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THE STATUS OF THE LAKES IN '75

On July 21, in Windsor, the Great Lakes Water Quality Board presented its Fourth Annual Report to the International Joint Commission. Recommendations to the IJC include the adoption of specific water quality objectives for a number of pesticides, persistent toxic substances, metals and some physical characteristics.

Progress in Great Lakes cleanup is being made, but it is slow. Municipalities' failure to meet phosphorus effluent regulations to combat nutrient loadings to the lakes and pervasive toxic chemicals present some of the most pressing difficulties.

The Board reported that further delays occurred in major sewage treatment plant construction projects at Detroit, Cleveland and Duluth, but programs gathered momentum in 1975. By September 1977 an additional $2.5 billion will be obligated for United States Great Lakes projects. Most of those funds will be spent on larger projects, including the three mentioned. However, under current United States Administration plans, some smaller projects will not be funded until 1978. The lack of federal money will cause serious problems with construction grant programs in Minnesota, Ohio and Wisconsin.

Where they are completed on Lake Erie and Lake Ontario, phosphorus control programs are producing improvements in nearshore areas. However, many United States municipalities are not yet meeting the goal of 1 milligram per litre phosphorus in sewage treatment plant effluents. The Board therefore recommended a ban on phosphates in laundry detergents used in the Great Lakes region, full attainment of the 1.0 mg P/litre in the effluent from all facilities in the Great Lakes System, and measures to identify and control non-point sources from land drainage and the atmosphere. Further, the Board asked that extraordinary efforts be made to complete treat-
ment facilities at Detroit and Cleveland by 1980 and to activate the associated phosphorus removal facilities as soon as possible. It is unlikely that major improvements in the main body of Lake Erie will be achieved until these plants are fully operational. For the Lake Ontario communities of Toronto, Hamilton and Rochester, the Board requested that the Commission assure that new phosphorus removal facilities are operating properly, and urged acceleration of programs at Niagara Falls, Buffalo, and Syracuse, New York, and other major centres where phosphorus removal limitations are not being met.

The Board told the IJC that persistent chemicals such as PCBs, Mirex, polynuclear aromatic hydrocarbons (PAHs), heavy metals such as mercury, and asbestos fibres are potentially dangerous substances affecting large parts of the lakes. Extensive contamination by toxic substances has already damaged the important commercial and sport fisheries of the lakes. PCBs and Mirex are problems for Lake Ontario (see article page 7). Mercury contamination of fish is a problem in the western basin of Lake Erie. In Lakes Huron and Michigan, PCBs in fish are a major concern. In Lake Superior, items of concern include accumulation of PCBs and mercury in fish and high concentrations of asbestiform fibres in certain nearshore areas. Source identification, control programs, and monitoring for these and other toxic materials should be intensified, the Board advised.

The Board report identifies 63 water quality "problem areas", including some 104 industrial and 66 municipal significant discharges. The problem areas are important as sources of drinking water, for recreation and as fish and wildlife habitat. Because of their importance, they must be assessed regularly for the effects of pollutants, including harmful chemical substances and radioactivity, to determine progress in the correction of water quality problems and to assure continued safe use. Unfortunately, data are incomplete, the Board reported, and the lack of an adequate nearshore surveillance program on the United

![Diagram of "Problem Areas" in the Great Lakes]
States side has hampered complete identification of "problem areas". An improved international surveillance program has been developed to evaluate whole lake and problem area water quality. The Board stated that the program is vitally needed and deserves the full support of all governments in the United States and Canada.


The Board enumerated some aspects of the Agreement related to long range planning in the Basin. Members concluded that the water quality objectives should be expanded to cover additional pollutants, should be used as explicit guides for planning and, where appropriate, should be embodied in developmental planning policies, legislation, plans or by-laws. Further, objectives should be translated into requirements for reduction of presently uncontrolled sources of phosphorus and other pollutants.

Copies of the 1975 recommendations and conclusions presented to the IJC are available from the Regional Office as are limited copies of the Board's report and those of its subcommittees: Appendix A — Water Quality Objectives Subcommittee; Appendix B (not yet printed) — Surveillance Subcommittee, with Data Quality Subcommittee; Appendix C — Remedial Programs Subcommittee; Appendix D — Radioactivity Subcommittee.

