

Community-Based Study on PFAS in Fish

Testing fish in the Huron River
and Rouge River watersheds
of Southeast Michigan

About the Project

The Ecology Center, Friends of the Rouge, and Huron River Watershed Council partnered with six local anglers to better understand how PFAS affect fish in the Rouge and Huron watersheds. We tested over 60 fish for 40 different PFAS chemicals. We collected 12 different species from 15 locations along the rivers. The project was grounded in community-based science as anglers gave input throughout the project and participated in collecting and processing the fish for research.

Project Partners:



ECOLOGYCENTER
HEALTHY STUFF LAB

Researching toxic chemicals in the everyday world

Friends
of the ROUGE



Huron
River
Watershed
Council



The Great Lakes have always been crucial to the people & wildlife who know these waters as home.

For thousands of years people have interacted with and depended on these watersheds, and still today many of us intimately know and love our fresh water.

Unfortunately, a class of thousands of toxic chemicals - per and polyfluoroalkyl substances (PFAS) - are disrupting our important cultural connections, food sources, and fragile ecosystems within these watersheds.

PFAS are widely used to make products water- and stain-resistant. They are highly toxic and have been found in many Great Lakes fish and other species. They are linked to certain types of cancers, reproductive harm, and reduced vaccine effectiveness.

Subsistence anglers are particularly at risk for PFAS exposure as the chemicals don't break down in the environment and can accumulate in the fish people eat. And, for many anglers fish harvest and consumption are about more than just food. There are significant cultural practices for sport fishers and subsistence anglers, and fish harvest is an essential part of Great Lakes Native American cultures.

Today, fish consumption advisories exist in parts of the Huron and Rouge watersheds warning people not to eat the fish. While these standards remain critical, the more equitable and permanent solution is to eliminate PFAS contamination so advisories are no longer needed.

Meet the Anglers

Jerrad, Clinton Township



"One of my favorite parts about fishing is sharing what I've caught. I'll share with my friends & family. It brings that connection from me to them in a great way. But, with fish consumption advisories like PFAS, it makes me worried about what I have caught and shared with my family, who I know look forward to these fishing events."

Antonio, Detroit



"Both the Huron and Rouge Rivers are really important to my life and the work I do as an outdoorsman and ecologist. I'm interested in watershed stewardship and regulating corporations that pollute bodies of water and ultimately our human bodies. A big part of the work is increasing awareness around PFAS and the many ways we expose ourselves to PFAS."

For more information visit ecocenter.org/pfas-fish

Meet the Anglers

Erma, Detroit



"I'm an angler, and I have a relationship and kinship with other anglers. There's a real independence in being able to get your own food. When you have that joy and sense of accomplishment about being able to eat the fish there's a real beauty in that. This study will help contribute to people's health and well being."

Bill, Beverly Hills



"I love fishing and giving back to the community. With all the recent news about PFAS, I'm concerned about protecting our watersheds. We anglers have a role in helping understand the scope of the issue. We need to understand where it is, how much there is, and what it does to animals around us."

Purple, Detroit



"I am a fisherwoman. I'm concerned because we have to eat this food and consume it, and take it home to our families. I'm concerned because we don't know much about PFAS, and I want to know what kind of harm it would do to our bodies."

Phil, Dearborn



"My friend Bill got me into being a citizen scientist. I volunteer to fish for a greater goal - because we're looking to see about PFAS contamination."

