

The Newsletter of WSU Snohomish County Extension Sustainable Community Stewards



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Concerned about air quality? Blame common products like hairspray and paint, not just cars

By Amina Khan, *From the Los Angeles Times, with permission.*

Morning traffic fills the 2 Freeway in Los Angeles. These days, about half of the petroleum chemicals that make up our smog come from consumer products like soap and paint, a new study says.

When it comes to air quality, the products you use to smell nice or keep your kitchen clean could do just as much damage as the car you drive. A new study of the air around Los Angeles finds that consumer and industrial products now rival tailpipe emissions as a source of harmful atmospheric pollutants.

The findings, published Thursday in the journal *Science*, reveal a shift in the balance of polluting power in cities — one that may prompt researchers and regulators to step up their focus on a wide range of goods such as hairspray, paint and deodorant.

"As we control some of the biggest sources in the past, other sources are emerging in relative importance, such as the use of these everyday chemical products," said study leader Brian McDonald, a research chemist with the University of Colorado at Boulder and the National Oceanic and Atmospheric Administration.

"In some ways," he pointed out, "this is a good news story."

Air pollution is a leading cause of health problems worldwide. Exposure to ground-level ozone and particulate matter contributes to asthma,

lung cancer, cardiovascular disease and other serious ailments, according to the World Health Organization. A report last year in the journal *Lancet* ranked air pollution fifth among risk factors to human health, behind malnutrition, poor diet, high blood pressure and tobacco use.

Much of the stuff in air pollution forms from reactions with volatile organic compounds, or VOCs, a wide range of carbon-based chemicals that easily escape into the air and that humans produce in huge amounts.

In the past, car exhaust was the predominant source of those man-made VOCs. That's been especially true in Los Angeles, a freeway-laced land of long commutes that a few decades ago was wreathed in dark, heavy layers of smog.

But as restrictions on tailpipe emissions have tightened and automotive technology has improved, the amount of VOCs has dropped and the air has cleared substantially. (Cars still produce tons of carbon dioxide, an invisible greenhouse gas that scientists say is contributing to global warming, but that's another story.) Scientists wanted to see what that evolution meant for L.A.'s air pollution profile.

"As the mix of chemicals in the atmosphere has changed, how is that impacting air quality in the region — and generally, in any urban environment?" asked study co-author Christopher Cappa, an environmental engineer at UC Davis.

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Cappa and his colleagues looked at data on the contents of outdoor air to see what pollutants they would find. They soon noticed that levels of certain VOCs, such as ethanol and acetone, were far too high to be explained by vehicle emissions alone.

"That implies that there's some other source," he said.

So the scientists went looking for those sources.

They made highly sensitive chemical measurements of air in the Los Angeles area. They also pored over chemical production statistics from industry and regulatory agencies.

The work revealed that many common products — including pesticides, paints, printing inks, adhesives, cleaning agents and personal care items such as body spray and hairspray — were full of volatile organic compounds that could be released into the air.

Since many of these VOC-containing products are used indoors, the scientists reviewed previous research on the air quality of interior spaces. Sure enough, the indoor concentrations of VOCs from these products were roughly seven times higher than they were in ambient air.

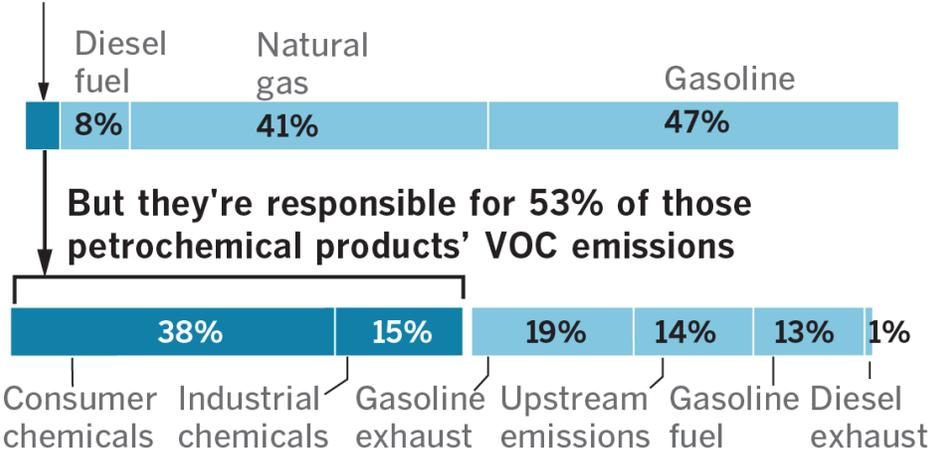
The researchers think that some of those compounds were probably leaking out of those buildings and polluting the greater environment.

