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ACTION, NOT REACTION
by Christopher Timm and M. P. Bratze, Jr.

The Upper Lakes Reference Group represents a unique approach in water quality studies — the characterization of two large bodies of fresh water which are for the most part not degraded. The studies are directed more toward protection than rehabilitation; toward action, not reaction.

In response to an International Joint Commission recommendation contained in its 1970 report on lower lakes pollution, the federal governments of Canada and the United States requested the International Joint Commission to undertake a study of water quality in lakes Huron and Superior, under provisions of the Boundary Waters Treaty of 1909. The study is to answer the four reference questions:

1. Are Lake Superior and Lake Huron being polluted?

2. If so, to what extent, by what causes and where?

3. What should be done to restore and protect the water quality? How much would the restoration cost?

4. What preventive measures should be taken to ensure that pollution not occur in the future? How much would such measures cost?

To answer these questions, the International Joint Commission created the Upper Lakes Reference Group: 7 Canadian and 7 United States members from the representative state, provincial, and federal agencies with responsibility for water quality in the Upper Lakes Basin. These include the United States Environmental Protection Agency, National Oceanic and Atmospheric Administration, and the Canadian government's agencies.
United States Fish and Wildlife Service, Minnesota Pollution Control Agency, Wisconsin Department of Natural Resources, Michigan Department of Natural Resources, Canada Department of the Environment, and Ontario Ministries of the Environment and Natural Resources.

At its inaugural meeting in November, 1972, the Upper Lakes Reference Group began organizing itself to answer the reference questions. By April 1973 the Group developed a Preliminary Study Plan, outlining the general types of projects required and anticipated schedules and costs. This was submitted to and approved by the Water Quality Board which had been designated by the Commission to assess the plan in terms of management and financial considerations. Six specific Study Items were identified:

I. "Background Information on the Basin, and its Population and Water Uses." Studies were proposed to compile and summarize information about the physical characteristics of the lakes and their basins, and human activities which could influence water quality.

II. "Surveys of the Main Bodies of the Upper Lakes." Data collection surveys were designed to collect main lake data necessary to answer the reference questions. The Reference Group has distinguished between "main lake" and "coastal" regions and is collecting data related to both water quality conditions in the main lakes and lake processes which affect water quality and the transport of pollutants. Relating to the principle of non-degradation, data collection was designed so that the Group could establish baseline levels of constituents and then trace changes in the water quality of the main lakes. Data will also be collected related to materials transported between Lake Huron/Lake Michigan, between Georgian Bay/Lake Huron, Lake Superior/Lake Huron and Saginaw Bay/Lake Huron.

III. "Sources and Characteristics of Material Inputs." Data have been collected to determine the loading of materials which could adversely affect lakes water quality and enable calculations of abatement programs required to reduce or prevent pollution. Atmospheric and point source inputs (municipal, industrial, and tributary) have been comprehensively considered; information on land source inputs (non point sources) will be provided as necessary by the Pollution from Land Use Activities Reference Group.

IV. "Geographic and Water Resources Relationships." Studies on human-geography-water interactions were proposed in order to better understand fundamental sources of pollution, develop and evaluate pollution abatement and preventive programs, and determine future trends in human activities which could cause additional pollution problems.

V. "Coastal and Local Effects Studies." Special attention was paid to studies related particularly to identifying and describing coastal and embayment pollution and degradation, the regions expected to be the most seriously affected at the present time in the Upper Lakes. Studies were also proposed to evaluate the perhaps insidious influences of these polluted regions on the main body of the lake and to enable recommendations to be made on abatement measures.

VI. "Main Lake Effects Studies." Though the Upper Lakes are very large in volume and are generally considered relatively free of water pollution, the Group proposed to thoroughly evaluate the state of water quality in them and in their sediments in order to: determine any existing pollution problems; develop a better understanding of processes which result in the transport of pollutants within the total Upper Lakes System, and/or result in periodic aggravation of deleterious effects; determine transport of materials between Lake Huron/Lake Michigan, Georgian Bay/Lake Huron, and Saginaw Bay/Lake Huron; and recommend total-lake management alternatives. Management techniques and costs are considered in each study item.

To administer the study, the Reference Group assigned the study items to four Work Groups. Study Items I and IV were assigned to Work Group A, consisting primarily of geographers, sociologists, economists, planners, hydrologists, and meteorologists. The organ
zation and analyses of background basin information, and the studies of present and future socio-economic implications to water quality were considered to fit closely together. Study Items II (main lake collection), VI (main lake data analyses) and III (portion concerned with transboundary movement of pollutants) were assigned to Work Group B, consisting primarily of limnologists and fisheries biologists. The task of measuring or calculating materials input to the lakes from the atmosphere and point sources, including tributaries

Water sampling using a Niskin bottle off the Roger R. Simons. (Study Item III), was assigned to Work Group C, which mainly represented the state and provincial water management agencies. Implementation of studies related to coastal and embayment pollution problems (Study Item V) was assigned to Work Group D, consisting of provincial and state representatives (for problems in their jurisdictional areas) and United States and Canadian federal representatives (for studies of interactions with main lake areas).

A Coordinating Committee of the Work Group Chairmen was established to facilitate interaction among the Work Groups and their activities. A Committee for Data Quality, composed of laboratory personnel from each jurisdiction, was also created to establish guidelines to assess data to be incorporated into the Final Report.

All studies were initiated and most are complete or are nearing completion as the deadline for reporting approaches. Technical and management personnel are now preparing more than 110 project reports.

