

Bay cleanup falls short

PENINSULA RUNOFF IS A TARGET OF THE CHESAPEAKE'S STEWARDS



Randy Chambers, a biology professor at William and Mary, looks for a sample of life in a retention pond near Route 199. PHOTO BY DAVE BOWMAN/DAILY PRESS

As data show, efforts are far from meeting cleanup goals by 2010. Some people want to step up runoff controls, such as in Williamsburg tributaries.

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WILLIAMSBURG — Paper Mill Creek runs clear and cold amid budding trees before flowing under the Colonial Parkway in Williamsburg and trickling into College Creek.

It appears pristine.

Looks are deceiving — this spot downstream of some golf

courses earned the lowest score of 23 water-quality monitoring sites on the tributaries of College Creek, which drains Williamsburg and a sliver of James City County into the James River near historic Jamestown.

"Everything looks all right until you actually look at it," said Randy Chambers, a biology professor at the College of William and Mary.

The College Creek watershed illustrates the vast problem of controlling an overflow of the nutrients and sediment — that is, the fertilizers and dirt that run off of paved surfaces, lawns, construction sites and farm fields — that are choking the Chesapeake Bay.

State and federal officials across the bay's watershed have worked for two decades to cut runoff nutrient and sediment pollution, but they're less than halfway toward meeting reduction goals for 2010, according to

Please see **POLLUTION/B2**



Fertilizing local watersheds

JAMES RIVER

The Chesapeake Bay's third-largest tributary is its largest source of phosphorus, accounting for about 29 percent of the total. The blame falls mostly on the basin's easily eroded soils, which carry the nutrient to the water. The river also contributes 14 percent of the bay's total nitrogen.

YORK RIVER

It makes up 3 percent of the total nitrogen and 4 percent of the total phosphorous in the bay. Farming is the primary source of nutrients. While many control measures have been drafted, few have been acted

Online video

Randy Chambers, biology professor at the College of William and Mary, explains how water samples are taken and discusses water quality in Williamsburg. See www.dailypress.com/baypollution.



Sewage plant work is favored, but runoff control is next front

the most recent government report.

Runoff reduction looms as the next spending front in bay cleanup efforts because tougher regulations, additional public spending and expensive equipment upgrades continue to significantly reduce the amount of nutrients released into rivers from pipes at sewage treatment plants and factories.

The scope is staggering and affirms the "E-cubed" motto cited by bay advocates:

"Everybody doing everything everywhere," said Chuck Epes, of the Chesapeake Bay Foundation, an environmental group.

Consider College Creek's place within the Chesapeake Bay watershed.

The creek drains 14 square miles of mostly houses and businesses, parking lots and roads.

It flows into the James River, which drains more than 10,000 square miles of land, from Virginia's westernmost mountains, past the farms of the Shenandoah Valley and the factories of Richmond to the mouth of the Chesapeake Bay.

Ultimately, the bay empties more than 64,000 square miles across six states.

It's the world's third-largest estuary, an ecological marvel that has wowed Virginians with its beauty and abundance since Capt. John Smith and his fellow colonists landed here in the early 1600s.

Now consider the poor health of just the tributaries and ponds that feed College Creek, which drains a watershed with no sewage treatment plants or factories that adds large amounts of pollution.

Chambers and his students flunked nine of the 17 freshwater streams and ponds that feed College Creek. Four others received a near-failing grade. Only one pond rated a top grade.

