When the International Joint Commission meets in Indianapolis November 15 - 17 those who attend will note some innovations. One is a theme, which will continue in the future: Great Lakes Connections - people's connections with the Lakes, land drainage connections with the Lakes, institutional connections, economic connections, recreation connections...the list is endless. Further, the International Joint Commission is the one continuing link connecting the people of Canada and the United States in the Great Lakes clean-up effort...and IJC can be your "Great Lakes Connection."

For the first time, reports are to be released 30 days in advance of the

Inside...

Governments Respond to IJC's First Biennial Report ............ 3
Protecting Water Quality — What the Home Gardener Can Do 4
Leaving Well Enough Alone: ............ 5
Soil Erosion In Wisconsin .......... 7
Center for Lake Superior Environmental Studies ............ 8
Institute for Research on Land and Water Resources ........ 9
Three Ontario Cottage Associations Receive Awards ............ 10
Practical Tips on the Large — Scale Use, Storage and Disposal of Pesticides ............ 11
IJC Meetings on Great Lakes Water Uses ............ 12
International Environmental Coalition Has First Annual Meeting ............ 13
Public to Assist in Formulating Regulation for PCB Disposal ............ 13
An Ecosystem Approach Workshop ..... 14
The Great Lakes Go to School ............ 15
Illinois-Indiana Sea Grant Marine Extension Program ........ 15
Columns
Law and the Courts ............ 6
Things to See ............ 9
Briefs ............ 10
Bookshelf ............ 12
Events ............ 12
Letters to the Editor ............ 15
meeting. Anyone who plans to attend the meeting is to be sent copies of the reports as soon as they become available. This mailing is to constitute general release to the media and the public. (A general mailing will follow to all those who return a reports request form indicating which of the new documents they wish to receive.)

Because people are to have the reports to read and discuss with others before the Meeting, the Commission recognizes that the opportunities for those who attend to participate must be expanded. The Water Quality Board and the Science Advisory Board presentations will feature the highlights of the Board reports followed by discussion with the Commission and the public. The opportunity will also be available for those in attendance to present comments. For those who cannot attend, comments can be sent to the Great Lakes Regional Office. Along with the reports, written comments and the discussion at the Biennial Meeting will be considered when the Commission prepares its Second Biennial Report to the Governments of Canada and the United States early in 1984.

Another change encourages increased participation. On the second full day of the Biennial Meeting workshops will be held. Two specific topics are under consideration now: Nonpoint Source

Successful, similar ones may be held in future host cities.

This year for the Second Biennial Meeting the Commission seeks imaginative ways to broaden public participation and leadership. The Commission believes that participants should be representative of the Basin community, and that some segments of the population may require encouragement in order to attend the Meeting and make their contributions. The Commission welcomes inquiries or suggestions either from individuals or from members of groups in this connection.

All sessions and the Environmental Exhibition will be held at the Atkinson Hotel in downtown Indianapolis. Registration information, including accommodations costs, will be sent during the summer to those requesting it. The next issue of Focus will carry more details on the Meeting.

CORRECTION

On page 13 of Focus Issue 8-3, in the article concerning the appointment of J. Blair Seaborn to the Commission, one correction is in order. Under the Rules of Procedure of the International Joint Commission under the Boundary Waters Treaty the Commissioners of each Section "shall appoint one of their number as Chairman (in Canada) to be known as the Chairman of the Canadian Section of the International Joint Commission." E. Richmond Olson was appointed Chairman on September 7, 1981 and served as Chairman until December 22, 1982 when he resigned and moved the appointment of J. Blair Seaborn as Chairman of the Canadian Section.
Governments Respond to IJC's First Biennial Report

The International Joint Commission presented its First Biennial Report under the 1978 Great Lakes Water Quality Agreement in June 1982. In it were fifteen recommendations to the Governments of Canada and the United States. The two Parties to the Agreement responded to all fifteen Commission suggestions this March.

The two nations' responses reflect pride in the successes achieved through actions to reduce pollution caused by direct industrial discharges and inadequate municipal wastewater treatment. The responses also recognized the need for accelerated and expanded efforts in some aspects of Agreement programs, especially those directed toward reducing the problems associated with persistent toxic substances.

Both Governments have confirmed their obligation and intent to comply with Agreement provisions on research, surveillance and monitoring, and to seek the necessary resources to support Agreement activities. The United States response states: "Shifts in resources to new programatic activities and steps toward greater integration of national program activities with those of Great Lakes states have and will continue to be made, as necessary. These changes will reflect current resource allocations and pollution control program priorities without impeding United States implementation of the 1978 Agreement." In Canada, Ontario and the federal government "are re-examining their surveillance programs to ensure that they are currently responsive to the reemerge...The need for a co-ordinated bilateral surveillance plan and longer-term commitment by the jurisdictions to its implementation is supported by Canada and Ontario."

In the area of toxic substances control, "Canada and Ontario support the view that an overall strategy to address toxic chemicals in the Great Lakes Basin is required. They also support continued emphasis on correction of priority Areas of Concern such as the Niagara River." The United States is considering the specific recommendations made by the Water Quality Board on a comprehensive toxic substances management strategy. The response points out that the United States "has legislative and regulatory authority to adequately manage toxic discharges, and the use, transportation, storage and disposal of hazardous substances. The comprehensive control systems in place at the national level are a significant indication of U.S. intent." Both countries agree that priority lists of toxic chemicals need to be revised and state their intention to participate in such revision cooperatively and soon.

