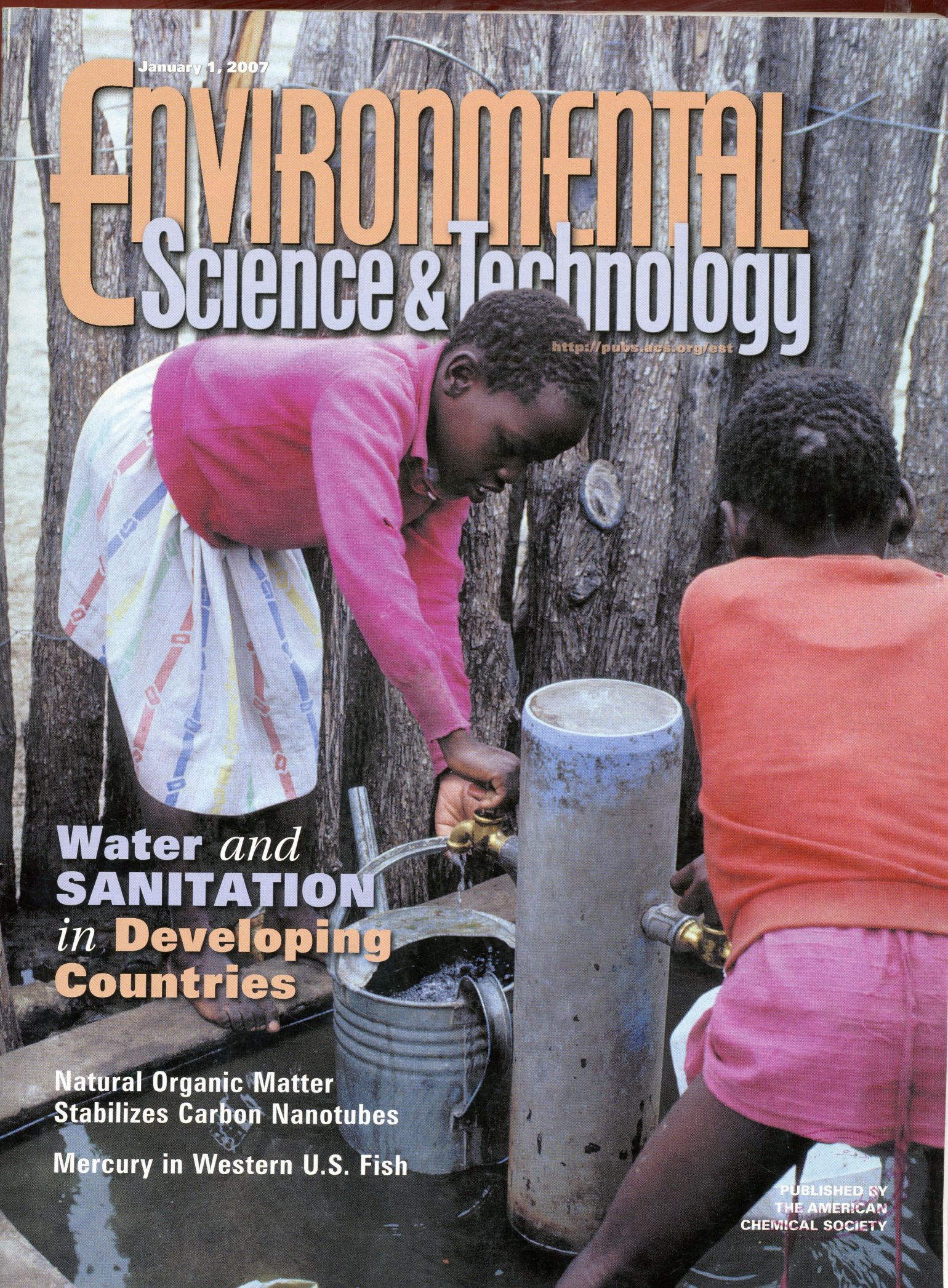


January 1, 2007

ENVIRONMENTAL Science & Technology

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**Water and
SANITATION
in Developing
Countries**

**Natural Organic Matter
Stabilizes Carbon Nanotubes**

Mercury in Western U.S. Fish

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NEWS

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Natural organic matter stabilizes carbon nanotubes in aqueous environments, an interaction that increases the potential for their transport downstream.

7 Mercury in western U.S. fish

New data provide a baseline for mercury levels in fish from streams and rivers in the western U.S., with implications for the element's origins.

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A quiet brain-damage epidemic • Climate cools economy • Green pact for France • Coastal pollution grows more dead zones • Green learning curve • Canada dumps CO₂ targets

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The composition of emissions from Chinese cooking could provide markers for air pollution.

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A new study confirms that perchlorate is ubiquitous.

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12 Germ fighter works as endocrine disrupter

Triclosan, popular in soaps and lotions, perturbs the thyroid system of frogs and humans.

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Natural attenuation gets a boost

Cover: The cover photo of children collecting water in Botswana was taken by Curt Carnemark and provided by the World Bank.

