

## Pharmaceuticals and Personal Care Products in the Aquatic Environment of the Northeast

### *PPCP Talking Points*

- Pharmaceuticals and personal care products (PPCPs) comprise a diverse group of chemicals including, but not limited to, prescription and over-the-counter human drugs, veterinary drugs, diagnostic agents, nutritional supplements, and other consumer products such as fragrances, cosmetics, and sun-screen agents. PPCPs comprise a vast universe of chemicals which include a broad array of synthetic and naturally occurring compounds that are not commonly monitored or regulated.
- These compounds enter both the soil and aquatic environments through a variety of sources, including, but not limited to, wastewater effluent, treated sewage sludge, landfill leachate, industrial effluent, combined sewer overflows, aquaculture, and animal feed lots. Contributions to the environment from these sources remain poorly characterized.
- The release of these chemicals into the environment has most likely been going on for as long as humans have manufactured and used products containing these chemicals; however the expansion of the number, types, and quantities of these compounds has likely led to an increase in the release of these compounds to the environment.
- New and improved analytical detection methods have enabled the detection of these chemicals in our waters at lower concentrations.
- Pharmaceuticals and personal care product constituents are being detected in groundwater, streams, rivers, lakes, reservoirs, and drinking water supplies of the Northeast at very low concentrations, and have commonly been detected in combinations of chemicals.
- Currently there are no US EPA/state ambient water quality criteria, water quality standards, or drinking water standards for most of these individual chemicals, and existing standards do not recognize the effect of chemical combinations.
- These compounds are not routinely monitored for as part of federal or state monitoring programs, and much of the monitoring to date has depended on specific research projects.
- The presence of these chemicals in water bodies have been linked to impacts on aquatic species, including changes in fish sex ratios, development of female fish characteristics in male fish, changes in nesting behaviour by fish, and adverse effects on invertebrates.
- The manner in which we handle and dispose of our unused PPCPs can result in the addition of these chemicals into some environmental settings at levels that may pose an ecological health concern. For information regarding proper disposal of PPCPs, please refer to state and federal guidelines.
- At this time, many unknowns remain regarding the potential for adverse effects on ecological receptors and humans from exposure to PPCPs in the environment.
- Research on human health effects should recognize the effects on sensitive populations such as children, pregnant women, and those with compromised immune systems.
- Manufacturers and consumers of PPCPs should utilize and promote green disposal practices for these chemicals at all times.