Bill, Dearborn

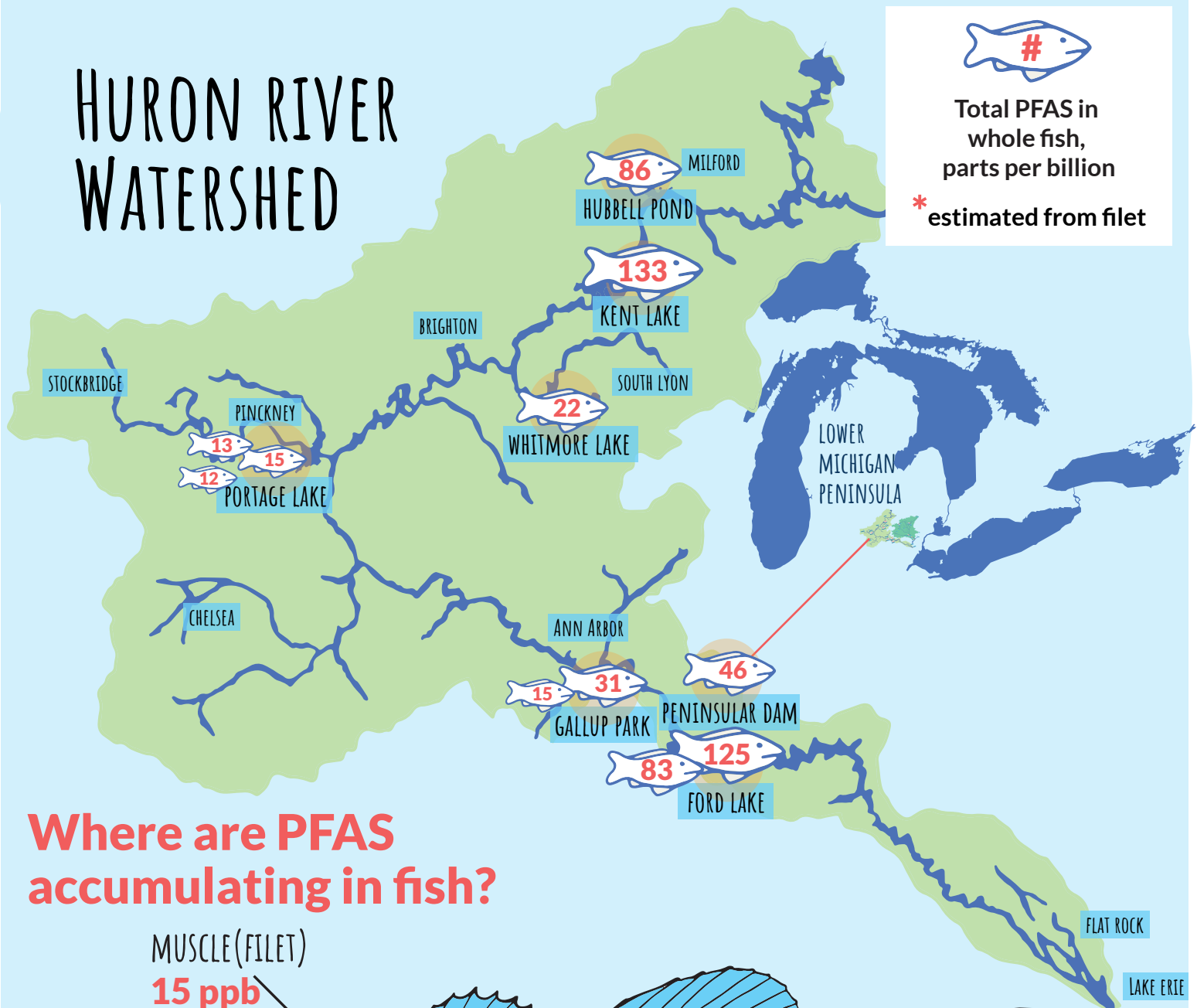


"We want to spread the word that these chemicals are everywhere, and we have to figure out where they are and how to prevent it"

