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IJC Encourages Open Dialogue on Great Lakes Water Quality Issues at Biennial Meeting

by Sally Cole-Misch

Indianapolis started it all in 1983, when 300 people joined the International Joint Commission for its first Biennial Meeting on Great Lakes Water Quality. Kingston was next in 1985, followed by Toledo in 1987, Hamilton in 1989, and Traverse City in 1991, when more than 1,600 people participated in the meeting. Now, ten years later, Windsor will host the International Joint Commission's 1993 Biennial Meeting on Great Lakes Water Quality. Why does the Commission hold these meetings, what issues are addressed, and how can attendees participate in this year's sessions?

A Bit of History

Under the Great Lakes Water Quality Agreement, the Commission is required to monitor progress by Canada and the United States to implement the goals and objectives of the Agreement, to assist in implementation, to analyze and disseminate data, provide advice and recommendations, and undertake other initiatives as requested. Two advisory boards -- the Great Lakes Water Quality and Science Advisory Boards -- were established to assist the Commission with these responsibilities. The boards have established numerous committees over the years to investigate and report on various topics, and the Commission has created other advisory groups, such as the Council of Great Lakes Research Managers and the Virtual Elimination Task Force, to address specific issues facing the Great Lakes ecosystem.

After the first Agreement was signed in 1972, the Agreement boards initially reported to the Commission at its semi-annual meetings similar to other boundary water advisory boards. By 1975, however, the Commission expanded its interaction with Agreement boards to an additional annual meeting, so the boards and their subcommittees could provide indepth presentations on their work and findings.

At night, above, a cosmopolitan sparkle embellishes Windsor and Detroit's shared river, bridge and skyline. During the day, below, the horizon reveals activities that make the area a center for the automobile and chemical industries, and create air and water quality concerns.

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For the first few years, few people attended the meetings other than Commissioners, staff, and board and subcommittee members. By the time the Agreement was renewed and revised in 1978, public interest in Great Lakes water quality issues had grown, and increasing numbers of citizens attended to observe the board presentations. The format of the meetings remained largely unchanged, although microphones were added in the audience area in 1980 for brief comments after the planned presentations. In Cleveland in 1981 and Windsor in 1982, most citizen comments addressed water quantity rather than quality concerns, due to high water levels at that time.

As public attendance increased at these annual meetings, the Commission began to realize that several other sectors of the Great Lakes community were interested in work under the Agreement and wanted to play a role in the achievement of its goals. Thus, the meetings were redesigned to include workshops and other discussion sessions to ensure that input was received from all interested persons. A biennial meeting cycle was created to conform with the 1978 Agreement's requirement that the Commission report on Agreement progress every two years. This allows the Commission to receive reports from its advisory boards and input from the public before it prepares its biennial reports to Governments.

Since 1983, biennial meetings have expanded significantly in attendance and design, and may include public hearings, workshops or other concurrent sessions, local tours, and ancillary events organized by other Great Lakes organizations. The Commission designs each meeting to encourage dialogue among all participants on the most pressing water quality issues facing the Great Lakes ecosystem, and to ensure that it has heard all points of view before it prepares its next biennial report. It also continues to devote a significant portion of the agenda to presentations by its Great Lakes advisory boards, which have studied these issues and can report findings to the Commission and the public at the biennial meetings. Biennial meetings alternate between the United States and Canada.

The 1993 Meeting

This year's meeting, to be held October 22-23 at the Cleary International Convention Centre in Windsor, Ontario, will include presentations by the Commission's Great Lakes advisory boards and task forces, a panel session to discuss progress on the Binational Lake Superior Program, a keynote address, a facilitated discussion on alternatives to using chlorine as an industrial feedstock, and several hours for public hearing presentations. Attendees are invited to present their views on progress under the Great Lakes Water Quality Agreement to the Commission during these hearings, in addition to coordinated presentations by governments, industry groups and citizen organizations. All plenary sessions will have simultaneous interpretation in French and English. Board and task force reports, which are sent to registrants approximately one month prior to the meeting, will be available in English and French.

Because the Commission's biennial meetings bring together researchers, regulators, citizen activists, industrial representatives, scientists and others involved in Great Lakes water quality issues, participants come to the meetings with a variety of agendas and interests. The Commission is working with various Great Lakes entities to ensure that the key issues facing the region are on the agenda, and that the best use is made of available time for presentation and discussion of these issues. The Commission also welcomes ancillary events to enhance the level of dialogue on Great Lakes issues.

Potential areas of future Commission work will also be explored during four concurrent sessions on Sunday morning, October 24, immediately following the Biennial Meeting. Topics for these sessions, which are open to the public, are described in the next two articles.

Recognizing the continued priority of the Remedial Action Plan process, a Forum on Remedial Action Plans for Great Lakes Areas of Concern will be held Thursday, October 21 and Friday morning, October 22. Options are being explored to ensure broad participation by agency representatives, business leaders, citizens and others involved in the development of these plans. For further information, contact Mark Breeder of the Commission's Great Lakes Regional Office, whose address is at the end of this article.
How to Participate

The Commission holds the Biennial Meeting primarily to listen and learn. Thus, while it provides the forum for discussion, the attendees of the meeting are the true participants. The meeting provides the opportunity to share your views with the Commission and, as importantly, to interact with others who are actively involved in restoring and protecting the quality of the Great Lakes Basin Ecosystem. No registration fee is charged, and your participation in the 1993 meeting is welcomed and encouraged. To register, please fill out and return the registration form on pages 17 and 18 by September 20, 1993.

For further information, contact Information Services, International Joint Commission, 100 Ouellette Avenue, Eighth floor, Windsor, ON N9A 6T3 or P.O. Box 32869, Detroit, MI 48232. Call (519)257-6700 in Canada or (313)226-2170 in the United States.

Sommaire

Tout a commencé à Indianapolis, en 1983; c’est là, en effet, que 300 personnes environ ont assisté à la première réunion biennale de la Commission mixte internationale sur la qualité de l’eau des Grands Lacs. Une décennie plus tard, c’est au tour de la ville de Windsor d’être l’hôte, pour 1993, de cette importante manifestation. Mais, pour quelles raisons la Commission organise-t-elle cette réunion? De quoi y sera-t-il question? Et, comment les personnes ou organisations intéressées peuvent-elles y participer?


Depuis 1983, les réunions biennales ont pris de l’ampleur, tant au plan de la participation que des activités au programme. Ainsi, des audiences publiques, des ateliers ou d’autres séances parallèles et des visites de lieux d’intérêt locaux sont prévus au programme de cette année; il y aura également des activités organisées en marge de la réunion par d’autres organismes s’intéressant aux Grands Lacs. La Commission cherche ainsi à ce que tous les participants puissent discuter des questions les plus pressantes touchant la qualité de l’eau du bassin des Grands Lacs, et lui faire part de leurs opinions sur le sujet avant qu’elle ne rédige son prochain rapport biennal.

Cette année, la réunion se tiendra les 22 et 23 octobre, au Centre international des congrès Cleary, à Windsor (Ontario). Au programme, des exposés par les experts des conseils consultatifs et des groupes de travail de la Commission, une discussion en panel sur l’évolution du programme binational du lac Supérieur, une discussion, avec animateur, sur les solutions de rechange à l’utilisation du chlore comme matière première dans l’industrie, quatre séances parallèles, et plusieurs heures d’audiences publiques au cours desquelles les participants pourront donner à la Commission leur avis sur les progrès accomplis dans le cadre de l’Accord relatif à la qualité de l’eau dans les Grands Lacs. Des représentants des gouvernements et de l’industrie ainsi que des groupes de citoyens y feront également valoir leur point de vue. Il y aura l’interprétation simultanée des débats en plénière. On pourra se procurer des exemplaires en français et en anglais de la série de rapports présentés par les conseils et les groupes de travail, qui auront préalablement été envoyés aux personnes inscrites, un mois environ avant la tenue de la réunion.

C’est d’abord par souci d’écouter et d’apprendre que la Commission organise cette rencontre. Celle-ci sera le prétexte pour que les participants en forment, la Commission ne faisant que fournir un cadre de discussion. La Commission invite donc chaleureusement toutes les personnes intéressées à s’inscrire sans frais à la réunion de 1993 en retournant, dûment rempli, le formulaire d’inscription apparaissant aux pages 17 et 18, le 20 septembre 1993 au plus tard.

Pour de plus amples renseignements, veuillez vous adresser aux services d’information de la Commission mixte internationale, 100, avenue Ouellette, huitième étage, Windsor (Ontario) N9A 6T3. Téléphone (519)257-6700.
IJC Explores Protecting Healthy Great Lakes Watersheds

by Mark Breederland

Do your travel plans this summer include time along the coastal areas of the Great Lakes? For many inhabitants of the basin, wandering along the shores and embayments is an annual excursion that reminds us of the tremendous resources of these “sweetwater seas.” Even to a casual observer, however, it is clear that significant growth and development pressures are impacting the aesthetics and ecology of the Great Lakes coast, including many notable nondegraded watersheds.

In the 1980s, the International Joint Commission catalyzed needed cleanup and restoration efforts in 43 Areas of Concern through the Remedial Action Planning process. Many lessons continue to be learned about forming effective partnerships and taking an ecosystem approach to cleaning up significantly degraded locales. One lesson is clear: it will take substantial time and fiscal resources to restore these areas.

While we focus attention on cleaning up polluted areas, however, many healthy local ecosystems in the Great Lakes basin are suffering a variety of impacts that threaten their integrity and the integrity of the entire Great Lakes ecosystem. The International Joint Commission’s Sixth Biennial Report on Great Lakes Water Quality recommends that the Governments of the United States and Canada join with jurisdictions and local governments to identify and designate sustainable development areas, and provide support to develop a model program for conserving and protecting areas of high quality. These areas can conceptually be thought of as “Areas of Quality” in contrast to Areas of Concern.

