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Land Use Activities in the Great Lakes Basin: A Citizen's Guide to Great Lakes Pollution: Problems and Solutions: Poster

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land use activities



in the great lakes basin

A Citizen's Guide to Great Lakes Pollution: Problems and Solutions

INTRODUCTION

This short guide is intended for those of us who enjoy the benefits of the Great Lakes Basin who would like to do something positive to protect and improve our Great Lakes waters.

The final report of the International Reference Group on Great Lakes Pollution from Land Use Activities (PLUARG) provided most of the information which is presented in this publication. The first part of this guide outlines the problems PLUARG identified, and the second part states what you, a city or a rural resident, can do "in your own back yard" to solve some of the pollution problems of the Great Lakes.

BACKGROUND

In 1972 the International Joint Commission was asked by the Governments of Canada and the United States to conduct a study of pollution in the Great Lakes from agricultural, forestry, urban and other land use activities. The Commission formed PLUARG to investigate the potential and actual pollution caused by such activities. That group presented its findings in July, 1978.

The scope of the PLUARG investigations included the entire Great Lakes Drainage Basin — a vast area which 37 million Canadians and Americans call home — 295,000 square miles of land and 95,000 square miles of surface water, 20% of the world's fresh water supply.

PROBLEMS

PLUARG identified two major pollution problems resulting from increasing population, changing technology and intensifying water and land uses: phosphorus and toxic substances.

PHOSPHORUS

Phosphorus enters the Great Lakes from two main sources:

1. Direct municipal sewage treatment plants and industrial discharges, and
2. Urban and agricultural runoff.

Municipal sewage treatment plants and industrial facilities are point source discharges. They are easy to identify, but expensive to control. In Canada and the United States, programs completed or underway will result in considerable phosphorus reductions from these sources.

Nonpoint sources, however, such as runoff from agricultural land during spring thaw or rainfall, and urban storm runoff are harder to identify and sometimes difficult to control.

Natural processes such as lakeshore and streambank erosion also can contribute phosphorus-laden particles to the Great Lakes.

Problem areas may represent only a portion of the drainage basin total area. The PLUARG study developed criteria for identifying potential contributing areas in the Great Lakes Basin, and within these areas zones with the highest potential for producing pollution. PLUARG terms these lands "hydrologically active areas", places where soil type, land use and slope combine to cause problems.

Intensive agricultural operations are one of the major contributors of phosphorus from nonpoint sources to the Great Lakes.

TOXIC SUBSTANCES

Toxic substances, one of which is PCBs (polychlorinated biphenyls), are entering the Great Lakes System from both point and nonpoint sources. Pesticides, such as DDT, even though banned, are still entering the waters from sediment contaminated by past use. Mercury has been found in fish tissues and the most serious current mercury problems appear to be in Lake Erie. Scientists have found a continuous build up of lead, a heavy metal linked to land runoff, in the sediments of the Great Lakes.

The major contributors of toxic substances from nonpoint sources to the Great Lakes are atmospheric deposition and urban runoff.

SOLUTIONS

Control of nonpoint source pollution will be difficult, but it is essential to the future of the Great Lakes ecosystem, including man. Differences in and between lakes will require that different degrees of nonpoint controls be instituted.

The most hydrologically active areas (HAAs) should be identified and treated first. These are land areas that contribute directly to ground and/or surface waters because of their proximity to water. Use of conservation techniques in agricultural HAAs can reduce erosion and runoff of pollutant bearing sediment particles.

Urban centers have large HAA's because tremendous surface areas are paved with impervious materials which prevent the water from seeping and draining naturally into the ground. Many developing urban areas are either within a HAA or on a stream which is a tributary to one. These areas need special and quick attention.

CONCLUSION

The PLUARG final report, "Environmental Management Strategy for the Great Lakes System", which was delivered to the IJC in July, 1978, contains 17 recommendations and asks for speedy government action.

In the meantime, this short guide has been produced for householders in the Great Lakes Basin so that those who wish to can start remedying nonpoint pollution problems now. If each person does a little, a lot can be accomplished.

THE CITIZEN'S ROLE

Citizens can play many roles to help solve some of the real problems which have been identified.

Water quality problems are serious. They affect everyone directly and indirectly; if you live near the lakes, you can see, smell and taste the problems; if you do not, you may only feel the impact in dollars.

Governments have laws and regulations in force which alone cannot be really effective unless each Great Lakes Basin resident, as an individual, takes

a personal responsibility for daily actions which can harm the Great Lakes ecosystem.

Citizens who wish to play an individual role in helping to remedy the problems can take steps, varying from simply developing an understanding and awareness of the Great Lakes ecosystem to fully devoting themselves to environmental activism. Most of us have limited amounts of time to apply to this task. If everyone were to do just a little, we could begin to see a big difference. The steps listed below range greatly in the amount of time and effort required from an individual.