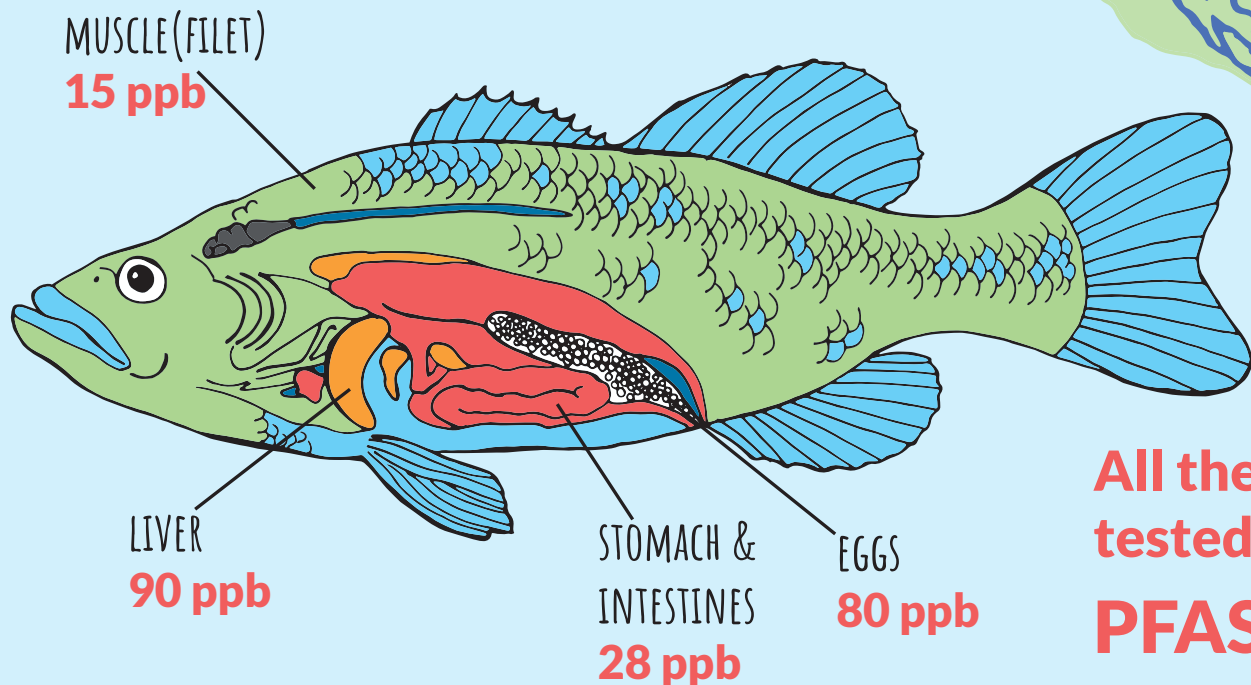
In 2019, EGLE stated that "the presence of even extremely low concentrations of some bioaccumulative pollutants in surface water can result in fish tissue concentrations that pose a human or wildlife health risk."