The old adage “an ounce of prevention is worth a pound of cure” certainly applies in this context. Efforts at protection require a very small percentage of fiscal resources and a much shorter timeframe compared with restoration of Areas of Concern. Furthermore, protecting the biodiversity typically associated with these areas may be of crucial importance for long-term protection of the Great Lakes Basin Ecosystem.

To further this concept, the Commission will host a concurrent session on “Approaches to Areas of Quality” on Sunday, October 24, 1993 following the Biennial Meeting (see program on page 15). One pollution prevention effort that will be discussed is the ongoing Grand Traverse Bay Watershed Initiative, a locally-initiated and locally-driven effort (see Focus, July/August 1991, page one). Lessons learned from other programs, such as the Lake Superior Binational Program, will also be shared to help catalyze Areas of Quality efforts throughout the Great Lakes basin.

For more information contact Mark Breederland, at the International Joint Commission’s Great Lakes Regional office, (313)226-2170 in the U.S. and (519)257-6705 in Canada.

Concurrent Sessions

Look to Future

Participants are invited to explore potential areas of future International Joint Commission work during four concurrent sessions to be held Sunday morning, October 24, 1993, following the Biennial Meeting. In addition to the two sessions described below, separate articles summarize sessions on Areas of Quality (at left) and the Lake Erie ecosystem (see next page).

Applying the Weight of Evidence: Issues and Practice

The Commission has adopted a “weight-of-evidence” approach to evaluate the injury resulting from persistent toxic substances. This session will explore how the approach is being applied in decisionmaking contexts and what issues remain to be addressed.

The Future of Great Lakes Science

Science is in an age of specialization, where areas of study are narrowly and intensely defined and tend to be pursued in isolation. At the same time, we are recognizing that the world operates as a single, interconnected web of relationships between and within natural and human subsystems. This session will explore measures that might be taken to ensure the future adequacy of an integrated and anticipatory science base for the Great Lakes.
Sommaire

Au cours des quatre séances parallèles qui se dérouleront après la réunion biennale, on examinera les points que la Commission mixte internationale pourrait traiter en priorité à l'avenir (programme à la page 16). En plus des articles présentés ci-après, la présentation suivante résume les grands points de séance concernant l'écosystème du lac Érié.

La protection des régions saines représente un prélèvement très faible dans le trésor public et se réalise dans des délais beaucoup plus courts que la restauration des régions polluées. Pour promouvoir ce principe, la Commission mixte internationale a organisé une séance parallèle sur les approches applicables aux régions de qualité.

La Commission a adopté l'approche de la valeur probante pour évaluer les dommages causés par les toxiques persistants. Dans une séance sur le poids des faits : questions à traiter et application pratique, on verra comment cette approche est appliquée dans contextes décisionnels et quelles questions restent à traiter.

La science traverse une ère de spécialisation caractérisée par des champs d'étude restreints, très précisément définis, qui obligent souvent le chercheur à travailler en solitaire. Parallèlement, on reconnaît que le monde est un réseau interactif où jouent des relations intervenant, non seulement au sein des systèmes naturels et des systèmes humains, mais aussi entre ces systèmes. Une séance sur l'avenir des sciences examinera les mesures qu'on pourrait prendre pour garantir la constitution d'une base scientifique applicable aux Grands Lacs, qui soit adéquate, intégrée et qui permette un certain travail d'anticipation.

Is Lake Erie Changing — Again?

by John Cooley

It is hard to believe that less than 30 years ago the media was reporting that "Lake Erie is dead." Scientists knew then that the reports of its death were greatly exaggerated.

The International Joint Commission can be justifiably proud of the part it has played in the recovery of the Lake Erie ecosystem. A vigorous binational effort to reduce phosphorus loadings resulted in Lake Erie changing from a highly eutrophic, or nutrient-rich ecosystem, to a mesotrophic ecosystem. The results have been dramatic: increased water clarity, decreased nuisance algae and a healthy fish community. A booming recreational walleye fishery in the western basin has helped the economies of numerous communities on both sides of the lake. Today, Lake Erie boasts the largest commercial freshwater fishery in the world.

The late 1980s brought the zebra mussel (Dreissena polymorpha) invasion to Lake Erie. This exotic nuisance species, native to the Caspian Sea, was probably discharged with the ballast of a transoceanic vessel in Lake St. Clair in 1986. By 1990 most hard surfaces such as rocks, piers, boat hulls and even intake pipes in Lake Erie had been colonized. Joint studies by the Canadian Department of Fisheries and Oceans and the Ontario Ministry of Natural Resources showed that, despite zebra mussel concentrations on walleye spawning shoals in the shallower western lake basin of over 200,000 per square meter, the walleye continued to spawn. Strong young-of-the-year walleye survival in 1990 and 1991, when mussel abundance was highest, suggested that the two species were able to co-exist.

In late 1991, however, scientists were jolted to learn at a zebra mussel conference in Rochester, New York that a second genetically distinct but similar looking mussel was also in the system. This new mussel is still scientifically unnamed but referred to as the "quagga mussel" after a relative of the zebra. Subsequent studies showed that the quagga, unlike its cousin, thrives on sand, silt and even mud. At depths greater than 20 meters (66 feet) where zebra mussels are not found, the quagga populations are expanding. Abundances in 1992 were estimated at over 2,000 per square meter (270 per square foot).

What Are The Effects?

New studies in preparation at the Canadian Department of Fisheries and Oceans are showing that some native bottom-dwelling species are disappearing from the lake ecosystem because of the mussels' invasion. The small shrimplike creature Diporeia, an important part of the food chain for lake trout, whitefish, sculpin and smelt, appears to be completely disappearing from the eastern lake basin. In 1979 it represented 40 percent of the dry weight of bottom-dwelling creatures at depths below 30 meters (100 feet), but by 1992 it was down to less than one percent. Some worms are also disappearing, while others show substantially increased numbers. Oligochaete worms, for example, have increased over 100-fold in some areas. Another shrimplike creature, Gamma-rus, once a common but minor part of the bottom fauna in the eastern lake basin, is now up to 16 times more numerous among zebra mussel colonies. Native unionid clams are disappearing as mussels settle and grow on their shells, preventing them from normal functioning.
The effects of these changes on the sustainability of the Lake Erie ecosystem and its important fisheries are unknown. The lake appears clearer because of the vast quantities of microscopic plants being removed by the filter-feeding mussels. There are estimates that the entire volume of the western lake basin is filtered 20 times a day, where mussel abundance is high. Water transparency as measured by secchi disks has changed from a pre-invasion, mid-1980s value of two to three meters or seven to 10 feet (it was less than one meter or three feet in 1970) to three to five meters (10 to 17 feet) in 1991. Not surprisingly, chlorophyll-a measurements have been reduced by about 50 percent since 1988. In the western lake basin where mussel abundance is highest, the smaller zooplankton at the lower end of the food chain have been reduced by 65 percent, while overall crustacean biomass is down 60 percent.

Similar changes are occurring in Lake St. Clair, where plant life is changing and aquatic macrophytes are returning as the water becomes clearer. Some fear that increased clarity will have an adverse effect on the turbid-water-loving walleye.

Although walleye stocks in Lake Erie appear to be healthy, the commercially important yellow perch may be declining. Smelt caught in these waters are reported to be in poor condition. If a problem in the fishery related to mussels emerges, it is likely to happen in the next few years as energy is rerouted from the open water organisms, such as phytoplankton and zooplankton, into the bottom-dwelling animal community.

The potential problems for Lake Erie are further compounded by yet another exotic that may enter and further destabilize the ecosystem. The ruffe (Gymnocephalus cernuus), a small perchlike fish that also arrived in the Great Lakes in the ballast water of a transoceanic ship, is thriving in Duluth Harbor and the St. Louis River estuary of western Lake Superior. The ruffe is believed to actively prey on fish eggs of perch, whitefish and smelt, as well as plankton and some bottom-dwelling animal species. No one knows what will happen if it invades Lake Erie. Both countries and the Great Lakes shipping interests are cooperating to contain the ruffe to its present range.

Because of these problems, the Commission’s Council of Great Lakes Research Managers will recommend in its 1993 report that the Commission encourage the Parties to undertake new and cooperative binational studies to define the problems and identify solutions. The Science Advisory Board also calls for new work in its report. Both reports will be sent to all registrants for the Biennial Meeting on Great Lakes Water Quality. Stresses leading to the potential collapse of the Lake Erie ecosystem will also be the subject of a concurrent session on October 24, 1993 following the Commission’s Biennial Meeting (see program on page 15).

It is clear that in these times of severe fiscal restraint, no one agency can undertake all the work that must be done to resolve these ecosystem management issues. Other individuals or agencies with an interest in working cooperatively on these issues are encouraged to contact the author. For further information, contact John Cooley, Great Lakes Laboratory for Fisheries and Aquatic Sciences, Department of Fisheries and Oceans, Canada Centre for Inland Waters, P.O. Box 5050, Burlington, ON L7R 4A6. Telephone (416)336-4568 or fax (416)336-6437.

Summaire

Au cours des trente dernières années, le Canada et les États-Unis ont déployé des efforts considérables en vue de réduire les apports de phosphore au lac Érié; résultat, on a assisté à un rétablissement spectaculaire de la qualité de l’eau et des pêcheries. Les vagues d’invasion de la moule zébrée, à la fin des années 1980, et de la «moule quagga», depuis 1990, entraînent cependant une diminution alarmante de la densité de phytoplancton, qui se répercute à tous les niveaux de la chaîne alimentaire.

