



German professor to swim — and analyze — entire Tennessee River

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Photos of Dr. Andreas Fath are available for download via WeTransfer.com at:

<https://we.tl/MHjWvlujXq> This link will expire on July 20.

Record-Breaking Swim

After breaking the world record for speed swimming the Rhine River from the Swiss Alps to the North Sea in 2014, Dr. Andreas Fath, Professor of Medical and Life Sciences at [Furtwangen University](#) in Germany, is preparing for another endurance challenge on the Tennessee River.

Dubbed TenneSwim, Fath's second "swim for science" will see him swim the entire waterway from late July through August. Fath will conduct daily analyses along his route to determine how water quality in the Tennessee River compares to the Rhine. This project will be the most extensive interdisciplinary water quality survey ever conducted of North America's most biologically diverse river.

"Water pollution is not only a result of the industrial use of water but also a result of unconscious consumer behavior," Fath says. "TenneSwim and the outcome will make people aware of their influence. Small changes in their behavior will have a big, positive effect on water quality."

At 652 miles, the Tennessee River is 112 miles shorter than the Rhine, but its significantly slower current will pose an even greater challenge for Fath. If completed as planned, his swim will break another world record.

TenneSwim begins July 27 at Ijams Nature Center in Knoxville and is organized in partnership with the [University of the South](#), the [Tennessee Aquarium](#), [The Nature Conservancy](#), the [University of Georgia River Basin Center](#), [Ijams Nature Center](#), the [River Discovery Center of Paducah](#), [Tennessee State Parks](#), and the [Tennessee Valley Authority](#).

The Tennessee River and its many tributaries are home to more than 230 fishes, more than 100 freshwater mussels, and more than 70 crayfishes. Its watershed also contains more than 150 turtle and more than 50 salamander species, including the giant Hellbender Salamander.

Many communities rely on the Tennessee River for drinking water, including Knoxville, Chattanooga and Huntsville.

In 2014, Fath and his team of scientists analyzed the Rhine for more than 600 substances and found that concentrations of persistent pollutants increased as they moved downstream. “We found the great ‘blockbusters’ in the Rhine,” Fath says, “from artificial sweeteners to residues of dishwasher tabs.” This means many substances we consume or use in our everyday lives survive wastewater treatment and end up in waterways.

During TenneSwim, Fath and his team will sample for common water quality indicators such as temperature, nitrates and phosphates, as well as for pharmaceuticals, hormones, pesticides, bacteria, and heavy metals.

Fath already has one prediction of what he’ll find in the American river.

“The use of lawn fertilizers is much more common in the United States than in Germany,” Fath explains. “That is why I expect significantly higher concentrations of phosphate in the Tennessee River.”

During TenneSwim, Fath will use a technique he pioneered to detect microplastics suspended in the water. These plastic fragments, less than 5 mm in size, are either manufactured at this size or created when larger plastic items break down into smaller pieces. Their small size enables microplastic to enter the food chain at the lowest levels. Microplastic has been found in the digestive tracts of both freshwater and marine animals.

In 2014, Fath and his team found large quantities of microplastics in the Rhine. Fath estimates that, every year, the Rhine carries eight tons of plastic all the way to the North Sea – on its surface alone. “Literally, this is only the tip of the iceberg,” he says. “Actual microplastics pollution in the Rhine is most likely many times higher.”

This leaves many wondering what levels of contaminants and microplastics Fath will discover in the Tennessee River.

TenneSwim is presented with financial support from [The Lyndhurst Foundation](#), Riverview Foundation, [PerkinElmer](#), [Sweetwater Brewing Company](#) and a host of German sponsors.