Watershed Maps of Fish Testing Results

HURON RIVER WATERSHED



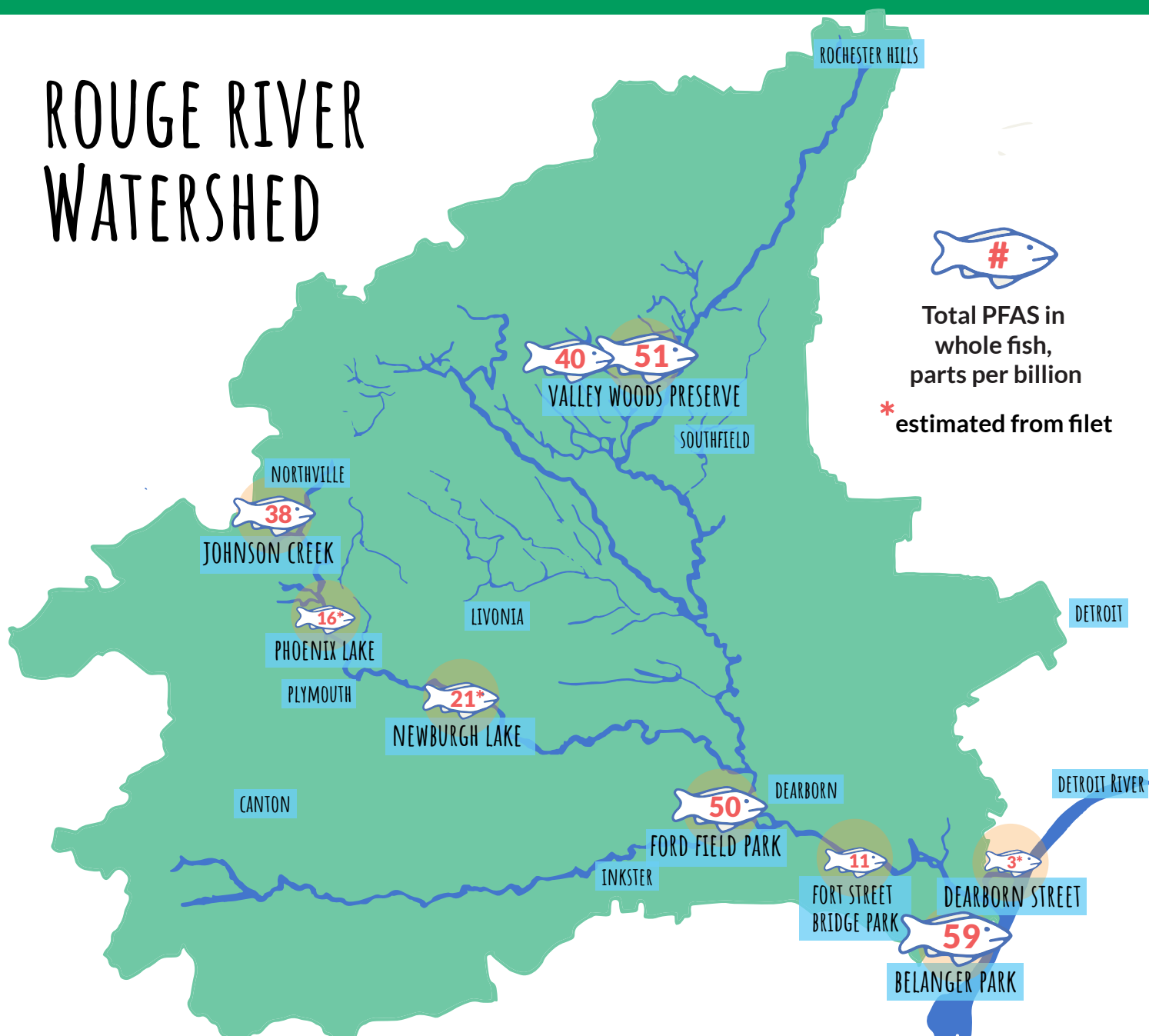
Where are PFAS accumulating in fish?



All the fish tested had PFAS !

Watershed Maps of Fish Testing Results

ROUGE RIVER WATERSHED



PFAS RESULTS BY FISH SPECIES

Read the report at ecocenter.org/pfas-fish

133 Bluegill Kent Lake	125 Sm Mouth Bass Ford Lake	86 Bluegill Hubbell Pond	83 Walleye Ford Lake	59 Perch Belanger Park	51 Creek Chub Valley Woods	50 Bluegill Ford Field
46 Black Crappie Peninsular Dam	40 Rock Bass Valley Woods	38 Creek Chub Johnson Creek	31 Bluegill Gallup Park	22 Perch Whitmore Lake	21* Bluegill Newburgh Lake	16* Bluegill Phoenix Lake
15 Largemouth Bass Portage Lake	15 Sunfish Gallup Park	13 Bluegill Portage Lake	12 Redear Sunfish Portage Lake	11 Channel Catfish Fort Street Bridge	3* Catfish Dearborn Street	# Total PFAS in whole fish, parts per billion *estimated from filet

What We Discovered By Testing the Fish

In order to understand the broader ecological impact of PFAS in the watersheds, our study analyzed whole fish for 40 PFAS chemicals. Previous studies on these watersheds have largely focused on fish filets because that is the part of the fish most commonly consumed by people.