Le gouvernement fédéral se mouille pour un autre 5 ans

par André Champoux

Le ministre fédéral de l'Environment, l'honorable Jean Charest, annonçait en avril dernier la reconduite du Plan d'action Saint-Laurent. Ainsi, 100 millions de dollars seront investis sur cinq ans pour l'atteinte de cinq nouveaux objectifs environnementaux majeurs. Pour bien comprendre la nouvelle dynamique du Plan ainsi que les nouvelles orientations de cette deuxième phase, voyons d'abord sommairement ce qui a été réalisé au cours de la phase I.

Annoncé par le gouvernement fédéral en 1988, la phase I visait l'atteinte d'objectifs environnementaux qui furent précisés dans le cadre d'une entente d'harmonisation Canada-Québec signée en 1989, où le gouvernement du Québec acceptait de rajouter quelque 63 millions de dollars supplémentaires aux 110 millions déjà prévus par le gouvernement fédéral. La première phase était composée de quatre grands volets autour desquels cinq objectifs se sont greffés (voir tableau).

La grande majorité des objectifs fixés en 1988-1989 ont donc été atteints. On peut, en majeure partie, attribuer cette réussite au mode de gestion par résultats que caractérisent le plan et au partenariat fructueux entre le gouvernement fédéral et le gouvernement du Québec dans ce dossier.

À Environnement Canada, la préparation de la phase II a débuté à proprement parler plus d’une année auparavant.

**Le Plan d’action phase I 1988-1993**

<table>
<thead>
<tr>
<th>Volet</th>
<th>Objectifs et résultats atteints</th>
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<tbody>
<tr>
<td>Protection</td>
<td>Réduire de 90% les rejets liquides toxiques de 50 établissements industriels jugés prioritaires. La réduction de l'ensemble des rejets toxiques liquides de 50 usines prioritaires sera de 74% en 1993. Les spécialistes prévoient l'atteinte du taux de 90 en 1995 lors de la mise en application de deux nouveaux règlements sur les rejets des usines de pâtes et papiers.</td>
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<td>Restauration</td>
<td>Mettre en œuvre des plans de restauration pour des sites fédéraux contaminés ainsi que pour des milieux humides. Les nombreuses études effectuées sur les ports de Montréal, de Québec et de Trois-Rivières ont permis de produire des scénarios d'intervention pour ces sites. D'autres études ont été réalisées en vue de la restauration du canal de Lachine sur l'île de Montréal.</td>
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<tr>
<td>Conservation</td>
<td>Conserver 5 000 hectares d'habitat, fauniques et créer un parc marin à l'embouchure de la rivière Saguenay. Cet objectif a été atteint dans son intégralité, grâce entre autres à des ententes avec des organismes non gouvernementaux voués à la sauvegarde du patrimoine faunique et floristique du Saint-Laurent. Élaborer et mettre en application des plans de rétablissement pour certaines espèces menacées. Des plans de survie ont été élaborés et mis en œuvre pour plusieurs espèces prioritaires alors que d'autres sont présentement en élaboration. Le ministère de Pêches et des Océans du Canada a de plus mis en œuvre un plan interministériel pour la survie du Béluga du golfe Saint-Laurent.</td>
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<tr>
<td>État du milieu</td>
<td>Réaliser un bilan de l'état de l'environnement du fleuve. Une activité intense de recherche et de concertation a été déployée pour développer et rendre disponible de nombreux outils d'information scientifique, de type grand public. Un premier rapport complet sur l'état de l'environnement du fleuve sera disponible à l'automne 1993.</td>
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Les falaises à Cap-Trinité sur le fleuve Saint-Laurent. 
Cliffs at Cape Trinity tower over the St. Lawrence River.

Credit/Photo: 
Jean Audet, Environment Canada

avant la fin de la phase I. Plusieurs exercices de réflexion ont permis de préciser cinq nouveaux volets. Un volet protection a de nouveau été créé afin de poursuivre la réduction des toxiques en conservant le concept de 90% de réduction et en l’appliquant à de nouvelles usines.

Le volet prévention regroupera divers programmes qui visent à définir des plans de prévention de la pollution pour des zones d’intérêt prioritaire, à mettre sur pied un programme d’aide pour les groupes locaux riverains et enfin à planter un plan d’action axé sur la santé humaine et l’environnement.

Le nouveau volet sur la biodiversité consistera principalement à mettre en œuvre un programme d’acquisition de connaissances sur la biodiversité du fleuve et de son estuaire et à protéger des espèce et des habitats prioritaires fluviaux et marins.

Les travaux pour la restauration du canal de Lachine ainsi que ceux visant à appuyer la restauration de sites fédéraux se regrouperont sous le volet restauration.

Sous le volet aide à la prise de décision, divers programmes permettront de suivre l’état et de mieux comprendre l’environnement du Saint-Laurent. Un programme sur les toxiques atmosphériques d’origine anthropique s’ajoutera à ce volet.

On remarquera tout de suite que ces objectifs sont d’ordre plus général que ceux de la phase I. Des négociations débuteront bientôt entre les deux gouvernements fédéral et provincial à ce sujet, pour harmoniser les actions et préciser des objectifs communes.

Après cinq années d’existence, le plan se doit d’aborder des problèmes qui n’ont pu faire jusqu’ici l’objet d’une action concertée. Le Plan doit maintenant avoir une vision à plus long terme, en s’engageant dans des domaines où les résultats environnementaux ne se feront sentir que dans des décennies.

Dans un contexte de développement durable, la protection, la restauration et la conservation du fleuve Saint-Laurent constituent un défi de taille. Les responsables du Plan n’ont bien sûr pas la prétention de pouvoir répondre, dans le cadre d’un plan de cinq ans, à toutes les attentes des citoyens et des divers intervenants. Mais à voir les réactions positives qu’ont suscitées les efforts déployés au cours de la phase I du plan, ces derniers sont convaincus d’être sur la bonne voie. Avec beaucoup d’Énergie et de bonne volonté, tout n’est cependant qu’une question de temps!

Pour obtenir de plus amples renseignements, communiquer avec André Champoux, Coordonnateur Plan d’action Saint-Laurent, Environnement Canada, 1141 route de l’Église, C.L. 10100, 7ème étage, Sainte Foy (Québec) G1V 4H5, téléphone (418)648-4725.
## St. Lawrence Action Plan First Phase: 1988-1993

<table>
<thead>
<tr>
<th>Segment</th>
<th>Objective</th>
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<tr>
<td>Protection</td>
<td>Reduce toxic liquid wastes from 50 priority industrial establishments by 90 percent. The rate of reduction in the 50 priority plants will be 74 percent in 1993. Specialists anticipate a 90 percent rate by 1995 when two new regulations applying to pulp and paper mill wastes take effect.</td>
</tr>
<tr>
<td>Restoration</td>
<td>Implement restoration plans for contaminated federal sites and for wetlands. Numerous studies on the ports of Montreal, Quebec and Trois-Rivières have resulted in intervention plans for these sites. Other studies have been conducted for restoring the Lachine Canal on the Island of Montreal.</td>
</tr>
<tr>
<td>Conservation</td>
<td>Conserve 5,000 hectares of wildlife habitat and create a marine park at the mouth of the Saguenay River. This objective was fully attained, thanks in part to agreements with nongovernmental organizations dedicated to preserving the wildlife heritage of the St. Lawrence River.</td>
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<td></td>
<td><strong>Develop and apply plans to restore certain endangered species.</strong> Survival plans were implemented for priority species and other plans are being developed. Fisheries and Oceans Canada has also initiated an interdepartmental plan to ensure survival of the St. Lawrence beluga whale.</td>
</tr>
<tr>
<td>River</td>
<td><strong>Prepare a report on the condition of the river environment.</strong> Intensive research and cooperation have taken place to make scientific information available for public consumption. The first complete report on the river environment will be available in fall 1993.</td>
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<tr>
<td>Environment</td>
<td></td>
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Plan Aims to Inform Health Professionals about Environmental Health Issues

by Geoffrey Thornburn

A diverse group of health professionals, including physicians, nurses and public health officials, met with the International Joint Commission March 29-30, 1993 in Toronto, Ontario to discuss strategies for better informing their colleagues about environmental health issues. The session followed a similar roundtable discussion convened by the Commission last August in Racine, Wisconsin (see Focus, November/December 1992, page 1).

The issues were introduced by Andrew Gilman, Health and Welfare Canada; John Frank, Ontario Workers Compensation Institute; Peter Ornis, Cook County Hospital; and Max Lum, U.S. Agency for Toxic Substances and Disease Registry. In discussions that followed, participants explored ideas to identify a plan for collective and individual actions.

Participants noted that environmental issues, particularly toxic substances, are becoming important to individual and community health. These issues need to be addressed in clinical and community health situations, even when effects are more perceived than documented. Health must also be promoted, including the avoidance of certain problems.

While health professionals may be poorly equipped to address these issues, they have credibility and are expected know about the issues. Government agencies tend to have more knowledge but less credibility, so the situation must and can be bridged.

Participants concurred that the need to redirect existing efforts and raise the profile of environmental health issues is greater than the need for new institutions or new long-range funding. A broad coalition, primarily through associations and universities with the support of key governmental agencies, is needed to raise the general level of awareness and undertake specific initiatives to inform and engage all health professionals in environmental health problems.

The group felt the basic instrument for action should be education, targeted at several levels:

- University and college curricula at all levels, including use of environmental case studies;
- Residency programs to identify environmentally relevant factors in case histories;
- Continuing education courses and seminars; and
- Improved access to information, including databases and referral centres, and strengthened links between research agencies and primary care givers. Community public health programs in the United States and Quebec were noted as possible models.

To sustain the momentum achieved at the roundtable discussion, participants formed an ad hoc task force to develop an action plan. The task force held its first meeting on May 26, 1993 in Toronto.

By convening the roundtable discussion, the Commission furthered its priority work in the area of community awareness of Great Lakes water quality issues, and extended the initiative started last year to the Ontario health community. For more information, contact Geoffrey Thornburn, International Joint Commission, 100 Metcalfe Street, 18th Floor, Ottawa, ON K1P 5M1. Telephone (613)995-2984.

