

# The HIGHLANDS Current



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## Haldane Coach Arrested

*Charged with defrauding worker's compensation*

By Chip Rowe

**T**yrone Searight, the Haldane High School girls' basketball coach for the past 11 seasons, was arrested on Tuesday (Oct. 29) on charges he defrauded the state of more than \$11,000 in worker's compensation.

Searight, 49, of Peekskill, was arraigned in Ramapo on two counts of felony work-

er's compensation fraud and one count of felony grand larceny. He is scheduled to return to court on Nov. 26.

Prosecutors allege that Searight, while employed as an MTA bus driver, reported a work-related knee injury in November 2016. He collected worker's comp until May 2017. However, investigators found

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**FULL HOUSE** — Cold Spring was mobbed on Saturday (Oct. 26), with a beer fest and Halloween parade and hundreds of Seastreak visitors. How far away did you park? For more photos, see Page 10. *Photo by Ross Corsair*

## Former School Board Member Running for Dutchess Clerk

*Fishkill resident hopes to unseat longtime incumbent*

By Arvind Dilawar

**W**hen Kenya Gadsden and her family moved to Fishkill in 2007, her eldest daughter enrolled at Beacon High School, where she would have five principals in the next four years. Concerned, Gadsden began attending school board meetings.

"I thought [five principals in four years]

wasn't consistent enough," she recalled, laughing.

In 2014, Gadsden was elected to a three-year term on Beacon school board, and in 2017 she was re-elected to a one-year term. She



Gadsden

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## Small Pieces, BIG PROBLEMS

*It is not surprising to learn that the Hudson River is filling with **plastics**. But scientists are discovering that the plastic we can't see — tiny particles, or **microplastics**, created when larger pieces break down or are inserted into cosmetics as exfoliants — are easily absorbed into fish and humans. What is the effect? Scientists aren't sure yet, but **no one thinks it's good.***



By Brian PJ Cronin

**Y**ou can find the pieces in the deepest trenches of the ocean, nearly 7 miles down. You can find them in the most desolate parts of the Arctic, in the rain over the mountains, in the fish, in the water. And, yes, you can find them in your poop, because you inhale and consume tens of thousands of pieces each year, which is probably a gross underestimate because scientists haven't yet inventoried all the animals and food that can absorb them.

Microplastics are defined by scientists as objects that are 5 millimeters or smaller. They are created when larger pieces of plastic, such as water bottles, are broken down by sunlight or the rocking of waves. Others are included as exfoliants in cosmetics such as facial scrubs and whitening toothpastes — they're often visible beads.

The fragments are so prevalent that

trying to quantify them can be problematic. Finding something that doesn't have traces of plastic for purposes of scientific comparisons is becoming increasingly difficult because they invade even single-cell organisms, erasing barriers between the natural and constructed environments at the molecular level.

Scientists have found them nearly everywhere, including, recently, in New York Harbor and the Hudson River. "Microplastics are in the guts of every animal we've studied," said Joaquim Goes, a marine biologist at Columbia's Lamont-Doherty Earth Observatory, after the annual Riverkeeper cleanup of the shoreline in May.

What scientists don't know, with certainty, is what microplastics mean for wildlife and human health. But nothing so far has been encouraging.

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## Small Pieces, BIG PROBLEMS

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“The climate-change issue is hard because you don’t really see carbon pollution,” says Judith Enck, who during her eight years as the region’s administrator for the Environmental Protection Agency oversaw General Electric’s attempt to remove polychlorinated biphenyl (PCBs) from the Hudson. “But plastic, you see everywhere. You see it on the street, in the water, up in the trees. People see the problem. And they see that it’s getting worse.

“We need systemic change,” says Enck. Without it, “in the next eight years, for every 3 pounds of fish in the ocean, there will be 1 pound of plastic. And scientists predict that if we don’t change things, by 2050, for every 1 pound of fish in the ocean, there’ll be 1 pound of plastic. We could turn our oceans into landfills.”

### Bits and pieces

Two years ago, Ian Krout spent the summer before his senior year at Marist College in Poughkeepsie hopping from creek to creek in the Hudson Valley carrying a fine mesh net, trawling for plastic. He was working with the state Department of Environmental Conservation, his position funded by a grant, to assess the penetration of microplastics. There wasn’t much to go on.

“No one had looked at the extent of the problem,” says Krout, who is now pursuing a doctorate in toxicology at the University of Rochester. “We didn’t know what to expect.”

Krout found microplastics in every single waterway and tributary he tested. As you might expect, waterways near urban areas had more than those near rural and agricultural areas. The Fallkill Creek in Poughkeepsie showed the highest levels, and Fishkill Creek showed the least, although Krout’s sampling locations were upriver of Beacon.

