

MAUMEE RIVER REMEDIAL ACTION PLAN

*From Satellites to Earthworms:
Improving Farm Management*

*Final Report for the Lake Erie Protection Fund
Small Grants Program - SG 41/96*



REMEDIAL ACTION PLAN

Toledo Metropolitan Area
Council Of Governments
300 Central Union Plaza
PO Box 9508
Toledo OH 43697-9508
(419) 241-9155

December, 1996



This document was prepared by the Toledo Metropolitan Area Council of Governments with funding from the Lake Erie Protection Fund, member local governments, and by grants from the U.S. Environmental Protection Agency, through the Ohio Environmental Agency.



From Satellites to Earthworms: Improving Farm Management

Final Report

December 31, 1996

A workshop to address changes in the agriculture industry using the latest technological breakthroughs and to demonstrate successful conservation practices took place at the Bowling Green FFA test plots on Tuesday, August 27 from 4:30 p.m. - 8:30 p.m. More than 100 people attended, representing a varied audience, including dozens of farmers from Wood, Ottawa and Henry counties.

This was a very successful event. Coordinated by the Maumee River Remedial Action Plan Implementation Committee (MRIC) and the Wood County Con-Till Club, this public meeting addressed:

- No-till management practices for corn
- Improved nutrient management systems
- Global Positioning Systems technology
- Successful long-term no-till corn, soybean and wheat rotations
- Multiple benefits of long-term no-till management to improve earthworm populations and soil structure

One highlight of the night was an earthworm hole demonstration. Nontoxic smoke was blown into field tile and escaped through the earthworm holes. This demonstration was an example of how earthworms improve aeration, drainage and soil structure. It also illustrated the benefits of no-till farming, as plowing is not conducive for healthy earthworm populations.

Experts from around the Midwest gave presentations throughout the evening. Speakers included: Greg Willoughby, Purdue University; Frank Gibbs, Natural Resources Conservation Service; Dan Kaminsky, Helena Chemical Company; Fred Vetter, Wood County farmer; Jim Carter, Wood Soil and Water Conservation District; Dan Frobose, Wood County Extension Agent; and Peter Thomison, Ph.D., OSU Agronomy Dept. A meal was part of this program paid for through the Lake Erie Protection Fund grant.

In addition to the contributions received from the Lake Erie Protection Fund, other contributors through direct donations or in-kind services include:

Conservation Action Project
Wood County Con-Till Club
Wood Soil and Water Conservation District
Natural Resources Conservation Service
Ohio Department of Natural Resources
Bowling Green FFA
OSU Extension
LG Seeds
MidWood, Inc.
Luckey Farmers
CIBA Crop Protection
Ohio EPA
TMACOG

From conversations with attendees, this program was of great benefit for landowners. The evening further promoted the agenda of the Maumee Remedial Action Plan's Agriculture Runoff Action Group which is to promote best management practices on farm fields.

**FROM SATELLITES TO EARTHWORMS:
IMPROVING FARM MANAGEMENT
SG41-96**

PROJECT EXPENDITURE REPORT

Staff Salary	\$984.15
Fringe Benefits	326.27
Conference Expense	2,005.45
Printing Costs	1,933.15
Postage	349.17
Supplies	329.76
Overhead/Indirects	1,094.65
Other Expenses	<u>13.75</u>
Total Expenses	\$7,036.35



August 16, 1996

300 Central Union Plaza

Toledo, OH 43602

Contact: Bob George, Wood Soil and Water Conservation District - 352-5172
Jim Rickenberg, Natural Resources Conservation Service - 352-5172
Jenny Carter, TMACOG - 241-9155 ext. 125

P.O. Box 9508

Toledo, OH

43697-9508

419/241-9155

Fax 419/241-9116

FOR IMMEDIATE RELEASE

From Satellites to Earthworms: Improving Farm Management

BOWLING GREEN, OHIO - New strides are continually being made in the agriculture industry using the latest technological breakthroughs. A workshop to address these changes and to demonstrate successful conservation practices is planned to take place at the Bowling Green FFA test plots on Tuesday, August 27 from 4:30 p.m. - 8:30 p.m.