In response to the IJC's recommendation to confirm the target loads for phosphorus outlined in the Agreement, the Governments were able to state that they recently accepted a text which provides confirmation of the target loads and makes provision for new targets and schedules to achieve the goals in accord with comprehensive plans to be developed within eighteen months of the formal acceptance of the new text. The United States pointed to the initiatives taken to meet the target loads prior to their confirmation: efforts to meet or improve upon the 1.0 mg/l effluent concentration in municipal treatment plant effluent, programs to demonstrate methods for reducing phosphorus inputs to the Lakes from land drainage, regulatory actions to limit or eliminate phosphate content in household detergents, and efforts to upgrade air monitoring networks to address the deposition of phosphorus (and other contaminants) to the Great Lakes. Canada underscored its parallel efforts and added that the programs in the Canada/Ontario Agreement are a first step in the development of a comprehensive water quality management strategy to include abatement of pollution from nonpoint sources.

Both Governments agree that there is little knowledge of the cumulative ecological or human health effects of multiple pollutant inputs, though scientists in each country are actively engaged in research. They agree that more information is needed before action can be taken.

Canada "remains prepared to designate limited use zones if this step can be taken in a co-ordinated fashion with the United States." The U.S. proposes to consult with Canada, but states that: "It is a matter of record that identification of Limited Use Zones within the United States has proved difficult. For practical purposes, the concept of Areas of Concern has proved quite effective in targeting effort where special problems exist."

In response to the Commission's suggestion that deadlines and timetables be examined and revised if necessary, in the considered judgement of Canada and Ontario, it would not "prove beneficial to amend the 1978 Agreement deadlines, which stand as an ever-present reminder to the Parties to encourage completion of the various programs and measures as soon as possible." The United States pledges to "continue to make every effort to meet schedules and deadlines in the Agreement."

The UJ expressed concerns about inter-jurisdictional impacts of pollution and a general lack of mechanisms to ensure that individual jurisdictions consider the costs and other disbenefits of their pollution on their downstream neighbors in the Great Lakes Basin ecosystem. Both Parties suggest that the innovative institutional approaches being tried to resolve the problems of the
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Leaving Well Enough Alone:
Loring C. Christie and the Rush Bagot Agreement, May-June 1939

by Michael Scheuer

During the past several years a good deal of media exposure has been devoted to what has been termed a "deterioration" in Canadian-American relations. Such matters as the cross-border animosity engendered by the Garrison Diversion Project and the failure of the East Coast Fisheries and Maritime Boundary Treaties to secure United States Senate approval have been used to illustrate the deterioration.

Difficulty in gaining Senate assent is not a new experience for Canadian-American treaties. While outright rejection has not been commonplace, it has consistently been a difficult process to guide such instruments through the Senate. The American Congress, as John Holmes has recently written, "does not act as a rational whole but as the endorser of the will of sectional clusters of senators and congressmen with a vested interest in their constituents' rights to fish or pollute." Holmes' opinion is a valid one and the diplomats of both nations constantly search for means with which to resolve bilateral problems without reference to the Senate. Flexibility and adaptability have therefore become the hallmarks of the two ratified Canadian-American treaties.

This flexible approach to bilateral relations has manifested itself even in regard to treaty provisions which do not seem open to expansive interpretation. An example of this procedure can be found in the application of the terms of the Rush-Bagot Agreement. Concluded in 1817, this Agreement between Great Britain and the United States mandated naval limitation and disarmament on the Great Lakes and Lake Champlain. Rush-Bagot limited each nation to a naval force on those lakes of four vessels "not exceeding 100 tons burden, and armed with one 18-pound cannon." Although the configuration and power of naval forces have been revolutionized many times over since 1817, the Agreement has never been officially amended and no major controversy has ever arisen over it.

The basis for this enduring success lies in the fact that both Ottawa and Washington have sought to preserve the Agreement by being as accommodating as possible to each other's desires. A system of advance notification has also been developed whereby one nation will inform the other of its intention to circumvent the Agreement while simultaneously requesting permission to do so. Each nation has, in this way, kept the other informed of its naval activities and, as a result, ships of size and armament exceeding original stipulations have frequently been allowed on the lakes. This pragmatic application of Rush-Bagot's terms has had the very considerable advantage of avoiding formal amendment and subsequent Senate ratification.

In May, 1939 a situation arose in which the Rush-Bagot Agreement had to be applied in the manner described above. At that time, the United States government wished to arm its training vessels on the Great Lakes with four-inch guns, the existing limit was three inches. Approval was also sought for the construction of ocean-bound warships in shipyards along the lakes. In a note to Canada's Department of External Affairs requesting permission for these measures, Daniel Roper, the American Ambassador in Ottawa, admitted that the proposals were technical violations of the Agreement, but added that the United States believed that they could be countenanced while fully maintaining "the spirit which underlies the Agreement". Recalling the failure of a bilateral effort to revise Rush-Bagot in the early 1920's, Roper said that his government felt that another attempt was also likely to be unproductive and, for that reason, "a modification of the Rush-Bagot Agreement would be undesirable at this time." Roper concluded by stating that Washington could foresee no ill-effects accruing to Canada from the proposed actions and reminded the Canadians that the Agreement's provisions had been consistently applied in a flexible manner and that, indeed, "without a degree of tolerance the Agreement could scarcely have survived to the present day in its original form."