PCBs AND PEOPLE

Recently the Michigan Department of Public Health released the results of a two-year United States Federal Drug Administration sponsored study of PCBs in humans. The study represents an attempt to evaluate human exposure to PCB from consumption of sport-caught Lake Michigan fish. There was no intention that the study be a full toxicological evaluation of the human health effects of PCB exposure. The study was designed to provide information on the levels and changes in the levels of PCBs in humans.

To achieve that goal, a total of 161 adults from the shoreline communities of Traverse City, Manistee, Ludington and South Haven, Michigan, participated in the study. Of these participants, 105 consumed more fish that the Department of Public Health recommends (no more than one meal per week or 24 pounds per year) and were considered the PCB "exposed" group. The 37 participants consuming 6 pounds or less per year, 19 persons eating an intermediate amount, and 19 fish eaters from Algonac (on Lake St. Clair) where sport fish are low in PCB were used for comparison groups. A short medical history, dietary record, and blood specimens were obtained from all par-
The findings confirmed what scientists have suspected. There was a direct relationship between the size and quantity of sport species of fish eaten and the PCB levels found in human blood. The level of PCB in the blood did not significantly change from year to year. It did not become significantly lower when fish consumption was eliminated for up to 9 months. More specifically, blood levels ranged from 0.007 ppm in persons who ate no fish to a maximum of 0.36 ppm for a Lake Michigan fish eater. In 1973, the people consuming 24 or more pounds had a mean blood PCB value of 0.073 ppm; persons eating 6 pounds or less had a mean level of 0.020 ppm; those eating no fish averaged 0.017 ppm, and the people in Algonac had an average blood level of 0.023 ppm. Results in 1974 were similar.

The U.S. FDA recommends that PCB intake not exceed 1 μg/kg body weight per day for long term exposure. Eighty-two percent of the participants who exceeded the state’s recommended maximum intake of 1 meal per week or 24 pounds per year received an estimated annual dose of PCB greater than the FDA recommends. Intake ranged from 0.49 μg PCB/kg body weight per day to 3.94 μg/kg/day and averaged 1.7 μg/kg/day. However, the “exposed” group exhibited no health problems or medical conditions which could be correlated with PCB blood levels, exposure to Lake Michigan fish, or known symptoms of PCB poisoning.

Overall, the researchers concluded that:

1. Consumption of Lake Michigan fish contributed substantially to the PCB levels in the blood of humans.

2. The dose received is insufficient to produce a detectable effect on human health at present.

3. It has not been determined whether long term exposure to PCB contaminated fish will result in a continuing accumulation of PCBs or eventually produce identifiable health effects in humans.

4. The data gathered to date appear to justify continued surveillance of this situation.

5. The data also justify continued recommendations that intake of Lake Michigan salmon and lake trout be limited to less than one meal per week or 24 pounds per year, and, a warning that pregnant women should eat none at all.

Dr. Harold E. B. Humphrey, Project Director of the PCB’s study, is concerned that the public understand that there is no demonstrable hazard; to date PCBs in fish are not a human health problem. PCBs are, however, worthy of scientific concern and their monitoring should be continued. Dr. Humphrey pointed to this study as an example of why the health aspects must be included in environmental monitoring programs. Without interpretation of data from the viewpoint of public health, citizens can be unduly alarmed.

For copies of the complete report, write to Dr. H. E. B. Humphrey, Michigan Department of Public Health, 3500 N. Logan Street, Lansing, Michigan 48914.

BRIEFS

On April 27 the Minnesota Pollution Control Agency Board banned the use of household detergents containing phosphates.

In April, Ontario Premier William G. Davis announced the appointment of the first Environmental Assessment Board. David S. Caverly, of Toronto, is the chairman and Eleanor Lancaster of St. Catharines is vice-chairman. Members are: Dr. Donald Chant (Toronto), Kelly Culin (Flamboro), David Dehler (Ottawa), Gil Fories (Moose Factory), Raoul W. Gagner (Paincourt), Keith Laver (Mississauga), Dr. Carl A. Martin (Mieton), James Meakes (Sudbury), D. Aubrey Moodie (Richmond), David C. Morton (Brockville), John Root (Orton), and Harry Smith (Ajax). The Board will expedite the implementation of the Environmental Assessment Act and will assume all the ongoing activities of the Environmental Hearing Board as prescribed under the Environmental Protection Act of 1971 and the Ontario Water Resources Act.
In May, President Ford signed into law the bill that brings science back into the White House. The new Office of Science and Technology Policy will be in the executive office of the President. Its director will be a member of the National Security Council and an adviser to the Domestic Council. The new Office will be involved in decisions about research and development programs and will prepare national plans for R and D.

