

Colonial dam removed on White Clay Creek

Molly Murray, *The News Journal* 10:52 a.m. EST December 15, 2014

Researchers from the University of Delaware have worked for the last four years to remove a dam from the White Clay Creek that has been blocking the spawning route of local shad since the Revolutionary War. It's finally gone.



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(Photo: SUCHAT PEDERSON/THE NEWS JOURNAL)

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Jerry Kauffman tells the story of the spring day he visited the dam along White Clay Creek in Stanton a few years ago.

There were hickory shad everywhere on one side of the dam, he said. On the other, there were none.

"They were literally hitting their heads on the dam trying to swim up stream," he said.

Last week, after four years of study, fish sampling, hydrology work and permitting, a large section of the colonial era dam was removed –making this stretch of the creek free flowing.

"This now connects the freshwater White Clay Creek with the tidewater for the first time since the American Revolution," said Kauffman, director of the Water Resources Agency.

Because the dam is historic, only a portion of it was removed and that will be studied by historians at the University of Delaware. The large hewn timbers and hand-forged spikes that held the dam together will tell the story of how the dam was built to withstand floods, storms and the changing creek course for more than two centuries.

Catherine Morrissey, a research associate at the University's Center for historic architecture and design said there isn't any information in Delaware's historic records about how dams such as this one were built.

She said they knew the basics of the design from what they could see: there is a raceway, a spillway and there was a timber, crib structure with stone support walls.

But the fine details of the construction and design were unknown.



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Over two hundred years old spikes from the old dam sticks out of a piece of the wood. Byrnes Mill Dam also known as Dam #1 is located on the White Clay Creek Country Club golf course at Delaware Park and has been removed to restore fish passage up the creek. The dam was blocking the upstream movement of American and hickory shad, fish with a long history in the region. (Photo: SUCHAT PEDERSON/THE NEWS JOURNAL)

"Now is our first opportunity to understand how the dam was built and how it functioned," Morrissey said. Some of the timbers used in the construction were large. One was 32 feet long and 2 feet wide, she said. And the metal spikes used to tie the timbers together were hand forged, she said.

Through historic analysis, the research team should be able to find out what type of wood was used and possible even the forest where it came from, she said. The work will likely take several months.

This dam is of special interest because there are not many old mill dams left in the state. Most burned or washed out in floods, she said.

What Morrissey already knows is that historic property records show that Daniel Byrnes purchased four properties in Stanton but he only bought the land right along the creek. He wanted the water rights and the ability to build a mill dam.

Morrissey said there is no indication that he farmed in the area so it is likely that he operated his mill as a for profit venture.

The records also show that between 1773 and 1777, he built his first mill along the Brandywine and operated that with his brother.

Morrissey said they moved to the White Clay as the Brandywine became crowded with mills.

The mill at Stanton was in operation from 1789 to 1840, she said.

The project to remove the dam had its start in 2010 when Martha Corrozi Narvaez, a senior policy analyst at the Water Resource Agency applied on a grant to study the feasibility of dam removal on the White Clay. There are six dams on the Delaware stretch of the White Clay and more in Pennsylvania.

Kauffman said there were several reasons why the agency decided to tackle this dam first. They knew that opening this stretch of the creek would likely result in ideal spawning habitat for several species of fish. And they knew the property owner, Delaware Racing, would be willing to work with the agency.



Gerald Kauffman at the dam behind White Clay Creek Country Club. (Photo: Courtesy of Danielle Quigley)

The White Clay Creek Country Club golf course adjoins the creek and because of the meandering nature of the creek during storms and heavy water flow, they were seeing loss of property from erosion, Kauffman said.

"I have to say a lot about the owners," Kauffman said. "They were just fantastic" to work with.

The agency received grants from the National Oceanic and Atmospheric Administration, American Rivers, the National Fish and Wildlife Foundation and Fish America Foundation.

In all, \$210,000 was spent to plan and remove the dam, Kauffman said.

One species of fish Kauffman would like to see resume spawning in White Clay Creek is the American Shad. And it might also provide spawning habitat for striped bass and river herring.

With this dam gone, they can at least make it up stream to Landenberg, Pennsylvania., he said. There, another dam blocks the passage.

Between Stanton and Landenberg there is plenty of clear, fresh water and grainy sand bottom – habitats that most scientists think will be suitable for fish spawning.

Kauffman said no one is sure how far upstream they will go.

"We haven't had a chance to observe this in over 200 years," he said.

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