1. Learn about anti-pollution laws at the local, state/provincial and federal levels and how they affect you. If you want to know how to change things, you need to know:
 - a) who controls what
 - b) who pays for what
 - c) who makes decisions when, and
 - d) how the decision processes work
 Public agencies and private organizations have information on specific aspects of pollution control. Please ask for it.
2. Check the groups at work in your community or region trying to remedy pollution or prevent it. Sometimes people are more effective together than alone. Maybe you can find a group or groups which fit your particular interests.
3. Find out how you can participate in the decision-making processes at the levels and on the topics of most interest to you. See if there are committees, workshops, advisory groups, hearings, public meetings,

9. See how much coverage newspapers, radio and T.V. give Great Lakes problems and solutions. Let them know you're interested. Encourage more coverage. If people do not show interest in the topic and the way it is covered, it will not be treated as important.

10. Check with the IJC office in Windsor for literature, and the availability of a slide presentation or display booth on pollution control mechanisms. Try the nearest office of your local, state/provincial and federal agencies too.

PREVENTING POLLUTION

PLUARG has identified many problems in the Great Lakes. The following list is a short guide to specifically remedying problems identified by PLUARG.

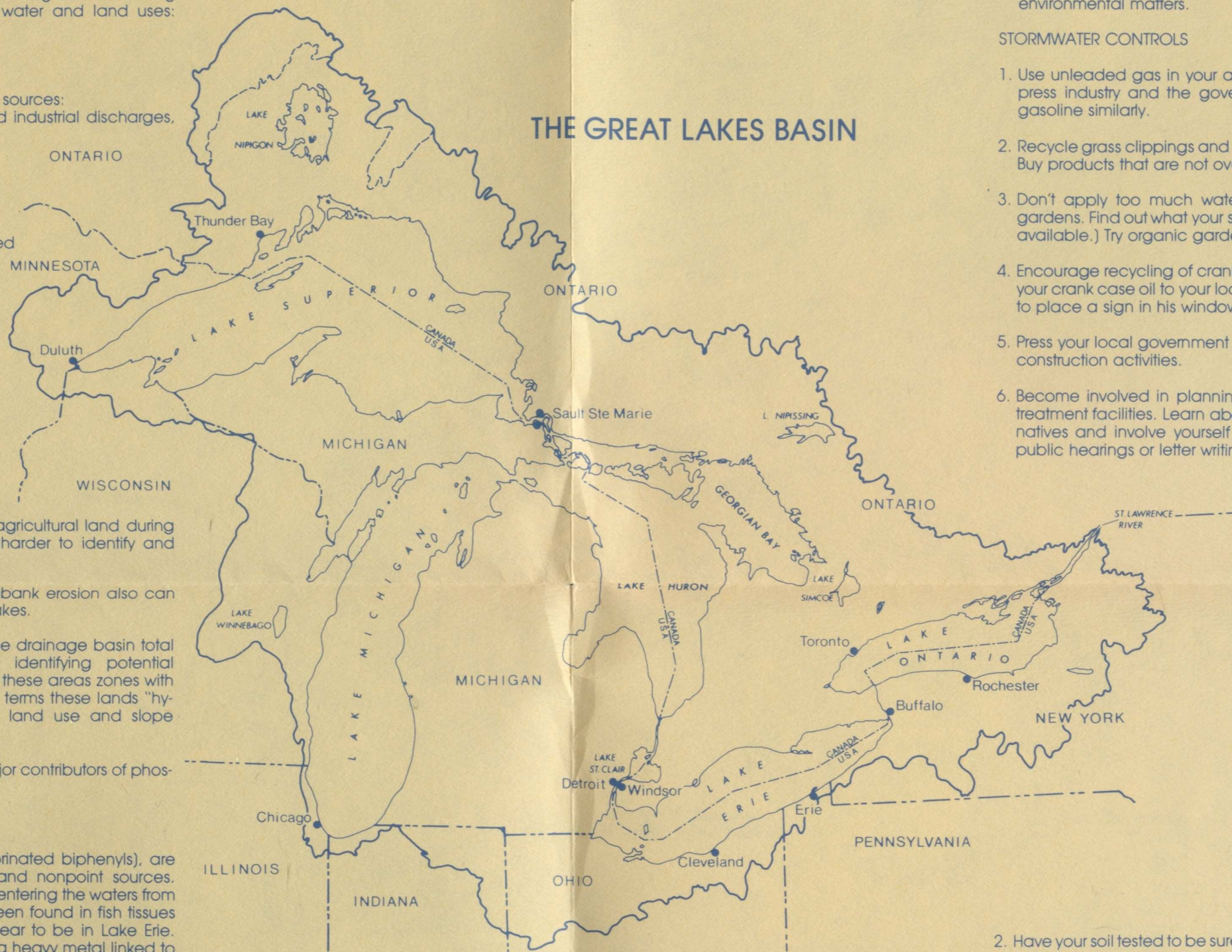
SEPTIC TANKS

1. If your home or cottage has a septic tank, have it checked regularly.
2. Have the soil checked to ensure that the soils are adequate for water quality protection.
3. Ask your local government department
 - a) what regulations exist for septic tank installation
 - b) find out what alternatives exist to replace septic tanks, e.g. — Think about installing a composting toilet in your home or cottage; encourage your neighbours to investigate the possibilities.