Chair:

Mark L. Pietrykowski

Commissioner

Lucas County

Coordinated by the Maumee River Remedial Action Plan Implementation Committee (MRIC) and the Wood County Con-Till Club, this public meeting addresses:

- No-till management practices for corn
- Improved nutrient management systems
- Global Positioning Systems technology
- Successful long-term no-till corn, soybean and wheat rotations
- Multiple benefits of long-term no-till management to improve earthworm populations and soil structure

Vice-Chair:

Stephen J. Pauken

Mayor

City of Maumee

One highlight of the night will be an earthworm hole demonstration. Non-toxic smoke will be blown into field tile and will escape through the earthworm holes. This demonstration shows how earthworms improve aeration, drainage and soil structure. It also gives a great visual showing the benefits of no-till farming, as plowing is not conducive for healthy earthworm populations.

2nd Vice-Chair:

James F. Carter

Commissioner

Wood County

Experts from around the Midwest, including Purdue University, are scheduled to speak throughout the evening. A free meal from Harlan's BBQ will also be provided to the first 125 people. This program is sponsored by a grant from the Lake Erie Protection Fund through the Ohio Lake Erie Commission.

MRIC's Agriculture Runoff Action Group is working with several organizations on this program to further promote best management practices on farm fields. This group was formed to reduce agriculture runoff into the Maumee River and Bay ecosystem. Not only are they trying to keep valuable topsoil on fields, but they are also trying to keep it out of the waterways. Sediment impairs habitat and clogs the shipping channel and the attached nutrients fertilize aquatic vegetation which eventually reduces dissolved oxygen.

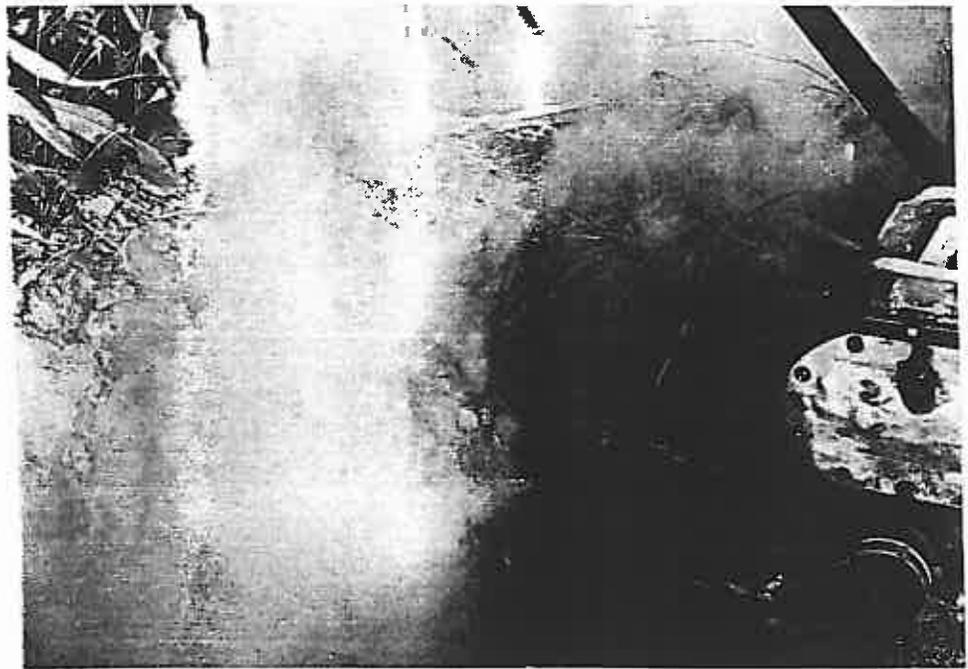
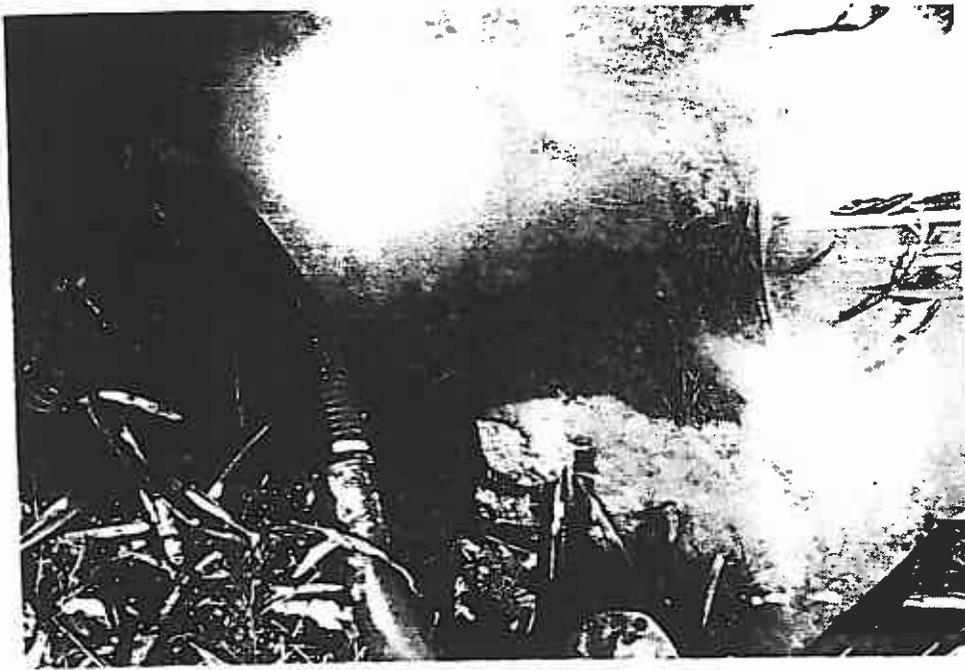
Executive Director:

