

Plastic Concerns in Goshen Waterways

A Quick Introduction



What are the most common plastics found in Goshen waterways?

- ◆ **Single-use consumer plastics**—used in food service and grocery. Includes things like plastic shopping bags, soda bottles, and take-out containers, silverware, and drink cups
- ◆ **Microplastic beads**—about 5 mm in size, these beads have been found in a range of colors.
- ◆ **Microplastic grind**—a dust-like microplastic observable to the naked eye floating in the water and clinging to the high watermarks on stream and river banks.
- ◆ **Microfibers**—unobservable to the naked eye, but found in all samples of Asiatic clams taken from Goshen waterways (field testing by City of Elkhart aquatic biologist Daragh Deegan).



What are the possible sources of our plastic pollution?

- ◆ **Storm drains**—trash littered on city streets can wash into drains and directly into our waterways without treatment.
- ◆ **Stream banks**—changes in river height and flooding can cause plastic trash littered along stream banks to be carried down river.
- ◆ **Wastewater Treatment Plant**—microfibers from polyester and other plastic-based clothing fibers are easily shed in washing machines. There are currently no common technologies for wastewater treatment plants to clean microfibers from effluent.
- ◆ **Industry**—industrial uses of plastics can lead to the discharge of large volumes of plastic beads and grind when a facility's good housekeeping practices fail to keep microplastics contained on-site.
- ◆ **Upstream**—plastics in Goshen waterways may come from upstream communities. Similarly, plastic from Goshen impact Elkhart and other downstream communities.



Why do plastics in our waterways matter?

While the U.S. Clean Water Act has led to great progress on water quality in the decades since its enactment, **stormwater runoff** remains a major water pollutant and is **one of the largest growing source of pollution entering waterways today**. Polluted stormwater runoff is generated as rainwater and snowmelt flows across hard surfaces and disturbed soils picking up pollutants like trash, sediment, oil, pet waste, yard waste, etc. and transporting them to a waterway untreated.

In an attempt to address the issue, the Clean Water Act designates communities in urbanized areas as Municipal Separate Storm Sewer Systems (MS4s) and tasks them with managing stormwater runoff. As an MS4 community, Goshen has a responsibility to protect our local waterways by addressing pollution concerns in our stormwater runoff. Our Stormwater Department does this through public education efforts, illicit discharge detection and elimination, stormwater management during and after construction, and pollution prevention and good housekeeping at municipal facilities.

Research on the ways plastics (and the microplastics they break up into) move through our environment includes well-documented threats to the health of fish, mussels, and other aquatic wildlife. While research is mixed on the impacts of plastics themselves, plastics act as a sponge and transport medium for harmful chemical and nutrient pollutants. An ever-growing body of more recent research is beginning to uncover how these plastics impact *us*.

As the Stormwater Department looked more closely at the issue of microplastics, we came across a number of concerning articles about microplastics and human health. This page includes a small selection of those articles.


Clothes washing linked to 'pervasive' plastic pollution in the Arctic

Polyester fibres that injure marine life were found in sea water across region



E360 DIGEST
DECEMBER 17, 2020

Mussels Sold in Grocery Stores Around the World Contain Microplastic Particles




Mussels sold in grocery stores contain between 0.13 and 2.45 microplastic particles per gram of meat.

Nov 29, 2020, 06:07pm EST | 3,890 views

When It Comes To Microplastics, Some Seafood May Be Riskier



Liz Allen Contributor 
Science
Liz writes about the ocean and its protection.

 The Philadelphia Inquirer

Microplastics found in 100% of sampled Pennsylvania waterways, study shows

Microplastics were found in 100% of samplings of 53 locations in waterways in Pennsylvania, including the Delaware and Schuylkill rivers, and ...

Microplastics revealed in the placentas of unborn babies

Health impact is unknown but scientists say particles may cause long-term damage to foetuses