Sommaire

Les 29 et 30 mars 1993, des membres de diverses professions médicales, notamment des médecins, infirmières et responsables de la santé publique, rencontrent des représentants de la Commission mixte internationale à Toronto (Ontario) pour discuter de stratégies permettant de mieux informer leurs collègues sur les enjeux relatifs à la santé environnementale.

Bien que les professionnels de la santé soient parfois mal équipés pour renseigner la population et faire de l'éducation préventive, celle-ci leur accorde sa confiance et s'attend à ce qu'ils soient compétents en santé environnementale. Inversement, même si les organismes gouvernementaux sont souvent mieux informés, leur crédibilité auprès de la population laisse à désirer; un rapprochement entre les deux groupes s'impose donc. Dans le sillage de la table ronde, les participants ont convenu de mettre sur pied un groupe de travail spécial chargé d'élaborer un plan d'action.
Recently appointed by the International Joint Commission as the Michigan member of the Great Lakes Water Quality Board is G. Tracy Mehan III, from the Michigan Department of Natural Resources. Mehan replaces Frank Ruswick. John Cooley of the Canadian Department of Fisheries and Oceans replaces Robert M. McMullen as member of the Great Lakes Water Quality Board. George Lambert of Loyola University Medical Center was appointed as member of the Science Advisory Board and replaces June Fessenden MacDonald. Jack Day of the University of Wisconsin-Green Bay replaces Walter Lyon as member of the Science Advisory Board.

John A. Ritter of the Canadian Department of Fisheries and Oceans replaces E.J. Norrena as member of the International Advisory Board on Pollution Control-St. Croix River. Vic E. Niemela of Environment Canada was appointed as member of the International Osoyoos Lake Board of Control and replaces E.M. Clark.

The International Joint Commission welcomed Douglas A. McTavish as Director of its Great Lakes Regional Office in Windsor, Ontario on May 25, 1993. McTavish had been Regional Director of the Southwestern Region for Ontario's Ministry of the Environment since 1974, responsible for implementing all environmental protection and pollution abatement programs. In addition, McTavish has served the Commission as a member of the Great Lakes Water Quality Board since 1984 and cochair of the Virtual Elimination Task Force since its inception in 1990. The Commission's Regional Office provides advice on Great Lakes water quality issues and secretariat support to related advisory boards and task forces. McTavish joins the Commission for a four-year term, replacing Dr. Al Duda, who left in 1992 to accept a position at the World Bank in Washington, D.C. The Commission also expressed its appreciation to John McDonald, who served as Acting Director in the interim.


The Great Lakes Water Quality Board marked its 100th meeting in March 1993 with a celebratory dinner attended by numerous former board members and five International Joint Commissioners. Francis Mayo, the first U.S. board cochair, flew in from Utah, and George Alexander, who took his place in 1976, arrived from Texas. Grant Merritt, the first member from Minnesota, proudly displayed copies of the original Great Lakes Water Quality Agreement signed in 1972 by President Richard Milhouse Nixon and Prime Minister Pierre Elliott Trudeau.

One highlight was an address by first Canadian Board Cochair Jim Bruce, recalling the origins of the 1972 Agreement in the Commission's study on pollution of the lower Great Lakes. Bruce emphasized that the Agreement addressed the presence of toxic chemicals in aquatic life, wildlife and humans as well as eutrophication from phosphorus, bacterial contamination of beaches, and taste and odor problems in drinking water. Following research in the 1970s, persistent toxic substances became the major focus of the new 1978 Agreement, including the adoption of a policy to prohibit discharges.

As a former meteorologist, Bruce was considerably influenced by information on the long-range transport of airborne pollutants, the greenhouse gas and global warming issue, and the depletion of the stratospheric ozone layer. These issues pose a challenge to the original ecosystem approach focusing on the Great Lakes basin. He suggested that in the 1990s, the Commission and its boards must consider influences on a continental and global scale, and address the uncertainties, for example, of increases in ultraviolet-b radiation or atmospheric deposition of persistent toxic substances on Great Lakes biota. Since burning fossil fuels is a leading source of carbon dioxide, lead and mercury, Bruce suggested the Water Quality Board and the Commission should support energy conservation and increased use of nonfossil energy sources.

Bruce concluded that measures such as reducing or eliminating atmospheric emissions of toxic substances throughout the large region upwind of the Great Lakes will require the same spirit of cooperation characterized by Canada and the United States through the work of the International Joint Commission.

The U.S. Environmental Protection Agency has released draft guidance under its Great Lakes Water Quality Initiative that would require the eight Great Lakes states and certain Indian tribes to establish consistent, scientifically based controls on toxic pollutants in the Great Lakes basin.

The proposed guidance includes numeric water quality criteria to protect aquatic life, human health and wildlife, antidegradation policies to protect existing water quality, and implementation procedures to convert the water quality criteria into enforceable pollutant discharge limits. Bioaccumulation factors would also be used to calculate wildlife and human health criteria for persistent toxic substances.

EPA estimates that the extra pollution control measures will cost industry and municipalities in the Great Lakes basin about $230 million a year.

The draft guidance was published in the U.S. Federal Register on April 16, 1993. Public hearings are scheduled on August 4-5, 1993 in Chicago, Illinois, and public information meetings will be held across the Great Lakes basin. For more information contact the Michigan Department of Natural Resources, P.O. Box 30028, Stevens T. Mason Building, Lansing, MI 48909, (517)373-1449 or call (800)621-8431 for meetings in the states of IL, IN, MI, MN, OH and WI; in PA call (215)597-6911; and in NY call (716)285-8842.

The Ontario Ministry of Environment and Energy has amended Regulation 309 of its Environmental Protection Act to ban new municipal waste incinerators in the province. The regulation specifies that no new municipal waste incinerators may be built or operated in Ontario, with the exception of waste-specific incinerators for certain forestry products, sludges and pathological wastes. These wastes are considered hazardous or lacking in viable recycling potential. According to the Ministry, waste incineration is not compatible with pollution prevention and carries a great potential for creating future problems. Substances emitted to the air from incinerators pose potential threats to human health and include mercury, PCBs, dioxins and furans.

For information on incineration, contact the Ministry of the Environment, Public Information Centre, 135 St. Clair Avenue West, Toronto, ON M4V 1P5, (416)323-4321 or (800)565-4923. For a copy of the Amendment to Regulation 309, contact Publications Ontario, 880 Bay Street, Toronto, ON M7A 1N8. (800)668-9938.

Sparked by concerns related to the Exxon Valdez oil spill, a 15-member task force with representatives from the eight Great Lakes states and the Great Lakes Commission is working with the Ohio River Valley Water Sanitation Commission and Upper Mississippi River Basin Association to review and improve emergency preparedness plans in these regions.

The Emergency Preparedness Task Force is collecting data for a computerized regional emergency response inventory that will provide up-to-date information to planners and emergency management personnel. The system will house information on equipment, supplies and other resources for the Great Lakes, Ohio River and Upper Mississippi River regions.

For more information, contact the Great Lakes Commission, Argus II Building, 400 South Fourth Street, Ann Arbor, MI 48103-4816. (313)665-9135.
Between 200,000 and 300,000 Milwaukee residents became ill this spring when the microorganism known as *Cryptosporidium* passed through filters at one of the city's water treatment plants. The parasite, which lives in the intestinal tract of animals, is also suspected to be a factor in about 12 deaths.

Milwaukee obtains drinking water from an intake pipe about one mile offshore in Lake Michigan, three miles south of the Milwaukee River. Unlike bacteria, *Cryptosporidium* is not readily killed by chlorine and tests that water purification plants routinely use to detect biological contaminants do not pick up the presence of this parasite. A recent change in filtration practices at one treatment plant could have been the cause of the problem. To reduce corrosiveness, which leaches from household pipes, the plant had temporarily switched the chemical compound used to clean the water. The new compound was less efficient and allowed more sediment — and quite possibly parasites — to enter the system.

Meanwhile, the Mannheim water treatment plant, which supplies the Kitchener-Waterloo and Elmira-St. Jacobs communities in Ontario, was closed to test for *Cryptosporidium* parasites in May after 125 cases of infection were confirmed in the area. While officials were not able to conclusively determine the source, water contamination remained the most likely possibility. High levels of turbidity in the Grand River, where the treatment plant intakes are located, were reported in March and health officials believe the parasites were flushed from farm fields during the spring runoff.

Proceedings are now available for the Globescopes '93 conference that explored current policy initiatives and methods for implementing sustainable development principles and goals in the Great Lakes region. More than 200 participants attended the conference convened by the Global Tomorrow Coalition last March in Dearborn, Michigan. For further information call Patricia Hartig at (313) 692-1532.

The Great Lakes Research Consortium, with assistance from the Great Lakes Protection Fund, is continuing the Great Lakes Human Health Research and Information Exchange Network. This network was created to link investigators in an ongoing discussion of research strategies, potential collaboration and the development of shared experimental protocols. It serves the research and policy community by collecting and interpreting the latest news and developments in human health effects of toxic contaminants.

For more information contact Sheila Myers, Great Lakes Research and Information Exchange Network, Great Lakes Consortium, State University of New York, College of Environmental Science and Forestry, 24 Bray Hall, Syracuse, NY 13210. Telephone (315) 470-6720 or fax (315) 470-6970.

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Shown in the photo are Eugene Perrin (second from left) and conservation award recipients Peggy Johnson, Clinton River Watershed Council, Ed McAr2le, Sierra Club and Michael Gilbertson, representing the International Joint Commission. Credit: Jack Smiley, Detroit Audubon Society
Why are fish from Lake Superior’s relatively cold, clean water more contaminated than fish from warmer lakes and rivers? Research by University of Minnesota Public Health School Professor Deborah Swackhammer shows that algae, which form the base of the food chain, concentrate contaminants up to 100,000 times the amount found in the water where they live. Algae living in cold water grow more slowly and absorb more PCBs and other contaminants than those that live in warm water. When algae grow or bloom, PCB levels drop dramatically. Because Lake Superior is cold, algae blooms are infrequent and short. Lake Superior fish thus eat a steady diet of relatively contaminated algae, even though they live in some of the cleanest freshwater in the world.