William L. Knight

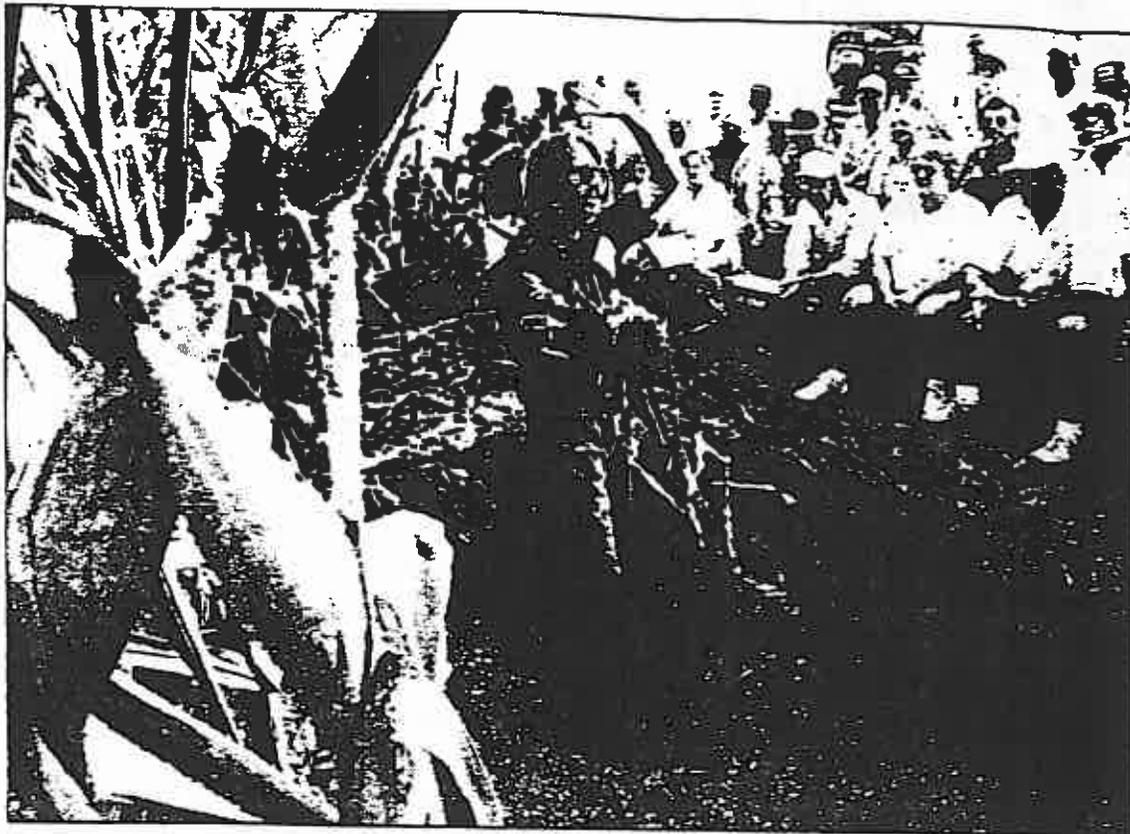
The Maumee RAP is partnership between federal, state and local governments working with area citizens to restore the health and beauty of the Maumee Bay ecosystem. The Maumee RAP is locally coordinated by, and a committee of, the Toledo Metropolitan Area Council of Governments (TMACOG).