During departmental discussions, Loring C. Christie, the Department's Counsellor and a hard-headed pragmatist on the subject of Canadian-American affairs, took the lead in arguing that, since Senate approval for formal revision was unlikely, Canada should seek to insure the continued flexible application of Rush-Bagot's provisions. He held that the maintenance of this approach would preclude the chance that either nation would feel forced to make a "unilateral interpretation" of the Agreement. Should such an interpretation ever be made, Christie wrote, it would be "in effect like throwing overboard the whole of this Great Lakes self-denying ordinance". Christie's memorandum on the requested deviations is an insightful analysis not only on that topic, but also, in its consideration of the many subtle influences coming into play, a splendid indication of the elements of pragmatism and expediency that often help to facilitate the handling of Canadian-American issues. Christie wrote:

"In any discussion or negotiation in this field it seems, therefore, entirely clear that, if they cannot see their way to some formal revision of the Rush-Bagot Agreement, both sides

https://scholar.uwindsor.ca/jcfocus/vol8/iss4/1
should firmly recognize the necessity of this practice or device. If they cannot mutually discover and appropriate technical schemes and definitions for a revised Great Lakes Naval Treaty covering (1) Quantitative or (2) Qualitative Limitation or (3) Advance Notification and Exchange of Information, or all three, they must at least fail to keep (3) in full effect, however informally. This can be done simply by following the existing well grounded practice, notifications and requests for permission being put forward separately whenever either side has some specific step in mind, and being advanced only as and when the necessity for action has actually arisen, so that the exact particulars of numbers, tonnage and calibre of vessels and armament will be known and can be definitely described.”

“Again, as between “unilateral interpretations”, on the one hand, and the maintenance of the existing informal practice of “advance notifications” and requests, on the other hand, it may be asked what are the differences in practical advantage and effect. Apparently “unilateral interpretations” have been contemplated because of the difficulty arising from the fact the U.S. Senate ratified the Rush-Bagot Exchange of Notes; and it is not proposed to publish any such interpretations. On the other hand, it is not necessary to publish the formal “advance notifications” and requests and answers involved in the existing practice. They have not been published in the past, and no difficulty has yet arisen, if there is some risk of difficulty with the Senate. In either case there would always be the risk that some bright reporter or agitator, familiar with the Rush-Bagot technical provisions, might spot some actual existing variation and make a play. There is plenty of material for that already. But if that risk actually materialized, which alternative would put both sides in a position to make the best of it? In the one case, both sides could say, “We knew the Rush-Bagot Agreement was out of date in certain respects; we were not clear about the lines of formal revision; practical necessity required certain reasonable and safe technical variations; but we have always safeguarded the position by advance notifications and consultation upon each specific instance, taking occasion from time to time in that connection to reaffirm our mutual determination to maintain the underlying spirit and objective.” In the other case both sides, starting with the same preamble, could only say, “Because of some legal difficulties, we thought it best for each of us to interpret the Agreement unilaterally on his own side according to his own idea of his reasonable requirements and without consultation” — leaving it to the public to ask, “How does that really differ from throwing the Agreement aside altogether?” The existing practice surely represents the lesser evil. And, if some publicity did arise, it would not seem very difficult on the existing facts for the State Department, while admitting, if necessary, some technical legal laxity, to prove to the Senate that as a practical matter the Department had never given more than they received in this field and in fact had done pretty well.”

“impractical” at the moment, it was indeed possible “to be consistent with the underlying objective of the Agreement though not strictly consistent with its technical schemes or definitions.” Skelton informed Roper that his government approved the American requests, adding only that it assumed that the deviations would “apply equally to the case of any Canadian vessels that may be maintained on the Great Lakes or of naval vessels to be constructed in Canadian shipyards there.” The Skelton-Roper exchange of notes settled the matter to the satisfaction of both governments and neatly avoided introducing the potentially disrupting factor of Senate involvement. Once again, some creative statecraft and fidelity to a pragmatic diplomatic tradition had allowed for both modernization and strengthening of naval forces on the lakes and the preservation of the Rush-Bagot Agreement.

NOTES:
4. ibid., O.D. Skelton to Daniel Roper, 10 June 1939.

LAW AND THE COURTS

In January the Michigan Supreme Court upheld the state's right to regulate phosphate content in detergents. (Source: January 28, 1983, Water Newsletter)

Superfund monies will be used to clean up the nearly 1 million pounds of polychlorinated biphenyls (PCBs) in Waukegan Harbor on Lake Michigan. The clean up will occur under a recently signed contract between the State of Illinois and the United States Environmental Protection Agency. The first step is a $100,000 feasibility study to decide on the most cost-effective and
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environmentally responsible means for removing and disposing of the PCBs. EPA Region V Administrator, Valdas Adamkus hopes to complete this step in about three months and to begin actual cleanup in the spring of 1984. After completing the clean up, EPA will sue Outboard Marine under liability provisions of Superfund to attempt to recover the $1.4 million cost. (Source: Lake Michigan, Vol. 13, No. 1)  

On Saturday, December 18, 1982, President Reagan signed a bill wiping out the remaining $110 million of debt the St. Lawrence Seaway Development Corporation owed to the United States Treasury. This move will enable the Seaway to use its share of ship tolls on necessary repairs in addition to operation and maintenance.

Soil Erosion In Wisconsin -
A BUSHEL OF SOIL FOR A BUSHEL OF CORN

It is by bit, Wisconsin topsoil is eroding at the average rate of 4 to 6 tons per acre per year. This means that about a bushel of soil is lost from a field for each bushel of corn produced. Areas in the hilly terrain of southwestern Wisconsin average up to 1.3 tons of soil loss per acre each year.

Obviously soil erosion, accelerated by human activity such as farming, is a continuing problem. For example, a 9-in. layer of surface soil over one acre has a dry weight of about 1,500 tons. If four tons are washed off evenly each year, starting in 1825, by 2200 the field will have lost its surface soil layer. Although a four-ton yearly loss may seem slight to a society that tends to ignore the future needs of people four centuries from now, the rate of deposition of eroded material at the more extreme sites was about 27 times the natural geologic rate. By 1915 this rate had increased to 170 times the geologic rate. The post-1915 reversal of the trend back to the present rate of 26 times the geologic rate can be attributed to good effects of soil and water conservation programs.