This discovery affects not only the fish, but the people who eat them. Previous models assumed that PCB contamination in algae remained proportional to the level of PCB contamination in the water. However, Swackhammer found PCB levels in algae vary tremendously with the season. These new findings make possible new models that may eventually allow health officials to issue seasonal fish consumption advisories. Results of this study were published in “The Role of Phytoplankton in the Partitioning of Hydrophobic Organic Contaminants in Water” by Swackhammer and Skoglund in chapter five of Organic Substances and Sediment in Water. To obtain a reprint, call Minnesota Sea Grant at (612) 625-9288 and request publication JR 275.

Domtar Specialty Fine Papers in St. Catharines, Ontario is producing chlorine-free paper made from 100 percent post-consumer recycled paper. The white paper — called Comet, or Infinity 100 — is brighter, cleaner and more opaque than other recycled papers. It is also acid-free, which provides for a longer life when stored in archives.

The Ontario provincial government challenged the paper industry to develop a new recycled and recyclable paper that would not be harmful to the environment. For more information contact Dan McLaughlin, Management Board Secretariat, Purchasing Services Branch, Sixth floor, Ferguson Block, Queens Park, Toronto, ON M7A 1N3. Telephone (416)327-3573 or fax (416)327-3592.

Domtar Specialty Fine Papers de St. Catharines, en Ontario, produit actuellement un papier sans chlore fait à 100 pour cent de papier recyclé après utilisation. Ce papier blanc appelé Comet ou Infinity 100 — est plus brillant, plus propre et plus opaque que les autres papiers recyclés et ne contient aucun acide, ce qui signifie qu’il a une vie utile plus longue lorsqu’il est archivé.

Le gouvernement de l’Ontario a mis l’industrie du papier au défi de mettre au point un nouveau papier recyclé et recyclable sans effet sur l’environnement. Pour de plus amples informations, s’adresser à Dan McLaughlin, Secrétariat du conseil de gestion, service des approvisionnements, 6e étage, Ferguson Block, Queens Park, Toronto, ON M7A 1N3. Téléphone (416)327-3592 ou télécopieur (416)327-3573.

The Conservation Technology Information Center of the National Association of Conservation Districts is encouraging local agricultural leaders to join with rural and urban partners in taking the lead to prevent pollution of their watersheds. To learn more about the “Know Your Watershed” campaign, contact the Conservation Technology Information Center, 1220 Potter Drive, Room 170, West Lafayette, IN 47906-1383. (317)494-9555.

Cooking methods for Great Lakes fish can reduce one’s exposure to pesticide and PCB residues by approximately one-third, according to a recent study by researchers at Michigan State University and the Michigan Department of Public Health.

Those who combine cooking, cleaning, trimming and filleting methods to eliminate fatty tissue will cut contaminants from 46 to 64 percent, depending on the species and water source. Information about reductions for particular species, lakes and substances is available from Chuck Pitsis, Michigan State University, Sea Grant Extension, 333 Clinton Street, Grand Haven, MI 49417. (616)846-8250.

The truck assembly plant at General Motors Canada in Oshawa, Ontario has been awarded an environmental citizenship certificate from Environment Canada for its recent corporate and manufacturing activities. These include helping to open and develop the McLaughlin Bay Wildlife Reserve, showing concern for migratory bird life near its newly constructed headquarters, establishing a system to prevent silt from entering the nearby Second Marsh and becoming involved as a Great Lakes Cleanup Fund partner. For information on the Environmental Citizenship Initiative, contact Conrad Bastien, Environment Canada, Communications Directorate, 3rd floor Jules Leger Building, Hull PQ, K1A 0H3. (819)497-6821.
PROGRAM

PRE-MEETING EVENTS
Thursday, October 21
9 a.m. - 5 p.m. Forum for Remedial Action Plans in the Great Lakes Basin
Detailed program information will be mailed to RAP coordinators and Public Advisory Committee chairs as well as made available on request. For information contact Mark Breederland at the IJC Regional Office.
Telephone (519) 277-2170 in the U.S. and (519) 257-6705 in Canada.

Friday, October 22
9 a.m. - noon Forum for Remedial Action Plans in the Great Lakes Basin

BIENNIAL MEETING EVENTS
Friday, October 22, 1993
NOTE: Simultaneous interpretation in French and English will be provided for all plenary sessions.
1:00 - 1:30 p.m. Welcome and Introductions
1:30 - 6:00 p.m. Presentations by:
• Virtual Elimination Task Force
• Great Lakes Water Quality Board
• Great Lakes Science Advisory Board
• Council of Great Lakes Research Managers
• Great Lakes Educators Advisory Council
6:00 - 8:00 p.m. Dinner (on own, or Windsor-sponsored barbeque in nearby Dieppe Park; tickets will be available onsite)
8:00 - 9:30 p.m. Progress under the Binational Lake Superior Program to Demonstrate Zero Discharge of Persistent Toxic Substances, a panel discussion session

Saturday, October 23, 1993
8:30 - 10:00 a.m. Presentation by Governments on Progress under the Great Lakes Water Quality Agreement
10:00 - 10:30 a.m. Break
10:30 - 11:30 a.m. Presentation by Industry
11:30 - 12:30 p.m. Presentation by Citizen Groups
12:30 - 2:00 p.m. Lunch (on own)
2:00 - 2:30 p.m. Keynote Speaker: The Honourable David Crombie, Commissioner, Waterfront Regeneration Trust, Toronto, Ontario
2:30 - 6:00 p.m. Public Hearings on Progress under the Agreement
6:00 - 7:30 p.m. Dinner (on own)
7:30 - 10:30 p.m. Beyond the Chlorine Debate: Assessing the Alternatives
10:30 - 11:00 p.m. Closing Remarks by Commissioners

POST-MEETING EVENTS
Sunday, October 24
9:00 - 11:00 a.m. Concurrent Sessions
• Approaches to Areas of Quality
• The Future of Great Lakes Science
• Is Lake Erie in Peril? Stresses Leading to the Potential Collapse of the Lake Erie Ecosystem
• Applying the Weight of Evidence Approach: Issues and Practice

ANCILLARY EVENTS
Greenpeace will sponsor a “Great Lakes Chlorine-Free Debate” from 7-10 p.m. on Thursday, October 21. An international panel will explore issues arising from growing environmental demands for a phaseout of chlorine-based industrial chemistry. Panel members will also discuss strategies for implementing the Commission’s Sixth Biennial Report recommendations and respond to industry arguments. Dr. Otto Wassermann, Director of Toxicology at Christian-Albrechts University in Kiel, Germany will provide the keynote presentation. For further information, contact Jay Palter, Greenpeace Toronto, 185 Spadina Avenue, Sixth floor, Toronto, ON M5T 2C6, telephone (416) 345-2445, fax (416) 345-9422, or Bonnie Rice, Greenpeace Chicago, 1017 W. Jackson, Chicago, IL 60607, telephone (312) 666-3305, fax (312) 226-2714.

The Council of Great Lakes Industries will host “A Dialogue on Great Lakes Issues” from 8:30-11:45 a.m. on Friday, October 22. Two sessions of panel discussions and audience feedback are included: “The Chlorine Debate: Emotion or Science?” and “Economic Cost of Good (and Bad) Environmental Regulation.” A continental breakfast begins at 7:30 a.m. No fee or registration is required, but please call to confirm interest. For further information, contact Dennis Hydenhein, Council of Great Lakes Industries, telephone (517) 636-3364. Fax (517) 638-9919.

Great Lakes United is coordinating a tour of Detroit River Hotspots on Friday, October 22 from 10:11-30 a.m. Registration is required. For more information, contact Mary Ginnebaugh, Great Lakes United, P.O. Box 548, Station A, Windsor, ON N9A 6M6. Telephone (519) 255-7141.

A coalition of Great Lakes Environmental and Community Groups will hold the Third Binational Great Lakes Peoples’ Rally for Zero Discharge on Saturday, October 23 from 12:30 to 2:00 p.m. in Dieppe Park, across from the Cleary International Convention Centre. For further information contact Mary Ginnebaugh, Jay Palter or Bonnie Rice, listed above.
Programme

Activités qui précéderont la réunion
Le jeudi 21 octobre
de 9 h à 17 h  
Forum sur les plans d’assainissement des Grands Lacs


Le vendredi 22 octobre
de 9 h à 12 h  
Forum sur les plans d’assainissement des Grands Lacs

Activités au programme de la réunion biennale
Le vendredi 22 octobre

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<th>Temps</th>
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<tr>
<td>13 h 30 à 18 h</td>
<td>Exposés par : le Groupe de travail sur l’élimination virtuelle</td>
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<td>13 h 30 à 18 h</td>
<td>… le Conseil de la qualité de l’eau des Grands Lacs</td>
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<td>13 h 30 à 18 h</td>
<td>… le Conseil consultatif scientifique pour les eaux des Grands Lacs</td>
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<td>13 h 30 à 18 h</td>
<td>… le Conseil des gestionnaires de la recherche des Grands Lacs</td>
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<td>13 h 30 à 18 h</td>
<td>… le Great Lakes Educators Advisory Council</td>
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<td>18 h à 20 h</td>
<td>Dîner (libre, ou barbecue organisé par l’hôtel Windsor dans le parc Dieppe</td>
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<td>20 h à 21 h</td>
<td>Examen des progrès réalisés par rapport au Programme binational du Lac</td>
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<td>21 h 30</td>
<td>Supérieur pour démontrer le rejet zéro des substances toxiques rémanentes</td>
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<td>22 h 30</td>
<td>… dans l’écosystème des Grands Lacs : discussion en panel</td>
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Le samedi 23 octobre
de 8 h 30 à 10 h 00  
Exposés par les gouvernements sur les progrès réalisés dans l’application de l’Accord sur la qualité de l’eau des Grands Lacs.