An outline for a three-volume Final Report has been developed and refined: Volume I will summarize the status of the Upper Lakes and present conclusions and recommendations to answer the reference questions; Volumes II and III will present the technical backing to the conclusions and recommendations for Lake Huron and Lake Superior, respectively.

Volume II and III are organized into seven chapters: (1) background of the Basin and characteristics of the human component, (2) existing criteria and abatement programs, (3) quantification of materials inputs, (4) description of nearshore water quality conditions, (5) description of open water conditions, (6) effects of inputs and conclusions regarding conditions, and (7) adequacy of existing criteria and programs. The technical details and the data generated by the projects will be contained in a report series to be released after the Reference Group submits its Final Report to the Commission.

The Reference Group will discuss preliminary findings and the answers being developed for the reference questions with the International Joint Commission at its July, 1975 meeting in Windsor. Conclusions and recommendations will be presented to the Water Quality Board in March, 1976, and the Final Report to the International Joint Commission on June 30, 1976.

While it would be premature to discuss details of their findings, a cursory review of the Final Report Outline reveals the breadth of the Upper Lakes Reference Group study. Several interesting approaches to the study have been developed. For example, in addition to the usual land-based municipal, industrial, and tributary loadings, the Reference Group is engaged in characterizing dry and wet loadings from the atmosphere as a contributor to the materials balance of each lake. Further, a
A comprehensive model incorporating inputs, economic, social, technological, and legal considerations has been developed to forecast changes in loadings under different assumptions. The Group has devised a method for describing baseline water quality conditions based on the natural characteristics of the Lakes in order to have a working basis to define nondegradation criteria. From Group fisheries biologists came the concept of utilizing the ability of fish to biomagnify persistent trace contaminants to help determine present and future water quality.

The Reference Group will consider effects of inputs and existing water conditions by categories of topics, including enrichment; bacterial, metallic, and organic contaminants; dissolved and suspended solids; lake levels regulation; dredging; spills and vessel waste discharges; thermal inputs and radiactivity; as well as pollution by categories of water use. These will form a basis to evaluate the adequacy of existing criteria and programs.

The Reference Group study is not crisis oriented. The Group’s conclusions and recommendations will have a far-reaching impact to restore those degraded and polluted areas of Lake Huron and Lake Superior and to maintain these lakes in their natural pristine condition to ensure a high quality of life for this and future generations.

The Authors

Christopher M. Timm (Chris) is Director of the Surveillance and Analysis Division of Environmental Protection Agency, Region V, and Chairman of the United States Section of the Upper Lakes Reference Group. He is a Registered Professional Engineer with a B.S. in Civil Engineering from Purdue and a M.S. with Sanitary Engineering specialty from the University of New Mexico. Dr. Martin P. Bratzel is the Chemist of the International Joint Commission Regional Office and performs Secretariat functions for the Reference Group. He obtained his degrees in Analytical Chemistry from the University of Florida, Gainesville.

Ontario’s resource recovery program (announced in Issue 1) was officially launched March 10, 1975 with the start of construction of the $9.2 million Ontario Experimental Centre for Resource Recovery, in North York. Metro Toronto and Environment Ontario fund it jointly.

Dr. Howard A. Tanner, Director of Michigan’s DNR, denied a request from a Calgary, Alberta firm to conduct a marine seismic reconnaissance survey for oil and gas in lakes Michigan and Huron. The Natural Resources Commission concurred with Tanner’s decision at its March meeting.

The charter of National Science Foundation’s Federal Committee on Ecological Reserves was published in the Federal Register February 25, 1975. Nineteen federal agencies are members and the Chairman is Dr. J. F. Franklin of NSF’s Ecosystem Analysis Program. The committee is to “provide leadership for a coherent national program on ecological reserves which can come only at the Federal level”. Its purpose is to supplement and assist agencies in fulfilling their missions (in land use management) and to provide overall federal focus.

The Committee will be concerned with Ecological Reserves which are those areas dedicated primarily or exclusively to scientific research and education on ecological and environmental problems including: Research Natural Areas, where natural management is to preserve a given ecosystem or feature; and Experimental Ecological Areas, where various kinds of experiments or management practices can be carried out and studied on wildland and associated aquatic ecosystems in order to provide new scientific knowledge of those systems or as a demonstration.

All Canadian and U.S. fish contaminant data produced in conjunction with the Upper Lakes Reference Group studies will be computer stored in a central data bank. For more information, please contact M. Wayne A. Will.
A chloroform concentration of 144 parts per billion (ppb), slightly worse than the 133 ppb found in the recent New Orleans, LA, water supply tests, was found in Belleville, Ontario. These results were found in a test of 12 Ontario cities. Ontario’s Environment Ministry says that there is no evidence that the trace levels found in some Ontario water supplies present any human health hazard. Provincial researchers are attempting to determine what substance reacts with chlorine during water treatment to produce the chloroform.

An International Conference on Heavy Metals in the Environment will be held in Toronto October 27-31, 1975. For information contact M. K. Ward, Executive Secretary, International Conference on Heavy Metals, c/o National Research Council of Canada, Ottawa, Ontario K1A 0R6.

To help determine sub-lethal effects of lead in rainbow trout, Canada Centre of Inland Waters is measuring lead in fish blood with an atomic absorption spectrophotometer employing a heated graphite atomizer instead of a flame system. The method, to be in use in June, is intended to detect the lead in concentrations of 50 to 5000 parts per billion (ppb).