What can be done to stop, or at least control, soil erosion? The ultimate solution — maintenance of adequate soil and water conservation practices, year-in and year-out — will only come with a total community involvement in a real defense effort. (Edited information from: SUR' View, June 1982)

Editor's Note: The recently completed Corps of Engineers Lake Erie Wastewater Management Study (LEWMS) included demonstration projects of conservation tillage to reduce erosion. (See Focus article, "Lake Erie Diffuse Source Phosphorus Control", Volume 6, Issue 3, pages 3-6) An update of that study will appear in the late summer Focus. The article will summarize the final report and present status of recommended follow-up activity.

[Image: Drifting Topsoil]
Center for Lake Superior Environmental Studies

University of Wisconsin-Superior

History and Purpose

In 1967, a small group of faculty scientists from the departments of Biology, Chemistry and Geology initiated multidisciplinary research and educational efforts aimed at addressing regional environmental problems. Because of the location of the University of Wisconsin-Superior campus at the southwestern tip of Lake Superior, the importance of the lake and Duluth-Superior harbor to the region and the close proximity of undeveloped regional forest areas and inland lakes, the scientists focused their efforts on area resource problems linked to national concerns. In 1969, the Center for Lake Superior Environmental Studies (CLSES) was created on the Superior campus with Dr. Albert Dickas of the geology department as director. The purpose of the Center was to promote unique research, educational and public service activities.

The major objectives of CLSES were and continue to be to: help identify, understand, and solve environmental problems; perpetuate the professional growth of participating scientific and non-scientific staff; involve students in nontraditional learning experiences through applied research; develop facilities and equipment to increase both research and instructional opportunities; provide a regional information source on environmental questions, and integrate acquired knowledge into the classroom when appropriate.

During its thirteen years of existence, CLSES associated faculty, staff and students have conducted diverse investigations on water quality, regional flora, Lake Superior fish populations, red clay erosion, harbor sediment quality screening methods development, heavy metal leaching from western coal, bioaccumulation and toxic effects of organic chemicals, metabolism of organic pollutants by aquatic animals, and development of structure-activity relationships for organic chemicals. In addition to science areas, staff from the areas of Psychology, Business/Economics, and Communicating Arts have participated in projects through CLSES. Over 20 UW-Superior undergraduate students per year have taken part in these research projects.

The Center has been involved in environmentally oriented educational programs. Staff is especially proud of the National Science Foundation sponsored Science Training Program for high ability high school students. The 7-8 week program which focused on environmental assessment of bodies of fresh water was conducted from 1972 through 1981 involving over 300 students representing nearly every state in the USA. Additional special educational programs have been conducted for college students, science teachers, minority students and the general public.

At present, CLSES employs over 30 full-time research staff, making it the
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largest division at this 2100-student undergraduate institution. It receives approximately 1.2 million dollars annually from extramural sources. This results in UW-Superior being the third largest recipient of such funds in the 13 member University of Wisconsin system (after Ph.D.-granting campuses at Madison and Milwaukee) although it is by far the smallest institution in the system.

Current Resources and Programs

CLSES utilizes on-campus laboratory facilities primarily designed for the exposure of aquatic animals to pollutants, analytical chemistry, microbiology and fish culturing.

THINGS TO SEE

Two unique films of particular interest to fishery workers and anglers are available for purchase or rental from Audio Visual Services, Special Services Building, The Pennsylvania State University, University Park, PA 16802. "Reproductive Behavior of the Brook Trout," produced by Robert L. Butler, provides an eye-catching, encyclopedic display of brook trout spawning activity. The 24-minute film (#22712) features effective use of telephoto lens and slow motion and may be rented for $14.50. A second film, "A Trout Stream in Winter," produced by Vernon Hawthorne and Robert L. Butler begins with underwater views of brook trout reproductive behavior in the fall and ends with similar footage of spring spawning rainbow trout. The film graphically portrays, through time lapse photography, the mechanics and ecological consequences of winter ice formation within trout streams. This 18-minute film (#22591) may be rented for $13. Both of these 16 mm color films were shot at the Sagehen Creek Field Station amid the spectacular scenery of the Sierra Nevada Mountains in California.

Institute for Research on Land and Water Resources

by Donna L. Fisher, Institute Publications Coordinator

The overall objective of the Institute for Research on Land and Water Resources at Pennsylvania State University is the discovery and transfer of knowledge in areas associated with the use and management of natural resources. Major emphasis is given to an interdisciplinary approach to natural resource use and conservation, which includes physical, biological, environmental, economic, social and political considerations. Research topics encompass all academic disciplines which might aid in solving natural resource problems, and contractual obligations amount to approximately $4.25 million annually. Faculty and graduate students from academic departments of all ten colleges of the University are involved in Institute research. The number of Institute-affiliated staff and faculty ranges from 150 to 200.

To meet its goals, the Institute coordinates and conducts basic and applied research. It also provides advisory services to public and scholarly organizations and disseminates information to industries, agencies and individuals about resource management and environmental matters. Legislative committees, public agency representatives, consulting and educational groups frequently visit the Institute, seeking information and assistance.

Research publications, information reports, journal reprints and other publications are available from the Institute. Its quarterly newsletter reaches more than 2,500 national and international researchers, legislators, government employees, libraries, members of citizens' groups and others. Workshops, seminars and conferences, and package technology transfer programs meet other communication needs. Institute personnel serve on federal and state committees as well as on national and international editorial boards.

