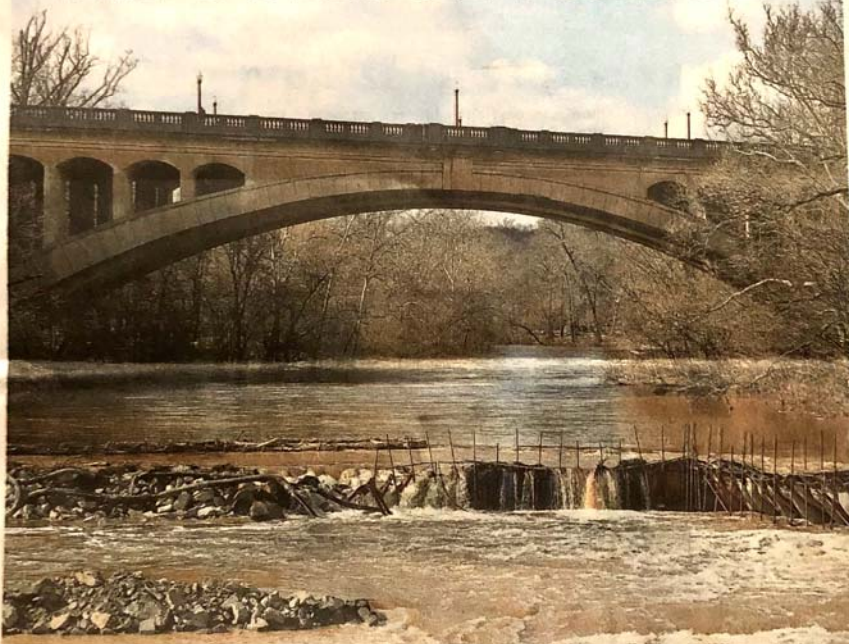


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BRANDYWINE DAM REMOVAL

Making strides in conservation



Demolishing historic Brandywine dams could make for healthier future

Maddy Lauria Delaware News Journal | USA TODAY NETWORK

Wilmington residents Hunter Lott and Jim Shanahan have a simple vision for the future of the Brandywine River.

In a few years, they imagine young public school students pressing their noses to the side of a classroom tank, watching fish grow from microscopic zygotes. Then the students might return their swimming friends to the Brandywine to help spawn the next generation of Delaware born and bred fish.

For that vision to become reality, a series of historical dams that date back hundreds of years must be removed, from Market Street in Wilmington into Pennsylvania.

Demolition continues on the dam and replacement of a water main across the Brandywine in Wilmington, just downstream from the Washington Street Bridge.

WILLIAM BRETZGER/
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Brandywine

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These sometimes-scenic relics hail from a time when mills were used to power flour, paper, cotton and gunpowder production.

"If we are successful — when we are successful — in this removal of the dams, it would have been 200 years since the fish have been able to swim freely up into the Brandywine and into their historical breeding grounds," Lott said.

The Brandywine Shad 2020 dam removal plan, spearheaded with research by the University of Delaware, is one of 25 conservation projects in Delaware, New Jersey, New York and Pennsylvania that have been awarded more than \$4 million in federal funding. All are within the Delaware River basin.

"Not only is it good for fish... it's good for conservation in general, it's good for the habitat, it's really good for the economy," said Wendi Weber, northeast regional director for the U.S. Fish & Wildlife Service at the grants announcement on Friday. "It's good for the health of the people in the watershed."

Wilmington residents and visitors may have noticed heavy equipment already working on the river banks near Market Street in recent months. Dam No. 1 there will be the first to go, for reasons more than just freeing the waterway's historic roots, city officials said.

In 1914, the concrete dam now surrounded by construction was built to encase the city's water mains. Today, they provide fresh drinking water to more than 100,000 customers every day, officials said.

"They literally brought clean water from one side of the river to the other side of the river," said Kelly Williams, Wilmington's public works commissioner.

Now, the time has come to upgrade and replace those mains, and the city is spending \$2.7 million to do so and remove the dam, Williams said.

New water mains are being laid below the bedrock under the creek. Once they're online, the old mains that make up the dam will be removed, she said.