The United States Supreme Court declared that the Nixon impoundment of $9 billion in construction grant funds was illegal. Based on the allocation formulas in effect for Fiscal Years 1973-1975, the Great Lakes Basin states have been assigned: Illinois — $571,698,400; Indiana — $251,631,800; Michigan — $625,991,900; Minnesota — $174,024,500; New York — $1,046,104,500; Ohio — $497,227,400; Pennsylvania — $498,984,900; Wisconsin — $145,327,400. How the funds are divided after receipt will be determined by the states’ Priority Lists for construction of sewage treatment facilities.

On March 31, 1975, the United States Supreme Court refused to intervene in the Reserve Mining Case. The Court denied the Minnesota-Wisconsin-Michigan application requesting the Court to establish a “firm and specific timetable” for abatement. Minnesota has submitted a timetable to the District Court of Minnesota, Judge Miles Lord, for Reserve’s switchover to onland disposal.

Environmental Protection Agency Administrator Russell Train said that he will ask other government departments to join his agency in monitoring Reserve’s discharges and in pressing the shift to onland disposal. This interagency task force he proposes would be able to request Department of Justice lawyers to go back to Judge Lord if negotiations for the shiftover breakdown.

The Seventh Circuit, United States Court of Appeals, on April 1, 1975, barred construction of the Bailly nuclear power plant on the southern shore of Lake Michigan by the Northern Indiana Public Service Commission. Population density projections, closeness of present population, impact on the wetlands and dunes of Indiana Dunes National Lakeshore, and the number of nuclear plants nearby were mentioned by the Court in the decision.
Dr. Yvonne C. Martin, Abbott Laboratories, Chicago, Illinois and Dr. Kenneth J. Macek, Bionomics, Wareham, Massachusetts, answer questions at the Predictive Toxicology Seminar.

COMMISSION ACTIVITIES

Proceedings of the three Research Advisory Board Standing Committee Seminars outlined in Focus 2 are being prepared. Summary documents will be made available on request.

The seminar on "predictive toxicology" provided much opportunity for useful discussion. Proceedings will include summations of those discussions and suggested research needs as well as the papers presented. A limited quantity will be printed, but additional copies will be made available through the National Technical Information Service. Watch for details in a future Focus.

The Research Advisory Board’s Standing Committee on Social Sciences, Economic and Legal Aspects (SSELA) will hold an invitational workshop on public participation in late June. Professionals in the media, information/participation, citizen group representatives, speakers, Commission staff and SSELA members will discuss fundamental issues such as: why communicate, through what means and to whom?; how should media be employed to explore and explain environmental issues and decisions?; how can it be and how has the public been brought into the decision making process (hearings, meetings etc.)? The IJC expects to have research needs in the field identified and to receive constructive suggestions for its own operations from this seminar. The workshop has potential to be useful to other organizations because so many are attempting public participation and are falling short of their aspirations. A summary document will be prepared.

At the Water Quality Board’s March meeting and the Upper Lakes Reference Group’s April meeting Dr. J. Mengel presented a summary of his findings about sedimentation and slope stability along the Lake Superior shoreline. Portions of his presentation were testimony he gave at the Duluth IJC Lake Levels hearing in November 1974. Dr. Mengel, of the Geology Department, University of Wisconsin at Superior, is preparing a short document on his findings for distribution through the Regional Office.

Through Agriculture Canada’s local agents, farmers are hearing about the agricultural basin watershed studies being conducted in Canada as part of the Pollution from Land Use Activities Study. The agents are asking farmers which chemicals and in what quantities they are applying them so that the contribution of such additions to the soils to pollution from land drainage can be determined.
On the Commission’s recent tour at the Detroit Metro Wastewater Treatment Plant are left to right William Steggles (MOE), Commissioner Charles Ross, plant superintendent A. C. Davanzo, Commissioner Bernard Beaupré, plant chemist P. Skupeko; in row two are K. A. Oakley and W. R. Drynan of the Regional Office.

COMMISSIONER’S TOUR

Commissioners Beaupré and Ross, accompanied by Regional Office staff, toured six municipal wastewater treatment plants in the Lake Erie Basin from March 18-20, 1975. The party visited the Detroit Metro Plant in Michigan, the Rocky River and Easterly Cleveland plants in Ohio, the West Windsor, Guelph and Burlington Plants in Ontario. Treatment processes at these plants include primary sedimentation with chemical addition, secondary treatment by activated sludge with and without phosphorus removal facilities, and a physical-chemical plant with carbon adsorption. Three plants (Detroit, Rocky River and Burlington) were at various stages of construction for expansion and modification.

State, provincial and local officials were open and frank in their discussions and warmly welcomed the Commissioners and staff. The tour provided the Commissioners with an opportunity to gain first-hand knowledge of the processes involved and the resources required for the construction and operation of municipal wastewater collection and treatment facilities.

The Regional Office, on behalf of the Commissioners, wishes to thank all concerned for arranging and hosting a most enlightening tour.

TOXIC SUBSTANCES IN FISH-EATING BIRDS

Studies of bird colonies on seven islands in Lake Ontario, three in Lake Erie, and ten in Lake Huron were performed by the Canadian Wildlife Service in cooperation with the Ontario Research Foundation. “A Great Lakes Tragedy,” by Michael Gilbertson, appearing in Nature Canada January/March 1975, provides more details of the studies than follow here.

