

STAFF REPORT: ENGINEERING AND PUBLIC WORKS DEPARTMENT

REPORT TO: **Committee of the Whole**
MEETING DATE: **November 10, 2014**
REPORT NO.: **EPW.14.081**
SUBJECT: **Corporate Ban on Microbeads**
PREPARED BY: **Jeffery Fletcher, Manager of Solid Waste and Environmental Initiatives**

A. Recommendations

THAT Council receive Staff Report EPW.14.081, "Corporate Ban on Microbeads";

AND THAT Council endorse a corporate ban by 2015 on the purchase and use of products containing microbeads within Town facilities and operations, wherever an equivalent product is available, to preserve and protect the water of the Great Lakes Basin.

B. Background

There is rising concern among researchers and the general public about microbeads and their ecological impact on our waters. Microbeads are small (less than 1mm in diameter) pieces of plastic incorporated into personal care products typically soaps, cleaners and even toothpaste. The plastic pieces act as an exfoliator in the products in place of natural or biodegradable exfoliators. The issue with these plastic beads, which has been discovered in recent research, is that they are entering the lake environments, in increasing quantities and in addition to creating essentially a floating litter problem they have the potential to create an aquatic animal and human health problem.

Detritus Issue

Microplastics are entering our Great Lakes in two ways:

- When larger plastic pieces enter the marine environment through rivers, beaches or other dumping and are subsequently broken into smaller pieces by wind, waves and UV radiation; and
- When plastic pieces already less than 1 millimetre in diameter are manufactured and then added to common consumer care products, such as exfoliating body wash. These are then flushed down the drain and cannot be captured by some wastewater treatment plants, or end up in biosolids and find their way into the Great Lakes.

In 2012 and 2013, a pair of scientific studies by Dr. Sherri Mason, professor at SUNY Fredonia, and the 5 Gyres Institute recorded the plastic content of Lake Huron, Lake Erie and Lake Superior and discovered microplastics in greater concentrations in Lake Erie than in any other body of water on earth, with concentrations equal to and exceeding data collected in the Great Pacific Garbage Patch.

The two figures below illustrate the particles of microplastics per km² found in the Great Lakes and the Pacific Ocean.

