

Nonpoint source pollution and its effect on the bay

COLLEGE PARK, Md. — It comes from fields and forests. Construction sites, roads and parking lots are another source. Some of its unwitting participants are farmers, weekend auto mechanics and your neighbor down the street fertilizing his lawn. "It" is what scientists call "nonpoint source pollution," a very special kind of pollution because it is elusive, its sources cover large areas, and it is insidious.

In spite of the fact that it is virtually invisible, nonpoint source pollution accounts for millions of pounds of contaminants entering the Chesapeake Bay each year and changing the health of a fragile ecosystem.

The best available research concludes that a combined total of 160 million pounds of nitrogen and phosphorus enter the Bay in a typical year between March and October. At this time, warmer temperatures and low stream flow compound the effects of polluted runoff. A good deal of that pollution comes from nonpoint sources.

Most scientists agree, a key link exists between the Bay's problems — declining fish and oyster harvests, and the disappearance of



people see a pipe discharging waste into a river or stream and recognize that as pollution.

"Most of those same people, however, do not see a connection between runoff after a heavy rainfall from lawns, corn fields, forests or urban parking lots, and pollution in the Chesapeake Bay."

Because there is no easily identified point of entry for pollutants from fields, forests and urban areas into rivers or the Bay, most people are unaware of the impact, according to Magette.

However, research shows that of the combined total of 160 million pounds of nitrogen and phosphorus entering the Bay during a typical seven-month period, when the effects of pollution are most critical, 67 percent of the nitrogen and 39 percent of the phosphorus come from nonpoint sources. The same studies show runoff from cropland contributes the largest share of nonpoint source pollution to the Bay.

When these nutrients enter the Bay, they promote the growth of algae, which in turn use oxygen from the water and also make it cloudy. Algae creates undesirable living conditions for Bay grasses, oysters and fish.

"It shouldn't be surprising that we have to do something about nonpoint sources of pollution if we're going to make progress correcting the water quality problems in the Bay," says Magette.

Not only is it difficult to pinpoint the exact location where nonpoint source pollution enters the Bay, it is equally difficult to identify specific culprits.

"Generally, once rain hits the ground — whether it is an urban area or rural area — the process of non-point source pollution can begin," Magette explains.

In urban areas, surface runoff from rainfall can carry a number of contaminants such as oil and grease from parking lots, deicing chemicals from roadways, fertilizers and pesticides used by homeowners, even pet droppings.

"In agricultural and forested areas, many of the same contaminants wash into rivers and streams feeding the Bay. They include fertilizers, pesticides, animal wastes and soil particles," Magette says.

Even water moving through the soil, in addition to that moving above ground, can transport contaminants to rivers and

streams feeding billions of gallons of water daily to the Bay, according to Magette.

Is nonpoint source pollution, then, a problem caused by people or rainfall?

Says Magette: "Nonpoint source pollution is, of course, basically a people problem, caused by people."

"But finding a solution and controlling the problem is made difficult by how water moves from place to place on this planet."

To Magette, the analogy is not pleasant, but accurate; Precipitation, or rainfall, starts the process of nonpoint source pollution in the same way a flush of the toilet or use of a garbage disposal begins the process of sending contaminants to a central treatment plant, where they will be discharged into rivers and find their way to the Bay.

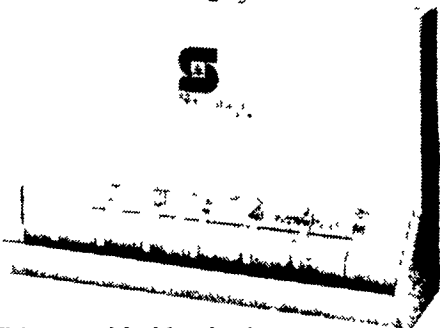
Because no one can say with absolute certainty when, where, how much or how long it will rain or snow, the efforts to control nonpoint source pollution should be directed at the sources of pollution, according to Magette.

"We have to turn our attention to those factors we can control," he says.

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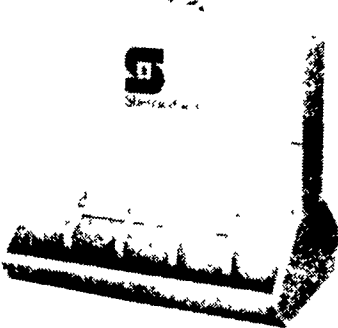
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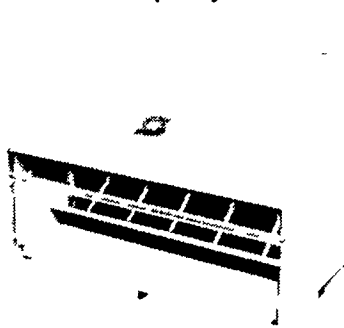
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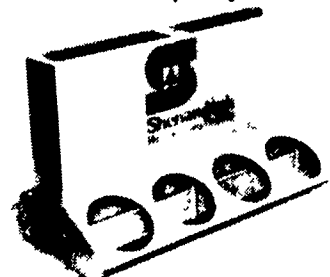
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