The Institute consists of five research centers. Each has a director or co-directors who, in addition to management responsibilities, actively engage in program development, research and technology transfer.

1. Water Resources Research Center - This Center's researchers devote their time to broad based water-related research, training and technology transfer programs. Research areas include water supply management and flood control, water quality management and control, and mine drainage pollution abatement. To support its research programs, the center maintains a water quality laboratory which is equipped with a full spectrum of instruments for specific water quality analyses.

2. Land Resources Research Center - Environmental quality is the principal concern of researchers working through this Center. Research areas include the relationships between land use developments and land uses and values in surrounding areas, real estate tax assessment practices, valuation of land and growth and development processes.

3. Regional Resources Research Center - This Center is concerned with the problems faced by local, state and federal governments and related regional organizations. Research studies focus on optimization of regional public services, appropriate regional resources use and regional development and the quality of life.
4. **Office for Remote Sensing of Earth Resources (ORSER)** - The objective of this Office is to develop a land data base for Pennsylvania and computer software that will store, retrieve and interpret data from aircraft and satellites. Versions of ORSER software are available worldwide; governmental agencies and environmental and resource inventory consulting firms already use ORSER programs and data. Programs have recently been used to assess the extent of insect defoliation and to detect change in land cover for defense mapping.

5. **Office of Hazardous and Toxic Waste Management** - The purpose of this Office is to provide technical assistance and research services to those in the state who are concerned about the management and control of hazardous and toxic wastes. It serves both the public and private sectors and involves nine other universities in the state.

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**Three Ontario Cottage Associations Receive Awards**

Three southeastern Ontario Cottage Associations received ten-year commemorative plaques from the Ontario Ministry of the Environment (MOE) for assisting the Ministry in its Self-Help for Recreational Lake Program. The *Battersea-Loughborough Lake Association* located on Loughborough Lake near Kingston and the *Otty Lake Association* situated on Otty Lake south of Perth have been sampling their lake located southwest of Arnprior since 1972. The sampling program gives MOE an opportunity to gauge recreational lake water from one year to the next and saves money while freeing Ministry staff and equipment for more detailed work elsewhere.

During the 1982 Self-Help Lake sampling period, 75 lakes were monitored by over 100 people representing many southeastern Ontario cottage associations. In 1972 the program included five lakes with only a handful of participants.

MOE supplies cottage associations with sampling kits to measure water clarity and to collect water samples biweekly during the ice-free season. These samples are mailed to the nearest MOE laboratory for analysis. The true value of the program is realized after the monitoring program is continued for a number of years so long term trends can be determined. After each sampling season, participants receive an MOE report on the lakes involved in the program that year.

Costs per sample including kit, mailing, administrative costs and analysis expense are about $10.00. Similar samples collected by Ministry staff would cost over $20.00 per sample.

MOE staff do intensive surveys in the ice-free months on regional recreational lakes. These surveys and resultant data allow the Ministry of Natural Resources to plan fish management in these lakes, and MOE staff use the data to make recommendations on future shoreline development. (News release)

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**BRIEFS**

A $25 million donation of the Mellon Foundation initiated the Nature Conservancy’s $50 million effort to protect U.S. wetlands. Ten to 20 critical areas will be targeted. For more information write to Jack Lynn, Nature Conservancy. (Source: January 24, 1983 - Land Use Planning Report)

Illinois, Indiana, Minnesota and Wisconsin are the only Great Lakes States among the 31 chosen to share $31.5 million which the United States Department of Agriculture is distributing under the Soil and Water Conservation Act of 1977. Objectives are to reduce excessive soil erosion which impairs agricultural productivity in crop, range, pasture and forest lands, to conserve water used in agriculture and reduce flood damage in small, upstream watersheds. Thirteen west/south-west and ten southern states as well as Iowa, Kansas, Missouri and Maine will benefit. (Source: January 10, 1983 - Land Use Planning Report)

The American Institute of Hydrology (AIH), as a non-profit organization, was recently established to offer registration of hydrologists and hydrogeologists. Admission to full membership to AIH is by registration only. Each Member will be certified as a Professional Hydrologist or Professional Hydrogeologist. Information forms should be requested from Dr. A. Zaporozec, General Secretary, AIH, University of Wisconsin, 1815 University Avenue, Madison, WI 53706, (608) 262-3385.

The Senate of the University of Western Ontario has approved the creation of the Cartographic Resource Centre for the Great Lakes Region. The project is financed by a grant from the University’s Academic Development Fund. The Centre will form an integral part of the Map Library of the Department of Geography and will complete the initial development stage in 1985. Resources of the Centre will be available to all interested parties - academia, private businesses and government.

The United Nations has designated 1983 as World Communications Year. Two of its objectives are to increase public awareness and understanding of communications technologies and their uses and benefits; and promote dialogues on public policy communications issues.
Practical Tips on the Large-Scale Use, Storage and Disposal of Pesticides

The proper management of pesticides ensures optimum use of the chemicals to control pests with a minimum effect on the environment. Following is a list of practical tips on the use, storage and disposal of pesticides:

WHEN TO APPLY

- Pesticides should be applied only if there is an economical pest problem.
- Pesticides should be sprayed when the wind is below 8 km/h (5mph).