Ring-billed gulls, herring gulls, caspian terns, common terns and double-crested cormorants were found when, in 1972 and 1973, research teams visited the islands to study reproduction and collect samples for chemical analysis. The general pattern of failure in the colonies studied is as follows, although details differed from species to species: (1) high egg loss during incubation due to causes unrelated to predation; (2) mechanical breakage of eggs because of extremely thin eggshells; (3) early death of the embryo soon after the start of incubation; (4) death of a fully developed but unhatched chick; (5) death during pipping (A pipped egg is one in which the chick has made a hole in the shell); (6) high mortality of chicks after hatching, although in many cases this could well be due to natural causes such as cannibalism (in the herring gull), predation, and food shortages; and (7) unusual incubation behavior of the adults.

Chemical analyses of the eggs collected during the study show that, in general, birds nesting on Lake Ontario accumulate the largest quantities of toxic substances. Those on Lake Huron lay eggs which are slightly less contaminated. Surprisingly, the birds nesting on Lake Erie are the least contaminated. No satisfactory explanation has been found to account for this fact.

The eggs for all species show a high degree of contamination with toxic substances. DDT, dieldrin, hexachlorobenzene (HCB), polychlorobiphenyls (PCB’s) and heptachlor were present. The results of studies relating thickness of shells to the amount of DDT in herring gull eggs yield the classic curve: the higher the concentration of DDT, the thinner the shell.
Polychlorobiphenyls were the most abundant of all toxic chemicals found. Many eggs also contained a high concentration of the trace metal mercury.

All the birds studied use fish as their main food source. In the food chain, the pollutants present in low concentrations in water and bottom sediments are concentrated at each step up the chain until they reach up from plankton to the birds.

A long-term problem would still exist even if all discharges were ended. Many of the toxic chemicals are highly stable; this combined with low solubility means they will persist in sediments and only slowly be released to the water and into the food chain.

Use of DDT has been banned and PCB's use has been reduced. Meantime the future of the bird colonies is still questionable.

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**BOOKSHELF**

A 101-page report, *House Report 93-1648*, about the state of federal energy data was issued in December 1974 by the Subcommittee on Regulatory Agencies of the Permanent Select Committee on Small Business. (John Dingell (D-MI) chairs of the group.) One of the conclusions reached was that deficiencies in the data, statistics, and analyses have adversely affected all phases of energy policy making. Copies of the full report can be obtained from Representative Dingell (Room 2210, RHOB, United States House of Representatives, Washington, D.C. 20515) or House Documents Room, United States Congress, Washington, D.C. 20515. The January 24, 1975 issue of National Wildlife Federation's Conservation Report had a good summary. The federation's publication is free (1412 16th St. N.W., Washington, D.C. 20036).

“Water Quality Station Inventory” has just been published by Michigan's Department of Natural Resources. It lists by county and river basin all Department of Natural Resources monitoring stations; describes the sampling location, water quality analyses performed, sampling history and frequency of collection at the sites. Michigan State Library branches, university libraries, Bureau of Water Management district offices, and water-related research groups have been sent copies. A limited number of copies is available through T. Newell, Comprehensive Studies, Bureau of Water Management, Department of Natural Resources, Stevens T. Mason Bldg., Lansing, Michigan 48926.

“Midpoint of ‘Environmental Decade’ Impact of National Environmental Policy Act Assessed” which appeared in *The New York Times* February 18, 1975, was reprinted by the American Lung Association recently. Try contacting your local chapter for a copy (editor's came from San Diego, California) if you missed the excellent article by Gladwin Hill.

A five-volume, 1,600 page, annotated bibliography for Lake Erie has been completed and is now being printed. The volumes contain abstracts of sources of historical and current research on Lake Erie in biology, chemical, engineering, physical, and socio-economic disciplines. While the supplies last, copies can be obtained from the Buffalo District of the Corps of Engineers, 1776 Niagara St., Buffalo, N.Y. 14207. Checks for $15.00 should be made payable to Treasurer of the United States.

The Buffalo District Corps also has published a Report on Sediment emphasizing phosphorus and its mobility between sediment and water. Checks for $5.00 should be made payable to the Treasurer of the United States.

Environmental Protection Agency's report “Activities of Federal Agencies Concerning Selected High Volume Chemicals” is available from Environmental Protection Agency, Public Information Office (PM-215), 401 M St. S.W. Washington, D.C. 20460. It summarizes the federal research and regulatory actions directed toward the 50 greatest volume chemicals produced in the United States. The intent is to provide industry with information on current and planned federal activities concerning the 50 chemicals.

*Environmental Literature: A Bibliography* is a 134-page compilation of pamphlets, books, journals and audiovisual aids dealing...
with pollution and pollution control. It also includes abstracts of symposia proceedings and meetings. The publication is available from Noyes Data Corporation, Noyes Bldg., Park Ridge, N.J. 07656.

Lake Erie Water Quality Newsletter is the quarterly publication from the Buffalo District Corps of Engineers. It provides news of the Lake Erie Wastewater Management Study the District is conducting in cooperation with the five States within the Lake Erie Watershed, the United States Environmental Protection Agency, and other regional and Federal agencies. The goal of the study, authorized by the Water Pollution Control Act Amendments of 1972, is the development of a demonstration program "for the rehabilitation and environmental repair of Lake Erie." Write to the Project at the Corps' District Office, 1776 Niagara St., Buffalo, N.Y. 14207 to be added to the mailing list.

