



# United States Department of the Interior

U.S. GEOLOGICAL SURVEY  
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## PRESS RELEASE

The U.S. Geological Survey is pleased to announce the release of *Presence of Selected Chemicals of Emerging Concern in Water and Bottom Sediment from the St. Louis River, St. Louis Bay, and Superior Bay, Minnesota and Wisconsin, 2010* by VG Christensen, KE Lee, KA Kieta, and SM Elliott. The lower St. Louis Bay between Duluth, Minnesota and Superior, Wisconsin receives substantial urban runoff, wastewater treatment plant effluent, and industrial effluent—leading to its designation as a “Great Lakes Area of Concern” by the International Joint Commission. Concerns exist about the potential effects of certain chemicals on aquatic biota because many of these chemicals have been shown to have detrimental effects on fish and other aquatic life. These chemicals are called *Chemicals of Emerging Concern* and may be toxic or pose some health risk to living organisms. These chemicals include pharmaceuticals, hormones, and other organic chemicals—some of which may cause endocrine disruption.

The U.S. Geological Survey in cooperation with the Minnesota Pollution Control Agency and the Wisconsin Department of Natural Resources collected water and bottom-sediment samples from 40 sites from August through October 2010 to identify the extent to which Chemicals of Emerging Concern occur in water and sediment in the St. Louis River, St. Louis Bay, and Superior Bay. During this study, 33 of 89 chemicals of emerging concern were detected among all water samples collected and 56 of 104 chemicals of emerging concern were detected in bottom-sediment samples. The chemical N,N-diethyl-meta-toluamide (DEET, a mosquito repellent) was the most commonly detected chemical in water samples and 2,6-dimethylnaphthalene (a petroleum by-product) was the most commonly detected chemical in bottom-sediment samples. In general, chemicals of emerging concern were detected at a higher frequency in bottom-sediment samples than in water samples.

Estrone (a steroid hormone) and hexahydrohexamethyl cyclopentabensopyran (a synthetic fragrance) were the most commonly detected endocrine active chemicals in water samples; beta-sitosterol (a plant sterol), estrone, and 4-tert-octylphenol (an alkylphenol) were the most commonly detected endocrine active chemicals in bottom-sediment samples. The greater detection frequency of chemicals in bottom-sediment samples compared to the detection frequency in water samples indicates that bottom sediment is an important sink for chemicals of emerging concern. The full report can be obtained from the USGS at <http://pubs.usgs.gov/sir/2012/5184/>. For more information on the study, contact Victoria Christensen ([vglenn@usgs.gov](mailto:vglenn@usgs.gov)) or Kathy Lee ([klee@usgs.gov](mailto:klee@usgs.gov)).