Putting all of this together to create a coherent portrait of air pollutant sources was no easy task, said John Seinfeld, an atmospheric chemist at Caltech who was not involved in the paper.

"It's a landmark accomplishment to have done this," Seinfeld said. "It will stand as an important piece of work."

Contributors to L.A.'s dirty air

The carbon-based volatile organic compounds, or VOCs, in consumer and industrial products account for just 4% of petrochemical products



By weight, people use about 15 times more fuel than they do any of these VOC-filled products like deodorant and hand sanitizer.

And yet, even though they're a tiny sliver of the petrochemical pie, consumer and industrial products emit roughly the same level of VOCs as fuel-burning vehicles.

Part of the problem is in the very nature of these household items, scientists said. While fuel is meant to be burned, the VOCs in many consumer products are meant to escape into the air.

"Many of the volatile chemical products that we use every day are intended to simply evaporate," said study co-author Jessica Gilman, a research chemist with NOAA. "Think of using hand sanitizer in cold and flu season, scented products, the time spent waiting for paint, ink and glue to dry."

All of these, she said, involve "waiting for these volatile chemical products to evaporate."

Petroleum-based chemicals in products like soaps and paints are a major contributor to Los Angeles' air pollution, a new study suggests.

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From the WSU Snohomish County Extension

Thoughts While Waiting for Paint to Dry

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The study authors pointed out that while U.S. regulations on VOC-containing products emphasize the need to mitigate the ozone and other toxins that are created when VOCs react in the atmosphere, those regulations currently exempt many chemicals that lead to secondary organic aerosols — which make up much of urban air pollution.

It's not just a problem for Los Angeles. Though the study focused on the Southland, its conclusions could have implications for cities across the U.S., Seinfeld said — although they might have slightly different "atmospheric cocktails."

"In Houston, there will be more emissions from large refineries and chemical plants that don't exist in L.A.," he explained. "In the southeast U.S., the air is influenced a lot by emissions from vegetation."

This new work points to a need to adapt research, and perhaps tailor regulations, to the changing pattern of emissions in cities, said Alastair Lewis, a researcher at the University of York in England who was not involved in the research.

"As knowledge of VOC chemistry improves, it

will become possible to develop more targeted approaches to reducing impacts," Lewis wrote in a commentary that accompanied the study. "Prioritizing those VOCs with the greatest aerosol formation potential — for example, through reformulation of consumer products — would be one option. Industry sectors that have until now been left outside of VOC emissions controls may, in a cleaner electrified future, receive more direct attention from regulators."

But figuring out exactly which VOCs are the most problematic will take more research, the scientists said.

Ravi Ramalingam, chief of the Consumer Products and Air Quality Assessment Branch of the California Air Resources Board, pointed out that the VOCs in consumer products have been regulated with an eye toward keeping toxic chemicals and ground-level ozone out of the air.

Understanding their effects on fine particulate matter helps fill in the picture of air pollution, he said.

"We're really pleased that this kind of work is going on and we're looking forward to engaging with the research team," Ramalingam said.