Our results showed:

- PFAS are still in every fish we tested in both rivers
- 14 different PFAS chemicals were detected in the study. Each fish tested had at least one of the 14 chemicals in its body. Only one (PFOS) of the 14 PFAS are regulated in MI fish.
- PFOS was found in every fish tested. PFOS accounted for 58% (Huron) and 46% (Rouge) of the PFAS content of the fish. (PFOS is one of the few regulated PFAS chemicals but is still widely found because it doesn't break down.)

READ THE
FULL REPORT



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Range of PFAS found in whole fish:

- Rouge River: 11 to 59 parts per billion (9 fish)
- Huron River: 12 to 133 parts per billion (11 fish)

PFAS in fish filets:

- Estimated highest filet concentrations were 47 ppb for Huron, and 12 ppb for the Rouge
- These levels are above the levels at which the State of Michigan advises limiting consumption to two (Huron) and 12 (Rouge) meals per month.
- The state currently issues DO NOT EAT fish consumption advisories if PFOS (one type of PFAS) is found at greater than 300 parts per billion level in fish.



Jerrad, angler, and Jeff, Ecology Center Research Director, fileting fish for testing.



Vicki and Daniela, Research Interns, preparing test samples.



Aminata, Research Intern, preparing test samples.

For more information visit ecocenter.org/pfas-fish



There's No Safe Level of PFAS

Despite emerging science from the EPA that there are effectively no safe levels of PFAS in drinking water, Michigan's fish consumption advisories have not been lowered.

The safe levels to eat fish that contain PFAS (fish consumption advisory level) should be lowered to keep pace with EPA's new guidance on safe drinking water levels.

Though we consume fish and water differently, we believe that if PFAS in drinking water is not safe for humans then even very low levels of PFAS in fish are unsafe for humans and fish-eating wildlife as well.



Recommendations for Anglers

Restrictive fish consumption advisories can be disruptive to cultural and traditional relationships with water, fish and wildlife. What's more, eating fish is a good source of protein and omega 3s and can lead to reduced heart disease, lower blood pressure and other health benefits.

However, fish consumption advisories allow anglers to make informed decisions in order to balance the risks and benefits of consuming fish that contain PFAS and other toxins.

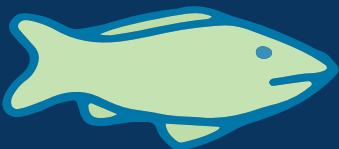
- Anglers planning to consume fish from the Rouge or Huron River should follow the Michigan Department of Health and Human Services' guidance listed in their Eat Safe Fish Guide
- If possible, explore alternative Michigan rivers and lakes where contaminant levels in fish are lower
- If local fish are too toxic to consume, explore alternative sources of protein and omega 3s (olive oils, eggs, leafy greens, nuts and seeds)
- For anglers continuing to consume fish that contain PFAS, try to limit exposure to PFAS commonly found in consumer products (nonstick cookware, waterproof gear, food packaging, etc.)



Recommendations for Michigan Lawmakers and Regulatory Agencies

- Establish science-based PFAS maximum contaminant levels for fish and wildlife
- Increase consumption advisory signage in heavy fishing areas along the Huron and Rouge Rivers
- Include other PFAS chemicals in addition to PFOS in the Eat Safe Fish Advisory
- Take a proactive stance and prevent future pollution in Michigan fisheries, water, and wildlife by regulating new chemical threats to ecosystems
- Prohibit the sale of all PFAS-containing products except when no safer alternative exists
- Hold polluters financially responsible for cleaning up PFAS pollution, including mitigation and PFAS destruction

TAKE ACTION



- Share this information with people who fish
- Become involved in the Great Lakes PFAS Action Network
- Join the Michigan PFAS Action Response Team's Citizen Advisory Workgroup
- Let your elected officials know you are concerned about PFAS
- Get involved in your local watershed council

EAT SAFE
FISH GUIDE



SCAN ME