The National Association of Conservation Districts received a $140,000 grant from U.S. EPA to encourage effective public involvement of the districts in 208 area planning under PL 92-500.

During 1976, 4,000 fish samples and 4,000 water, air and sediment samples will be collected and analyzed for PCB content under a joint program of the Ontario Ministries of Health, Natural Resources and Environment. For more details, write to W. M. Dodds, OMOE/Information, 135 St. Clair Ave. W., Toronto M4V 1P5, regarding the July 2 news release: "Ontario Research Program to Monitor PCB Levels".

PAH's, polynuclear aromatic hydrocarbons, have been found to be more stable and widespread than previously believed. These compounds, which are released in the burning of fossil fuels and in the use and processing of petrochemicals, have been found in herring gulls of the Great Lakes. As yet, they have not been found in fish, but fish studies are now underway to determine if PAH's, which include several known carcinogens, are present.

Klaus L. E. Kaiser of CCIW suggested in Science that the PCB problem could be a PCDF (polychlorinated dibenzofuran) problem. PCDFs are four to six times as toxic as PCBs and were found as impurities in all but one of the samples he studied. He further suggests that past experiments "be reevaluated in view of the strong possibility of the presence of PCDFs and their overriding toxic effects."

Polydimethylsioxane fluids are "far preferable to PCBs for use in transformers from the environmental viewpoint," according to EPA. The agency recommended against the introduction of Chloralkylene for use in capacitors after it completed a review of both chemicals as possible PCBs substitutes. EPA made no attempts to evaluate the performance or assess the economic aspects of flammability of the chemicals.

**GREAT LAKES RESEARCH**

Research was the focus of the July 22 presentations to the International Joint Commission. As its major accomplishment, the Great Lakes Research Advisory Board presented a document which identifies research relevant to solving water quality problems of the Great Lakes. The report, Great Lakes Water Quality Research Needs, is part of an effort by the Board to review research activities in United States and Canada and subsequently recommend to Governments research needs that should receive additional effort, those which require less emphasis, and those efforts which lend themselves to more international cooperation.

The Board recommended that the Commission request that Governments distribute the document to all agencies having research and development responsibilities affecting the Great Lakes Region. The Board further recommended that these agencies be advised that the Research Advisory Board would be contacting them to learn how responsive the total United States-Canadian programs are to the needs defined in the report.

Members of the 1976-76 Great Lakes Research Advisory Board and their Secretariat.
In its report, the Research Board also highlighted the conclusions of three workshops it sponsored. Participants at the Toxicity to Biota of Metal Forms in Natural Waters Workshop concluded that at present water quality objectives for most heavy metals are based on total concentrations of the metals in unfiltered samples. The objectives cannot be refined until testing techniques are improved to discriminate among and measure the various forms of metals and until the biological impacts of the various forms are better understood.

The Research Board concluded from the discussions at its Public Information and Participation Workshop that public information and participation relating to IJC activities are inadequate. Further, the Board stated that government in general needs to assess techniques to evaluate all aspects of information/participation programs, including measures of success, and then develop more cost-effective programs.

The overall conclusion of the workshop sponsored to improve the understanding of transport and dispersal of introduced materials and heat in the Great Lakes (Stratified Flows in Large Lakes) was that there is inadequate information on the behavior and role of stratified flows such as underwater currents in the Great Lakes. Such flows, the Commission was told, may play a prominent role in releasing nutrients and contaminants from sediments. Their effect on dispersal differs throughout the Great Lakes, and vertical sampling techniques must consider these flows.

Proceedings of all three of the workshops detail the technical information and recommendations. They are available from the Regional Office as are the Board’s Annual Report and Great Lakes Water Quality Research Needs.

**PLUARG STUDIES STATUS**

On July 20, the International Reference Group on Pollution from Land Use Activities reported progress toward identifying issues and developing remedial measures from several complementary directions.