YET ANOTHER REASON FOR GREEN CLEANING

"Have you ever looked for ingredients on a cleaning product? If you can find the list, it's usually vague like "cleaning agents" or a word that you can't pronounce, let alone understand. This recipe booklet is designed to make creating your own cleaning products, safely and inexpensively. There is far less risk to your family, your health, and to the environment with these nontoxic recipes. All of these recipes have been tested extensively by WSU Snohomish County Extension volunteers, and handpicked for their ease of use and effectiveness. Time to get scrubbing!"

Do we do enough to save energy?

Save on home
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PARTNER



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Save on your home heating using your myPSE account.

With winter's cold weather, there's no better time to view the details on your home's energy use and create an online plan for saving.

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- ⇒ **Payment options.** Set your preferences for payment and bill handling to match your needs.

For more information, and to sign up, go to pse.com/myaccount.

If you already have an account and want to receive outage notifications, just sign in to verify we have your most recent contact information.

Sustainable Community Stewards News

From the WSU Snohomish County Extension

Letters from our SCS Friends

Dear Editor,
After I read the bad news about Goodwill not taking rags anymore, I went online and found another source — USAgain. Website is USAgain.com. They have drop boxes and take clothes and textiles in any condition, as long as not wet, moldy, or contaminated with hazardous materials. They can recycle any that are not usable for wearing into other products. They even take single shoes and gloves. They have a map of local drop boxes--can go to their website and put in your zip code.

Then go to ThreadCycle at <https://kingcounty.gov/depts/dnrp/solid-waste/programs/ecoconsumer/threadcycle.aspx> for more info. It's a great program, and I'm so happy that there is a way to recycle clothes that

are worn out. Maybe this would be good follow-up info for the next newsletter. Just think if everyone started recycling worn out clothes--it would make a huge difference.

~Nancy Vandenberg,
SCS Class of 2013

Editor's Note: You can imagine how embarrassed we are! We've seen those USAgain drop boxes around town — in fact, we took a picture of one as an example for styro-foam collection. Our impression of the clothing drop boxes was that the clothing had to be “gently worn,” and since we wear our clothes into the ground, never gave a thought to donating there. ... We certainly do learn from each other. ... Thank you Nancy for the great follow-up!



STOP PLASTIC MICROFIBER POLLUTION!



that is choking our oceans. They're even showing up in our tap water!

The Story of Stuff wants you to know all about this. Go see for yourself. Here's the link: http://action.storyofstuff.org/sign/stop_microfiber_plastic_pollution/?t=3&akid=31142%2E209785%

Sustainable Community Stewards News

From the WSU Snohomish County Extension

It's in the food wrappers.

What's for Lunch? PFAS!

What are PFAS? ... And the answer is: "Per- and polyfluoroalkyl substances."

But how do they affect us?

In general, animal studies have found that animals exposed to PFAS at high levels resulted in changes in the function of the liver, thyroid, pancreas and hormone levels. In other words, **PFAS may make you fat**, and they are in our food wrappers — in abundance.

The Agency for Toxic Substances and Disease Registry at the U.S. Department of Health & Human Services can tell you more about this at <https://www.atsdr.cdc.gov/pfas/index.html>

Recently, the Center for Environmental Health (CEH)

and the Responsible Purchasing Network (RPN) hosted a webinar titled "*Toxic Chemicals in Disposable Food Service Ware: Emerging Concerns and How Safer Alternatives Stack Up.*"

The CEH has been testing disposable foodware for the presence of harmful fluorinated "non-stick" chemicals known as PFAS. CEH's newly released report, *Avoiding Hidden Hazards: A Purchaser's Guide to Safer Foodware* includes important test result findings. If you're interested, here's the report: <https://www.ceh.org/wp-content/uploads/CEH-Disposable-Foodware-Report-final-1.31.pdf>

This foodware report is designed to equip purchasers with the information, tools and other resources they need to procure healthier and environmentally preferable foodware options. Specifically, the report provides guidance on how to avoid foodware that contains PFAS.

Accompanying the report is a searchable database with test results for 137 products that identifies which products do, or do not, contain these highly persistent

and harmful fluorinated compounds. The report also explains why purchasers should be concerned about these chemicals in foodware and describes specific actions purchasers can take that will not only enable them to procure healthier products for their organization, but will also help shift the market towards safer products.