HOW TO APPLY

- Spray equipment should be carefully maintained and operated correctly to ensure that the quantity applied corresponds to the quantity intended for application as specified on the label.
- Spraying should not be done close to surface waters.
- Well openings should be covered when near spray operations.
- A low application pressure should be used to help control spray drift.
- The spray nozzles should be kept as low to the ground as possible, while still getting good coverage.
- Special applicators with electrostatic charging, recirculating sprayers or rope wick applicators should be used to target the application.
- Aerial application of hormone-type herbicides (2,4-D) is NOT recommended in agricultural areas of Ontario.
- Extra care should be taken when applying pesticides next to susceptible crops.

STORAGE AND HANDLING

- Spray equipment must be equipped with an anti-back flow device where water is being drawn from surface waters or wells.
- Nurse tanks can be used to transfer water from the source to the sprayer.
- Water-filled sprayers should be moved away from the source of water before adding the pesticide and when cleaning.
- Sprayer wash water should not be emptied into or near surface waters or wells.
- Pesticides should be stored in an area isolated from farm water and feed supplies. (READ THE LABEL REGARDING STORAGE REQUIREMENTS)
- The storage area should be kept clean to ensure that pesticide dust is minimal.
- Pesticides in leaky containers should be transferred to good quality containers and the original label should be attached.
- Pesticide containers should never be left unguarded in the field while spraying, especially near a surface body of water.

DISPOSAL OF PESTICIDES

- All empty metal or glass containers should be rinsed out three times with water and the washings should be added to the spray tank.
- Metal or glass containers should be punctured or broken and then buried under a minimum of 50 cm (18 in.) of soil in an area which is not near a watercourse or water table and approved by the Ministry of the Environment.
- Paper or cardboard containers can be burned, provided persons and animals are kept clear of the smoke.
- Surplus pesticides should be disposed of at an approved landfill or decontamination site.
- Empty containers should not be used for any other purpose.
- Rinsed and punctured containers may be disposed of at approved landfill sites.
- Contact your local municipal landfill sites or the Ministry of the Environment for more information.
Information provided in _Talk of the Thames-Winter 1983_, as taken from the _Handbook, Environmental Implications of Fertilizer, Pesticide and Waste Management_ distributed by the Thames River Implementation Committee, P.O. Box 6278, Station D, London, Ontario N5W 5S1, (519) 451-2800.

**BOOKSHELF**

The March/April Issue of _Michigan History_ ($2.00 US from Charlene Kull, Michigan Department of State, Publications Unit, Michigan History Division, Lansing, MI 48918) focuses on the common threads that have bound Michigan and Canada together over their history. Nine articles are included, one by two-time _Focus_ contributor Michael Scheuer, describes charting the boundary through the Detroit River.  

The Flower Press announces publication of _Worms Eat My Garbage_, by Mary Appelhof. This 110-page paperback provides complete instructions on how to set up and maintain a home system which uses earthworms to recycle organic kitchen waste to produce plant fertilizer and fishing worms. Interested? Write to Flower Press, 10332 Shaver Road, Kalamazoo, MI 49002, or call (616) 327-0108 for cost information.  

"Great Lakes Maritime History: Bibliography and Sources of Information", published in December 1982, may be of interest for _Focus_ readers. For more information about this 124-page reference, write to Eajay Publications, P.O. Box 2176, Dearborn, MI 48123 or call (313) 274-9731.  

The Izaak Walton League has published "A New Citizen's Guide to Clean Water", describing provisions of the Clean Water Act and how to become involved. It can clarify debates over the Act's reauthorization and help you assess future proposals for regulations. For copies ($1.50 US) write to IWLA, Suite 806, 1800 N. Kent St., Arlington, VA 22209 or call (703) 528-1818.  

**EVENTS**

The Fourth Annual Meeting of the Society of Environmental Toxicology and Chemistry (SETAC) will be held November 6-9, 1983, at the Hyatt Regency Hotel, Crystal City, Arlington, Virginia. Its theme, "Multidisciplinary Approaches to Environmental Problems", will focus attention on the merits of coordinating expertise from varied disciplines to identify, characterize, solve, and predict problems resulting from the environmental release of toxicants. For details, contact SETAC, P.O. Box 352, Rockville, MD-20850 (301-468-6704).  

In June the International Joint Commission will hold public meetings on diversions and consumptive uses of Great Lakes waters. Discussion will focus on the report of the International Great Lakes Diversions and Consumptive Uses Study Board, on broader policy implications, and related issues.

The Board concluded that: increasing consumptive use will have a significant effect on the levels of the Lakes and should be monitored; present diversion rates could be modified without structural changes, but managing diversions to raise extreme low lake levels was not feasible; and these diversion rates could not be managed to reduce extreme high levels without causing an overall long-term economic loss. The Board did not have a mandate to investigate speculative large scale diversions out of the Great Lakes Basin.

Citizens of both countries may participate in either Canada or the United States.
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States. Prepared briefs will be received as is customary, but they should be summarized for verbal presentation. Oral presentations are also welcome. If you cannot attend, send your written comments to LC offices.

The meeting schedule follows:

Week 1
June 7, 1983
Chicago, Illinois
American Congress Hotel
532 South Michigan Avenue
Sessions at 2 and 7 p.m.

June 8, 1983
Duluth, Minnesota
Radisson Hotel
505 West Superior Street
Sessions at 2 and 7 p.m.

June 9, 1983
Windsor, Ontario
Cleary Auditorium
201 Riverside Drive West
Sessions at 2 and 7 p.m.

Week 2
June 13, 1983
Cleveland, Ohio
Cleveland Engineering Society
3100 Chester Avenue
Sessions at 2:30 and 7 p.m.

June 14, 1983
Rochester, New York
Rochester Inst. of Technology
Webb Auditorium
Sessions at 2 and 7 p.m.