Members told the IJC that an inventory and evaluation of the legislative/regulatory framework to control diffuse sources is being performed. A lake-by-lake inventory of land use practices with emphasis on trends to 1980 and 2020 is completed for the United States side of the Basin and will be completed by October for the Canadian side. Data collected from stream monitoring stations over the last two years appear to be quite similar, giving the Group increased confidence in its program design for measurement and in its information. In agricultural basins, the Group’s monitoring of pesticides shows a measurable decline in levels of DDT. These declines correlate with the period of time since DDT use was discontinued in each watershed. Generally, pesticides of the chlorinated hydrocarbon type were predominant in the watersheds under study in both countries. Further, PCBs in rather uniform and low concentration were present in 98.5% of the Canadian samples collected from agricultural watersheds.

Organochlorine pesticides and PCBs in sediments have been determined for Lake St. Clair, the Detroit River, Lake Erie and Lake Ontario, and data for Lake Huron are being analyzed, the Reference Group reported. DDT levels in Lake St. Clair decreased 60% from 1970 to 1974; a 50% decrease in PCBs was also reported. Sediments are, however, being resuspended and carried into and through the Detroit River into Lake Erie’s western basin. Mean values of PCBs and DDE in sediments in the western basin show a tenfold increase over levels observed in Lake St. Clair.
It appears that forestry operations are not a major contributor to Great Lakes pollution, the Group told the IJC. However, preliminary findings point to urban growth and activities related to it (road and sewer building, general construction, etc.) as contributing to increased erosion, thereby increasing enrichment problems resulting from phosphorus and nitrogen as well as increasing heavy metal concentrations associated with sediments.

The Group will continue its efforts to clarify issues and identify potential remedial measures until its studies are completed in 1978.

**MIREX**

Dr. Richard L. Thomas, (Canada Centre for Inland Waters—CCIW) in his presentation of a PLUARG report to the IJC announced important new findings concerning Mirex. He reported on July 20 that the chemical had been found in sediments of Lake Ontario. Just days before, on the 16th, Ontario Ministry of the Environment released information about finding traces of Mirex in Lake Ontario fish. Dr. Thomas and MOE officials said the information was preliminary.

Dr. Richard Thomas

U.S. Commissioner Charles Ross, during a lengthy discussion of the implications of these findings, urged researchers "to get cracking on the problem". He said that "the public has a right to know if this is a serious problem, which I think it might be. The extent of the problem should be determined immediately".

Something about the extent of the problem is already suspected. Mirex is a completely chlorinated hydrocarbon. Because of its structure, Mirex can be expected to follow the same pattern of bioaccumulation as PCBs, DDT and Kepone. Because it is completely chlorinated it is quite stable and highly resistant to biological, chemical, photochemical and pyrolytic degradation. It may be a carcinogen since it has induced tumors in two strains of test mice. It has also been considered responsible for decreased reproduction in test animals. More information about the toxicity of the substance is needed. In May 1976, the U.S. established a 0.1 part per million (ppm) guideline for Mirex in fish for human consumption. Canada is now reviewing the need to establish a guideline.

Allied Chemical patented Mirex in 1955. The substance has been used as an insecticide and a fire retardant since then, but only in a limited way. It has not been registered for use in Canada and in the U.S. only a few Southern States have registered it for use in fighting fire ants and termites. However, in 1974 it was found in two fish taken from the Bay of Quinte. Eggs the Canadian Wildlife Service collected from herring gull colonies of Lake Ontario in 1974 and 1975 averaged 6.18 and 4.18 parts per million (ppm) of Mirex, and up to 220 ppm were found in Lake Ontario gulls. When the Ontario Ministry of the Environment Pesticide Laboratory analyzed approximately 1,000 fish samples from various locations throughout the Great Lakes, only the Lake Ontario fish had measurable Mirex residues.

Where is the substance coming from? How does it get into Lake Ontario?

Until 1967, Hooker Chemical Company manufactured the substance in Niagara Falls, New York. Dr. Thomas told the IJC that recent analysis of sediment samples taken in 1968 revealed that currents had dispersed Mirex into the deep waters of the Niagara Basin to the Northwest and along the south shore. However, he said another substantial deposit of sediment-bound Mirex was found. From the pattern of deposits it appears that the unknown source is (or was) in the Oswego River area.