Even “protected” areas are not immune. While many microplastics come from single-use plastic items such as Styrofoam, straws and bags, others originate from an unexpected source: You.



Asher Pacht of the Beacon Institute says the shoreline of the river collects an endless stream of plastic garbage. Photo by Ross Corsair

“If you wear a fleece jacket and you’re walking outside and the wind picks up, little fibers are flying off your jacket and going into the environment, so light that they can float for miles,” explains Asher Pacht, director of environmental programs at Clarkson University’s Beacon Institute for Rivers and Estuaries.

The microfibers in synthetic clothing are also coming out in the wash and making their way into the watershed, Krout notes. “Any article of clothing that is made up of a polysynthetic fiber, regardless of the proportion, at some point will shed through the washing-and-drying process.”

For the past three years, the Estuary Lab at the Hudson River Park Trust has been measuring microplastics at two locations off Manhattan island. Scientists were using tap water as part of their procedures, not expecting or realizing that it, too, is polluted with microfibers. Once they did, the group stopped counting microfibers in samples, says Carrie Roble, director of environmental education and stewardship for the trust.

Last year, the Estuary Lab found an average of about 578,000 microplastics per square kilometer in the water near Hudson

River Park. That’s three times greater than the amount found in 2016 and five times greater than 2017.

The amount of rainfall seems to correlate with the measurements, Roble says, “so while we’re not sure how plastics move around our system, we know there are many, and that there are more when it rains. There’s probably a connection to our sewage system, or an impact from sources upriver or even downriver, since we’re in a tidal estuary. But those kind of hydrological dynamics are exactly some of the elements that we need to learn more about.”

Scientists have many other questions, notes Jeremy Cherson, the legislative advocacy manager at Riverkeeper, the environmental group based in Ossining, such as: “How much plastic is entering the system? Can we find out the major sources for microplastics entering the Hudson? Is there a way to do source tracking? Are wastewater treatment plants a major source, and is there technology that can capture microplastics at that source?”

At Cornell University, doctoral candidate Lisa Watkins is studying how microplastics move through rivers and streams,

but the topic is so new, and the data set so small, that her thesis now isn’t just about microplastics. “It’s about how, as scientists, we can ask our questions in a better way to get better data,” she says. Most of what we know so far is because of what Watkins refers to as “snapshots”: particular pieces of data culled at specific times. But what happens when you zoom out? How do dams in rivers and streams affect the amount of microplastics in the river? Does the time of day or year make a difference?

“Studying microplastics in a river instead of an ocean is more challenging, because rivers are flowing and flooding,” Watkins says. “They pick up things from the floodplain; they don’t have this nice ebb and flow of a tidal cycle.”

Down at Hudson River Park, Roble is wondering about what’s going on at the bottom of the river. The trawling that’s used to measure and identify microplastics only covers the surface, and not all plastics float. How much plastic is on the riverbed, and what effect is it having on the creatures that live there? What effect is it having on filter-feeders such as mussels, mollusks, and the millions of

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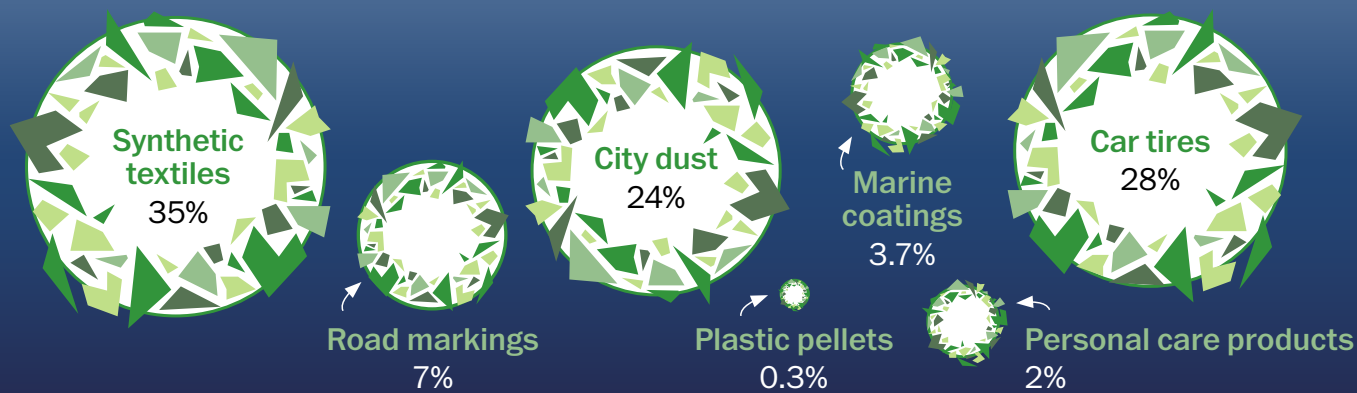


It took only a minute to collect this plastic on the beach at Little Stony Point, just outside Cold Spring. The sun and water breaks it down into microplastics. Photo by Michael Turton



Ye Li of the Lamont-Doherty Earth Observatory collects microplastic samples in New York Harbor. Photo by Leah Rae / Riverkeeper

## Where do the oceans' microplastics come from?



Source: International Union for Conservation of Nature

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oysters that have been painstakingly bred in New York Harbor over the past few years in an effort to restore their populations?