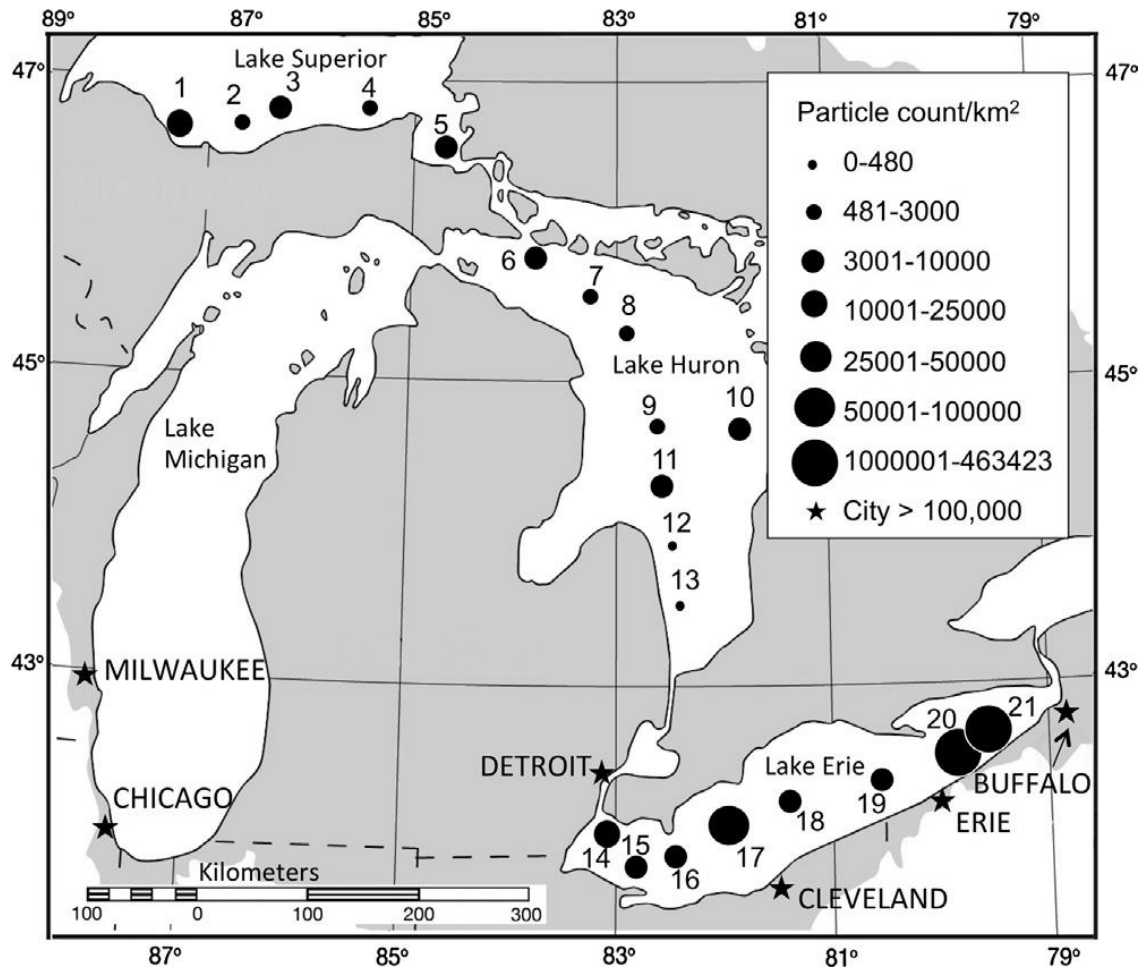


Figure 1. Microplastic Sampling Stations in the Great Lakes

Source: Eriksen, M. et al., Microplastic Pollution in the Surface Waters of the Laurentian Great Lakes. Marine Pollution Bulletin, 2013

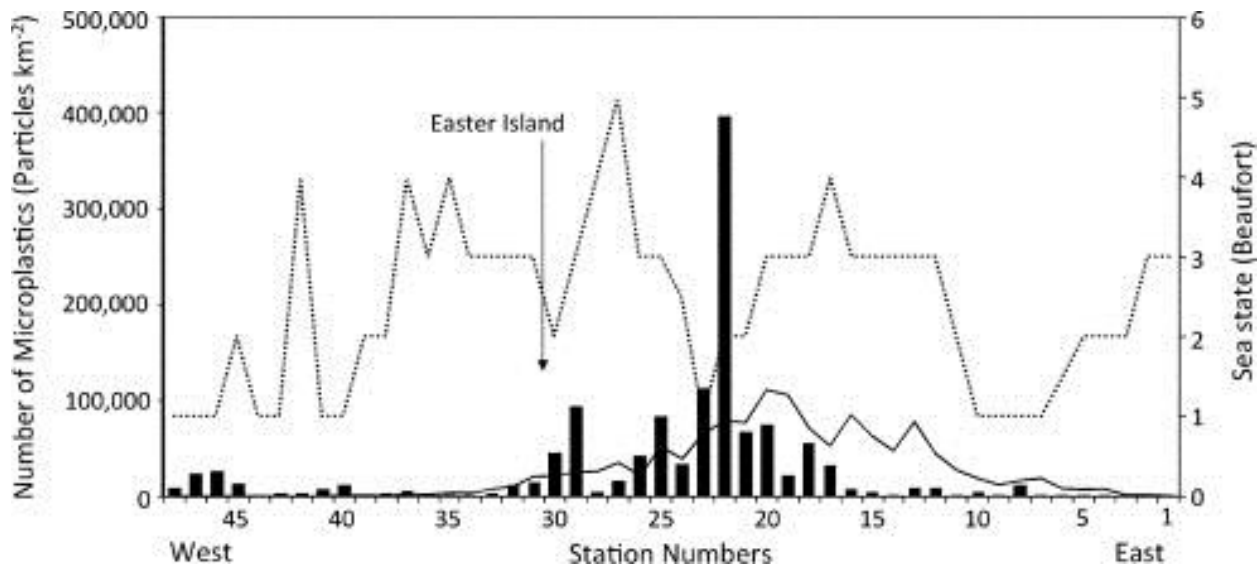


Figure 2. Microplastic Sampling Stations in the South Pacific Ocean

Source: Eriken, M. et al., Plastic pollution in the South Pacific subtropical gyre, *Marine Pollution Bulletin*, V.68, I. 1-2, March 15, 2013, pg. 71-76