Online news: Read news first at <http://pubs.acs.org/estnews>.

FEATURE



16 Water and Sanitation in Developing Countries: Including Health in the Equation

Maggie A. Montgomery and Menachem Elimelech

Improving global access to clean drinking water and safe sanitation is one of the most effective ways to improve public health and save lives. Montgomery and Elimelech emphasize the need for greater collaboration between the fields of water and sanitation engineering and public health, the need to address water and sanitation in a more integrated and sustainable manner, and the obstacles to overcoming lack of investment, lack of political will, and difficulty in maintaining services.

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Environmental Implications of Municipal Solid Waste-Derived Ethanol

Youssef Kalogo, Shiva Habibi, Heather L. MacLean, and Satish V. Joshi

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Rapid Response of Arctic Ringed Seals to Changes in Perfluoroalkyl Production

Craig M. Butt, Derek C. G. Muir, Ian Stirling, Michael Kwan, and Scott A. Mabury

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Temporal and Spatial Trends in the Occurrence of Human and Veterinary Antibiotics in Aqueous and River Sediment Matrices

Sung-Chul Kim and Kenneth Carlson

The occurrence and partitioning of 15 antibiotics belonging to 3 different groups—tetracyclines, sulfonamides, and macrolides—are studied in aqueous and sediment matrices in a watershed.

■ Supporting information is available free at <http://pubs.acs.org/est>.

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► Mercury Concentration in Fish from Streams and Rivers Throughout the Western United States

Spencer A. Peterson, John Van Sickle, Alan T. Herlihy, and Robert M. Hughes

Large piscivorous fish exceed the U.S. EPA guidance of 0.3 µg Hg/g for consumption by humans in >56% of stream length assessed in the western U.S.

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Platinum, Palladium, and Rhodium in Fresh Snow from the Aspe Valley (Pyrenees Mountains, France)

Mariella Moldovan, Sophie Veschambre, David Amouroux, Bruno Bénech, and Olivier F. X. Donard

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Chlorinated Solvents in Groundwater of the United States

Michael J. Moran, John S. Zogorski, and Paul J. Squillace

Chlorinated solvents are frequently detected in groundwater of the U.S. and exceed maximum contaminant levels more frequently than other volatile organic compounds.

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Elemental and Molecular Evidence of Soot- and Char-Derived Black Carbon Inputs to New York City's Atmosphere during the 20th Century

Patrick Louchouart, Steven N. Chillrud, Stéphane Houel, Beizhan Yan, Damon Chaky, Cornelia Rumpel, Claude Largeau, Gerard Bardoux, Dan Walsh, and Richard F. Bopp

High concentrations of GBC and PAHs in sediments of NYC lakes show dramatic shifts in pollution sources, which include fossil-fuel combustion and municipal/domestic incineration.

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► Perchlorate in Dairy Milk. Comparison of Japan versus the United States

Jason V. Dyke, Kazuaki Ito, Taketo Obitsu, Yoshiharu Hisamatsu, Purnendu K. Dasgupta, and Benjamin C. Blount

Perchlorate in Japanese dairy milk is not any less than that in the U.S.; atmospheric perchlorate deposition through precipitation and a greater production rate per unit land area may be responsible.

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Acid Rain Effects on Aluminum Mobilization Clarified by Inclusion of Strong Organic Acids

G. B. Lawrence, J. W. Sutherland, C. W. Boylen, S. W. Nierzwicki-Bauer, B. Momen, B. P. Baldigo, and H. A. Simonin

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Yunliang Zhao, Min Hu, Sjaak Slanina, and Yuanhang Zhang

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A Mechanistic Study of Methyl Parathion Hydrolysis by a Bifunctional Organoclay

Chaim Rav-Acha, Ludmila Groisman, Uri Mingelgrin, Zvi Kirson, Yoel Sasson, and Zev Gerstl

The mechanism by which a bifunctional organoclay catalyzes methyl parathion hydrolysis includes the formation of a phosphorothioate isomer as an intermediate reaction product.

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Removal of Cadmium from Wastewaters by Aragonite Shells and the Influence of Other Divalent Cations

Stephan Jürgen Köhler, Pablo Cubillas, Juan Diego Rodríguez-Blanco, Christoph Bauer, and Manuel Prieto

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Accumulation of Inorganic and Methylmercury by Freshwater Phytoplankton in Two Contrasting Water Bodies

Paul C. Pickhardt and Nicholas S. Fisher

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Maren Kahle and Christian Stamm

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Electron Transfer Capacities and Reaction Kinetics of Peat Dissolved Organic Matter

Markus Bauer, Tobias Heitmann, Donald L. Macalady, and Christian Blodau

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Reduction of Cr(VI) under Acidic Conditions by the Facultative Fe(III)-Reducing Bacterium *Acidiphilium cryptum*

David E. Cummings, Scott Fendorf, Nathan Singh, Rajesh K. Sani, Brent M. Peyton, and Timothy S. Magnuson

A. cryptum reduces Cr(VI) by at least two different mechanisms: via direct reduction by cellular components or via enzymatic reduction of Fe(III) to Fe(II) and subsequent electron shuttling.

