

## A Preview of What's In This Issue

*The title of each article links to the on-line version*

### Native Bees are Exposed to Neonicotinoids and Other Pesticides

A recent reconnaissance study by the U.S. Geological Survey (USGS) demonstrates the first observed occurrence of pesticides, including neonicotinoid insecticides, in wild-caught native bees. The results indicate that native bees collected in an agricultural landscape are exposed to multiple pesticides.



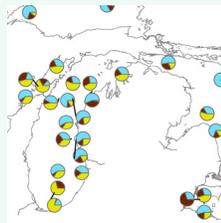
### Ethanol-Containing Fuel Spills Enhanced Natural Trace Element Release from Sediments in an Experimental Setting

Research simulating hydrocarbon spills by USGS and university scientists showed that mixed ethanol and petroleum fuels increased the rate by which arsenic and other natural trace elements are released from aquifer sediments to groundwater when compared to petroleum fuels alone.



### New Tool to Track Sources and Exposure Pathways of Mercury in the Environment

USGS scientists and collaborators have developed a new tool for attributing (fingerprinting) mercury sources to the Great Lakes. This new fingerprinting tool helps resource managers understand which mitigation strategies will be most effective for reducing mercury loading and exposure to fish and wildlife.



### Complex Mixtures, Complex Responses—Using Comprehensive Approaches to Assess Pharmaceutical Effects on Fish

The occurrence of complex mixtures of pharmaceuticals in streams and rivers has raised concerns about potential unintended adverse effects on fish. The deleterious effects observed in this study confirm that effluents containing pharmaceuticals can adversely affect fish in ways that are central to sustaining populations.



### U.S. Rivers Show Few Signs of Improvement from Historic Nitrate Increases

A recent USGS study provides a rare glimpse into how nitrate levels in 22 rivers across the Nation have changed during the past 65 years. Despite the stabilization of nitrogen inputs in recent decades, there is no evidence of widespread decrease in nitrate levels in rivers.



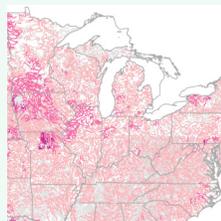
### Landfill Leachate Released to Wastewater Treatment Plants and other Environmental Pathways Contains a Mixture of Contaminants including Pharmaceuticals

New research from the USGS details how landfill leachate, disposed from landfills to environmental pathways, is host to numerous contaminants of emerging concern. Scientists determined that final leachate samples contained 101 of the 190 chemicals analyzed for the study.



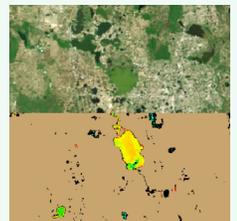
### Predicting Pesticide Levels in Streams and Rivers—Where is Water Quality at Risk?

A new interactive mapping tool predicts likely concentrations for 108 pesticides in streams and rivers across the Nation. The tool provides water-resource managers with information to design cost-effective pesticide monitoring programs and to evaluate ecological risks for pesticides.



### Remote Sensing Provides a National View of Cyanobacteria Blooms

Four Federal agencies, including the USGS, are collaborating to transform satellite data into information managers can use to protect ecological and human health from freshwater contaminated by harmful algal blooms.



Patricia R. Bright, Managing Editor  
Michael J. Focazio, Managing Editor  
Carol Meteyer, Editor  
Kathy E. Lee, Editor  
David W. Morganwalp, Coordinating Editor

The title of each article links to the on-line version. The online versions have links to additional information.

For additional information contact:

David W. Morganwalp  
U.S. Geological Survey  
913 National Center  
Reston, VA 20192  
geohealth@usgs.gov



The GeoHealth Newsletter provides information on new USGS environmental health science activities related to safeguarding the health of the environment, fish and wildlife, domesticated animals, and people.

Scan this with your  
smartphone QR code  
reader app to get past  
and future issues of the  
USGS GeoHealth  
Newsletter



Sign up to receive email notifications about new issues and to access past issues at:

<http://www.usgs.gov/envirohealth/geohealth/>

Scan this with your  
smartphone QR code  
reader app to sign up to  
get email notifications  
about new issues