Fish that migrate, such as the American shad and river herring, which live in saltwater but breed in upstream freshwater, will benefit from the dam's removal. Hardened structures are like roadblocks when the fish are trying to swim upstream, said Gerald Kauffman, director of the Water Resources Center at the University of Delaware.

"Now the river is getting healthier, so much so that the fish are returning," Kauffman said. "The obstacles that remain are these 19th and 18th century dams."

The shad that instinctively want to swim upstream to breed the next generation literally get bruises on their noses from bumping into the concrete, Weber said.

Just a few decades ago, those fish couldn't even reach the dams, though, because industrial pollution created dead zones in places like the mouth of the Delaware River. But things have



Crews are relocating a water main under Brandywine Creek as they remove a dam that has been blocking fish passage for 200 years. PHOTOS BY JENNIFER CORBETT/THE NEWS JOURNAL



Removal of the dam is part of the work that is underway on the Brandywine River in Wilmington to restore the waterway to its historic roots.

changed, Kauffman said.

He and his colleagues now will use \$241,000 in federal funding to lay the groundwork needed to remove the dams along 17.6 miles of the Brandywine River.

They will match that money with private funds to study the feasibility of removing most of the remaining intact Brandywine dams left in Delaware. One dam near Hagley Museum will likely remain intact for historical purposes while Dam No. 2 will continue operating as a source of drinking water. That means scientists will have to find another way to help fish get by those obstacles, he said.

Once the remaining dams are removed, area residents could see fewer flooding problems, have additional access to the river through new boat ramps and maybe even enjoy a white-water rafting experience, Kauffman said.

Four years ago, he also was part of the push to remove a colonial-era dam on White Clay Creek that dated back to 1777 when George Washington was march-

ing through, around the time he was planning the Battle of the Brandywine.

"Now we're finding the fish are swimming up and spawning, after two centuries," he said. "It's about fish and it's about history, but it's also about water, too. If the quality of the water is good enough for these sensitive fish, that's great news because that's the water we drink."

However, even after Dam No. 1 is removed, the fish will still be blocked by several others that dot the river from Delaware and into Pennsylvania. That includes Dam No. 2, near the headgates of the Brandywine Raceway, which creates the pooling necessary to provide drinking water to people living in the area.

North of the Delaware-Pennsylvania state line, experts have located at least three dams that will need to be studied for removal in a future project, Kauffman said.

Other complications are likely to stymie the romantic story of reconnecting these native creatures to their centuries-old breeding grounds. Some of the larger dams, like Brandywine Falls at Alapocas Run State Park, are beloved scenic features that some residents may want to keep just as they are.

"You're going to get that push back, there's no question," Lott said, noting that an argument was made against removing Dam No. 1. It had historical value by providing a pool of water that would freeze in the winter to create an all-natural ice-skating rink.

"There will be a certain amount of people used to looking at a pool of flat water," said Shanahan, who said he frequently swims in the Brandywine like it's his own backyard pool. "But it's only been like that for 100 years and the river's been there for thousands of years."

The plan to remove the Brandywine's

series of Delaware dams is an effort to remove human interference from the Industrial Age and restore the ecology of the river, Shanahan said.

"That abstract, pure aspect of bringing the river back actually has a larger appeal than I anticipated," he said. "Just to bring it back to its natural state really tugs at heartstrings."

The Brandywine Shad 2020 projects and 24 other projects will be partially funded by the Delaware River Basin Conservation Act. It's a relatively new grant and technical assistance program, introduced by Delaware Sens. Tom Carper and Chris Coons, as well as then-Congressman John Carney.

Beyond the Brandywine, that \$4.1 million in federal funding, matched by \$7.5 million in private funds, will go to projects such as forest management on 1,400 acres, 630 acres of restored wetlands, 550 acres of restored floodplain and more than 1,800 acres of public access that is key to recreation, said Holly Bamford, chief conservation officer for the National Fish and Wildlife Foundation.

Those projects include tidal marsh restoration at the John Heinz National Wildlife Refuge near Philadelphia, shorebird and horseshoe crab restoration in New Jersey and a plan to reduce microplastics in the watershed.

"This protects the river, it provides water quality, water quantity and also protects the community and their economy," Bamford said.

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Want to know more?

For more, including the full list of projects, go to www.delriverwatershed.org.



American shad caught at Brandywine River Dam No. 1 on March 7, 2019