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Julia L. Bonin and Myrna J. Simpson

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Li-Sha Wang, Hong-Ying Hu, and Chao Wang

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Thomas Borch, Yoko Masue, Ravi K. Kukkadapu, and Scott Fendorf

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Artur Braun, Bongjin Simon Mun, Frank E. Huggins, and Gerald P. Huffman

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Natural Organic Matter Stabilizes Carbon Nanotubes in the Aqueous Phase

Hoon Hyung, John D. Fortner, Joseph B. Hughes, and Jae-Hong Kim

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Sunlight-Mediated Inactivation of MS2 Coliphage via Exogenous Singlet Oxygen Produced by Sensitizers in Natural Waters

Tamar Kohn and Kara L. Nelson

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Yang Liu, Ching-Hong Yang, and Jin Li

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J. L. Zhou, R. Liu, A. Wilding, and A. Hibberd

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Toxicity of Cr(III) to *Shewanella* sp. Strain MR-4 during Cr(VI) Reduction

Rizlan Bencheikh-Latmani, Anna Obratsova, Mason R. Mackey, Mark H. Ellisman, and Bradley M. Tebo

Cr(VI) reduction by *Shewanella* strain MR-4 is enhanced if the resulting Cr(III) is complexed, whereas Cr(III) in a transiently soluble uncomplexed form is deleterious to cells.

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Elizabeth Newton and Ruthann Rudel

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If intense sources of ethanol are present in an aircraft cabin, photocatalytic purification of recirculated air leads to elevated levels of acetaldehyde and formaldehyde.

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Heonki Kim, Kyong-Min Choi, and P. Suresh C. Rao

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J. Karl C. Nieman, Richard C. Holz, and Ronald C. Sims

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A Flow-Through Sampler for Semivolatile Organic Compounds in Air

Hang Xiao, Hayley Hung, Tom Harner, Ying D. Lei, Gordon W. Johnston, and Frank Wania

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Partial Removal of PCDD/Fs, Coplanar PCBs, and PCBs from Municipal Solid Waste Incineration Fly Ash by a Column Flotation Process

Ying Huang, Masaki Takaoka, Nobuo Takeda, and Kazuyuki Oshita

Organohalogen contaminants in municipal solid waste incineration fly ash are mainly enriched in the unburned carbon and are difficult to remove because of their low concentrations and high removal cost.

■ Supporting information is available free at <http://pubs.acs.org/est>.
▶ This issue contains a news story about this research.

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Photocatalytic Degradation of Pesticide Pyridaben. 3. In Surfactant/TiO₂ Aqueous Dispersions

Xinle Zhu, Chunwei Yuan, and Huilan Chen

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James D. Englehardt, Daniel E. Meeroff, Luis Echegoyen, Yang Deng, Francisco M. Raymo, and Tomoyuki Shibata

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Field Application of Partitioning Gas Tracer Test for Measuring Water in a Bioreactor Landfill

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Aggregation and Sedimentation of Aqueous Nanoscale Zerovalent Iron Dispersions

Tanapon Phenrat, Navid Saleh, Kevin Sirk, Robert D. Tilton, and Gregory V. Lowry

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Long-Term Effects of Dissolved Carbonate Species on the Degradation of Trichloroethylene by Zerovalent Iron

Anika Parbs, Markus Ebert, and Andreas Dahmke

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Ricardo A. Torres, Christian Pétrier, Evelyne Combet, Florence Moulet, and Cesar Pulgarin

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Dianlu Jiang, Shanqing Zhang, and Huijun Zhao

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■ Supporting information is available free at <http://pubs.acs.org/est>.

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Combined Exposure to Hydrogen Peroxide and Light—Selective Effects on Cyanobacteria, Green Algae, and Diatoms

Michaela Drábková, Wim Admiraal, and Blahoslav Maršálek

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Kristin Inneke Van de Vijver, Ludo Holsbeek, Krishna Das, Ronny Blust, Claude Joiris, and Wim De Coen

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Daniel L. Villeneuve, Patrick Larkin, Iris Knoebl, Ann L. Miracle, Michael D. Kahl, Kathleen M. Jensen, Elizabeth A. Makynen, Elizabeth J. Durhan, Barbara J. Carter, Nancy D. Denslow, and Gerald T. Ankley

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Jayne V. Brian, Catherine A. Harris, Martin Scholze, Andreas Kortenkamp, Petra Booy, Marja Lamoree, Giulio Pojana, Niels Jonkers, Antonio Marcomini, and John P. Sumpter

Mixtures of estrogenic chemicals act together to affect reproductive parameters, even when each component is present at a low and individually ineffective concentration.

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Brad Bessinger, Brooke Redding, and Yvette Lowney

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Response to Comment on "Release of Arsenic to the Environment from CCA-Treated Wood. 2. Leaching and Speciation during Disposal"

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