de 8 h 30 à 11 h 00  
Pause

de 10 h 30 à 11 h 30  
Exposés des industries

de 11 h 30 à 12 h 30  
Exposés des groupes de citoyens

de 12 h 30 à 14 h  | Découvrir (libre)                                                       |
| 14 h à 14 h 30  | Conférencier d’honneur : l’honorable David Crombie, Commissaire, Fonds  |
| 14 h 30 à 16 h  | pour la régénération des rives, Toronto (Ontario)                       |
| 18 h à 19 h 30  | Dîner (libre)                                                           |
| 19 h 30 à 22 h 30 | Audiences publiques sur les progrès réalisés dans l’application de l’Accord|
| 22 h 30 à 23 h  | Conclusions des commissaires                                            |

Activités qui suivront la réunion
Le dimanche 24 octobre

de 9 h à 11 h  | Séances simultanées                                                    |
| 10 h 30 à 11 h | Façons d’aborder les aspects de la qualité.                            |
| 11 h 30 à 12 h | L’avenir de la science des Grands Lacs.                                 |
| 12 h 30 à 13 h | Le Lac Érié est-il en danger ? Les stresss conduisant à l’effondrement  |
| 13 h 30 à 14 h | … de l’écosystème du Lac Érié.                                         |
| 14 h 30 à 15 h | … de la valeur probante : théorie et pratique                           |

Activités auxiliaires

Le Conseil des industriques des Grands Lacs organisera un débat sur les problèmes des Grands Lacs le vendredi 22 octobre, de 8 h 30 à 11 h 45. Deux séances de discussion en panel et une tribune publique intitulées : « Le débat sur le chlore : émotion ou science ? et "Le coût économique de bors (et de mauvais) règlements en matière environnementale" seront au programme. Le déjeuner continental sera servi à compter de 7 h 30. Aucun droit ni inscription nécessaires; toutefois, nous vous demandons de confirmer par téléphone votre intention de participer. Pour de plus amples renseignements, veuillez communiquer avec M. Dennis Heydari, Conseil des industriques des Grands Lacs, par téléphone au (519)267-3364, ou par télécopieur au (517)638-9919.

Les Great Lakes United subventionneront une excursion dans les secteurs les plus toxiques de la rivière Detroit, le vendredi 22 octobre de 10 h à 11 h 30. Il est nécessaire de s’inscrire. Pour plus de renseignements, veuillez communiquer par écrit avec Mme Mary Gannbaugh des Great Lakes United, P.O. Box 548, Station A, Windsor, Ontario N9A 6M6, ou par téléphone au (519)255-7141.

Une coalition de groupes environnementaux des Grands Lacs et de groupes locaux organiserait le troisième rallye binational des Grands Lacs pour le rejet zéro, le samedi 23 octobre, de 12 h à 14 h, dans le parc Dieppe, en face du Centre international des congrès Cleary. Pour de plus amples renseignements, veuillez communiquer avec Mme Mary Gannbaugh, M. Jay Faller ou avec Mme Bonnie Rice, que vous pouvez joindre aux numéros indiqués ci-dessus.
1993 BIENNIAL MEETING ON GREAT LAKES WATER QUALITY

Note: A registration fee is not charged for the Biennial Meeting, but REGISTRATION IS REQUIRED by October 1, 1993 because space at the Cleary International Convention Centre is limited. Please complete and return this form to assist us in determining space needs and to ensure receipt of board and task force reports, which will be sent approximately one month prior to the meeting. Given the interest expressed for this meeting, we strongly suggest you register early.

Return registration form to:
Ms. Susan Knowles, International Joint Commission
IN THE UNITED STATES: P.O. Box 32869, Detroit, MI 48232
IN CANADA: 100 Ouellette Avenue, Eighth floor, Windsor, ON N9A 6T3

Name ____________________________ Address ____________________________

Agency/Organization (as applicable) ____________________________

City, Province/State, Postal/Zip Code ____________________________

Telephone ____________________________ FAX Number ____________________________

For details of all Biennial Meeting sessions, please see related summaries on pages 1-6.

☐ I will attend the Forum for Remedial Action Plans in the Great Lakes Basin, October 21-22
☐ I will attend the 1993 Biennial Meeting on: October 22 ☐ October 23 ☐ October 24 ☐
☐ I am interested in attending the following concurrent session on October 24
  (initial response required only, to estimate space needs):
  ☐ Approaches to Areas of Quality
  ☐ The Future of Great Lakes Science
  ☐ Is Lake Erie in Peril? Stressors Leading to the Potential Collapse of the Lake Erie Ecosystem
  ☐ Applying the Weight of Evidence Approach: Issues and Practice
  ☐ Please send copies of the 1993 reports in the French language.
  ☐ I will be driving to Windsor for the meeting (complimentary parking passes will be provided by the City of Windsor as needed).
  ☐ I am interested in attending the barbecue on Friday, 6-8 p.m.

A variety of hotels in downtown Windsor are holding a block a rooms for Biennial Meeting participants. Please contact the hotel of your choice directly, and identify yourself as a participant of the International Joint Commission’s 1993 Biennial Meeting to obtain the conference room rate (listed below in Canadian funds). Conference rates are available for reservations made by September 22, 1993. Space is limited, and prices do not reflect 12 percent tax.

For additional hotel information, please contact the Convention and Visitors Bureau of Windsor, Essex County and Pelee Island, City Centre, Suite 103, 333 Riverside Drive West, Windsor, ON N9A 5K4, telephone 1-800-265-3633 or (519)255-6530.

- The Windsor Hilton (attached to Cleary Convention Centre, restaurant, indoor pool, sauna, exercise room):
  $82/night (800)463-6655

- Compri Hotel (attached to Cleary Convention Centre, parking, complimentary breakfast and cocktail hour, indoor pool, sauna, health club):
  $75/night (519)977-9777

- Ramada Inn (one block from Cleary Convention Centre, restaurant, parking):
  $70/night, single or double occupancy
  $80/night, three or more occupancy
  (519)253-4411 in Canada, 1-313-963-7590 in the U.S.

- Relax - Travelodge Hotel (two blocks from Cleary Convention Centre, parking, indoor pool, restaurant and lounge):
  $58/night (519)258-7774 or 1-800-667-3529
FORMULAIRE D'INSCRIPTION

À LA RÉUNION BIENNALE SUR LA QUALITÉ DE L'EAU DES GRANDS LACS 1993

Remarque : Aucun droit d'inscription n'est exigé pour la Réunion biennale. Cependant, les FORMULAIRE D'INSCRIPTION DOIVENT NOUS PARVENIR d'ici au 1er octobre 1993, le nombre de places au Centre international des congrès Cleary étant limité. Veuillez avoir l'obligeance de remplir et de retourner le présent formulaire, afin de nous aider à déterminer les besoins en matière de locaux et de nous permettre de vous faire parvenir les rapports des conseils et des groupes de travail environ un mois avant la tenue de la conférence. Étant donné l'intérêt manifesté pour cette rencontre, nous vous recommandons fortement de vous y inscrire le plus tôt possible.

Veuillez retourner le formulaire d'inscription à : Mme Susan Knowles, Commission mixte internationale
AUX ÉTATS-UNIS : P.O. Box 32869, Detroit MI 4823; AU CANADA : 100 Ouellette Avenue, Eighth Floor, Windsor, Ontario N9A 6T3

Nom ___________________________________________ Adresse ____________________________

Ville, province/État, code postal/code ZIP ________________________________________________

Organisme/Association (le cas échéant) ___________________________________________________

Téléphone ____________________________ Télécopieur ____________________________

Pour plus de précisions sur les séances de la Réunion biennale, veuillez consulter les articles à ce sujet aux pages 1-6.

☐ Je participerai au Forum sur les plans d'assainissement des Grands Lacs, les 21 et 22 octobre.
☐ Je participerai à la Réunion biennale 1993 le 22 octobre
☐ Le 23 octobre
☐ Le 24 octobre
☐ J'aimerais participer aux séances suivantes, qui se dérouleront simultanément le 24 octobre :
(réponses initiales requises seulement afin de déterminer les besoins en matière de locaux).
☐ Façons d'aborder les aspects de la qualité.
☐ L'avenir de la science des Grands Lacs.
☐ Le Lac Érié est-il en danger? Les stresss conduisant à l'effondrement éventuel de l'écosystème des Grands Lacs.
☐ L'approche de la valeur probante : théorie et pratique.

☐ Veuillez me faire parvenir des exemplaires des rapports de 1993 en français.
☐ Je me rendrai à Windsor pour la conférence en automobile (la ville de Windsor fournira gratuitement les laissez-passer de stationnement nécessaires).
☐ Je désire participer au barbecue qui aura lieu le vendredi, de 18 h à 20 h.

Différents hôtels du centre-ville de Windsor réservent un nombre fixe de chambres pour les participants de la Conférence biennale. Veillez communiquer directement avec l'hôtel de votre choix et préciser que vous participez à la Réunion biennale 1993 de la Commission mixte internationale pour profiter des tarifs de réunion (la liste de ces tarifs figure ci-dessous, en dollars canadiens). Vous pourrez profiter des tarifs de conférence à la condition de réserver d'ici au 22 septembre 1993. Le nombre de places est limité et le prix ne comprend pas la taxe de 12 p. 100.