The New York State Department of Environmental Conservation is currently checking
for possible manufacturers or users of the compound and has performed additional analysis of samples taken by EPA at 6 Oswego River sites. At present no source has been identified. New York has found no detectable levels in the Oswego, but will continue fish sampling in efforts to locate the source.

Current information does not warrant extreme concern, but the Ontario Ministry of Environment has advised the public not to eat more than an occasional meal of Lake Ontario fish. For a list of such fish write to D. Nagata, Ontario Ministry of Environment Information, 135 St. Clair Ave. W., Toronto, Ontario M4V 1P5, with a reference to a July 16 news release, "Insecticide Mirex found in Lake Ontario Fish". For additional facts about the Mirex in the sediments of Lake Ontario, write to Dr. R. L. Thomas, CCIW, P.O. Box 5050, Burlington, Ontario L7H 4A6.

**PLUARG AND THE PUBLIC**

The International Reference Group on Great Lakes Pollution from Land Use Activities (PLUARG) was charged, under its terms of reference, to determine the most practicable ways to reduce pollution of the Great Lakes from land drainage.

PLUARG included, in its revised study plan (1976), a significant program of public involvement and information. This is not merely to be a series of token meetings to let citizens know what they are going to pay or how their life styles will change. The PLUARG public participation program is designed to incorporate public input into the process of determining what the final set of recommendations made to the IJC will be. Implementation of PLUARG's recommendations may require voluntary changes in behaviour; legislation may be needed too, but only where changes do not occur voluntarily. The practicability of the recommendations has to include their social acceptability, if the Reference Group study is to succeed.

It is anticipated that as pollution problems are identified in the field studies, the public will be informed through a series of fact sheets, press releases and public discussion panels set up in the Basin. Community leaders, government representatives, academics, industry representatives, agricultural organizations and other interested citizens will have an opportunity to sit on one of a number of these consultation panels. This will provide the dialogue that PLUARG is seeking.

In July, the Commission agreed in principle with the program as one of its first experiments in public involvement beyond traditional public hearings processes. The next step is to assure adequate funding through the governments.

**PCBs TASK FORCE REPORTS**

The Canadian federal departments of Environment and Health and Welfare presented their PCBs report to the Government in June.

The Task Force, the first set up under the Canadian Environmental Contaminants Act, was established in August, 1975, to document the quantities of PCB involved in Canada, the levels in the ecosystems and routes by which PCBs were entering the environment. Further, the group was to recommend information required and controls programs.

Many conclusions are relevant to the Great Lakes: PCBs are ubiquitous persistent pollutants to which humans are exposed. Dietary intakes of PCBs are low, but highest in persons consuming Great Lakes/St. Lawrence River fish. All PCBs are toxic, but those more highly chlorinated are more persistent. PCB's are reaching Great Lakes water, air and soil from sewage treatment plants, industries, solid waste disposal sites, tributaries and incinerators. PCBs have contributed to reproductive problems in ranch mink and fish-eating birds of the Great Lakes. Accidental introduction of even small quantities of the more persistent PCBs into aquatic ecosystems may be toxicologically and economically significant.

Recommendations include 13 regarding information gathering (with 12 subsections for specific research or development projects and 4 subsections for institutional requirements), and 16 concerning controls for PCBs. The latter touched upon inspection, disposal restrictions, labelling, elimination of uses, restriction
of uses, licensing of those servicing PCB-containing equipment, and import controls.

For copies of Technical Report 76-1, "Background to the Regulation of Polychlorinated Biphenyls (PCB) in Canada" contact Dr. J. E. Brydon, Chairman DOE/NHW Canada Committee on Environmental Contaminants, Env. Contaminants Control Branch, EPS-DOE, Ottawa, Ontario K1A 0H3.

BOOKSHELF

Ottawa Report is available free from the Canadian Wildlife Federation, 1673 Carling Ave., Ottawa K2A 1C4. It summarizes Canadian government work in conservation and environmental protection.

Copies of the IJC's 1975 Annual Report of all its activities along the U.S.-Canadian border are now available from the Windsor office.

Limited copies of Inputs of Phosphorus from Precipitation to Lake Michigan are available from the EPA Large Lakes Research Station, 9311 Groh Road, Grosse Ile, MI 48188. The Report, No. EPA-600/3-75-005-December 1975, is also available from NTIS, 5285 Port Royal Rd., Springfield, VA 22161.