Also, this: What is all this plastic doing to us?

### The known unknowns

Enck is worried about vaping, not so much because of the nicotine, the detrimental health effects of which are well-known. She's concerned with the plastic in vaping devices.

"You're heating a chemical liquid formation to high temperatures, then sucking it through a plastic device, and it's irritating your lungs," says Enck, who left the EPA in 2017 and now teaches at Bennington College in Vermont. "Shouldn't they have figured that out before it was approved to go on the market?"

For Enck, vape pens are another in a long list of plastic items sold to consumers without enough study of the effects on human health.

"The challenge is that there are so many types of plastics and we're all exposed differently," she explains. "Polystyrene, or Styrofoam, is an easy one, because styrene is a probable human carcinogen. You should not be eating food off it or drinking hot tea out of the cups because we know it leaches out of those containers. BPA [bisphenol A, commonly found in plastic water bottles] is another one that has been well-studied. But there are thousands of plastics additives in food packaging."

At the Beacon Institute, Pacht points out it could take years to conduct definitive studies that show the impact of plastic on our bodies and health. But the initial evidence from plankton to fish to sharks and on up the food chain suggests plastics are endocrine-disruptors and "mess with hormones," he says. Microplastics also may cause damage just moving through our bodies.

In addition, scientists have discovered that, in the water, carcinogens such as PCBs, flame retardants and other toxic chemicals adhere to microplastics. "They act like a vector," says Cherson at Riverkeeper, because these toxic-laden bits are absorbed by diatoms, single-cell organisms that filter water in the ocean and the lower Hudson. In turn, the diatoms are eaten by fish, and the fish by humans. "That's another health risk that is not quantified," he says.

### What can be done?

There are strategies to keep microplastics out of the Hudson and elsewhere. At Hudson River Park, Roble suggests people curtail water usage during rainstorms,

noting that overflowing sewers send microplastics and other contaminants into the river. Synthetic clothing can be avoided. A company in Vermont markets a reusable ball — made of plastic — that can be tossed into a washing machine to collect microfibers so they can be thrown away. That's better than sending them to the depths of the Hudson, but they never disappear.

"In the process of creating plastics, you heat the molecules and they form a bond that is unbreakable by natural forces," explains Pacht. "Plastic can break into smaller pieces, but those pieces don't truly go away."

"The thing I tell my students that makes them cry is that we can't recycle our way out of this crisis," says Enck. She points out that only about 10 percent of the billions of tons of plastic produced so far has been recycled. And with the recycling industry in a tailspin following China's decision to no longer accept material from the U.S., the amount that's recycled is falling quickly while the amount produced continues to rise.

This past January at Bennington, Enck launched a program called Beyond Plastics, which hopes to connect the dots between the plastics crisis and climate change, showing that it involves more than finding out how to best dispose of a plastic bag but ending production of the bags altogether. And if companies won't stop making them, she says, it falls to local, county and state governments to push back.

### The burdens of a river city

"When you're walking through any of

our alleyways, you're going to see a lot of plastic, especially Styrofoam," says David Bissember, who serves on the city council in Troy, which, like the Highlands, is located on the Hudson. "These kinds of things cause significant environmental harm and burden our government."

Troy has 8 miles of shoreline and two major creeks that flow through the city and empty into the river. "A lot of this plastic ends up going into our water system, as well as our landfills," Bissember said.

In September, the Troy council unanimously passed a resolution introduced by Bissember called the Plastic-Free Hudson River Act. The bill was based on a framework created by Beyond Plastics, with the goal of restricting the use of plastic bags, plastic straws and Styrofoam. It goes into effect in March, at the same time as a state ban on single-use plastic bags.

