There *Are* Solutions To Sinkhole Problems

Last of a series

Editor's Note: In the first part of the series last week, *Lancaster Farming* interviewed those who experienced difficulties in dealing with sinkholes. Part two looks at some of the alternatives farmers have in dealing with sinkholes, and introduces a project that can help educate others about how to handle the problem.

ANDY ANDREWS
Lancaster Farming Staff

HARRISBURG (Dauphin Co.) — "By repairing a sinkhole, you're not only taking care of a physical hazard, but you're also cleaning out a dump," said Bruce Benton, a geologist with the Natural Resources Conservation Service (NRCS — formerly the Soil Conservation Service, or SCS).

What many farmers may not realize, according to Benton, is that sinkholes can be a direct conduit to a water supply. So whatever you throw in a sinkhole will show up in your water supply.

Soon to be released will be the results of a survey, conducted by the Lancaster County Conservation District with the help of the Environmental Protection Agency (EPA) and the Pennsylvania Department of Agriculture, on pesticide use in the Pequea-Mill Creek Watershed. One of the conclusions: farmers believe that once a sinkhole is simply covered up, there are no longer any problems.

In the survey, 76 percent of those who responded reported no sinkholes, and eight percent reported between 1-3 sinkholes. Sixteen percent stated they had "none presently" or that they occurred only "occasionally." According to the report, the perception was that once a sinkhole was filled with stones and/or covered over with soil, it no longer existed.

The report indicated the following: "This shows that 16 percent probably do not understand that these sinkholes (even when covered over) pose a potential threat of direct conveyance of pollutants to groundwater if the area receives nutrient or pesticide applications. This 'out of sight, out of mind' thinking should be addresssed in any educational program."

Farmers remain afraid to talk about sinkhole problems. They fear government intervention and costly repairs, or, in the least, investigation by an agency such as DER and possible subsequent fines. So while many remain hush-hush about the problems, sinkholes remain to pollute substantial sources of groundwater in the Chesapeake Bay area.

But for now, farmers can solve the problem and not worry about the government imposing fines or restrictions on their practices.

And repairing them costs money.

However, under a new Pequea-Mill Creek Project initiative, Section 319 Nonpoint Source Funding, drafted in August and approved in early November this year, farmers in the Pequea-Mill Creek Project area in Lancaster County can repair the sinkholes free of cost.

Under the plan, there is money to repair four or five sinkholes in the project area.

One of the objectives of the initiative was to identify four or five sinkholes in the watershed area (which stretches from the Susquehanna River into the eastern and southeastern sections of Lancaster County) that have been used as dump sites. For no charge, the project, together with the help of the state NRCS and the Lancaster County Conservation District, will assess, design, and implement a complete sinkhole cleanup and repair on a cooperating farm.

"Ideally, we'd like to have demonstration sites in place to show people and explain what was done," said Jerry Martin, assistant on the Pequea-Mill Creek Project. Together with NRCS project leader Frank Lucas, the team wants to spend some of the funding (a portion of nearly $190,000) to clean up and repair sinkholes.

They need volunteer farms in the watershed.

Once completed, the sites would be used "for educational purposes to talk to farmers about what is involved in cleaning them up," said Martin.

The project assistant said the team wants to clean up sinkholes that have been used as dumps, but would consider large sinkholes that open out in the field.

According to Lucas, the team wants "to bring people to the site and show them what we did" during field day demonstrations and so forth.

In the process, the team hopes to learn more about exactly what should be done in identifying the size of the sinkhole, the extent of the sinkhole, and potential effects it has on groundwater contamination. They also plan to document the processes involved in repairing the site. Also, the project wants to examine ways to manage the sinkhole after it is repaired.

"We're all learning in the process," said Martin. "As long as the sinkholes are there, there is a risk to that farmer from an environmental standpoint that could come back to haunt him or her at some point down the road."

"Farmers are serious about keeping surface water out of the sinkholes," said Lucas. Many sinkholes, according to the NRCS project leader, open up in terraces as a result of heavy water accumulation and flow. Many farmers have to accept the fact that, even after a sinkhole is repaired, there are certain management strategies that have to be implemented near the sinkhole to ensure the safety of groundwater quality.

According to Travis Martin, conservation technician with the Lancaster County Conservation District, the district can assess the situation and look at technical help to design a plan for the farm. He said the district's program is very similar to the NRCS program.

