

50 years later, Agnes still impacts bay

By Ashley Barrientos

Fifty years ago, Tropical Storm Agnes engulfed Maryland and the rest of the Eastern Shore in a relentless fury of torrential rain and mass flooding, killing 21 people and causing \$62 million in damages.

The storm, downgraded from a hurricane to a tropical storm by the time it reached Maryland, flooded streets and left cars submerged in high waters. The debris has long been cleared, but experts say the storm imposed lasting damage on the Chesapeake Bay, the largest estuary in the United States and the third-largest in the world.

The June 1972 storm, which experts called a “100-year flood,” altered the bay’s ecosystem and decimated the oyster population — problems that the bay still suffers from today.

Considered one of the most productive and vital ecosystems on the planet, estuaries are bodies of water usually found where rivers meet the sea. They filter out sediments and pollutants from rivers and streams before flowing into the ocean.

Affected areas received roughly between 8 and 18 inches of rainfall in the span of just 10 days during the storm, according to Ted Evgeniadis, who serves as riverkeeper for the Lower Susquehanna River.

The region had already experienced a particularly wet winter and spring prior to the tropical storm, generating conditions that severely exacerbated the force of its environmental impact.

The massive amounts of rainfall brought on by Agnes led to an increase in sedimentary pollution, resulting in “an unseason-



Tropical storm Agnes left Ellicott City’s Main Street mud-covered and deserted after lying under 10 feet of water.

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ably high concentration of nitrates and nitrites two to three times greater than normal in the northern half of the bay,” Evgeniadis explained.

This was a massive blow to the bay’s ecosystem, causing abnormally extensive algae blooms to suffocate the water and make it difficult for aquatic species to thrive.

Salinity levels in the bay also sustained significant damage as a result of the storm, severely damaging marine life. Among the most impacted were oysters, a keystone species that is crucial to the Chesapeake Bay ecosystem; they filter out excess nutrients from the water and provide habitats for marine life.

Evgeniadis said oysters in the upper bay region suffered 100% mortality rates as a result of the prolonged low salinity levels from Agnes.

“Oysters had a very difficult time reproducing. And still, to this day, there are organizations out there trying to replenish oyster beds and replenish our

oyster population,” said Evgeniadis. “We still see very low salinities in the upper bay.”

Many experts fear that another Agnes-sized storm could further prolong and exacerbate these ecological impacts, devastating the bay for decades to come.

The Conowingo Dam plays an important role in preserving the bay’s ecological integrity, and it serves as one of four hydraulic dams on the Susquehanna River.

But reported instances of poor maintenance and inadequate upkeep of the dam and its surrounding environment have frustrated local environmental organizations.

The dam — which is responsible for capturing 2 million tons of sediment per year and protecting the bay from harmful pollutants — has reached a point of dynamic equilibrium, meaning that it has reached capacity and is currently unable to sufficiently trap sediment.

“Anytime we get a rain event, it’s going to cause Conowingo Dam to open up its floodgates, which then releases sediments and nutrients that are delivered downstream at an unnatural rate. That causes negative water

quality impacts to the Chesapeake Bay,” Evgeniadis said. “Grasses are gonna be decimated, oyster beds are gonna be covered up, spawning grounds are gonna go away, and places where fish go to reproduce are going to be gone.”

An estimated 31 million metric tons of sediment and other nutrients were trapped behind the dam after Agnes — these levels were deemed “abnormally large” even 50 years ago, according to Evgeniadis. He cautioned that there is a lot more sitting behind the dam today.

“Who knows what that amount would be if we get another Agnes tomorrow?” he said. “We’re looking at levels of sediments and nutrients coming down into the bay at a multiple that I can’t even give you, just because there’s so much more there today than there was 50 years ago.”

Global climate change has led to more frequent extreme weather events like hurricanes that match the magnitude of Hurricane Agnes, posing a direct threat to the Chesapeake Bay.

“When we get another large storm event like Agnes, the devastation to the Chesapeake Bay will be even greater than it was in 1972,” said Evgeniadis. “And it’s not if — it’s when we get another storm.”

Hurricanes will be able to hold more water vapor as the earth continues to warm, producing more intense rainfall rates during storms.

“The probability of us seeing another storm like Agnes is gonna only get higher as climate change progresses,” Evgeniadis said. “We will see another storm like this in our lifetime, I’m sure about it.”