

Greenlist Bulletin

From the Toxics Use Reduction Institute
at the University of Massachusetts Lowell

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NCEAS Researcher Shows Microplastic Transfers Chemicals, Impacting Health

[Source: The Current, University of California, Santa Barbara, December 2, 2013](#)

Author: Julie Cohen

With global production of plastic exceeding 280 metric tons every year, a fair amount of the stuff is bound to make its way to the natural environment. However, until now researchers haven't known whether ingested plastic transfers chemical additives or pollutants to wildlife. A new study conducted by UC Santa Barbara's National Center for Ecological Analysis and Synthesis (NCEAS) shows that toxic concentrations of pollutants and additives enter the tissue of animals that have eaten microplastic. The findings are published today in *Current Biology*.

Lead author Mark Anthony Browne, a postdoctoral fellow at NCEAS, had two objectives when the study commenced: to look at whether chemicals from microplastic move into the tissues of organisms; and to determine any impacts on the health and the functions that sustain biodiversity. Microplastics are micrometer-size pieces that have eroded from larger plastic fragments, from fibers from washing clothing or from granules of plastic added to cleaning products. Microplastics are then consumed by a variety of animals, beginning with the bottom of the food chain. These tiny bits of plastic act like magnets, attracting pollutants out of the environment to attach to the plastic.

"The work is important because current policy in the United States and abroad considers microplastic as non-hazardous," Browne said. "Yet our work shows that large accumulations of microplastic have the potential to impact the structure and functioning of marine ecosystems."

[Read more...](#)

Read article in *Current Biology*, "[Microplastic Moves Pollutants and Additives to Worms, Reducing Functions Linked to Health and Biodiversity.](#)"

[Source: U.S. Environmental Protection Agency, December 5, 2013](#)

WASHINGTON -- As part of President Obama's Climate Action Plan to cut carbon pollution and lead in clean energy, EPA today released its 2013 Strategic Sustainability Performance Plan that outlines actions planned over the next year to cut energy use and waste in agency operations. President Obama signed Executive Order 13514 on Federal Leadership in Environmental, Energy, and Economic Performance in October 2009, setting aggressive targets for reducing waste and pollution in Federal operations by 2020. EPA's 2013 Sustainability Plan builds on four years of progress under the Executive Order and provides an overview of how the agency is saving taxpayer dollars, reducing carbon emissions, and saving energy.

The 2013 Sustainability Plan will also help guide EPA's actions to meet the new goal President Obama set today with a Presidential Memorandum directing the Federal Government to consume 20 percent of its electricity from renewable sources by 2020 -- more than double the current level. Meeting this renewable energy goal will reduce pollution in our communities, promote American energy independence, and support homegrown energy produced by American workers.

Access the U.S. Environmental Protection Agency's [2013 Strategic Sustainability Performance Plan](#).

Access [Executive Order 13514](#).

View the U.S. Environmental Protection Agency's [January 2013 OMB Scorecard on Sustainability/Energy](#).

Nike fires starting gun on water-less dye factory

[Source: businessGreen, December 3, 2013](#)

Author: Jessica Shankleman

Nike will next year start selling sportswear that has been coloured without water and using substantially fewer chemicals after yesterday cutting the ribbon on a new water-free dye facility in Taiwan. . . .

Dyecoo, which has financial backing from Nike and Ikea, uses high-pressure liquidised CO₂ rather than water to apply dyes to fabrics, eliminating the need for 100 to 150 litres of water usually required to dye one kilogram of material.

[Read more...](#)

Read "[DyeCoo: waterless dyeing.](#)"

Also read "[The Levi's® Brand Introduces Water<Less™ Jeans Collection For Spring.](#)"

Household Cleaning Activities as Noningestion Exposure Determinants of Urinary Trihalomethanes

[Source: Environmental Science & Technology, November 22, 2013](#)

Authors: P. Charisiadis, S. S. Andra, K. C. Makris, M. Christodoulou, C. A. Christophi, S. Kargaki, and E. G. Stephanou