The Ecology Law Quarterly will publish a special issue in the summer of 1977 on Hazardous Substances in the Environment: Law and Policy. The publishers invite comments and articles on all aspects of the problem. For more information or to make submissions, contact: Developments Editor, Ecology Law Quarterly, University of California, School of Law/Boalt Hall, Berkeley, CA 94720.

PEOPLE

Colonel Daniel D. Ludwig is now the District Engineer for the Buffalo Office of the Corps of Engineers. He replaced Colonel Bernard C. Hughes who was transferred to Fort Belvoir, Va.

Ronald C. Waybrant, Ph.D., has been named as Michigan's PLUARG member, replacing James Dooley.

PRESERVE, PROTECT AND PREVENT

Those were the key words which the ULRG used to introduce the final reports of its three-year, $14 million dollar study of conditions and trends in Lake Superior, Lake Huron-Georgian Bay and the North Channel.

The Group concluded that, though the water quality of the Upper Lakes is still excellent, man's impact is evident and measures must be taken to preserve and protect all existing uses and to prevent degradation.

The only instance of transboundary pollution that Group reported is in the St. Marys River where discharges of phenolic substances violate Agreement objectives. Heavy metals and toxic organic compounds, lake wide problems, are reaching the lakes mainly from land runoff and the atmosphere. Because neither of these pathways is clearly understood, effective control measures cannot yet be developed. The atmosphere contributes about 15% of the phosphorus and 30-40% of the lead and copper inputs to the Upper Lakes.

Upper Lakes Reference Group Chairmen Dr. G. Keith Rodgers and Christopher Timm.

Nutrients, metals, asbestos and organics are major environmental problems. Less important issues are vessel wastes, erosion, thermal inputs, bacteria, radioactivity, dredging and spills, which are causing or are likely to cause some degradation. Radioactivity is not currently a major problem for the Upper Lakes, but the Group recommended that the adequacy of present controls be assessed, that new measures be implemented if warranted, and that radioactivity monitoring continue to assure...
that changes occur as predicted and no areas of local high concentrations develop.

The greatest phosphorus problems found by the Group were in Saginaw Bay and Duluth-Superior Harbor, but Munising, Marquette and Thunder Bay on Lake Superior, and Goderich, Cheboygan, Alpena, Harbor Beach, Penetang Bay, Midland Bay and Collingwood Harbour on Lake Huron also show signs of enrichment. The Group recommends that municipal and industrial discharges of phosphorus be reduced to 1.0 mg/l or less, that all practicable measures be taken to reduce loadings from nonpoint sources, and that a limit of 0.5% phosphorus content by weight be set for laundry detergents.

Because of the significance of atmospheric contributions, the Reference Group recommended that phosphorus be considered an air pollution control parameter and that a precipitation chemistry surveillance program be initiated to include synthetic organics, arsenic and mercury.

No increase in metals inputs to the lakes should be permitted, the Group stated. Monitoring of heavy metals should continue after present clean up programs are in place to assure that inputs are reduced and necessary measures taken to prevent new pollution from heavy metals.

The asbestos problem in Lake Superior will not end when Reserve Mining ceases to discharge its taconite tailings. Measures must be taken to minimize erosion of the tailings delta and monitoring must continue to determine if reductions in asbestos dispersal occur as predicted. Governments should establish a drinking water standard for asbestos and should intensify research into health effects of ingested asbestos, the Reference Group recommended. The Group also called for the IJC to set an asbestos objective for the Great Lakes under the provisions of the U.S.-Canada Water Quality Agreement.

The recognized toxicity, limited knowledge of chronic sublethal effects, violations of present objectives, the apparent ineffectiveness of partial bans of some toxic organics, and the possibly significant transport of these substances through the air, led the Reference Group to make several strong and far-reaching recommendations relating to toxic organics. These include a total ban on the sale, use, transport and manufacture of PCB, aldrin, dieldrin, DDT and its derivatives; pre-market testing of new organic compounds for environmental and health effects; initiation of an accelerated program for evaluating human health and biota effects, and development of remedial programs for man-made organics.

Copies of the final report will be available in the fall; a recommendations booklet is now ready for distribution from the Great Lakes Regional Office. The Commission hopes to schedule public hearings on the report in the spring.