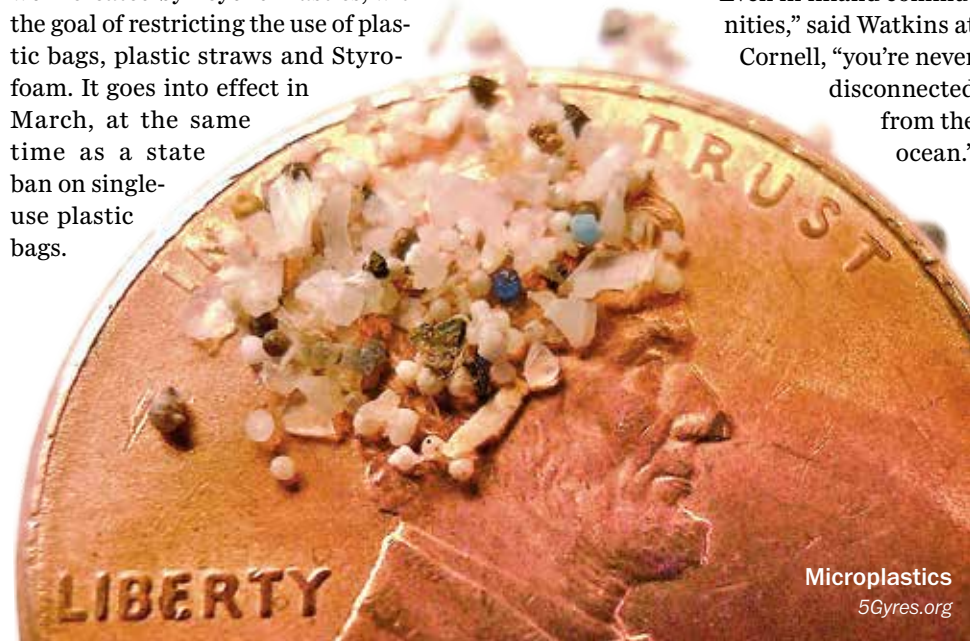
After being introduced, the Troy bill was tweaked after feedback from the community. Bissember said this has made the law more popular and effective. For instance, he said, small businesses can apply for a yearlong waiver to give them time to adapt. A 5-cent fee on paper bags, which municipalities will be allowed to impose under the state law, will be waived for customers paying with food stamps. And after discussions with disability rights organizations, the law will not include an outright ban on plastic straws. (Disabled individuals can have trouble sterilizing reusable straws, and non-plastic straws can increase the risk of injury or choking.) Signs will inform customers that plastic straws are available for those who need them.

"Working together [with the community] on this was great," says Bissember, "because we were able to avoid some of the missteps" encountered by other municipalities. He says he hopes other towns and cities can build upon what Troy has done; he's already heard from officials in Northampton, Massachusetts.

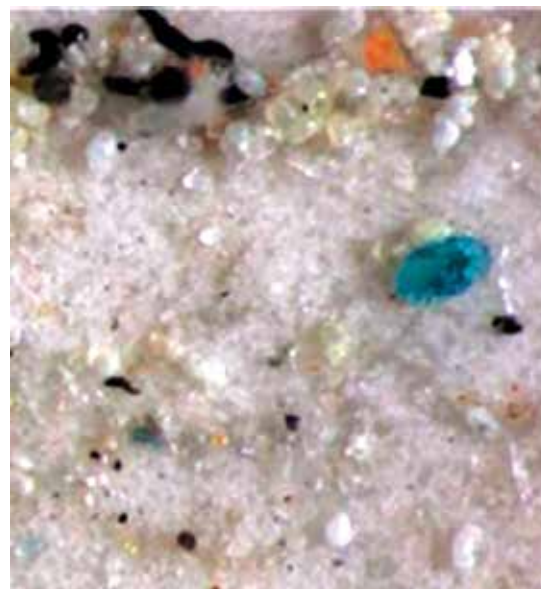
Thanks to the law, he says, Troy will be able to reduce its dumping fees and transportation costs "with a green solution that can serve as a model."

And the model isn't just for river cities. No matter where you live, your plastic at some point, even if it takes years, will end up in a creek or river. And from there, there's only one place it can go.

"Even in inland communities," said Watkins at Cornell, "you're never disconnected from the ocean."



Microplastics  
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## WOULD YOU LIKE SOME SALT?

- In a study published in 2015, researchers who analyzed 15 brands of table salt bought at supermarkets across China found microscopic particles of polyethylene terephthalate (common in water bottles), polyethylene, cellophane and other plastics (left). The highest levels were found in salt from the ocean, with 250 particles per pound. (*Environmental Science and Technology*)
- Another study of 17 salt brands from eight countries published in 2017 found that all but one contained microplastics, with 25.6 percent being fibers, 63.8 percent fragments and 10.6 percent films. (*Scientific Reports*)
- A 2019 review of 26 studies calculated that Americans consume between 39,000 to 52,000 plastic particles annually and inhale another 25,000 to 69,000. People who drink most of their water from plastic bottles ingest another 90,000 particles. (*Environmental Science and Technology*)