Previous epidemiological studies linking drinking water total trihalomethanes (THM) with pregnancy disorders or bladder cancer have not accounted for specific household cleaning activities that could enhance THM exposures. We examined the relation between household cleaning activities (washing dishes/clothes, mopping, toilet cleaning, and washing windows/surfaces) and urinary THM concentrations accounting for water sources, uses, and demographics. A cross-sectional study ($n = 326$) was conducted during the summer in Nicosia, Cyprus, linking household addresses to the geocoded public water pipe network, individual household tap water, and urinary THM measurements. Household tap water THM concentrations ranged between 3-129 $\mu\text{g L}^{-1}$, while the median (Q1, Q3) creatinine-adjusted urinary THM concentration in females (669 ng g^{-1} (353, 1377)) was significantly ($p < 0.001$) higher than that in males (399 ng g^{-1} , (256, 681)). Exposure assessment, based on THM exposure equivalency units, showed that hand dishwashing, mopping, and toilet cleaning significantly ($p < 0.001$) increased urinary THM levels. The effect of dishwashing by females ≥ 36 y of age remained significant, even after adjusting for potential confounders. No

significant ($p > 0.05$) association was observed between ingestion-based THM exposure equivalency units and urinary THM. Noningestion routes of THM exposures during performance of routine household cleaning activities were shown for the first time to exert a major influence on urinary THM levels. It is warranted that future pregnancy-birth cohorts include monitoring of noningestion household THM exposures in their study design.

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Dow Chemicals Plots Course Away From Chlorine

Source: [Chemical & Engineering News, December 5, 2013](#)

Author: Alexander H. Tullo

Setting up an exit from chemicals it has made for decades so it can focus on higher-growth sectors, Dow Chemical is carving out chlorine-related businesses with annual sales of \$5 billion and moving them to a separate division. The company intends to sell the businesses, together or piecemeal, within the next 12 to 24 months.

The company revealed plans to divest two of the operations, epoxy resins and chlorinated organics, in July. The company now says it will also divest its chlor-alkali and chloro-vinyl assets in Freeport, Texas, and Plaquemine, La.; its interest in a chlor-alkali joint venture with Mitsui & Co.; brine assets; and energy operations in Plaquemine. . . .

Dow's chlorinated organics business is the world's largest supplier of the dry-cleaning solvent perchloroethylene and the industrial solvent trichloroethylene. Its epoxies unit is one of the world's largest producers of epichlorohydrin and epoxy resins used in coatings, adhesives, and composites.

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Database Tracks Toxic Side Effects of Pharmaceuticals

Source: [North Carolina State University, December 5, 2013](#)

Sometimes the cure can be worse than the disease. Pharmaceutical drugs are known for their potential side effects, and an important aspect of personalized medicine is to tailor therapies to individuals to reduce the chances of adverse events. Now researchers from North Carolina State University have updated an extensive toxicology database so that it can be used to track information about therapeutic drugs and their unintentional toxic effects.

"Environmental science actually shares a common goal with drug makers: to improve the prediction of chemical toxicity," says Dr. Allan Peter Davis, lead author of a paper on the work and the biocuration project manager of the Comparative Toxicogenomics Database (CTD) in NC State's Department of Biological Sciences.

[Read more...](#)

Access the [Comparative Toxicogenomics Database](#).

Tracking fracking pollution: Researchers establish benchmarks to monitor shale gas pollution

Source: [Concordia University, December 2, 2013](#)

Montreal, 2 December 2013 -- As a result of the fracking revolution, North America has overtaken Saudi Arabia as the world's largest producer of oil and gas. This, despite endless protests from environmentalists. But does drilling for natural gas really cause pollution levels to skyrocket? . . .

A team of geochemistry researchers affiliated with Concordia University, l'Université du Québec à Montréal, l'Institut national de la recherche scientifique, and the GEOTOP research group has just completed the first detailed study to examine the natural quality of groundwater prior to fracking.

The resulting report, commissioned by the Strategic Environmental Assessment Committee on Shale Gas, provides a benchmark for naturally occurring levels of pollution. This will help scientists prove definitively whether fracking causes groundwater pollution by establishing the concentrations of methane, ethane, propane, helium and radon found in the groundwater in a location where fracking has yet to occur -- the low-lying areas surrounding the St. Lawrence River, between Montréal and Québec.

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Clariant Launches Nipaguard® Zero Preservative Blends as Innovative Alternatives to Parabens

[Source: Clariant, September 19, 2013](#)

Muttenz, September 19, 2013 -- Clariant, a world leader in specialty chemicals, is launching Nipaguard® Zero -- a powerful line of optimized preservative blends that contain no parabens, yet deliver a comparable performance. . . .

Extensive testing to meet the highest standards on the market ensures that formulators can have complete confidence in the effectiveness of all four blends to deliver the same high levels of performance as traditional preservatives.

The Nipaguard Zero blends are based on 100% renewable Velsan® SC -- a highly effective, novel synergistic booster developed by Clariant that enables use of a reduced amount of preservatives to provide reliable protection against bacteria, yeasts and fungi. Nipaguard Zero provides broad-spectrum preservation, is easy to use, safe and effective at low concentrations and also meets major regulatory requirements. The four products, all based on Velsan SC are: Nipaguard SCE, Nipaguard SCM, Nipaguard SCP and Nipaguard SCV.

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