

BUCKS COUNTY **Courier Times**

What's behind the recent flooding?

By Pamela Batzel

July 17, 2006

Flooding along the Delaware River three times in less than two years has created a collective impression that something is wrong, that society is causing this environmental mayhem.

A hearing being held today by Rep. Mike Fitzpatrick, R-8, will begin searching for an answer. Is the problem overdevelopment? Global warming? Reservoir releases in New York?

A historical look at flooding along the Delaware might give us another answer: Mother Nature is unpredictable. And when she wants, she can throw some back-to-back blows.

"I think the best bet is that it's mostly a natural chance variable thing here. We just got unlucky," said Christopher Milly, a research hydrologist with the U.S. Geological Survey in Princeton. The geological survey has the most comprehensive historical data for Trenton.

Just over two weeks ago, the river crested at 25.09 feet in Trenton, or about 5 feet over the 20-foot flood stage. In April 2005, the river hit 25.33 feet. A flood in September 2004 crested at 23.41 feet. Bob Schopp, a surface water specialist with the geological survey's New Jersey Water Science Center, said there have been instances in the past when the river has overstepped its banks more than once in a relatively short period of time, evidence that floods can come in clusters.

Take the two floods that hit the region in March 1902 and October 1903. The river crested in Trenton at 3.6 feet above flood stage on March 2. In the fall of the following year, it crested at 28.5 feet, or 8.5 feet above flood stage.

The region also suffered floods in doubles between 1913 and 1914, 1940 and 1942, and 1984 and 1986, although those floods were less severe. The worst of the six floods only exceeded flood stage by 1.2 feet in Trenton.

But even without past flood clusters to point to, nature could still be responsible for throwing three separate big floods at the region one after the other, Milly said.

Jon Nese, a senior lecturer at Penn State University's Department of Meteorology, agreed that nature is inconstant.

"Mother Nature is capricious and sometimes things occur in bunches and we want to find ... something to blame," he said. But looking at the last three floods you won't find a strong link, Nese said.

Hurricane Ivan was behind the September 2004 flood, he said. The April 2005 is largely attributed to snow melt in New York in a particularly wet season. And the latest flood "was just a persistent flow of moisture from off the Atlantic Ocean."

"These things are not linked by some weather conspiracy," said Nese, who noted that none of the recent floods exceeded the flood of 1955, which topped the flood stage in Trenton by 8.6 feet. "I would steer away from the whole thing of blaming things on global warming."

Still, experts acknowledged that global warming could play a role as it changes weather patterns.

Richard Nalbandian, a research fellow at Temple University's Center for Sustainable Communities, said it appears the severity and frequency of the recent floods indicate that global warming is part of the mix.

But it is nearly impossible to know for sure or to quantify what impact it might have, he and others said.

While global warming indicates there will be increasing flood activity in the Northeastern United States, science cannot attribute particular floods to it, Milly said. Scientists need to look for larger patterns from a global perspective, he said. "Any single event or combination of events you can't really say it's global warming or not."

And there is no climate model that would predict the "whopping increase" in the size and frequency of floods just felt along the Delaware, he said. "The odds are just tilted a little more in favor of this happening by chance now" because of global warming.

As for development, Schopp and Milly both dismissed it as a significant factor. Development, which can increase storm water runoff because

there is less ground to absorb the water, is more likely to cause flooding along small streams than big rivers like the Delaware, Schopp said.

But Mary Shafer, the local author of “Devastation on the Delaware,” a book about the 1955 flood published in October, maintained that global warming and development are significant factors in the recent spate of high water that has overtaken riverside communities.

Development is having a “huge impact,” she said. The amount of surface covered by buildings, parking lots and other structures has “grown exponentially” since the 1950s, she said. Logically, it means more water is running into tributaries and then into the river, she said.

At the same time, some believe global warming is causing more intense hurricanes and changing weather patterns generally. The most recent flood was due to tropical moisture that came up on a jet stream “taking a strange pattern” for this time of year, Shafer said. It “has to do with the oceans being so warm,” which is a result of the Earth heating up.

Shafer acknowledged she is not a meteorologist but said that she’s well-studied and that, “privately, [experts] will admit a lot of the anecdotal evidence points to global warming.”

“It’s not a matter of whether it’s nature or whether it’s man. It’s both,” she said.

Studies are being planned to get a handle on the flooding.

Fitzpatrick will hold a hearing at 2 p.m. today at the New Hope–Eagle Fire Co. The hearing will include representatives from the U.S. Army Corps of Engineers, National Weather Service, geological survey and the Delaware River Basin Commission. The focus of the hearing will be on what factors led to the recent flooding and what can be done to prevent and decrease future damage from flooding.

Fitzpatrick also expects the Senate to pass a bill that the house approved in July 2005 that calls for a study of the Delaware River.

“It’s been probably 40 years since these studies have been reviewed comprehensively and a lot has changed in the watershed,” he said, including new development in Monroe County in the Poconos.

That study would help determine what is causing the flooding, he said. The floods could be the result of unusual rainfall, climate changes, new development or reservoir releases in upstate Pennsylvania and New York,

he said. "These questions need to be asked and the answers need to be provided."

At a meeting on July 3 with Yardley flood victims, Fitzpatrick said that a federally subsidized elevation plan would be a better use of tax dollars than continual investment in the federally subsidized flood insurance program. But, he added, federal dollars might not cover it all, saying state, local and even individual monies might be needed to make it happen.

The meeting also contained calls to fix the structural integrity of the Delaware Canal's walls.

Sherry Baker, a New Hope resident still recovering from the latest flood, said she thinks Mother Nature could be responsible. But, she said, the 2005 flood was the result of simultaneous releases from reservoirs in New York and New Jersey. Baker also said that municipalities have not managed growth well.

But in the end, what's most important is to find solutions, said Baker. "I much prefer the problem-solving options than the finger-pointing option."

Finding fixes to the problem is the goal of the Flood Task Force, formed by Yardley officials after the April 2005 flood.

In the last couple months — before the latest flood — the group met twice to brainstorm solutions, including dredging the river, building levees and constructing dry reservoirs that would be able to absorb some of the river in flood times, said Jean Schmidling, a Yardley councilwoman and chair of the task force.

"There's no one big solution," said Schmidling, who elevated her home 12 feet after last year's flood left five feet of water in her first floor. Her living space stayed dry in the last flood.

The group will meet for a third time at 7 p.m. Wednesday in Yardley Borough Hall, this time joined by several additional municipalities, including New Hope, Lower Makefield and Upper Makefield. Morrisville was already participating, she said.

"We felt the power of numbers will help us."

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