Because sinkhole repair is estimated on site and extent of damage, cost estimates will vary. As an example, to repair one such sinkhole in Lancaster County, according to NRCS records, it cost about $480 for materials.

For information on signing up with the Pequea-Mill Creek Project to have a sinkhole repaired, contact Gerald Martin, Pequea-Mill Creek Project, 311B Airport Dr., P.O. Box 211, Smoketown, PA 17576-0211, (717) 396-9423.

Said Martin, "If we can demonstrate that these things can be cleaned up and repaired, it will encourage more widespread cleanup."

"Ideally, we'd like to have demonstration sites in place to show people and explain what was done," said Gerald Martin, assistant on the Pequea-Mill Creek Project, right. Together with NRCS project leader Frank Lucas, the team wants to spend some of the funding (a portion of nearly $190,000) to clean up and repair sinkholes. First, they need volunteer farms in the watershed.

Beware Of Sinkhole Dangers

ANDY ANDREWS
Lancaster Farming Staff

PALMYRA (Lebanon Co.) — One night, a man in this Lebanon County community heard strange noises coming from somewhere downstairs in his house. Luckily for him, before entering the basement, he turned on the lights.

What he found was that a 42-foot deep sinkhole had opened up in his basement, caving in the basement floor, taking with it the oil tank for his heating system, his hot water heater, and other items.

Sinkholes can literally happen anywhere, warns a certified professional geologist. And everybody should remember that sinkholes are "very unpredictable, very difficult to understand, and can kill you," said Ed Pinero, director of environmental science services at Rettew Associates, Inc., in Lancaster.

Pinero spoke on Wednesday afternoon as a guest of the weekly meeting of the Mount Joy Rotary Club at The Gathering Place in Mount Joy. He spoke about methods used to identify and treat sinkholes and his experiences with treating sinkholes on commercial properties.

"Sinkholes are incredibly dangerous," he said. He said that a sinkhole opened up on a main street in Palmyra not too long ago. When a contractor went to measure how deep it was, the tape measure stretched down 85 feet, before the tape simply ran out.

"We have sinkhole-prone topography," said Pinero. Sinkholes will form in nearly any location on limestone bedrock. "There is no way you can stop it, avoid it, or work your way around it. That's just the way it is."

Sinkholes can vary by type and size.

The most prevalent type of sinkholes are the "soil-piping sink," formed when water, carrying soil particles, washes down to bedrock, eroding away at the topsoil. The soil thins and collapses, leaving a gaping whole, which can serve as a direct conduit for surface water contaminants into the groundwater.

Penn State's Department of Agriculture Engineering has prepared the Chesapeake Bay Fact Sheet #5, which alerts potential sinkhole "owners" about what to do to protect water quality. The following steps are important:

- Don't use sinkholes as dumping sites. Sinkholes may seem like ideal locations to dump trash, but they're not. The water from precipitation and drainage that flows through trash-filled sinkholes carries contaminants directly into groundwater.
- Never dump rinse water from sprayer tanks or any other hazardious liquids into sinkholes. These liquids will reach groundwater easily. Never dump any hazardous materials, including pesticide containers, into a sinkhole.
- Avoid using sinkholes as outlets for drainage tiles. This water may contain contaminants, such as pesticides and nitrate, that have leached from the soil.

Steps that should be taken are the following:

- If the sinkhole contains trash, clean it out. This will stop any further groundwater contamination.
- Keep sinkholes and the area immediately around them vegetated with trees, shrubs, and grasses. This buffer of vegetation will help stabilize the area, filter contaminated runoff, and provide wildlife habitat.

Remember, sinkholes need to be treated with care. A video showing sinkhole repair from Clinton County is available from many conservation district offices. Call them and request to borrow a copy. Contact your local extension office or conservation district for more information about how to handle sinkholes.

Farmers in the Pequea-Mill Creek Project area who want to sign up under a special educational program and have sinkholes repaired free of charge should contact Gerald Martin, Pequea-Mill Creek Project, 311B Airport Dr., P.O. Box 211, Smoketown, PA 17576-0211, (717) 396-9423.

Ed Pinero, director of environmental science services for Rettew Associates, Lancaster, center, spoke about the dangers of sinkholes at a meeting this week of the Mount Joy Rotary Club. From left, Todd Smeigh, president of the Rotary, who presented a gift to Pinero, and at right, Ed Kaseab, president-elect.