



**New World Record: German Professor Completes 652-mile  
“Swim for Science”  
Analysis of Water Samples Underway, Comprehensive Report Card To Come**

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**Record-Breaking Swim**

Dr. Andreas Fath, scientist and endurance athlete, completed an almost superhuman feat today by swimming the entire 652-mile Tennessee River in just 34 days. To reach the goal in world-record-breaking time, Fath maintained a swim pace of 20 miles per day on average as he swam from the river’s headwaters near Knoxville, Tennessee, to its mouth at the confluence with the Ohio River near Paducah, Kentucky. Along the way, he endured punishing summer sun, balmy water temperatures that reached 86 degrees Fahrenheit in places, and wind-whipped waves on many of the nine reservoirs he crossed.

Fath holds a doctoral degree in chemistry and is a Professor of Medical and Life Sciences at Furtwangen University in Germany. Even as he assailed this monumentally challenging physical challenge, the “swimming professor” collected daily water samples, which will undergo extensive analyses in the coming weeks. Eventually, Fath and his research team will use the results of these tests to produce a comprehensive “report card” about the overall health of the Tennessee River, North America’s most biodiverse watershed.

Having completed this titanic physical feat, Fath says he was motivated to reach the finish line by the response he and the project received from the public, sometimes from unexpected corners.

“I am very happy that I reached my goal,” says Fath. “The support and interest of people who live along the Tennessee River was overwhelming.”

Throughout his journey, residents along the river invited the TenneSwim team to their homes

for meals and refreshments or simply to rest. The team was also greeted frequently by boaters who located the crew online using a GPS tracker on the boat, which tracked their progress in real-time. These visits were welcomed because Fath's primary motivation was to increase public awareness of water quality in the Tennessee River basin.

"By publishing a scientific paper, I mainly reach scientists, but an unconventional endurance swim gains the attention of the general public as well," Fath emphasizes. "Everyone can contribute to keeping our rivers healthy and clean. A great start is to dispose of your unused pharmaceuticals correctly rather than simply flushing them down the toilet or sink."

### **How did the project originate?**

In the summer of 2014, Andreas Fath broke the world record for speed swimming the Rhine River from its source in the Swiss Alps to its confluence with the North Sea in just 28 days. Martin Knoll, professor of geology and hydrology at the University of the South in Sewanee, Tennessee, became fascinated with the project. Upon its conclusion, Knoll contacted his German colleague. The two professors started to discuss the possibility of comparing the Rhine to a river in the United States. Many universities and organizations in the U.S. supported this idea, which eventually became the TenneSwim project. Financial support came from both American and German sponsors.

### **An endurance test for the swimmer**

This marathon "swim for science" was extremely hard work. But Fath's spirits were buoyed by numerous guest swimmers along the way. "My wife and my three sons swam part of the river with me," Fath says. "At some places, members of open-water swim clubs accompanied me for some distance. This was very helpful, since I swam approximately eight hours every day, which can become somewhat monotonous."

A bright green kayak led the way through the river, its position serving as a constant marker for the racing line, or "The Magic Line," as the team called it. As he swam, a support crew paced Fath nearby in an 18-foot pontoon boat. In addition to serving as a mobile eating and resting place for Fath, researchers on the boat used it as a scientific platform from which they took daily water samples and conducted other water quality analyses.

At 652 miles, the Tennessee River is 112 miles shorter than the Rhine, but its significantly slower current posed an even greater challenge for Fath. He had to cross nine lakes while

swimming the Tennessee River, compared to just one – Lake Constance – during the Rhine project. While the southeastern lakes presented both beautiful scenery and a rogue’s gallery of physical challenges. In many of the lakes, there was almost no current, forcing Fath to swim every single mile without the river’s assistance. Other parts of The Tennessee River were significantly slower than the Rhine as well. Especially in the Swiss Alps, Fath could rely on the river’s faster current to almost “carry” him downstream.

Although the Tennessee River presented vastly different conditions, the swimming professor benefited from his Rhine experience. He knew how to pace himself. During the entire 652-mile swim, Fath only took a single day off. The Rhine project also prepared him for the Tennessee River in other ways, such as applying Vaseline to prevent chafing from his wetsuit’s zipper and wearing a swim cap to prevent sunburn.

Until now, only one other person has swum the entire Tennessee River. Mimi Hughes, a teacher from Taft, Tennessee, completed her "Tennessee Riverswim" over the course of 5 summers between 1999 and 2003. She met Fath halfway through the TenneSwim project.

### **Much work is still ahead**

The water samples, collected daily by Fath and his team, will be analyzed for several hundred substances at Furtwangen University and by other project partners. The researchers will use methods and equipment that proved effective in analyzing the samples collected during Fath’s Rhine swim.

While swimming the Tennessee River, Fath wore an artificial membrane on his leg. This device, which Fath likens to a fish skin, collected any organic pollutants he came into contact with. Past experience has taught him the Tennessee may be carrying more of these pollutants than the public realizes.

In 2014, Fath and his team found more than 130 substances from their Rhine River water samples, including beta blockers, painkillers, corrosion inhibitors, and microplastics. “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.

In the following weeks, the samples from TenneSwim will be similarly analyzed. The scientists

already are very curious to see the results of their work, particularly the microplastics. These small particles, less than 5 mm in size, are either manufactured at this size or created when larger plastic items break down into smaller pieces. As they are transported by the river to the ocean, they accumulate chemical pollutants and enter the food chain at the lowest levels. Microplastic particles have 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 surface waters of the Rhine carry eight tons of plastic all the way to the North Sea. “Literally, this is only the tip of the iceberg,” Fath says. “Actual microplastics pollution in the Rhine [below the surface] is most likely many times higher.”

**Fath offers the following tips for everyone to help improve the health of local rivers, lakes, and streams:**

“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/](http://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.

**For more information go to:**

[www.tenneswim.org](http://www.tenneswim.org)

[www.facebook.com/tenneswim](https://www.facebook.com/tenneswim)

**Visuals:**

We have hundreds of photographs and video clips available for use, which we will gladly make available upon request. Video clips are also available in our YouTube

playlist: [https://www.youtube.com/playlist?list=PLtbehxN2BAaZjedn4ChwMmD0TLBd\\_hA0I](https://www.youtube.com/playlist?list=PLtbehxN2BAaZjedn4ChwMmD0TLBd_hA0I)

**GoFundMe:**

The public can support the project financially via the web-based Crowdfunding platform "GoFundMe": [gofundme.com/swimming-the-tn-river-for-science](https://www.gofundme.com/swimming-the-tn-river-for-science). Contributions will be used for water analysis costs only.

TenneSwim 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](#).

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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