###



Photos of Earthworm Hole Smoke Demonstration



BLADE PHOTO BY CHRIS WALKER

Scientist Frank Gibbs shows farmers in Bowling Green how earthworms can loosen soil

Can you dig it? Earthworm is now latest farm technology

BY JANE SCHMUCKER
BLADE BUSINESS WRITER

Hailed as one of the latest technological breakthroughs in agriculture — on the same agendas as satellites and complex soil tests at farmer meetings — is the earthworm.

The lowly worms that so fascinated Charles Darwin in his research in the late 1800s seem like they'd be a topic as old as dirt to area farmers. Not so. On many Midwestern farm fields, earthworms took up residence in numbers only in the past 10 or 12 years, after the plow was put out to pasture.

Just as farmers notice more benefits of the earthworm, agricultural colleges and research stations are studying the worm anew. Ohio State University, aided by more than \$3 million from the U.S. Department of Agriculture and the National Science Foundation, keeps 15 to 20 people on worm projects.

At Purdue University, graduate students' best bet for stipends from the agronomy de-

partment is worm research.

Ever since farmers noticed more worms in their fields — at the same time they found soil fluffier and more absorbent — many have been eager for information on their new-found underground friends.

Ivan Myers remembers the day he and a salesman were tromping through his corn fields. The salesman had never heard the sucking sound of earthworms slithering back into their burrows as they felt the vibration of people approaching.

Mr. Myers, who has spent many of his 71 years on farms, had never heard worms either until he bought equipment that could plant a crop without first tilling it about 14 years ago. Without annual destruction of their homes by plowing, the worms thrived, making the soil look richer and feel looser than Mr. Myers said he's ever seen.

"Earthworms are the best people you have working for you for nothing," said Mr. Myers, who farms with sons Bill and Bob.

The Myers so value the earthworms on their 300 to 500 acres near Maumee Bay State Park that on the rare occasion when a field must be plowed, the work is done late at night when darkness will protect the worms from hungry seagulls.

Earthworms act almost like little plows in the ground, loosening soil so it is easier for farmers to pull equipment through their fields. They also help reduce damage that heavy farm implements do to the soil.

Many of the large tractors on area farms weigh 13,000 pounds. Combines with a bin of corn can weigh 23,000 pounds. Grain carts can be more than 45,000 pounds when full.

That weight, along with the pulling force that it takes for a tractor to move a drill or planter through the ground, can squeeze soil particles together. The problems are worse when farmers work in wet fields.

But when earthworms live in

nure have overrun view homes and farms.

"Many of the current laws the EPA follows regarding this high-density livestock and poultry production were written nearly a generation ago, when we never envisioned tens of millions of birds ... confined to a small area and generating waste," Mr. Nash said.

Mr. Nash said his group is working with legislators to introduce a bill next year that would give the EPA the authority to conduct environmental background checks of companies opening poultry or livestock "megafarms."

The EPA has no authority under Ohio law to conduct such checks but would consider supporting a bill that would allow it to do so, agency spokesman Jim Leach said.

"We'd want to take a look at it, of course. Generally speaking, if it's something we feel will help us do a better job serving all the citizens of Ohio, we certainly would welcome that," Mr. Leach said.

In April, the company was cited for bringing eggs into the LaRue farm for washing and in June, the EPA sent AgriGeneral a notice to bring dead birds out of their buildings daily until they can move them off-site.

No fines were levied, but AgriGeneral has challenged the EPA's June citation, Mr. Leach said.

AgriGeneral co-owner Anton Pohlmann was found guilty by a German court last month of violating German drug laws and failing to help a former worker who was injured when he used an illegal nicotine-based spray to treat chickens for mites.

Mr. Pohlmann was fined \$2 million and sentenced to two years probation.