If you would like assistance on how to purchase non-fluorinated foodware, please contact CEH or RPN. If you have questions about CEH's report, including the database, its findings, or submitting additional products for testing, please reach out to Sue Chiang at the Center for Environmental Health (sue@ceh.org). The Responsible Purchasing Network also invites its members to contact Alicia Culver (alicia@responsiblepurchasing.org) and see RPN's webpage (responsiblepurchasing.org) with additional resources on this topic.

Here's an interesting slide show report: http://www.responsiblepurchasing.org/webinars/toxics_food_service_ware_webinar_slides_101717.pdf

Here's the good news! Local update:

A bill is in the Washington State Legislature concerning PFAS. You can watch the progress of this important piece of legislation at <http://app.leg.wa.gov/billssummary?BillNumber=2658&Year=2017>

Check it out. It's interesting!



Your Opportunities

**Looking for some opportunities to get involved?
Love being a part of cool community events??
Start planning your 2018 volunteer days now!**

Repair Cafes At 3200 Cedar Street in Everett

March 10

April 14

September 22

November 10

Master Gardner Annual Plant Sale

Saturday, May 5th – South Everett

Edmonds Waterfront Festival

June 1-3

Arlington Street Fair

July 13-5

Stanwood/Camano fair

August 3-5

National Night Out (locations TBA)

August 7th

Taste of Edmonds

August 10–12

Evergreen State Fair

(late August/exact date TBA)

Mukilteo lighthouse festival

September 7–9

**Reuse. Used.
Teach. Projects. SCS.
SCS. Clothing. Recycle.
Ideas. Plastics. DropBox.
Shoes. Collection. Warming.
Styro. Environment.
Starts With You.
Educate. Starts Here. Global.
Recycle. Styrofoam. Action.
Global. Projects. Reduce.
Rags. Warming. Help.**

Sustainable Community Stewards News

From the WSU Snohomish County Extension

Coming Events & Volunteer Opportunities

Please contact Heather to get signed up for what events you want to help with now!
heather.teegarden@wsu.edu or 425-357-6027.

Saturday, March 10 — Repair Café Event

10:00 to 2:00 pm 3200 Cedar, Everett

Come help out at the Repair Café. The Cafés do exactly what their name implies – they help folks to repair their used items, taking a stand against the idea that all things are disposable. We'll have some paid "fixer" people and other volunteer craftspeople to make repairs. These are brand new, with some preliminary ideas formulated by the Class of 2017 project team focused on this. <http://extension.wsu.edu/snohomish/event/repair-cafe/2018-03-10/>



Thursday, March 15 — Sierra Club Snohomish Group Social

5:00 to 7:00 pm Port Gardner Bay Winery, 3006 Rucker Ave, Everett, WA 98201

Join the Sierra Club Snohomish Group to socialize and meet other sustainability-focused volunteers. No-host event with non-alcoholic beverages; beer and wine available.

VOLUNTEER OPPORTUNITY: Sierra Club Snohomish Group is looking to restart Green Drinks Snohomish to bring together other environmentally minded people and discuss conservation and political issues, and future actions. Contact Tom at Tom.Crisp@Washington.SierraClub.org to learn more.

Wednesday, March 28 — SCS Meeting

6:00 to 8:00 pm McCollum Park, Evergreen Room

Lively discussions and continuing education on everything environmental. ... Occasionally featuring a guest speaker.



Saturday, May 5 — Plant Sale - Snohomish County Master Gardener Foundation

7:00 am to 1:00 pm McCollum Park, Parking Lot

Lots of opportunities to volunteer from entertaining the people waiting in line, to helping carry plants. Each year, our plant sale features an extensive selection of perennials, shrubs, trees, berries, and grasses. In addition, our sale is famous for an amazing selection ... <http://www.snomgf.org/plant-sale.html>

Got an Event? List it here.

Contact Heather at heather.teegarden@wsu.edu