

A Preview of What's In This Issue

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Chemicals Found in Treated Wastewater are Transported from Streams to Groundwater

Scientists studying a midwestern stream conclude that pharmaceuticals and other contaminants in treated wastewater effluent discharged to the stream are transported into adjacent shallow groundwater. Other mobile chemicals found in wastewater are expected to have similar fates.



Densovirus Calculated as Culprit Killing Sea Stars

A prime suspect has been identified as a probable cause of the "Sea Star Wasting Disease," a mysterious epidemic that has been killing these animals by the thousands along the U.S. and Canadian Pacific Coast. The culprit appears to be a newly discovered virus dubbed "sea star associated densovirus," or SSaDV.



Endocrine Disrupting Chemicals Persist Downstream from the Source

Endocrine disrupting chemicals (EDCs) were transported 2 kilometers downstream of a wastewater treatment plant outfall in a coastal plain stream in Georgia. EDCs persisted downstream of the outfall with little change in the numbers of EDCs and limited decreases in EDC concentrations.



Highly Pathogenic Avian Influenza Detected for the First Time in Wild Birds in North America

For the first time, highly pathogenic influenza viruses have been identified in wild birds in North America. Three influenza virus strains have been shown to cause severe illness and death in chickens and are composed of Asian-origin and North America-origin avian influenza virus genes. The USGS is tracking these viruses within migratory birds.



Commonly Used Chemicals Measured in Minnesota Groundwater

A team of scientists measured 127 organic chemicals in groundwater underlying urbanized areas in Minnesota. These chemicals include ones commonly used and consumed in our daily lives, in products such as human-use and veterinary pharmaceuticals, fragrances, surfactants, plastic components, and fire retardants.



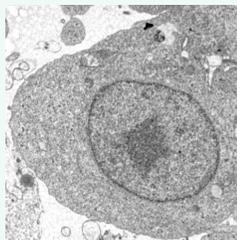
Land Disposal of Wastewater Can Result in Elevated Mercury in Groundwater

Recent studies explain factors that can lead to elevated mercury levels in groundwater underlying wastewater infiltration beds. The scientists explained that treated wastewater can be a source of mercury and a source of organic carbon and other nutrients that can lead to mobilization of naturally occurring mercury.



Channel Catfish (*Ictalurus punctatus*) White Blood Cells are Functionally Modulated by Estrogens

USGS scientists have found that fish white blood cells (leukocytes) have specific estrogen receptors—a discovery that moves scientists one step closer to understanding the connection between exposure to estrogenic substances and disease susceptibility in fish.



Comprehensive Assessment of Mercury in Streams Explains Major Sources, Cycling, and Effects

A new USGS report presents a comprehensive assessment of mercury contamination in streams across the United States. It highlights the importance of environmental processes, monitoring, and control strategies for understanding and reducing stream mercury levels.



Organic Geochemistry Research Laboratory Scored High on Proficiency Testing for Glyphosate

In a recent interlaboratory comparison of 28 international laboratories, the USGS Organic Geochemistry Research Laboratory scored A's for the analysis of glyphosate. Glyphosate has become the most widely used herbicide in the world and is a common contaminant in rivers and streams.



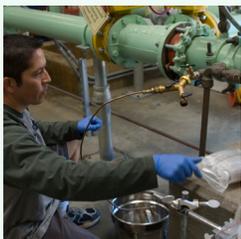
Natural Breakdown of Petroleum Results in Arsenic Mobilization in Groundwater

Changes in geochemistry from the natural breakdown of petroleum hydrocarbons in groundwater promote mobilization of naturally occurring arsenic from aquifer sediments into groundwater. This geochemical change can result in potentially significant and overlooked arsenic groundwater contamination.



Public-Supply Well Pumping Regimes Influence Quality of Water Produced

USGS scientists studying the vulnerability of public-supply wells to contamination have identified that changes to the period of time in which supply wells are pumped during different seasons could decrease contaminant concentrations in water that the wells produce.



Recognition for a USGS Scientist in Service to Others

USGS scientist Dr. Michael T. Meyer has had a prolific career, publishing 60 journal articles and 45 USGS publications. Mike has been designated as a Thomson Reuters Highly Cited Researcher, ranking among the top 1 percent of researchers from 2002 to 2012 for most cited documents in the field of Environment and Ecology.



Contaminant Transport Models Aid in Understanding Trends of Chlorinated Ethenes in Public Supply Wells

A solute-transport model was used to understand factors affecting chlorinated ethene (CE) concentrations, including trichloroethene, in a public supply well. Long-term simulated and measured CE concentrations were affected by several factors, including bioavailability of organic carbon that drives biodegradation.



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