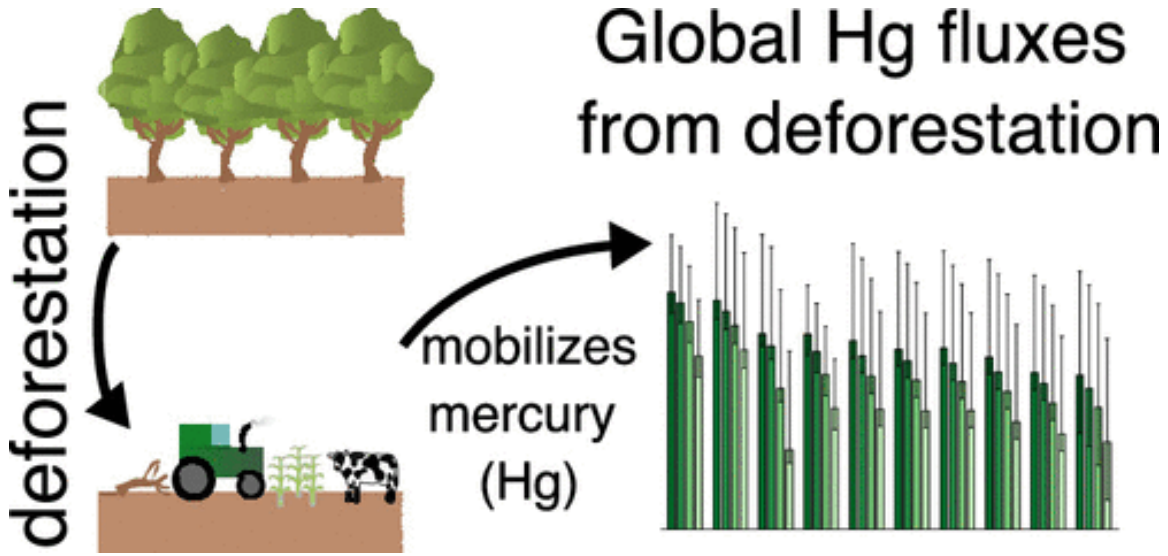


Comparison of Releases, Disposal, and Transfer Levels of Mercury reported to the NPRI: 2010-2019

Releases and Disposal Quantities (in kg)	2010	2019	% change
Total releases	3,657	1950	-47%
i) Releases to Air	3288	1844	-44%
ii) Releases to Water	261	106	-59%
Disposal	170,535	120,000	-30%
Transfers: Treatment and Recycling	52,255	102,799	+50%

Deforestation

Deforestation reduces the capacity of the terrestrial biosphere to take up toxic pollutant mercury (Hg) and enhances the release of secondary Hg from soils.



The consequences of deforestation for Hg cycling are not currently considered by anthropogenic emission inventories (e.g., the NPRI) or specifically addressed under the global Minamata Convention on Mercury.

https://pubs.acs.org/doi/10.1021/acs.est.3c07851

Grassy Narrows - and Mercury

- “That mercury is a potent poison with capacity to maim and kill is an old story, from Roman times, throughout disastrous poisoning in Iraq and Japan in the 1950s to 70s.” (Warner Troyer - No Safe Place 2003)
- During that period, the Reed paper mill at Dryden Ontario dumped over ten tons of mercury and continued to ‘lose’ more mercury into the Wabigoon River and English river systems for another 5 years.
- The dumping has contaminated more than 150 miles of watershed.
- As a result, two native communities in the region, Grassy Narrows and White Dog, have suffered untold hardship as their livelihood was destroyed and their lives placed at risk from mercury poisoning for years, and continues to do so.

https://pubmed.ncbi.nlm.nih.gov/7734058/

https://www.theguardian.com/global/2018/oct/16/canada-first-nations-ojibway-warrior-society

The Minamata Convention

Objective: Protect human health and the environment from anthropogenic sources of mercury

Products and Processes using mercury:

Dental amalgam (Part II, Annex A):

Between 226 and 322 tonnes of dental mercury were used globally in 2015, accounting for about 19% of global mercury consumption in mercury-added products. (Health Canada has recommended minimizing amalgam use in people who are pregnant, children, and people with kidney disease or other sensitivities. (Note: the European Union consumes 44-67 tonnes per year)

Mercury in products and processes

Canada supports working on developing guidance on controlling releases and phasing out the use of mercury in processes and products.

Artisanal and small-scale gold mining (ASGM)

All parties need to adopt the existing guidance document of the Convention with the understanding that some sections need to be further developed and improved.

Reporting on Contaminated Sites - Minamata Convention

Waste Thresholds:

Article 11 on mercury waste calls for relevant thresholds to be defined (no date has been established). COP3 agreed to "exempt overburden and waste rock from mining other than primary mercury mining (from Article 11), and that thresholds should be developed for waste contaminated with mercury or mercury compounds and tailings from metal mines."

No agreement has been reached on a threshold. Consequently, there is no specific reporting mechanism that covers contaminated sites.

Canada's requirements re waste:

Requires all metal mining effluent to meet requirements of the *Metal and Diamond Mining Effluent Regulations*.

Canada has established the Federal Contaminates Sites Inventory and Action Plan, but this applies only to contaminated sites on **federal land**.

It is strongly recommended that the NPRI broaden its coverage to include a specific section on any and all mercury-contaminated sites in Canada.