AgriGeneral spokeswoman Amy Bast said Mr. Pohlmann was not immediately available to comment.

Meanwhile, as the population ages, the \$1.5 billion toothpaste industry is working hard to convince consumers that a perfect smile depends on healthy gums. Marketers are swinging back to an emphasis on therapeutic claims after a long period of pushing whiteners and other cosmetic attributes. (Dentists discount the efficacy of such popular additives as baking soda and peroxide. Fluoride, however, is an acknowledged cavity preventive.)

Gingivitis develops when unremoved plaque irritates the gums, making them swell and bleed. If untreated, diseased gums may shrink, eventually causing bad breath and tooth loss. Toothpaste makers say most adults get gingivitis at some point in their lives.

Underscoring the importance of the gum-care market, Colgate has

been declining and now stands at 28.4 per cent, a five-year low.

Colgate's share, meanwhile, rose 0.4 point to 18.8 per cent during the year ended June 30, according to Information Resources, Inc., a Chicago firm that tracks consumer spending. Meanwhile, Unilever PLC's Mentadent has shot from nowhere to a 12 per cent share in three years. Colgate and Mentadent scored against Crest with products containing baking soda and peroxide.

Despite all the new attention from toothpaste makers, gingivitis is a tricky marketing hook, especially when targeting youth-conscious baby boomers. The handful of existing gum products — including Mentadent Gum Care and SmithKline Beecham's Aquafresh Gum Care — aren't breaking sales records.

The ball's extr comes partly fr new dimple des ball aloft longer secret change in it rise faster. Another change The result is a tude quickly, the None of the cha the ball itself.

Despite this e mance, the comp spokesman put i

"In golf you ne TV publicity. Th the pro shops a of all golf produ the pros use yo

Worm

► Continued from Page 29

the field, they eat some compacted soil and when it comes out the other end of the worm, it is reconditioned, said Greg Willoughby, a graduate student in Purdue University's agronomy department.

A few farmers are so eager to have more earthworms that they've tried walking through their fields with a bucket and tossing out a few worms with every step.

At 2 cents a piece, the worms are cheap, but five-gallon buckets full of soil get heavy and the best time to do this is on cool, drizzly spring days when most farmers would rather be adjusting their corn planter in their shop or

otherwise inside.

Add to this the fact that worm mortality rates are 50 per cent when they're transplanted, and earthworm "seeding" isn't popular.

Instead, most scientists suggest farmers first try to make their fields more earthworm-friendly and hope worms will come on their own. Earthworms like fields that aren't tilled often but get plenty of manure and host a wide variety of crops over the years. (Earthworms prefer legumes to coarser corn and wheat stalks.)

Earthworm research, however, is very incomplete. Scientists are stumped as to why some fields have many earthworms and others have almost none when conditions appear to be the same in both. But they do know that a field that's plentiful with worms, generally means that all is well with the soil.

Signage (indoor and outdoor) • Banners • Window Lettering

• ADA (engraved raised letters)

We attract
new
customers
to your
shop



Magnetics

Sandwich Board

As a Slide service. We ar hope that you

From time to t damaged. Or on vacation, c may just have Whatever the

When any of Service Cent for a replacer

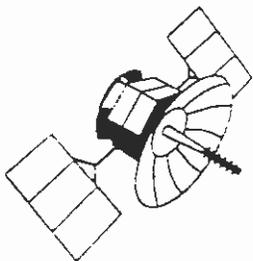
COGNates

Volume 12, Number 7

August 1996

From Satellites to Earthworms!

Both earthworms and satellites can help farmers improve farming practices and increase crop yields. Find out how by attending this program on Tuesday, August 27. It will be held at the Bowling Green Future Farmers of America test plots (Fairfield Ave.).



Speakers will cover a range of agricultural topics from the benefits of no-till farming to using satellite technology to improve crop yields.

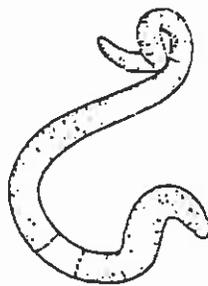
A meal from Harland's BBQ will be served, free of charge, to the first 125 persons attending. Binders that are packed full of information from

the presentations will be available to the first 125 attendees. The first 50 attendees will receive an added bonus: The Farmer's Earthworm Handbook.