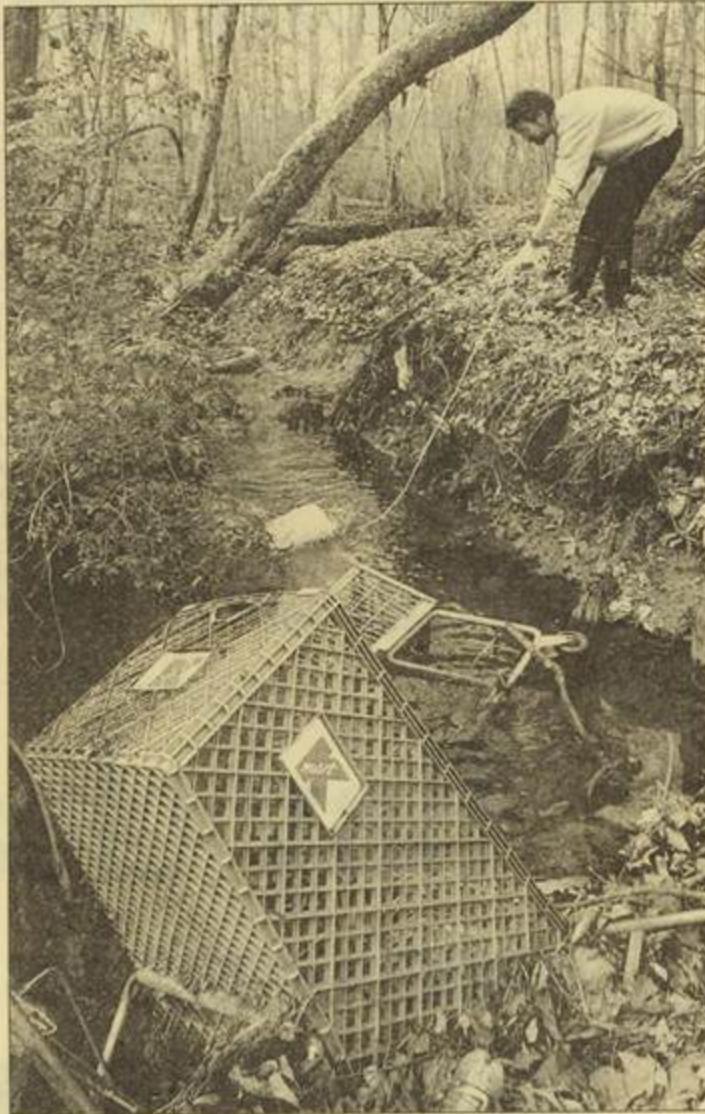
They've tested the waters quarterly since October 2004, measuring for amounts of sediment, nutrients, oxygen and fecal coliform bacteria.

Off New Hope Road, discarded shopping carts and scattered trash contribute less to the poor quality of the creek's headwaters than the decades-old concrete swale that speeds along stormwater runoff.

At Route 199 and Route 5, minnow-like fish infected with red blotches and lesions swim in a drainage pond.

"There's something they don't like in the water here," said Chambers, cupping a tiny fish in his hand.

The Chesapeake Bay Pro-



W&M professor Randy Chambers measures the levels of sediment and nutrients in a Williamsburg stream. PHOTOS BY DAVE BOWMAN/DAILY PRESS



Chambers found a minnow-like fish infected with red blotches and lesions in the retention pond near Route 199.

gram, a regional partnership that coordinates the bay cleanup effort, calls nutrient pollution the worst problem threatening the bay's health.

Excessive amounts of nutrients — primarily nitrogen and phosphorous — spur the growth of phytoplankton, tiny aquatic plants.

Phytoplankton then create algae blooms that block sunlight from reaching underwater grasses, which provide shelter

for lots of marine animals, and rob oxygen from the water, forcing fish to leave or die.

Particularly severe blooms afflicted the James and York rivers this past summer.

About \$2.5 billion of the \$4 billion spent since 1995 on bay cleanup has gone to improving water quality by better controlling nutrient and sediment pollution, according to the U.S. Government Accountability Office.

A state legislative committee estimated last year that Virginia needs to spend an additional \$2.3 billion to cover its share of improving the water quality of the Chesapeake Bay and other state rivers.

That amount includes \$500 million to upgrade sewage treatment plants and \$1.2 billion to better control runoff pollution — also known as nonpoint source pollution.

Runoff controls are a mix of regulatory and voluntary measures.

Such controls include the fences required around construction sites that limit erosion

How you can help

Tips for controlling runoff pollution around the house:

Apply yard fertilizer when heavy rain isn't expected and according to soil test results.

Follow label instructions when applying pesticides.

Collect litter and animal waste before they wash away.

Direct roof runoff toward grassy areas.

Recycle grass clippings by mulching or composting.

Watch for soil erosion and plant grass or other ground cover as needed.

Use materials with porous surfaces, such as interlocking pavers or gravel, instead of concrete and asphalt.

Never dump oil down a storm drain.

Source: Virginia Department of Conservation and Recreation

and the ponds built to catch and filter rain washing off of parking lots.

Gary Waugh, spokesman for the Virginia Department of Conservation and Recreation, said the most effective control in the countryside has been a cost-share program that encourages farmers to do things such as plant cover crops on fallow fields and erect fences to keep livestock out of streams.

The state pays some or most of a project's expense.

But politicians, regulators and advocates have favored spending money on sewage plant upgrades because they can readily quantify the amount of pollution coming out of pipes, identify who's responsible and measure how much pollution control they've bought.

For example, the state's proposed budget includes \$257 million to improve water quality, tagging only about \$38 million for runoff pollution.

The Chesapeake Bay Program said that improved sewage treatment plants baywide have achieved about 60 percent of the nitrogen reduction and 60 percent of the phosphorous reduction set by the 2010 goals.

"The biggest bang for the buck is to put most of the money into sewage treatment plant upgrades," said Epes, of the Chesapeake Bay Foundation. "But the focus is going to increasingly come on the non-point sources." ■