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How you can help

Water covers most of the earth’s surface, but only about 2.5 percent of it is fresh water. Of that, less than 1 percent is easily accessible for human use. That makes every drop — and every individual action that could impact a waterway — critically important. Here are five ways you can safeguard the rivers, lakes and streams near you:

- **Don't Flush Your Meds** — Any pharmaceuticals you flush down the toilet or pour down the sink inevitably end up in a body of water. As part of its National Take-Back Initiative, the U.S. Drug Enforcement Administration has authorized thousands of collectors who can safely dispose of unused medication for you. Find a collector near you by using the search tool at www.deadiversion.usdoj.gov/drug_disposal/takeback/ or calling 1-800-882-9539.
- **Skip the straw** — Plastic is the most prevalent type of debris in aquatic environments, and single-use plastics, such as drinking straws, are a major source of this pollution. Over time, these items break down but don't fully biodegrade, creating fragments (microplastics) that can be consumed by animals, impacting their ability to feed as well as contaminating the seafood people enjoy. Instead of a plastic straw, use an alternative, reusable sipping device made from paper, metal, glass or even bamboo.
- **Fertilize with Care** — Using too much fertilizer can affect your plants' ability to absorb water and can contaminate nearby streams when the excess is carried away by stormwater run-off. To prevent this, follow the label instructions carefully to mix the fertilizer accurately and only use it during the appropriate time of year.
- **Don't Go Down the Drain** — Storm drains are like superhighways that transport chemicals, unfiltered and untreated, into local waterways. Do a web search to find local hazardous waste disposal sites near you rather than risk a fine or damage to a nearby stream.
- **Jump In!** — Stricter government regulations have made many waterways safe for human recreation, but that wasn't always the case. You can now fish, swim, paddle or otherwise enjoy many of the rivers, lakes and streams near you because of the clean water regulations of the past 45 years. By making use of these waterways, you'll show legislators that communities value the cleaner water these laws made possible.

A Personal Connection

Why the Tennessee River? In the summer of 2014, Martin Knoll, professor of geology and hydrology at the University of the South, became fascinated with Fath's Rhine swim. Knoll's mother is German, he studied for one year in Heidelberg and spent many summers living in Nussloch, a town across the Rhine River from Fath's hometown. Knoll's three sons are all passionate swimmers. Knoll emailed Fath, and a lively discussion followed. In October 2015, Fath participated in the 10-mile Swim the Suck race on the Tennessee River near Chattanooga. In July 2016, he presented the results of his first "swim for science" at a science conference in the United States. "After I swam the Rhine, I was curious how a river on a different continent would compare in terms of water quality," recalls Fath. "When I visited Martin Knoll, we began talking about this idea, and it ultimately became the 'TenneSwim' project. His support has been essential in making this possible." Knoll is the U.S. Project Director for the TenneSwim.

Public Events

- The TenneSwim begins at **Ijams Nature Center in Knoxville, Thursday, July 27** at 10 a.m. The public is invited, though parking is limited. *Reporters interested in attending*

this event should RSVP to Cindy Hassil at Ijams Nature Center to ensure adequate parking and transportation arrangements have been made.

- Andreas Fath arrives in **Chattanooga, Friday, August 4**. He will speak at the Tennessee Aquarium's River Journey auditorium on Thursday, July 3 at 7 p.m. This will be a ticketed event. For more details on tickets, visit www.tnaqua.org.
- The **TenneSwim culminates in Paducah, KY at the confluence of the Ohio and Tennessee Rivers which the River Discovery Center overlooks**. At press time, it was expected that Fath will arrive in Paducah around Aug. 26. Follow www.tenneswim.org for the latest details on the ending celebration event.

Crowdfunding

Anybody who would like to support the project financially can do so via the web-based Crowdfunding platform "GoFundMe": gf.me/u/6jz3e. Contributions will be used for water analysis costs, equipment rental and student internships. All other expenses will be paid for by project sponsors.

About the Swimmer

Andreas Fath has a doctoral degree in chemistry. He is a professor at Furtwangen University (Black Forest, Germany), where he teaches physical chemistry and analysis. His research focuses on the electrochemical degradation of pollutants (such as perfluorinated tensides and antibiotics) in wastewater, and on microplastics that act as water filters.

Join Us

Much more information is available on our Facebook page facebook.com/tenneswim. Starting July 27, people can follow Dr. Andreas Fath in real-time via GPS tracking at tenneswim.org