**LEGISLATION AND THE COURTS**

The Fisheries Conservation and Management Act of 1976 (H.R. 200) passed both houses of the U.S. Congress and in April was signed into law by President Ford. Copies are available from: National Marine Fisheries Service Information, 2001 Wisconsin Ave., NW, Washington, D.C., 20235.

Federal installations discharging water pollutants do not have to obtain state permits, even when state requirements are part of federally approved environmental control programs, according to a June U.S. Supreme Court ruling. Only when there is “clear and unambiguous” authorization written in the law by Congress can the states regulate federal facilities.

As a result of a suit filed by several environmental groups against EPA contending that the Agency was not properly enforcing Federal Water Pollution Control regulations regarding discharge of toxic chemicals, EPA has begun a major effort to collect information on the health effects of 65 toxic chemicals. The action is only the first step toward settlement of the suit which U.S. District Court Judge Thomas A. Flannery approved.
On August 24, the U.S. House passed the toxic substances bill with an amendment to ban amendment to ban PCBs in two years. Next, a House/Senate Committee will meet to resolve differences between their bills.

On June 15, HR 14389 was introduced. It directs the Secretary of the Army, through his Chief of Engineers, to develop a plan for shoreline protection and beach erosion control along Lake Ontario.

Another bill, introduced June 14, HR 14335, would amend the Federal Water Pollution Control Act to include methods for protecting natural aquifers within the definition of "treatment works" for which construction grants can be made under the Act.

"These Are Your Waters" is a 20-minute sound and slide show prepared by the Water Quality Federation of Northeast Ohio to show citizens how to participate in and influence the implementation of PL 92-500, the FWPCA Amendments of 1972. The program is available free on request from the Federation at its address: 307 The Arcade, Cleveland, OH 44114. An informed speaker will accompany the show.

Cranbrook Institute of Science at 500 Lone Pine Road in Bloomfield Hills, Michigan, has a Great Lakes display through December in its Science Museum. Admission is $2.25 for adults, $1.25 for students and senior citizens. The display is only one room, but the museum takes a full day or more to see. Hours are 10 to 5 on weekdays, 1 to 9 on Saturdays and 1 to 5 on Sundays.

**PUBLIC SESSIONS TO FOLLOW WQB MEETINGS**

At a special meeting in July the Great Lakes Water Quality Board (WQB) approved proposed procedures for public information. Board meeting agenda lists will be sent to citizen organizations, individuals and media representatives in the general area (150 miles) of the meeting place two weeks prior to the scheduled meeting. In addition a mailing list will be developed so that those who request copies will always be informed of the upcoming public sessions.

The Board's September, December and March meetings will be followed by public discussions. Because the Board's report to the Commission forms the basis of the June meetings and because such reports are not public until presented to the IJC, a public session will not follow that meeting.

Public sessions will be similar in format to news conferences. The Board Chairmen will make brief opening statements highlighting the events of the Board's meeting and then will entertain questions on the agenda items. The sessions are planned to be up to one-hour long. If agenda-related questions do not fill the

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THINGS TO SEE

"Water is America's Future" is a permanent exhibit at Chicago's Museum of Science and Industry. It is a series of modules which explain the scientific principles of water and show their relationship to wise use of this resource in planning for preserving the quality of the environment and providing water to fit people's needs.

Copies of a brochure about the exhibit are available from Corps of Engineers, North Central Division, 536 So. Clark, Chicago, IL 60605.

Canadian Secretary David Chance watches as Chairman Maxwell Cohen presents Between Friends to United States Chairman Henry P. Smith.
allotted time, the Chairmen will invite any ques-
tions or comments regarding Great Lakes
water quality. Questions which the Board can-
not answer immediately will be researched
and replies will be sent to the inquirers.

If you, your firm or group would like to be
placed on the local, regional or general lists,
write to the Regional Office.

OBJECTIVES HEARINGS

In early November, the International Joint
Commission will hold a 2-day hearing on water
quality objectives in Windsor. On the first day,
the technical-scientific community will be
asked to present statements. The second day,
the general public’s comments will be heard.
All sessions will be open. Those unable to at-
tend are encouraged to send written com-
ments.

For more information about the hearings or
for water quality objectives material, write or
telephone the Regional Office: Canada — (519)
256-7821; United States — (313) 963-9041.

FOR ADDITIONAL COPIES
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