National Aeronautics and Space Administration

Your Toilet Doesn't Have Bronchitis…

Don't Rush to Flush

Have you finally kicked this season's flu? Sinusitis (or any other "itis") lost its grip as well? Did your knee surgery leave you with a new lease on life and a jammed medicine cabinet? Your first inclination may be to flush your unwanted pills down the toilet or sink. After all, you don't want your pets sifting through them in the trash. Your line of reasoning says your prescriptions and over-the-counter drugs go to a waste water treatment plant (WWTP), which should be able to take care of this. It's a win-win situation, right? Unfortunately, it's not that simple. According to Maryland's Department of the Environment, new technology has been able to detect trace amounts of these pharmaceuticals in local waterways. Currently, WWTP's are not able to *remove* such trace amounts of pharmaceuticals before discharging them into local waterways. As a result, these pharmaceuticals enter the watershed and fall into the pollutant category "pharmaceuticals and personal care products" (PPCPs).

Intersex Fish: It's what's for Dinner

As pollutants, PPCPs float freely within the water column and eventually settle into the sediment below. Over time, PPCPs come into contact with aquatic organisms. Recent studies have discovered troubling results from such contact. It is believed a type of PPCP known as *endocrine disrupting chemicals* is responsible for abnormal growth and development in largemouth bass. According to a US Fish and Wildlife Service study of largemouth bass in the Potomac River, over 80% of males were found to be intersexed, containing some or all female reproductive organs in addition to their male reproductive organs. Other studies have revealed eggshell thinning in birds, and reproductive abnormalities in snails and frogs. Although more research is needed to understand the effects of PPCP's on aquatic ecosystems and human health, it is clear there is something we can do to help.

GSFC environmental bulletin

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So How Can I Help?

We're glad you asked. National Drug Take Back Day, an event sponsored by the Office of National Drug Control Policy, and organized by **SMARXT DISPOSAL™** is April 30, 2011. During its inaugural take back day on September 25, 2010, 121 tons of pharmaceuticals were collected nationwide. You can play an important part in keeping pharmaceuticals out of our local waterways by becoming involved in this program. Consult the websites below for information on take back locations in your community. If a take back program is not available in your area, you can still play a part. Almost all medicines can be disposed in household trash after mixing them with some unpalatable substance such as coffee grounds, kitty litter, or sawdust. Making the drugs unpalatable helps prevent the accidental ingestion of drugs by pets, wildlife, and curious children. Be sure to put the mixture in a sealed bag or container. We can all help to keep our fish, frogs, and feathered friends drug free. Consult the White House Drug Policy website below for additional details.

SMARXT DISPOSAL™
http://www.smarxtdisposal.net/

Maryland Department of the Environment
http://www.mde.state.md.us/programs/Water/Water_Supply/Source_Water_Assessment_Program/Pages/programs/waterprograms/water_supply/emerging_concern.aspx

National Drug Control Policy
http://www.whitehousedrugpolicy.gov/publications/pdf/prescrip_disposal.pdf