The program begins at 4:30 p.m. and ends around 8:30 p.m. You do not have to register or pay to attend this program. If you do have questions, contact either Jenny Carter (TMACOG) at 419-241-9155, ext. 125 or Cherie Blevins (Ohio EPA) at 419-352-8461, ext. 3010. This program is funded by a grant through the Lake Erie Protection Fund.

TMACOG's Maumee RAP Implementation Committee action group on agricultural runoff has coordinated this program with: Wood County Con-Till Club, Wood Soil and Water Conservation District, Bowling Green Future Farmers of America, CIBA Crop Protection, LG Seeds, Luckey Farmers, MidWood Inc., Natural Resources Conservation Service, OSU Extension, Ohio Department of Natural Resources, and Ohio Environmental Protection Agency.

The Maumee RAP Implementation Committee works with federal, state, and local governments as well as area citizens to restore the health and beauty of the Maumee River ecosystem. X



New Name

A contest to rename the building we're in has been wrapped up. It's official ... our building name is Central Union Plaza.

Our street address will change from 415 Emerald Avenue to 300 Central Union Plaza. Please, though, use our post office box to mail anything to us. X

Thanks for Your Time!

"Thank you" to everyone who filled out and returned the COGNates newsletter survey. We had a lot of good comments on what to keep and what to change. X

A New Look for COGNates?

Not yet. Because of Windows, we're now converting layouts to a program similar to what we used in DOS. As always, conversions aren't perfect so we're forced to substitute some fonts. Look for major changes later this year. X



Commissioner
Mark L.
Pietrykowski
Chair

Mayor
Stephen J.
Pauken
Vice Chair

Commissioner
James F.
Carter
Second
Vice Chair

William L.
Knight
Executive
Director

K.J. Yehoda-Barrett
Editor

COGnates is published
by the Toledo Metro-
politan Area Council of
Governments, 415
Emerald Ave. P.O. Box
9508, Toledo, Ohio
43697-9508; 419-241-
9155 (voice) or 419-241-
9116 (fax)



COGnates

Calendar

August

Air Quality Task Force

Wednesday, August 21, 1996; TMACOG
board room, Central Union Plaza, 3rd floor,
Toledo; 8:00 a.m.

Expressway Needs Committee

Wednesday, August 21, 1996; TMACOG
board room, Central Union Plaza, 3rd floor,
Toledo; 1:30 p.m.

Board of Trustees

Wednesday, August 21, 1996; Port Clinton
Council Chambers, 1868 E. Perry St., Port
Clinton; 3:30 p.m.

MRIC Dumps and Landfills Action Group

Thursday, August 22, 1996; Cousins Waste
Control Corp. 1701 Matzinger Rd., Toledo;
3:30 p.m.

MRIC Open Space and Wetlands Action Group

Thursday, August 22, 1996; Lucas Soil and
Water Conservation District, 130-A W.
Dudley St., Maumee; 4:30 p.m.

PR/Marketing Committee

Friday, August 23, 1996; TMACOG board
room, Central Union Plaza, 3rd floor,
Toledo; 7:30 a.m.

"From Satellites to Earthworms: Improving Farm Management"

Tuesday, August 17, 1996, FAA test plots
(behind Bowling Green High School), Fair-
field Ave., Bowling Green). It begins at 4:30
p.m.

MRIC Ottawa River Action Group

Thursday, August 29, 1996; Conference
Room, Toledo Division of Environmental
Services, 26 Main St., Toledo; 1:30 p.m.

September

Joint Transportation Committees

Wednesday, September 4, 1996; TARTA,
1127 W. Central Ave., Toledo; 1:30 p.m.

Maumee River Crossing Task Force

Thursday, September 5, 1996; TMACOG
board room, Central Union Plaza, 3rd floor,
Toledo; 7:30 a.m.

"The Forum" for Northwest Ohio

Thursday, August 1, 1996; Toledo Area
Chamber of Commerce board room, 300
Madison Ave., Toledo; 1:30 p.m.

Non-Profit Org.
U.S. Postage
P.A.D.
Toledo, Ohio
Permit No. 79

Toledo Metropolitan Area
Council of Governments
415 Emerald Ave. Circle - 3rd floor
P.O. Box 9508
Toledo, Ohio 43697-9508

