

# BEST PRACTICES



## Plastics & Water: A Dangerous Mix for Aquatic Life

Humans use plastics in our daily lives in a myriad of products, and, through littering, ship spills and other actions, some of these plastics end up in our waterways. Plastics will break down into smaller and smaller particles, but they never “go away”. Even plastics labeled as biodegradable need exposure to air to biodegrade, so they will never totally break down in water.

Plastics that get into our waterways can harm fish and other wildlife. Photos of aquatic wildlife tangled in plastic bags, fishing line and other plastic debris show up regularly on our media. A gray whale found dead in West Seattle in April 2010 had 20 plastic bags in its stomach, along with other human garbage.

Studies have shown that aquatic animals will eat plastic particles. Plastic does not get digested and has the effect of causing the animal to feel full even though it has not taken in enough nutrients. This can lead to malnutrition or starvation of the animal. Further, plastics can contain harmful substances, such as BPA (bisphenol A), polystyrene and PCBs (polychlorinated biphenyls), which accumulate in animal tissues and cause biologic harm.

Ocean currents cause plastic debris to collect together into large, moving masses. Ocean currents that spiral around a central point in a large scale circular feature, clockwise in the Northern Hemisphere and counterclockwise in the Southern Hemisphere, are called gyres. Gyres which contain large amounts of plastics and other marine debris have been dubbed “garbage patches”. While this term conjures up an image of a mass of garbage floating on the surface of the ocean, in reality, it mostly consists of a mass of subsurface plastic, mainly microplastics (less than 5 mm), swirling around with the ocean currents. The largest, and most famous, “garbage patch” occurs in the North Pacific Ocean.

Accidents involving ships are one cause of plastics being spilled into our waterways. Everything from industrial plastics to loads of rubber duckies has made its way into the ocean via ship spills. The most insidious spills are of shiploads of microplastic pellets used in the manufacture of plastic products. These particles, called nurdles, are particularly harmful to wildlife. These spills are hard to clean up. Their small size is comparable to plankton, so scooping them up would also remove plankton, which is vital for the food web in our oceans.

A surprising source of plastics in our waterways comes from household products used and flushed down the drain. From microbeads in body care products washed down the shower drain to tiny bits of synthetic fabric,



such as fleece, discharged with washing machine water. All these household products contribute to the problem. Sewage treatment plants screen out larger plastic items that get into the sewage waste stream, but microplastics pass right through. You can help eliminate this source by checking the products you buy. ***Avoid anything with microbeads and choose products with a minimal use of plastic packaging. And, of course, bring your own reusable bag to the store!***

*Source: Stream Team News, Winter 2013*

*Graphic courtesy of Ocean Conservancy [www.oceanconservancy.org](http://www.oceanconservancy.org)*