A Technical Note summary of Asbestos in the Great Lakes Basin, the Commission's Research Advisory Board report, is now available from the Regional Office. The Note summarizes the major chapters of the report.

Water: A Primer, by Luna B. Leopold, W.H. Freeman and Company ($2.95), New York, N.Y. is about the water of the hydrologist: where it comes from, where it goes, the character of rivers, floods and moist soil and how we use them and try to control them. The book is a paperback text for undergraduates.

"Endosulfan: Its Effects on Environmental Quality" is a report concerning the movement, persistence and toxic properties of endosulfan and its sulfate in terrestrial ecosystems. Endosulfan is one of the major chlorinated insecticides still in use in Canada. The report is $1.25 and is available from Publications, National Research Council of Canada, Ottawa, Ontario K1A 0R6, as publication NRCC 14098.

IJC HAS NEW UNITED STATES CHAIRMAN

States Section. As the Congressman from the 36th District of New York State from 1964 through 1974, Mr. Smith was a strong supporter of environmental legislation. During his service in Congress he served on the Judiciary Committee, the District of Columbia Committee, and as a member of the United States-Canadian Interparliamentary Group. He was a member of the Conference of Great Lakes Congressmen and received the Great Lakes Commission Conservation Award in 1972.

Prior to serving in Congress, Mr. Smith practiced law in Ithaca and North Tonawanda, New York. In 1962 he was elected Mayor of North Tonawanda, and the following year he served as Niagara County Judge, Surrogate and Family Court Judge in Lockport, New York.

Smith received his A.B. degree from Dartmouth, his LL.B and J.D. degrees from Cornell University Law School, and was admitted to the New York Bar in 1936.

"I'm tremendously pleased that the Presi-
dent has given me this exciting opportunity to be of service to the United States and to Canada," Smith stated.

Chairman of the Canadian Section, IJC, Maxwell Cohen, Q.C., of Montreal, stated that Henry Smith’s appointment “takes place at a time when the world can do with models of international cooperation at its best.”

Former United States Chairman, Christian A. Herter, Jr., has been named Deputy Assistant Secretary of State for environment and Population.

WILDLIFE

April 6, 1975 marked the beginning of National Wildlife Week in Canada. Jeanne Sauvé, Environment Minister, commenting on this year’s theme “People and Wildlife”, noted that renewed interest in outdoor activities such as hiking, camping, bicycling and gardening has been stimulated by concerns about pollution and energy conservation. Hunting and fishing continue to have an active following.

The minister stated that the Canadian Wildlife Service and the Ministry of Natural Resources, Province of Ontario, are attempting to perform wildlife management in habitats that can support wildlife populations. The Service’s concern was such that a few years ago it began acquiring productive marshes to preserve breeding habitat for waterfowl and other wildlife. There are now over 30 National Wildlife Areas in Canada.

In Ontario there are eight National Wildlife areas, some of which are not yet ready for the general public to visit. For particulars about the wildlife areas listed following you can write to the Canadian Wildlife Service Information, Department of the Environment, Ottawa, Ontario K1A 0H3: Big Creek Marsh (Longpoint on Lake Erie, 1450 acres), Dover Marsh (Lake St. Clair, 620 acres), Elinor Island Bird Sanctuary (Muskota, 2 acres), Hahn Marsh (Longpoint, 300 acres), Mohawk Island Bird Sanctuary (Port Maitland, 5 acres), Mississippi Lake (Lanark County, 780 acres), Willer Bay (Hillier Township on Lake Ontario, 100 acres), and Wye Marsh, which has the only National Wildlife Service interpretation center in Ontario (Midland 38 acres). Point Pelee National Park also provides excellent opportunities for those who enjoy ornithology.

In the Great Lakes Region the Service is engaged in research with endangered species and with bird populations to pinpoint the effects of pollution (see Toxic Substances in Fish-Eating Birds, page 7).

PEOPLE

Former Congressman Ogden R. Reid has been appointed Commissioner of the New York State Department of Environmental Conservation.

The IJC has, upon recommendation of Governor James A. Rhodes, appointed Ned E. Williams to be Ohio’s member on the Great Lakes Water Quality Board.

Christopher M. Timm, newly appointed Director of the Environmental Protection Agency’s Surveillance and Analysis Division Region V, has been named Chairman, United States Section, of the International Reference Group on Upper Lakes Pollution. He replaces Dr. Robert W. Zeller who recently transferred to the Environmental Protection Agency, Washington, D.C.

William E. McCracken, Michigan Department of Natural Resources, has been appointed to membership on the Upper Lakes Reference Group.

Patrick S. Chamut, who had been the Regional Office Biologist and in that position provided Secretariat functions to the Pollution from Land Use Activities Reference Group and the Water Quality Objectives Subcommittee, has accepted a position with the Aquatic Contaminants Unit of the Fisheries and Marine Service in Ottawa.

William D. Marks, Chief of the Water Development Services Division, Michigan Department of Natural Resources and member of the IJC’s Pollution from Land Use Activities Reference Group, has been designated as Michigan’s official delegate to the Great Lakes
Wes Williamson has been named director of the new Resource Recovery Branch in Ontario’s Ministry of Environment. The Branch will coordinate Ontario’s 15-year $500 million resource recovery and reclamation plans.

Wilson K. Talley, an Oakland, California, scientist, has been appointed new Assistant Administrator of EPA’s Office of Research and Development. He is responsible for supervising Environmental Protection Agency research activities in air, water, radiation, noise, pesticides and solid wastes.

