

# Soil and animals contribute to non point pollution

COLLEGE PARK, Md. — Nonpoint pollution has a two-way impact on our nation's rivers, streams, lakes and harbors according to specialists at the University of Maryland.

First, there is a non-organic filling-in effect caused by sedimentation, or settling of soil particles as a result of stormwater run-off from agricultural land, forests, streets, parking lots, lawns, strip mine areas and construction sites.

Secondly, there is an organic effect involving growth processes referred to by scientists as eutrophication and putrefaction. This phenomenon results from water being polluted with nutrients, organic matter, microorganisms and other materials. Sources for such pollution would include septic tanks, animal pens, and areas where fertilizer or chemicals have been applied on land vulnerable to rapid run-off.

While not organic themselves, fertilizer and chemical particles provide nutrients which can fuel the processes of eutrophication and putrefaction.

Farmers are not the only contributors to nonpoint pollution problems, by any means, declares Dr. Fred P. Miller, professor of agronomy and Extension soil and water resources specialist at the University of Maryland in College Park.

In fact, studies in New Jersey, Virginia, and other states indicate that forested and undeveloped land contribute little pollution per unit area; that row-crop agriculture and single-family housing contribute moderate amounts, and that shopping centers, multiple-

family housing, urban centers, and industrial activities are generally high contributors to stream pollution—using the per-unit measuring method.

However, Miller explained, keep in mind the large areas devoted to agriculture in this country and the fact that some of this farmland is vulnerable to rapid surface run-off. Materials carried from these vulnerable areas—especially when in proximity to streams—can contribute significantly to the total amount of pollutants in a body of water.

Miller notes that nonpoint pollution is really a function of dosage. In many watersheds, no one source can be identified as the major contributor. Rather, it is the sum total of all contributors that most often causes a problem.

Agricultural activities tend to contribute significantly toward the supply of nutrients in polluted waters, while stormwater run-off from shopping centers is often high in poisonous lead contamination.

All of this does not mean that farmers—or any other group—can point to others while doing nothing themselves to help solve nonpoint pollution problems. The time for action is here, and, hopefully, it can be done largely on a voluntary basis.

Maryland has a showcase example of how this can be accomplished. That is the dramatic transformation resulting from a one-day facelifting operation last Summer (Aug. 19, 1978) on the 245-acre Warren D. Roelkey farm near Knoxville, in central Maryland's Frederick county. It was

dubbed "Operation Clear-water."

That event was sponsored by the Catoctin Soil Conservation District, with assistance from the Farm Bureau, Grange, Future Farmers of America, and many civic, commercial, governmental and educational groups—including the University of Maryland's Cooperative Extension Service. Much of the latter effort was coordinated by Extension agents in Frederick county.

An extensive terrace-building program helped switch the Roelkey-crop-farming operation from "up-and-down" to "around the hills," thus reducing annual sedimentation loss into the streams and the nearby Potomac river from an estimated 350 tons to only 40 tons or less. (A neighbor's farm pond has been completely filled in by this sediment run-off in earlier years.)

And the big cutback of stormwater run-off has eliminated—for all practical purposes—previous washing of fertilizer and herbicide salts into those same waterways.

Also helping to meet clean water standards was virtual elimination of contamination from animal waste run-off on the Roelkey farm. This was accomplished by bulldozing a 1.1-acre farm pond, building a new hoghouse with farrowing stalls and a fence to keep pigs from wallowing in a stream leading to the Potomac river, and construction of two gravity-flow pasture-watering troughs to help keep other livestock out of the stream.

G. Paul Edwards, district conservationist for the U.S.

Department of Agriculture's Soil Conservation Service in Frederick County, predicted a 25 per cent increase in corn production and a 50 per cent increase in pasture grazing capacity as a result of the Roelkey farm renovation.

He reported that a recent inspection (early March) revealed water from the Roelkey farm stream was running clearer than water from streams on neighboring farms, despite the pollution potential created by spring rains and extensive melting from this past Winter's heavy snowfall.

Financial underwriting for such a project could be handled on a cost-sharing arrangement through county offices of the USDA's, Agricultural Stabilization and Conservation Service (ASCS).

Technical and general advisory assistance is available from professional people like Edwards and his counterparts in the Soil Conservation Service and its associated soil conservation districts throughout the nation.

Other professionals here in Maryland who can help are appropriate representatives of the University of Maryland's Cooperative Extension Service and the Forest Service of the state Department of Natural Resources.

Finally, some specific guidelines on nonpoint pollution from dairy and livestock farms are contained in a mimeographed leaflet revised earlier this year by Herbert L. Brodie, agricultural engineer on the upper Eastern Shore for the Maryland Cooperative Extension Service.