June 15, 1983
Toronto, Ontario
Harbourfront
York Quay Centre
235 Queen’s Quay West
Sessions at 2 and 7 p.m.

June 16, 1983
Cornwall, Ontario
Cornwall Civic Complex
100 Water Street East
Sessions at 2 and 7:00 p.m.

International Environmental Coalition has First Annual Meeting

Great Lakes United (GLU), a coalition of 69 environmental, labor, business, governmental, and citizen groups representing more than a million people came together the weekend of May 7-8 to elect its first Board of Directors and determine policy for the coming year. GLU developed a set of resolutions to protect Great Lakes Basin environmental quality and charged its Board with carrying out policy directives on: hazardous and toxic substances; atmospheric deposition; energy development and distribution; land quality and land use; regulation of levels and flows; navigational projects; fish, wildlife and habitat protection; and water quality.

On May 8, featured speaker Congressman David Bonior of Michigan introduced a Great Lakes Environmental Agenda which GLU delegates endorsed and pledged to support:

“...We must obtain recognition of the importance of the Great Lakes as a national, international and global resource.

We must fulfill the U.S. obligation to our Canadian neighbors by doing our share of regulation, enforcement and research for the Lakes.

We must expend our Basin-wide research capabilities to deal with long-term problems and to anticipate new ones.

We must understand the necessity of, and utilize the principles of, the ecosystem approach in decisions for the future, such as structural expansion of our navigation systems.

And we must recognize the importance of the quality of the Lakes to the quality of life in the Region, including economic revitalization of the Region.”

The Congressman explained what the agenda means in terms of actions. “There is an urgent need for a comprehensive assessment of atmospheric deposition of all pollutants, especially toxic fallout.

The results of this research should be used to design regulatory programs that recognize the relationship between air and water quality.

The total costs, environmental as well as economic, must be assessed for determining the role of navigation development in the Lakes.

Environmental impact statements for projects which affect some part of the Lakes should also address the implications for the whole lake system.

Decisions on such issues as diversions, level regulation, use of wetlands and reindustrialization should be approached from the perspective of how this affects the Great Lakes Ecosystem, as well as the specific goals of each program.” (For GLU information contact Robert A. Boice at (315) 788-8450).

Public to Assist in Formulating Regulation for PCB Disposal

In March, Ontario’s Environment Minister Keith C. Norton invited public discussion on draft guidelines covering mobile facilities for the destruction of polychlorinated biphenyls stored in many communities. His invitation was contained in letters sent to municipal officials, public interest groups, trade associations and companies with interests and expertise in the field of PCB destruction.

Mobile destruction technologies offer the opportunity to deal with the PCB problem on a community-by-community basis. These technologies may be more acceptable to citizens who would otherwise oppose establishment of large-scale permanent destruction facilities within their community.

Following review of the public responses, revised guidelines and a draft regulation will be prepared. The proposed guidelines and draft regulation will be referred to the Environmental Assessment Board which will hold public hearings and make recommendations to the Minister.

The regulation will be introduced under the Environmental Protection Act setting out terms and conditions for approval of mobile PCB destruction facilities which will permit the movement of such facilities to new locations as needed without the current legal requirement of repeated public hearings.

https://scholar.uwindsor.ca/ijcfocus/vol8/iss4/1
An Ecosystem Approach Workshop

A three-day workshop on implementing the "Ecosystem Approach" in the Great Lakes Basin was held on March 22-24 at Hiram College in Ohio. The workshop, the most recent step in a program that has been developing since 1980, (see Focus Volume 7, Issue 2) was co-sponsored by the Great Lakes Fishery Commission, Great Lakes Tomorrow, the International Association for Great Lakes Research and the Science Advisory Board of the International Joint Commission. The goal of the program is the adoption of an ecosystem oriented approach as the basis for planning and management decisions for the Great Lakes Basin.

The workshop brought together more than 60 persons from the United States and Canada, representative of major interests in the Basin — industry, government, citizen groups and universities — to arrive at an agreement on the core concepts underlying an ecosystem approach, to identify the major factors to be considered in planning or implementing such an approach and the barriers to its use, and to develop practical strategies to address these problems and opportunities.

The workshop reached a broad agreement on the basic concepts of the ecosystem approach, including evident need for it in dealing with the interrelated problems of the Great Lakes. The workshop developed criteria to define and assess ecosystem oriented initiatives, identified current ecosystem approaches in the Basin, and developed a range of strategies involving and identifying roles for education, government, industry, information management, research, and individuals in the process.

The program steering committee, co-chaired by Dr. John R. Vallentyne, Senior Scientist at the Canada Centre for Inland Waters, and Dr. William E. Cooper, Michigan State University, will be working with participants in the next few weeks to add practical details to the suggested initiatives, drawing on the varied perspectives and expertise represented.

For further information write to Dr. Vallentyne, Department of Fisheries and Oceans, CCIW, Box 5050, Burlington, Ontario, L7R 4A6.

Look for further details about the ecosystem approach workshop results in a future Focus.
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LETTERS TO THE EDITOR

John Hartig’s article elicited several telephone calls, but to date only one letter:
Dr. Hartig apparently views Great Lakes fisheries as based on put-and-take exotic salmonid stocks, of species prone to contamination in areas where high contemporary inputs of contaminants occur. However, not all of these fisheries are so affected and, of course, these are not the only important fisheries and not necessarily even the most desirable fisheries for very many areas of the Great Lakes.