Dr. A. T. Prince, of Canada’s Department of Energy, Mines and Resources, is the new president of the Atomic Energy Control Board. Dr. Prince was the first chairman, Canadian Section of the Great Lakes Water Quality Board.

Dr. Arthur Porter, first Chairman of the Canadian Environmental Advisory Board, has accepted chairmanship of the new independent commission of inquiry into long-range planning of Ontario’s power needs.

Dr. G. Keith Rodgers, presently chairman of the Water Quality Board’s Surveillance Subcommittee, has been appointed the Chairman of the Canadian Section of the Upper Lakes Reference Group replacing Dr. Robert K. Lane, who has taken a position with the Environmental Management Service in Edmonton, Alberta.

Grant J. Merritt, Water Quality Board member for Minnesota, has resigned as head of the Minnesota Pollution Control Agency, effective July 1, 1975. Peter Gove has been named to replace him in the agency.

Dr. J. C. N. Westwood, Professor and Head of the Microbiology and Immunology Faculty of Medicine at the University of Ottawa, is a new member of the Great Lakes Research Advisory Board.

Dr. Ray W. Durham of Canada Centre of Inland Waters has been appointed chairman of the Water Quality Board’s Radioactivity Work Group, replacing W. L. Dick, who assumed a position with the Ontario Provincial Secretariat for Resources Development.

Carlos Fetterolf, Research Advisory Board member and Chairman of the Water Quality Objectives Subcommittee, has been named Executive Secretary of the Great Lakes Fishery Commission.

Richards said, referring to the IJC’s 1973 annual report on Great Lakes Water Quality. Inshore waters have shown some improvement and Ohio is “doing reasonably well” in meeting the requirements set by the 1972 Agreement between Canada and the United States on Great Lakes water quality, Richards stated.

Further progress in Ohio, however, is keyed to the availability of construction grant funds for wastewater treatment plants. The federal government recently released $497 million for construction of wastewater treatment plants in Ohio. The funds had been impounded under the Nixon administration. Although this money will help ease the pressure of construction costs for some Ohio communities, progress beyond 1976 will depend on future funding. The money now available will...
provide aid for only about half the communities requesting help, according to Richards.

Ohio is "well along" in the reduction of phosphates in the lake. Richards cited the example of the city of Akron, which has an ordinance that bans phosphates over a certain percentage in detergents. The law has resulted in a 60 percent drop in phosphates in Akron's wastewater, and a resultant low phosphate content in the water after treatment.

Pollution of lake waters by commercial and private vessels is a special problem because type and size of vessels varies so widely, and many agencies and governments are involved in developing and enforcing standards. The Water Quality Board of the International Joint Commission has recommended that a policy of no discharge be adopted by both governments. Monitoring of thousands of pleasure craft is an impossible task and there are questions about the adequacy of the number of disposal facilities presently available at the lake's marinas. To correct this problem, the Ohio EPA is promoting the building of pump out facilities at the docks and marinas along Lake Erie.

On the federal level, Public Law 92-500, the Federal Water Pollution Control Act of 1972, requires the United States Environmental Protection Agency to develop standards for the kind of effluent necessary for a safe discharge, and the Coast Guard to develop regulations for the equipment necessary to produce such an effluent.

Under Ohio law, it is illegal to discharge wastes from a water craft unless treated by a device or methods approved by Ohio EPA. The director of Ohio EPA has determined that there are no devices or methods available for recreational water craft which will produce a satisfactory effluent.

The disposal of both dredging spoil and sewage sludge are other concerns of the Agreement. Several Lake Erie harbors are now building diked disposal areas for dredged spoil where before the material was dumped back into the lake. Richards said that some wastewater treatment plants in Ohio now incinerate their sludge, but that is a waste of resources. He called upon the waste treatment industry to investigate ways that sludge can be used as soil treatment and fertilizer.

Several Ohio EPA staff members serve on IJC committees. Ernie Neal, head of the Office of District Operations, serves on the Surveillance and Data Quality sub-committees of the Water Quality Board; Paul Flanigan, head of the Office of Water Pollution Control, is a member of the Board's sub-committee on Remedial Measures, and George Garrett, chief of the Technical Research Advisory Committee, is a member of the Board's Water Quality Objectives Sub-committee. In addition, Russell Hart of the northeast District Office in Twinsburg, serves on the International Working Group on Dredging.

**FILMS**

Four films are available from the Corps of Engineers. Three are available through the Buffalo Corps Office. Requests must be submitted at least four weeks in advance. The films are: *Living Filter* (17 min/1963), wastewater management techniques using land treatment; part of the research program at Penn State University. *The Choice is Ours* (28 min/1969), multi-use planning in the upper Mississippi Drainage Basin; scenes on water supply, fish and wildlife, recreation, navigation, soil and water conservation, flood control, pollution, and power. (Booked to July 1975). *Wastewater Bonanza* (28 min/1974), a review of wastewater treatment with emphasis on recycling nutrients. "The Great Great Lakes" is now available from the North Central Division of the Corps of Engineers, Public Affairs Office, 536 S. Clark St., Chicago, Illinois 60605.

"Our Ever Changing Shoreline" is a 15-minute color, 16 mm film (cleared for television) produced for the New York State Sea Grant Program. It focuses on the problems of erosion and deposition on New York's Atlantic and Great Lakes shorelines and protective constructions and their effectiveness. Though aimed at a New York audience, the background information is useful to residents of...
The film is available on two weeks notice from the Cornell University Film Library, Robert H. Mals, Ithaca, New York 14853. The fee is $2.00 a day. Write to the Library for a list of other films.