Toxins Issue and Human Health

The small pieces of plastic tend to resemble food to aquatic animals, and so fish and birds ingest them. Microplastics can cause internal blockage, dehydration and death in wildlife.

Microplastics on beaches change the physical properties of beaches, such as heat retention and light reflection, which impacts organisms dependent on land temperature leading to ecosystem and habitat destruction.

Microplastics absorb pollutants already in the water such as DDT, PAHs and PCBs. When ingested by wildlife, the plastics contain super-concentrations of these dangerous toxins. They become more concentrated as they bioaccumulate in the food chain. This also creates the potential to impact human health for people consuming wild game or aquaculture fish from lake based farms.

Awareness and Identification

Staff have identified that natural exfoliator products are readily available as an alternative to synthetic based exfoliators. Town Staff will make every effort to evaluate soaps and other care products used in Town facilities and ensure microbeads are not incorporated into the product. Solid Waste Division Staff will assist other Town Divisions in identifying products with synthetic microbeads and finding alternatives. Microplastics are found in many common consumer products, including toothpastes, deodorants, body washes, hand cleansers and facial exfoliate. One method of identifying if a product uses plastic microbeads is if it contains polyethylene or

polypropylene. Natural, readily available alternatives do exist, such as ground almonds, oatmeal and pumice depending on the product to be used.

Corporate Ban

Some manufacturing companies have promised a voluntary phase-out of plastic beads. Others have made no commitments. And, some companies already have committed and avoid the use of synthetic ingredients and do not include microbeads in their personal-care products.

According to the Great Lakes and St. Lawrence Cities Initiative, legislation to phase out the use of microbeads in personal-care products has passed in Illinois and is being considered in several other U.S. states, including New York, Ohio, Michigan, Minnesota and Wisconsin.

The Town is a member of the Great Lakes and St. Lawrence Cities Initiative. The Cities Initiative has written to the United States Environmental Protection Agency and Environment Canada asking what the US and Canadian governments are doing and plan to do to prevent microplastics from entering the Great Lakes and to remove microplastics already in the Great Lakes.

The Cities Initiative has written all the major companies using microplastics in their products, asking for:

- full disclosure of all products that contain microplastics;
- a commitment to completely phase-out all microplastic production by 2015 at the latest; and
- development and disclosure of plans to clean up existing microplastic pollution.

Town Staff recommend that Council endorse a corporate ban on the use of products containing microbeads by 2015 within Town facilities and operations, wherever an equivalent product is available, for the protection of our natural aquatic environment and the health of future generations living in the Great Lakes Basin.

Although our current use of these products corporately may be minimal, this commitment is also intended to be awareness raising for all local residents and businesses.

C. The Blue Mountains' Strategic Plan

The action of banning microbeads from Town facilities and operations supports the strategic goal of preserving and enhancing natural and environmental features, and cultural heritage of the community.

D. Environmental Impacts

This ban will work to develop public awareness and opinion through Council decision making and through leadership. This effort will demonstrate to manufactures and the public that the Town prioritizes environmental health.

E. Financial Impact

None

F. In Consultation With

None

G. Attached

None

Respectfully submitted,

Jeffery Fletcher

Jeffery Fletcher
Manager of Solid Waste and Environmental Initiatives
Engineering & Public Works
Office: 519-599-3131 Ext.238
Fax: 519-599-7723
ifletcher@thebluemountains.ca

Reg Russwurm

Reg Russwurm
Director, Engineering and Public Works