Pour plus de renseignements sur les hôtels, veuillez communiquer avec le bureau des congrès et des visiteurs de Windsor, Essex County et Pelee Island, City Centre, Suite 103, 333 River Side Drive West, Windsor, Ontario N9A 5K4, au numéro (800)265-3633 ou au (519)255-6530.

- Hilton de Windsor (contigu au Centre des congrès Cleary, restaurant, piscine intérieure, sauna, salle de culture physique) :
  82 $ la nuit
  (800)463-6655

- Hôtel Compri (contigu au Centre des congrès Cleary, stationnement, petit déjeuner et cocktail gratuits, piscine intérieure, sauna, club de santé) :
  .75 $ la nuit
  (519)977-9777

- Ramada Inn (à une rue du Centre des congrès Cleary, restaurant, stationnement) :
  70 $ la nuit occupation simple ou double
  80 $ la nuit trois occupants ou plus
  (519)253-4411, au Canada, (313)963-7590, aux États-Unis

- Hôtel Relax - Travelodge (à deux rues du Centre des congrès Cleary, stationnement, piscine intérieure, restaurant et bar-salon) :
  58 $ la nuit
  (519)258-7774 ou (800)667-3529

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Focus on International Joint Commission Activities, Vol. 18 [1993], Iss. 2, Art. 1

https://scholar.uwindsor.ca/ijcfocus/vol18/iss2/1
The International Joint Commission is convening a public hearing and invites written comment to assist with its review of the final report of the Levels Reference Study Board. Completing three years of work under the second phase of a study of fluctuating water levels in the Great Lakes-St. Lawrence River basin, the report makes 42 recommendations for actions by governments.

The study was requested in August 1986 by the Governments of the United States and Canada in response to widespread concern about record high water levels on all Great Lakes except Ontario. Following its review of the study and public comment, the Commission will respond to the two Governments.

The report of the study board concludes that the installation costs of major engineering works to further regulate the levels and flows of the Great Lakes and St. Lawrence River would exceed the benefits provided. In addition, these works would have negative environmental impacts. Instead, the report recommends comprehensive and coordinated land use and shoreline management programs throughout the basin to help reduce vulnerability to flood and erosion damage.

The report also concludes that regardless of whether lake levels and flows are regulated, damage to shoreline properties, public infrastructure and water dependent businesses will continue without land-based action to curb such damage. Coordinated land use and shoreline management programs must be instituted at the local level, using decisionmaking processes that take into account the needs of those affected.

While the study board recognizes that it may be impossible to implement such programs uniformly throughout the basin, the recommendations aim at uniformity to the maximum extent possible. This would help to ensure consistency in the application of these measures along the full length of the Great Lakes-St. Lawrence River shoreline.

The board recommends that governments budget $10 to $20 million annually for these purposes. Suggested cost sharing is one-third federal, one-third state and provincial, and one-third local.

In addition to recommendations for long-term planning, the study board urges governments to begin developing, as soon as possible, coordinated and comprehensive emergency preparedness planning.

Two of the Great Lakes, Superior and Ontario, already have structures at their outlets that control outflows. The report recommends improvements to make the existing regulation plans more responsive to the current needs of the interests affected by them.

The report also recommends removal of some fills in the Niagara River, which over the years have impeded the river’s outflow and slightly raised the level of Lake Erie. The recommended removal of fills would lower Lake Erie’s long-term average level by 0.03 to 0.06 metres (0.1 to 0.2 feet). Action is recommended to prevent future fills in the connecting channels that could have similar effects on lake levels.

Management of problems associated with fluctuating water levels does not appear to be guided by clear or consistent policies among the many responsible government agencies. The study board recommends all levels of government adopt principles to guide future decisions and enhance coordinated, systemwide management. The same principles were used to guide the study.

The final phase of the Levels Reference study relied extensively on citizen input through its 18-member Citizens Advisory Committee, citizen membership on its working committees, the openness of its proceedings, its newsletter UPDATE/AU COURANT, and through 17 public events around the Great Lakes-St. Lawrence River basin. This process convinced the
board that future resolution of water level issues will depend not only on coordination and cooperation, but on the continued involvement of the people who are most directly affected. The study board recommends establishment of a Great Lakes-St. Lawrence River Advisory Board, with citizen as well as agency representation, to advise the Commission and to coordinate responses to water levels issues. Another recommendation calls for increased citizen membership on the International Lake Superior and St. Lawrence River Boards of Control.

The study looked at both high and low water level conditions. The potential lowering effects of climate change on the Great Lakes and St. Lawrence River could be dramatic. The board recommends that these possible effects be taken into account in future management of water levels and flows.

While this study examined the engineering, economic, environmental and social issues implicit in Great Lakes-St. Lawrence River management, it identified areas in which data gathering efforts, information storage, interpretation and communication could be improved. A number of actions are recommended to update hydrologic and hydraulic models, improve forecasting and statistical methodologies, expand communications of water level and flow information, and enhance data collection, including monitoring of shoreline flooding and erosion and mapping of hazard areas.

The Commission will hold a public hearing to receive comment on the final report of the Levels Reference Study Board on September 11, 1993 from 10 a.m.-1 p.m. at the Ramada Inn Hotel, 480 Riverside Drive West, Windsor, Ontario N9A 5K6.

Please submit written comments by September 15, 1993. Comments or requests for the Levels Reference Study Board report and any of its six annexes, available in English or French, should be addressed to Secretary, International Joint Commission, 1250 23rd Street NW, Washington, D.C. 20440, or 100 Metcalfe Street, Ottawa, ON, K1P 5M1. For information about the comment process call (202)736-9000 or fax (202)736-9015 in the United States. In Canada call (613)995-2984 or fax (613)993-5583.

Lake Ontario Outflows Increased During High Water Supply Period

by Frank Bevacqua

Extensive flooding on Lake Ontario occurred this spring as waters rose to their highest levels since 1973. Flooding on the St. Lawrence River and erosion on Lake Ontario were also significant. Extremely high water supplies, particularly during November, January and April, caused Lake Ontario to begin to rise in November rather than March, and exceed its maximum target elevation in April.

During this period, careful decisions on the amount and timing of Lake Ontario outflows, as described below, allowed large amounts of water to be removed from the lake. The outflows have been consistently greater than the regulation plan flows since December 19, 1992, even when ice jams and the Ottawa River freshet pushed water levels above the banks of the St. Lawrence River. As we go to press, available data show that outflows from Lake Ontario exceeded water supplies to the lake for eight of the 12 months ending in May.

While nature determines how much water flows into the system -- and whether there will be drought or deluge -- Lake Ontario outflows can be moderated to mitigate extreme high and low levels. These outflows are regulated at the hydropower project at Cornwall, Ontario and Massena, New York, which was approved by the International Joint Commission. Requirements set by the Commission include provisions to protect

Sommaire

Afin de recevoir des commentaires sur le rapport final, la Commission mixte internationale tiendra des audiences publiques le samedi, 11 septembre 1993 de 10 h00 à 13 h00 à l’hôtel Ramada Inn, 480 Promenade Riverside ouest, Windsor (Ontario) N9A 5K6.

Nous vous invitons à faire parvenir vos commentaires par écrit jusqu’au 15 septembre, 1993. Le public peut faire parvenir ses commentaires ou ses demandes du rapport final ainsi que n’importe quel des six annexes sur les fluctuations de niveau des eaux dans les Grands Lacs et le Saint-Laurent (disponibles en français et en anglais) à l’adresse suivante: le Secrétaire, Commission mixte internationale, 100 Metcalfe, 18ème étage, Ottawa (Ontario) K1P 5M1. Pour de plus amples renseignements sur le processus de présentation des commentaires, veuillez téléphoner au (613) 995-2984 ou télécopier au (613) 993-5583.
affected interests, including shoreline property owners and navigation up-
stream and downstream, and hydropower downstream in Quebec. The
Commission appointed the International St. Lawrence Board of Control
to exercise operational oversight.

The St. Lawrence Board has developed a regulation plan designed to
keep Lake Ontario between 74.15 metres (243.27 feet) and 75.37 metres
(247.27 feet). In June 1992, Lake Ontario was at 75.05 metres (246.24 feet)
above sea level (monthly average levels are cited in this article). Heavy
rains delayed the seasonal decline, and in August the lake was at 75.03
metres (246.16 feet), but well within its normal range for this time of year.

During Lake Ontario’s seasonal decline, reductions below plan flows
were made by the St. Lawrence Board in September and October to reduce
water spillage while the power entities maintained their facilities. This
resulted in 10 centimetres (four inches) of water being stored on the lake,
but higher outflows eliminated this storage by December 31, 1992. The level
continued to fall to 74.82 metres (245.48 feet) in November, when extremely
high supplies reversed the trend.

Beginning in December, when Lake Ontario was at 74.86 metres (245.61
feet), the St. Lawrence Board began to

maximize outflows under its winter operations. Maximum flows would
remain the objective within the limits imposed by ice conditions, flooding and
navigation safety in the St. Lawrence River.

A major ice jam formed between Montreal and Sorel, Quebec in early
February. Despite repeated attempts by ice breakers to clear the jam, it
remained largely in place for three weeks and severely restricted the flow
capacity of the St. Lawrence River at times. Flow reductions also occurred
well into March due ice conditions, including jams and hanging dams
under the ice cover in the international reach of the river. Water supplies to
Lake Ontario in January 1993 were the highest ever recorded for that month.
The lake climbed to 75.04 metres (246.19 feet) in January and to 75.15
metres (246.56 feet) in February.

Nonetheless, the St. Lawrence Board
was able to keep outflows as high as supplies in February and March, and
the lake held at 75.14 metres (246.52 feet) in March.

In February, the Commission in-
voked criterion (k), which states that
when water supplies exceed those the
regulation plan was designed to accom-
modate, the control works shall be
operated to provide all possible relief to
shoreline owners upstream and down-
stream. This action was taken to allow the St. Lawrence
Board the flexibility to continue maximizing outflows once winter operations were no
longer in effect.