"Aqua Folly" is a 16 mm, sound, color, 33 minute film explaining the need for water conservation through watershed management. Boyd Film Co., 1569 Shelby Ave., St. Paul, Minnesota 55104 will lend it free.

"Aquatic Weed Control" is a 16 mm, sound, color, 17-minute film available on a free loan basis from Chevron Chemical Company, Advertising and Public Relations, Ortho Division, 200 Bush St., San Francisco, Ca. 94120. The film shows the problems of weeds in the fresh water environment and presents methods of control.

Two EPA films are available on a free loan basis from the Agency's Water Quality Office, Washington, D.C. 20242. "Talent Search" is a 16 mm, sound, color, 20-minute film about the work, training and importance of wastewater treatment plant operators. "Spray Irrigation of Digested Sludge" is a 16 mm, sound, color, 25-minute film about the Hertfordshire, England, project.

GOVERNOR MILLIKEN ON GREAT LAKES ISSUES

Governor William G. Milliken welcomed those attending the Great Lakes Basin Commission's February meeting in Lansing with an issue oriented speech. He noted that Michigan has a very special interest in the Great Lakes and has placed high priority on effective management planning to meet future needs and preservation of the Great Lakes. He expressed a concern about the future of Great Lakes navigation and its implications for the resources, economy, and citizens of Michigan. The Governor urged a greater role be given to the States in a number of current activities dealing with the improvement of navigational systems. At the recent National Governors' Conference in Washington, D.C., a Caucus of Great Lakes Governors adopted a resolution urging Congressional action to create a Maritime Administration office for the Great Lakes. (Recent information indicates that the selection of a site for the Great Lakes Regional Maritime Administration office is proceeding.) The Caucus also recommended that no less than 10 percent of available operating and construction subsidies be spent on each of the four coasts, including the Great Lakes.

Other areas of concern to Governor Milliken are lake levels and shore property damage. He stated that the report of the Great Lakes Levels Board of the International Joint Commission left a number of issues unresolved and suggested that the Basin Commission may wish to explore alternatives to the current IJC strategy.

In a related issue, the Governor indicated that the National Flood Insurance program seems to be coercing shoreland residents to purchase insurance, while imposing substantial barriers to obtaining relief when erosion losses occur. At a later time, Michigan will be suggesting certain modifications in the Flood Insurance program to the Federal Government.

Closing with a strong statement, the Governor declared that Michigan intends to do all in its power to maintain present pleasure boat pollution standards.

Michigan filed a petition with the Environmental Protection Agency April 24, 1975, requesting complete prohibition of vessel waste discharges into Michigan waters of Lakes Michigan, Huron, Superior, Erie and St. Clair, all connecting channels, and all inland lakes. This on the grounds that the majority of these waters are designated for domestic water supply and total body contact recreational uses.
**MICHIGAN “BILL OF RIGHTS” UPHeld**

The Michigan Supreme Court unanimously upheld an environmental bill of rights which grants citizens the right to file suit to stop projects that may damage the environment. The court's decision held that the 1970 Environmental Protection Act not only gave citizens power to stop destructive projects, but also “imposes a duty” on public officials to “prevent or minimize degradation of the environment which is caused or is likely to be caused by their activities.”

Michigan’s statute goes further than NEPA. Instead of forcing just the preparation of an environmental impact statement (as in NEPA), under the state law the citizen suit, if won, blocks the project.

The decision came about from a suit filed by 56 landowners near Scotsville, Michigan (near Lake Michigan). They opposed a $213,000 plan to change Black Creek from its meandering course to a deep, fast-flowing ditch to prevent flooding of a 100-acre crop area owned by two farmers.

The plaintiffs, who represented 70 percent of the landowners assessed to finance the project, argued that the project would lower the water table in the area and therefore damage wetlands. The plan called for filling hundreds of cubic yards of mud from the creek bottom on its banks in piles 24 to 30 feet wide.

The Supreme Court ruled that once plaintiffs in a lawsuit brought under the act had showed that a project would harm the environment or was likely to do so, the project could not proceed unless the public interest compelled it and there was no “feasible and prudent alternative.” In addition, the Supreme Court said that judges must issue detailed findings of fact in deciding such cases.

Joseph Sax, professor of environmental law at the University of Michigan, said that the decision “creates a kind of environmental ‘Bill of Rights’ that is now imposed on every official of every public agency” in Michigan.

**LAKE MICHIGAN DAY**

Five years ago Lake Michigan Federation was formed to unify citizen action to preserve that Great Lake. To assess progress to improve water quality in Lake Michigan, to review the remaining and emerging problems and to celebrate their fifth anniversary, the Federation held Lake Michigan Day, April 25, 1975.

William A. Steggles, advisor to the Deputy Minister of the Environment for Ontario, and Fitzhugh Green, Associate Administrator for International Affairs, U.S. Environmental Protection Agency, provided overviews of the progress under the 1972 Canada-U.S. Water Quality Agreement and PL 92-500, the U.S. Federal Water Pollution Control Act Amendments of 1972.

Mr. Green noted that reports indicate that for every $50 thousand spent in response to 92-500 requirements one job is created. Quoting Governor Milton Shapp of Pennsylvania, Mr. Steggles stated that for every dollar spent on environment, $2.00 to $2.50 are added benefits felt in the economy. Congressman Abner J. Mikva of Illinois in his luncheon speech stressed that “none of the aspirations of America are incompatible with a healthy environment.”