The main objective of fisheries agencies is to rehabilitate native fish communities (variously including lake trout, whitefish, chubs, ciscoe, walleye, yellow perch, etc.) in most areas of the Great Lakes. Concurrently the main objective of Great Lakes environmental protection agencies is to reduce toxic contaminants to safe levels in air, water, sediment and biota. Commonly held assumptions are that both tasks will take many years, but, by the time toxics are reduced, fish communities will be more stable, balanced, self-reproducing and useful than most recent fish communities.

Considerable progress has been made in developing a co-ordinated fish contaminants monitoring program tailor-made for the Great Lakes and for UC. This is not so easily done for the two national health protection programs, each of which considers exposure of its population from all sources (air, water, agriculture products, etc.). Nevertheless, consistency would be a worthwhile objective, considering that susceptibility is based on age, sex, and pregnancy status, rather than on nationality.

I suspect that Dr. Hartig’s question, implying the futility of stocking fish in contaminated waters, is asked often. However, I believe that many groups and individuals would be concerned if rehabilitation of Great Lakes fish communities were abandoned as a matter of public policy, particularly if they were one of the many millions drinking Great Lakes waters.

M. G. Johnson, Scientist
Department of Fisheries & Oceans

The Great Lakes Go to School

Do the Great Lakes really exist?
"Not according to traditional school curricula," says Ellen Fisher. Students learn about the Great Gatsby, the Great Wall and the Great Society in United States classrooms, but often the Great Lakes are ignored.

The Joyce Foundation of Chicago agreed with Fisher and granted the Coastal Management Specialist nearly $50,000 to incorporate the Great Lakes into classroom programs for grades kindergarten through eight. The curricula to be developed under the Joyce Foundation grant will not be restricted to science or geography. Instead, Great Lakes information will be woven into art, history, music and language arts as well. The Joyce Foundation is presently funding the first year of the three-year project.

In April 1982, Fisher tested the waters by informing Midwest schools they could send for GLRP — the Great Lakes Resource Packet — containing activity tips, film lists, posters, and coastal contacts. Fisher said he expected a few hundred requests, but she had received over 2,000 by late October. Most teachers do not have the time to gather facts about the Lakes and seem enthusiastic about receiving pre-packaged materials.

By spring of 1984, classroom teachers and other experts will evaluate the revised curricula. If all goes as planned, the Great Lakes will make "a real splash" in elementary education.

On April 28-30, teachers and specialists from various disciplines met for a three-day workshop to lay the foundation for the curriculum. They will identify appropriate grade levels and disciplines for Great Lakes content, assign priorities to topics to be included, and design a conceptual scheme and format which can be easily incorporated in existing programs. During the summer, teachers and writers will develop the curricula, the draft of which Ellen Fisher hopes to have available for schools by late fall.

If you would like more information, contact Ellen Fisher, University of Wisconsin-Extension, 1815 University Avenue, Madison, WI 53706 (608) 262-2106. She would like to hear from you if you know of texts which include the Great Lakes, have developed materials for classroom use, or know of such information.

Illinois-Indiana Sea Grant Marine Extension Project

The focus of this new program will be the environs of Lake Michigan and will provide an opportunity for the two states to address some of the marine resource problems which they both face. It was determined that the most logical approach would be to have the land grant institutions of the respective states - the University of Illinois at Urbana-Champaign and Indiana-Purdue University work cooperatively on the program.

There have been and continue to be critical environmental and resource
problems in Lake Michigan which need to be addressed. The wise utilization of these resources to enhance the quality of life, in not only the two states but nearby Great Lakes states as well, will be the central focus of the Illinois-Indiana Sea Grant Program. It is anticipated that there will be a great deal of coordination and cooperation with the Great Lakes Sea Grant Program through the Great Lakes Sea Grant Network. The Network has been in existence for several years and the procedures for such cooperation already exist.

Lake Michigan, a valuable recreation resource for Illinois and Indiana, has played a significant role in economic and social development of these two states. Between eight and nine million of the people in these two states live within an hour's drive of Lake Michigan. To insure the best use of water related environments, now and in the future, residents must better understand and appreciate them. Although the length of the shoreline contained in the two states is relatively small (approximately 110 miles), in comparison to that of most other states that front on the Great Lakes or oceans, the impact of the midwest megalopolis associated with most of this lake frontage is tremendous.

The central mission of this bi-state program is to seek the wise use of marine resources related primarily to Lake Michigan and its environments for the enhancement of life in this area. Programs will be designed to increase the use and increase public awareness of the resources of Lake Michigan, thereby responding to high priority issues or marine resource problems facing the people in these two states.

A marine extension project will be implemented initially to activate the Sea Grant Program. In the future, the research and educational elements will be added to make it a more comprehensive program. The marine extension project will be the link between sources of information - those who study the Great Lakes marine resources and have access to other resources at the universities - and the resource users: industry, government and the general public. Information can be transferred through personal contacts by marine extension personnel, meetings, conferences, publications, and media projects reaching a broad spectrum of users. This extension function is the primary outreach element of the program and will provide the link to the general public.

The mission of the marine extension project is to communicate with identified clientele groups in the bi-state area and to work with them to identify their problems and needs. Response to these needs can be accomplished by informing client groups of research results or relevant technical information and by carrying public concerns, needs and priorities back to the academic institutions so that proper research projects can be designed to respond to identified needs.

The Sea Grant Program Coordinator, Robert D. Espeseth, will be located at the University of Illinois at Urbana-Champaign. The Co-Coordinator for Indiana will be James Peterson, a Cooperative Extension Service Recreation Specialist, who has a joint appointment at Purdue University and at Indiana University.

The total funding for the first year of the project will be approximately $134,595 of which the Office of Sea Grant, United States Department of Commerce will contribute about $80,475 or 60% of the total with the respective institutions contributing a little over $54,000.