4. Join a local group which has demonstrated a concern for environmental matters.

STORMWATER CONTROLS

1. Use unleaded gas in your automobile to reduce lead pollution, and press industry and the government to price unleaded and leaded gasoline similarly.
2. Recycle grass clippings and pet and kitchen wastes in compost heaps. Buy products that are not overpackaged and/or can be recycled.
3. Don't apply too much water, fertilizer or pesticide to your lawns or gardens. Find out what your soil needs and add no more. (Soil tests are available.) Try organic gardening for controlling garden pests.
4. Encourage recycling of crank case oil and where recycling exists, take your crank case oil to your local gas station for recycling. Ask the owner to place a sign in his window advertising re-cycling.
5. Press your local government for sound soil erosion control practices in construction activities.
6. Become involved in planning relating to location and size of waste treatment facilities. Learn about the environmentally acceptable alternatives and involve yourself in the decision-making process through public hearings or letter writing.



THE GREAT LAKES BASIN

etc. which you can attend. Write letters, and ask to be placed on the mailing lists which will ensure that you hear about the things which interest you.

4. Speak to your local elected representatives about pollution control regulations at the local level. Find out what they are doing and what they think about:
 - a) storm water management,
 - b) control of phosphorus and heavy metals at sewage treatment plants,
 - c) policies for use of salt on roads in the winter,
 - d) policies and plans for disposal of municipal refuse, sewage sludges, industrial waste and dredge spoils,
 - e) environmental impact studies made before major construction projects are begun,
 - f) recycling programs for papers, bottles, cans and other reclaimable materials,
 - g) control of erosion from highway construction and other development,
 - h) zoning and other land use and development controls.

TELL THEM WHAT YOU THINK OUGHT TO BE DONE AND WHAT YOU ARE WILLING TO PAY TO DO IT.

5. Read your dishwasher and laundry detergent and shampoo packages. There are some on the market with less phosphorus than others. Read labels on cosmetics, home and garden supplies. Ask the manager of your supermarket what will work yet do least harm to the environment.
6. Find out what local schools teach about the Great Lakes:
 - a) are they an important subject?
 - b) is there a mechanism for increasing awareness about the Great Lakes?
 - c) does the school have an environment club, sponsor special Great Lakes events or have speakers who talk about the environment? Can you help the school do these things?
 - d) ask the teachers and principal what they think about the value as well as the pollution problems of the Great Lakes.
7. Ask your local Board of Education about its program on Great Lakes pollution. If there is none, offer your help to develop one.
8. Check your local library for studies on Great Lakes pollution and what to do about it. See if you can help them develop a collection.

AGRICULTURE

1. Find out from your local agency representative what you can do to reduce pollution from your farming activities.
2. Have your soil tested to be sure you do not apply and pay for more fertilizer than your crops can use.
3. Write for PLUARG's remedial measures catalogue (IJC Windsor office) relating to agricultural management practices and see what you can do to reduce pollution.
4. Ask your local agricultural agency if subsidies are available for pollution control or to help you pay for construction of ponds, storage areas, etc.
5. Apply and incorporate sewage sludge and manure in the spring and autumn and do it when the soils are not frozen.
6. Ask your local farming organization for educational materials on:
 - Soil erosion prevention
 - Manure storage and application practices
 - Strip cropping and minimum tillage
 - Contour plowing
 - Mulching
 - Grassed waterways and vegetative buffers
 - Proper use of pesticides and fertilizers
7. Check with your local agricultural agency on the best ways to conserve soil and prevent pollution from your farm.

PUBLIC HEARINGS

1. Ask the International Joint Commission to inform you of its public meetings, workshops and/or hearings on Great Lakes pollution.
2. Write for and read the report(s) which are topics of IJC hearings, and prepare a statement or presentation to the Commission outlining your concerns.
3. After the hearings request information on the status of the IJC's reports to Governments.
4. Read those reports and watch what Governments do about implementing the Commission's recommendations.
5. Use steps 1-4 and apply them to local, regional, state/provincial or federal agencies' procedures.

BECOME AWARE — a few little things, done by many people, all add up.

This guide is being widely distributed across Ontario and the eight Great Lakes States. Before you put it down, decide what you are going to do, and start TODAY!