#### KILLING THE CHESAPEAKE

Susquehanna River water goes south from Lake Otsego — figuratively and literally Degradation of the Susquehanna begins only a few miles from its source: Dams, farm pollutants, septic tank leakage and other ecological assaults.

#### Jeff Platsky, Binghamton Press & Sun-Bulletin

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This USA Today Network special report explores solutions to deep threats that flow through New York, Pennsylvania and Maryland as the Susquehanna River feeds the Chesapeake Bay — with life and death.

On Otsego Lake's south end, a public lakefront park offers an expansive view of the nine-mile-long water mass formed by a glacier 20,000 years ago.

From the shore, the more than quarter of a million tourists who visit this central New York locality annually can take in much of this 4,000-acre surface.

For most visitors, the well-manicured lawn merely serves as a way station or an inviting lunch spot between the main tourist attractions in the bucolic Village of Cooperstown – The National Baseball Hall of Fame and The Farmers Museum. The harried museum visitor finds the lake visit a welcome respite, a chance to chill from the all-on national pastime experience a block away.



Otsego Lake, in Otsego County in New York state, is the source of the Susquehanna River. Friday, September 18, 2020.KATE COLLINS, BINGHAMTON PRESS & SUN-BULLETIN

Others, on literary tourism treks, attempt to envision the lake as it was more than 150 years ago, when James Fenimore Cooper set scenes for three Leatherstocking series novels against this grand expanse.

"Lake Otsego is a sheet of limpid water, extending ... about nine miles, and varying in width from about three-quarters of a mile to a mile and a half," Cooper writes in "The Chronicles of Cooperstown." "It has many bays and points, and as the first are graceful and sweeping, and the last low and wooded, they contribute largely to its beauty. The water is cool and deep, and the fish are consequently firm and sweet."



At the SUNY Oneonta Biological Field Station near Cooperstown, NY, lecturer Paul Lord, researcher Jim Vogler and undergraduate intern Deanna Caracciolo prepare for a SCUBA dive as part of ongoing research on zebra mussels in Otsego Lake....MICHAEL FORSTER ROTHBART

Even today, Otsego Lake — fed by more than 20 streams and other underground aquifers — is pristine by present-day standards. Eight miles of eastern lakefront is jealously guarded from development through ownership by the Clark Foundation, the philanthropic arm of the long-tenured Cooperstown family that traces its fortune back to Singer sewing machines. Septic systems serving the 400 or so homes and cottages that line other parts of the lake shore are strictly monitored and inspected every five years.

"People around here have been listening for 50 years and they have a very good idea of what's needed to protect the quality of the lake," said Willard Harman, Otsego Lake research chairman and distinguished professor at the State University of New York at Oneonta, who has been managing the campus field station on the west lake shore for about 50 years.



## An ecological assault

But conditions all go south, literally and figuratively, 1,000 feet east of Cooperstown's Lake Front Park. That's where the lake feeds the start of the Susquehanna River's circuitous 444-mile journey through New York, Pennsylvania and Maryland into the Chesapeake Bay.

It doesn't take long before these relatively unblemished waters come under assault from a host of ecological misdeeds. And the river's natural self-defense systems, which in the past have served to guard the stream against the ravages of storm drainage, are increasingly becoming ineffective as invasive species and other onslaughts render them incapable of natural cleanup.



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## Susquehanna River source is Otsego Lake in New York

Otsego Lake, a 4,046-acre lake located in Otsego County in New York state is the source of the Susquehanna River.

Degradation begins only a few miles downstream. Farm runoff carrying nitrogen and phosphorous, oxygen depleting substances, flow unchecked into the river. Poorly monitored septic tank leach fields along the stream bed slowly leak other contaminants into the swiftly running waters.

"The farther south you go the more extensive the pollution is," said Donna Vogler, biology professor at Oneonta State. "We don't know what's worse, the agriculture runoff or septic systems."

River researchers rattle off the nearly unending cascade of mistreatment the river is subjected to during its course from Otsego Lake to the Chesapeake Bay.



## 'It's Whack-A Mole'

Paul Lord, lecturer and researcher at the Otsego Lake Field Station, pulls an undersized pearly mussel from his sample box, displaying it on the table. These mussels are part of the Susquehanna self-cleaning system, but their populations are dwindling, unable to cope with the increasing salinity — caused by winter road salt — and invasive zebra mussels in the river and its tributaries.

American eels, another element in the river's defensive system, have been frustrated in their attempt to migrate upstream by a series of dams that make migration nearly impossible.

# It's death by a million paper cuts. It's Whack-A Mole. You take care of one problem and another develops.

Paul Lord, Otsego Lake Field Station lecturer and researcher

Wetlands, the river's natural filtering system, have been encroached by over-fertilized corn fields and development, adding to the list of issues plaguing the river.

"Protecting wetlands could mitigate the nitrogen problem," Vogler said.

When the lake heads south after its 144-mile New York stretch, it is further abused by industrial farm runoff, researchers said.

"It's death by a million paper cuts," Lord said. "It's Whack-A Mole. You take care of one problem and another develops," Lord said.

Jeff Platsky recently retired from the USA TODAY Network New York. Follow him on Twitter: <u>@JeffPlatsky</u>.