Indiana, Illinois, Michigan and Wisconsin environmental control agencies reported their status on 92-500 programs. The contribution of pollution from the air to the loadings of Lake Michigan received much attention. DDT, phosphorus and metals have reached the Lake via the air because wind patterns carry the pollutants over the lake as the air masses move eastward and deposit the materials in precipitation.

A poster, “Man’s impact on Lake Michigan,” was prepared for the Federation in time for distribution at the conference. It is a useful map of the Lake with explanations of some of its characteristics, processes and uses. Copies are available from the Lake Michigan Federation, 53 West Jackson Boulevard, Chicago, Illinois 60604, for $1.00.

https://scholar.uwindsor.ca/ijcfocus/vol1/iss3/1
TOXIC SUBSTANCES BILL

Senators John V. Tunney (D.-Calif.), Philip A. Hart (D.-Mich.) and Warren G. Magnuson (D.-Wash.) introduced this year's Senate version of the Toxic Substances Control Act (S.776). As yet, no similar bill has been introduced in the House. During the last Congress, both the House and Senate passed such bills, but the final bill was held up in conferences for over a year and never did pass. Environmental Pollution Agency Administrator Russell E. Train and Council on Environmental Quality Chairman Russell W. Peterson support the new bill. Train said the Administration differs in some specifics, but not in principle; however, OMB (Office of Management and Budget) appears less supportive.

According to a CEQ report in 1971, there are approximately two million known chemical compounds and probably over two thousand new ones have entered the marketplace since the report (according to Train). Only about 6,000 have been tested for carcinogenicity, according to a recent Science and article. Substances cited as examples of the need for this legislation include mercury, fluorocarbons, asbestos, inorganic arsenic, vinyl chlorides, and polychlorinated biphenols.

Train and Peterson agreed that the bill should: provide for reporting to the government of chemical production, intended use, and any privately sponsored health and safety information relevant to the various federal agencies that deal with controlling toxic substances; permit the government to require testing of chemicals, both new and prospective, to assess their potential for human and environmental risk; and give Environmental Protection Agency authority to deal with chemical substances not adequately covered by other legislation. Train said Environmental Protection Agency's best estimates are that overall additional cost to industry to meet the bill's requirements would be about $45 million per year.

Canada's Parliament is presently considering Bill C-25, An Act to protect human health and the environment from substances that contaminate the environment. The Environmental Contaminants Act, on March 24, 1975 was read a second time and referred to the Standing Committee on Fisheries and Forestry. The bill concerns "suspicious" substances, those not biodegradable which may have eventual damaging effects on health or the environment. It is a preventive measure which the Department of the Environment would use to identify and analyze the presence of suspicious substances in manufactured products.

AMENDMENTS TO 92-500

The Environmental Protection Agency is planning to send the 94th Congress amendments to the Federal Water Pollution Control Act relating to ad valorem taxes, toxic standards, extension of expiring authorities, and allowing state water quality reports to be submitted every other year instead of annually; further, the Agency will support the Cleveland-Wright (Representative James C. Cleveland, R.-N.H.; Representative James C. Wright, D.-Texas) bill (H.R. 2175) giving authority for certifying compliance with federal requirements for construction grants to the states.

The proposed bill is designed to accelerate the development and approval of municipal sewage treatment projects by enlarging the responsibility, authority and capability of the states. Principal benefits, according to Representative Cleveland (see Congressional Record, February 5, 1975, Volume 121, No. 15), would be construction economics through reduction of delays, a spur to employment, economic and residential expansion in communities presently stifled by lack of a treatment capacity, and clean waters faster with the states in true partnership with the federal government.

The Environmental Protection Agency Administrator would, under the Cleveland bill, be empowered to accept state certification of treatment works if he determines the state agency able to carry out the functions. If after public hearings the Administrator determines the state fails to meet any requirements, he can suspend his acceptance and assume
responsibility. Further, he is authorized to conduct inspections and audits and require data, information, and reports from the certifying agency. Up to 2 percent of the allotted construction grant monies shall be reserved by the Administrator for the state to carry out its new functions.

Omitted from the Environmental Protection Agency’s recommended amendments are reduction of the federal share from 75 percent, and limiting federal support for treatment works.

Toward the end of this year additional amendments dealing with eligibilities, federal sharing, and design limits may be proposed.

FOR ADDITIONAL COPIES

Write to the Editor, Great Lakes Focus, IJC Regional Office, 100 Ouellette Avenue, Windsor, Ontario, Canada N9A 6T3.

NEW WINDSOR OFFICE DIRECTOR

In Focus 2, brief mention was made that Kenneth A. Oakley had been appointed Director of the Commission’s Great Lakes Regional Office. We thought that perhaps you would like to know more about the new Director.

Prior to joining the Commission in May 1973, Mr. Oakley was the General Manager of the Newfoundland Clean Air, Water and Soil Authority. He entered public service after 20 years with Imperial Oil Ltd. in Alberta, Saskatchewan, British Columbia, and Ontario as an engineer and in various executive capacities. Mr. Oakley is a member of the Engineering Institute of Canada, the Association of Professional Engineers of Ontario and the Rotary Club of Windsor. He holds a degree in Civil Engineering and is a graduate of Memorial University College and the University of Toronto.