

# Down the Drain

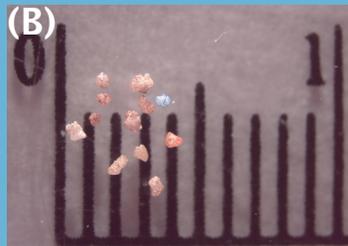
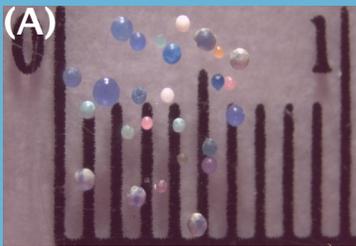
## Microbeads in Western NY

Thirty-four volunteer wastewater treatment plants from across New York State submitted samples from their clean wastewater. The OAG study “Discharging Microbeads to Our Waters” looked for spherical and speckled microbeads, images A and B, to show that microbeads were slipping past treatment plants during normal operations. Microbeads were detected in samples from 25 of the 34 treatment plants participating in this study.

### Microbeads Found in Treatment Plant Discharge

Beads Present	Waste Water Treatment Plant	Receiving Waterbody
✓	Village of Silver Creek Treatment Plan	Lake Erie
✓	ECSD No. 3 - Southtowns Advanced WWTP	Lake Erie
✓	Town of Grand Island WWTP	Niagara River
✓	ECSD No. 6 - Lackawanna WWTP	Smokes Creek
✓	ECSD No. 2 - Big Sister Creek WWTP	Big Sister Creek
✓	Niagara County Sewer District No. 1	East Branch of the Niagara River

### Microbeads from Treatment Plant Discharge



Spherical Microbeads

Speckled Microbeads

Scale: 10 millimeters

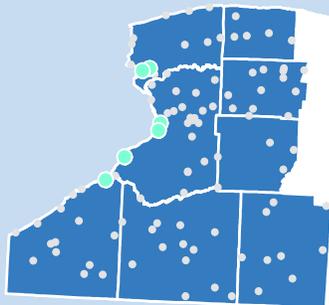
### Study Summary

34

Facilities Submitted Samples

25

Facilities Discharging Microbeads



### Treatment Plant Key

- Untested Plants
- Microbeads Detected

### Only Part of the Problem

94%

of microbeads in personal care products are not spherical or speckled and are hard to identify in water. They enter treatment plants in much higher quantities.<sup>1</sup>

94

additional untested treatment plants in this region. Microbeads are likely slipping through most facilities.



## Detrimental to Your Health

Microbeads are ubiquitous and harmful to the environment. Some toxic substances stick to microbeads such as Polychlorinated biphenyls (PCBs), dichloro-diphenyl-trichloro-ethane (DDT), and Polycyclic Aromatic Hydrocarbons (PAHs). These chemicals are linked to heart disease, immune system disruption, endocrine system disruption, cancer, and other serious health complications.

## NY Can Make a Difference

The personal care product industry is a \$53.7 billion dollar industry in the U.S. alone. New York State produces 16.5% of the revenue for the industry - the most of any state in the country.<sup>3</sup>

## What You Can Do

Avoid personal care products containing polyethylene or polypropylene. Use the *Beat the Microbead app*<sup>4</sup> to see if your products contain microbeads.

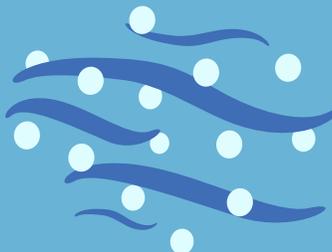
Call or write to your state representatives or senators and tell them to support Attorney General Schneiderman's *Microbead-Free Waters Act!*

The U.S washed almost **308 tons** of microbeads down the drain each year. That's more than the weight of the Statue of Liberty!

## Down the Drain

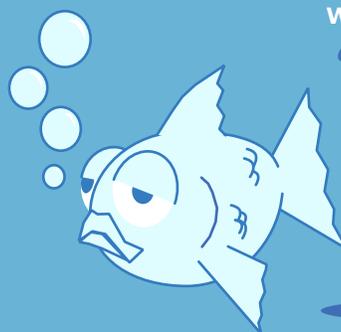


Microbeads are plastic abrasives less than one mm in size used in personal care products like toothpastes and facial scrubs. A single tube of product can contain over **350,000 microbeads**.<sup>5</sup>



Treatment plants were not designed to filter out microbeads, resulting in microbeads entering state waters. In fact, Lake Erie averages **46,000 plastic particles per square kilometer** - a significant amount are microbeads.<sup>2</sup>

Toxic chemicals accumulate on microbeads, holding up to **a million times** the toxics found in seawater.<sup>2</sup> These toxics then enter the food chain if fish mistake toxic-laden beads for food. Contaminated fish can then be consumed by other organisms, including humans.



The Department of Health warns against eating fish from **dozens of waterbodies** across the state due to chemical contamination.<sup>6</sup> Microbead accumulation in our waters increases the risk that toxic chemicals will enter the food chain.

## About the Study

Under the oversight of SUNY Fredonia's Dr. Sherri Mason, effluent samples were filtered and oxidized, so that only plastic remained. Microbeads were identified under a dissecting microscope, and verified as identical size, shape, color, and chemical composition as those removed from personal care products in a lab. Review the entire report, "Discharging Microbeads to Our Waters: An Examination of Wastewater Treatment Plants in New York" online at [www.ag.ny.gov](http://www.ag.ny.gov).

<sup>1</sup> Mason, Sherri., Unpublished data. (State University of New York at Fredonia), Personal communication February 20, 2015.

<sup>2</sup> New York State Office of the Attorney General. "Unseen Threat: How Microbeads Harm New York Waters, Wildlife, Health and Environment." May 2014.

<sup>3</sup> IBISWorld, "IBISWorld Industry Report 32562 Cosmetic & Beauty Products Manufacturing in the US," November 2011.

<sup>4</sup> Beat the Microbead App. [www.beatthemicrobead.org](http://www.beatthemicrobead.org)

<sup>5</sup> Gyres Institute, et al. "Microplastics in consumer products and in the marine environment." 2013.

<sup>6</sup> New York State Department of Health. "Regional Fish Health Advisories." [www.health.ny.gov/environmental/outdoors/fish/health\\_advisories/regional/](http://www.health.ny.gov/environmental/outdoors/fish/health_advisories/regional/)