The leaflet is titled "Water

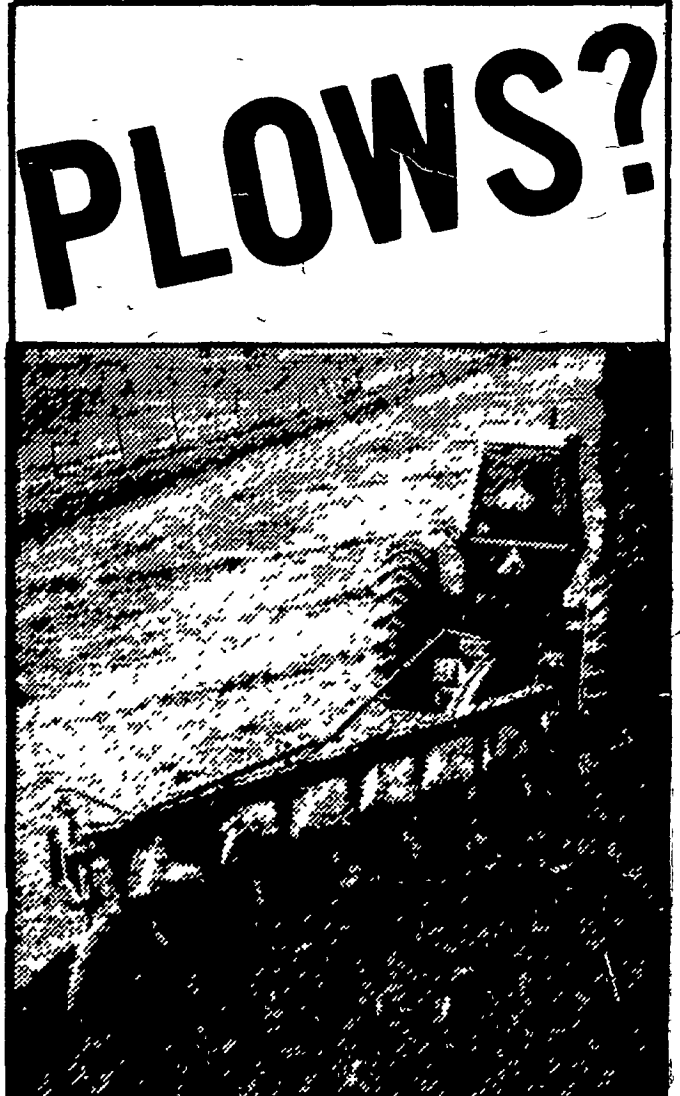
Pollution—How Do You Measure Up?" It is identified as "Facts No. 102." Single copies are available free by writing to: Agricultural Engineer, Cooperative Extension Service, County Building, Centerville, Md. 21617, or by telephoning Brodie at (301) 758-1064.

In the leaflet, Brodie points out that farm animal production systems can cause water pollution as the result of direct discharge, diffuse run-off, seepage, or

percolation of pollutants to surface or groundwater.

One of the large sources of pollutants on most livestock farms is obviously manure, he comments. Thus, management and handling of both manure and animals is an important part of water quality improvement.

Brodie's leaflet is intended to help livestock farmers determine how they measure up to recommended standards and what might be done to correct possible deficiencies.



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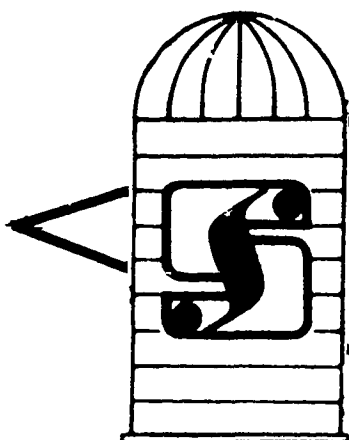
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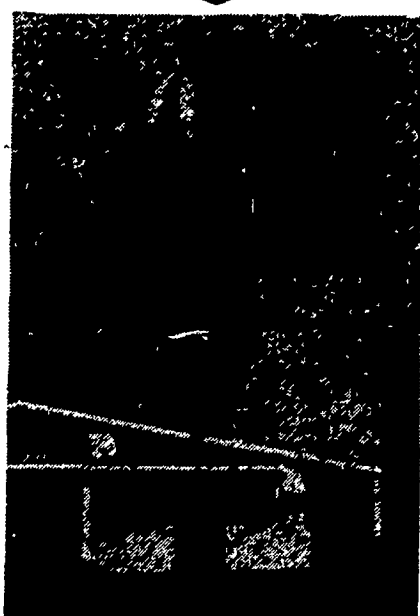
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