Lake Ontario began to climb at the end of March fed by runoff from a heavy
snowfall and water supplies that in April were the highest for any month in recorded history. Even after the ice problems had largely dissipated, flooding in communities around Montreal on Lac St. Louis prevented higher

outflows from Lake Ontario. Levels in the St. Lawrence River are sensitive to the outflows and changes of up to one foot at Montreal harbour can occur overnight. Lake Ontario’s April level reached 75.43 metres (247.47 feet),
exceeding the maximum target elevation.

At the end of April, when high Ottawa River flows and flooding
downstream subsided, Lake Ontario outflows could again be increased
beyond the supplies to the lake. The flows exceeded the capacity of the
Cornwall-Massena and Hydro Quebec power plants and water had to be
dispelled at this time. On May 10, the St. Lawrence Board wrote the Commis-
sion to ask whether relief to shoreline owners provided under criterion (k)
should extend to the point of serious adverse effects to other interests,
such as navigation. The Commission responded on May 13 that while the
board must be sensitive to potential adverse effects, criterion (k) opera-
tions could, in extraordinary circumstances, extend to the point of serious
adverse effects to other interests.

The Commission considered the elevation of Lake Ontario, then 30
centimetres (one foot) above its maximum target level, and the record wa-
ter supplies as extraordinary circumstances. Outflows were
increased to 10,900 cubic metres per second (385,000 cubic feet per second) for 24-hour test periods on Monday and Thursday each week beginning May 20. On these days, the interests concerned rescheduled commercial navigation between Lake Ontario and Montreal to avoid the higher velocities and cross currents in this section of the St. Lawrence River. Conditions in critical sections of the river were also monitored since flows were the highest in recorded history. The test program was discontinued after June 10 as conditions on Lake Ontario improved, but outflows remain well above plan flows. In June, the Commission commended its St. Lawrence Board for exemplary service during this difficult period.

For more information contact Don Parsons, International Joint Commission, 1250 23rd Street NW, Washington, D.C. 20440, telephone (202)736-9000 or Reg Golding, International Joint Commission, 100 Metcalfe Street, 18th floor, Ottawa, ON K1P 5M1, telephone (613)995-2984.

**Sommaire**


Au cours de cette période, après mûre réflexion, on a décidé d’évacuer d’importantes quantités d’eau du lac Ontario. Depuis le 19 décembre 1992, le débit des émissaires a constamment dépassé les valeurs prévues dans le plan de régulation et ce, même lorsque qu’une embâcle et une crue nivale dans l’Outaouais ont fait déborder le Saint-Laurent.

Du 20 mai au 10 juin, pendant 24 heures tous les lundis et jeudis, les débits ont été élevés à des valeurs encore jamais atteintes. On a modifié en conséquence le programme de navigation commerciale entre le lac Ontario et Montréal pour éviter les courants forts et les transcouants risquant de se produire dans cette section du fleuve. La Commission a loué le travail du Conseil du Saint-Laurent, qui a su honorer ses obligations de façon exemplaire durant cette période difficile.

**Lake Ontario Water Supplies and Outflows, 1992-1993**

All data in this article is from U.S. Army Corps of Engineers Monthly Bulletin of Lake Levels for the Great Lakes and is provisional. Supplies include inflows from Lake Erie, Lake Ontario basin runoff and precipitation on the lake, minus evaporation from the lake. Levels are in reference to International Great Lakes Datum 1985.
Making Innovation Routine Business in the Waukegan RAP

by Pamela Gordon

In defining the environmental problems of Waukegan Harbor, Illinois learned many lessons from other Stage 1 Remedial Action Plans (RAPs). Approaches used in Waukegan Harbor to define the Area of Concern, resolve environmental problems while the RAP is still being written, and involve citizens in the process may also be useful in other areas around the Great Lakes basin.

Waukegan Harbor was originally designated as one of the 43 Areas of Concern because of PCB contamination, but concerns of the local community extend to other problems. A Waukegan Citizens Advisory Group was formed in summer 1990 to actively assist in preparing the RAP. One of the first things this group pointed out was that a number of abandoned industrial sites and other locations suspected of having contaminated soil did not lie within the Area of Concern boundaries. The Illinois Environmental Protection Agency (IEPA) responded by defining an “expanded study area” to include additional sources of contamination that may affect both Waukegan Harbor and Lake Michigan waters adjacent to the harbor. This effort led to investigation, and in some cases remediation, of non-PCB sources of contamination.

Citizens Advisory Group research has identified a myriad of contamination sources and environmental threats. To assure rapid response, the IEPA suggested enrolling problems in the expanded study area into existing programs. At one site where field staff discovered paint seeping from storage drums, the leak was reported to the Immediate Removal program. The leaking drums were lowered into protective overpack drums and placed on pallets until they could safely be disposed at an approved facility. In the harbor area, birds were landing in a tar pit and the U.S. Environmental Protection Agency took immediate action to secure and clean up the site.

While removing contaminated sediments at another site, IEPA staff discovered leaking underground storage tanks. At a different site, a Citizens Advisory Group member used her newly acquired knowledge of the Leaking Underground Storage Tank program to help coordinate and implement remediation activities. In both situations, the amount of contamination that would have flowed into Waukegan Harbor and Lake Michigan was significantly reduced. Such tangible results also help to sustain community involvement in the RAP.

An important part of the RAP process is encouraging open lines of communication among the agencies, local businesses and citizens groups, as well as reaching out to the public at large. Since libraries and other information distribution points may not reach everyone in the area, especially summer evening crowds, kiosks were built and placed strategically throughout the harbor area. The kiosks provide information about the Waukegan RAP and serve as a convenient mail box for depositing comment cards on the spot.

“Many times I would notice a boater or passerby stop at the kiosks and collect information. With the traffic I see down at the harbor, I would say the location is excellent. As a result of our outreach, people have taken notice of the problems in the harbor area. The Citizens Advisory Group sponsored a successful “Beach Sweep” refuse collection effort last year and found a corporate sponsor for this year. A tire recycling program sponsored by the City of Waukegan and the Citizens Advisory Group is also on the slate.”

Charles Isley
Citizens Advisory Group member

Mary Walker, Citizens Advisory Group Outreach Committee chair

To reach the broader audience, a five-minute video was professionally produced to explain the Waukegan Harbor RAP, highlight public comment opportunities and introduce the
Citizens Advisory Group. In addition to using the video at public meetings and speaking engagements, it has been broadcast repeatedly by a local cable television network.

For copies of the video or additional information, contact Greg Michaud, Illinois Environmental Protection Agency, Office of Community Relations, 2200 Churchill Road, P.O. Box 19276, Springfield, IL 62794-9276. Telephone (217)782-5562.

A workshop on the Remediation of Contaminated Sediments will be held by the International Joint Commission in cooperation with the Cornwall St. Lawrence River Remedial Action Plan Public Advisory Committee September 24-25, 1993 in Cornwall, Ontario. For more information, contact Bruce Kirschner at the Commission’s Regional Office. Call (519)257-6710 in Canada or (313)226-2170 in the U.S.

In its April 1993 review, the International Joint Commission found that the goals of the Oswego River Stage 2 Remedial Action Plan (RAP) were clear and consistent, but plans for remedial actions were not coordinated with major cleanup efforts upstream of the Oswego Area of Concern. Defining actions to address sources of pollution and restore impaired uses is the focus of stage 2 of the RAP process. Since the contribution of upstream pollution sources tends to dwarf those within the Oswego River Area of Concern, this lack of coordination will make it especially difficult, in the Commission’s view, to plan and implement effective remedial measures.

In its June 1993 review, The International Joint Commission found that the Cuyahoga River Stage 1 Remedial Action Plan (RAP) adequately addressed problem definition in the Area of Concern and provided a strong foundation for Stage 2 efforts. The RAP developed criteria for source-impairment linkages, cumulative loading tables and methods to evaluate nonpoint source pollution. A thorough compilation of point and nonpoint sources in the Area of Concern was also prepared and development of strategies to address the immense combined-sewer overflow problem is underway. The Commission feels that this is an excellent example of a job well done, and looks forward to sharing the mechanisms and decisions for development and implementation with participants in other RAPs.

The St. Louis River Remedial Action Plan (RAP) has clearly made a significant effort toward taking a comprehensive ecosystem approach, according to the International Joint Commission in its June 1993 review of the Stage 1 RAP document. Discussion of forestry practices, and listings of local air emissions, other atmospheric inputs and valuable natural resource parcels are examples of this effort.
Continued activity to consider and address the impacts of exotic species on the St. Louis River system is also encouraged. The St. Louis River RAP, which is being developed by Minnesota and Wisconsin, is one of two RAPs requiring coordination by two states. The Commission found that the St. Louis River RAP has appropriately addressed the problem definition in the Area of Concern and provided a broad foundation for the Stage 2 RAP process. As the RAP process has a significant impact on Lake Superior and the Binational Lake Superior Program, the Commission encourages further examination of ecosystem linkages on nearshore areas outside of Superior Bay as part of the St. Louis River RAP.

A Review of the St. Lawrence River at Massena Stage 1 and 2 Remedial Action Plan (RAP) and a review of the Cornwall St. Lawrence River Stage 1 RAP were completed by the International Joint Commission in June 1993. While the Commission is dissatisfied over the split of the St. Lawrence River Area of Concern into two RAPs, it encourages the actions initiated by the two RAPs to cooperate in a binational manner. The Commission's review raised questions about the adequacy of the Stage 1 Massena RAP and urged the RAP team to reconsider two use impairment designations. A lack of consistency between cleanup efforts planned by the agencies and the goals of the RAP was also noted. Since the Stage 2 Massena RAP does not identify which use impairments the remedial measures will restore, the Commission concluded that it did not meet the requirements for a stage 2 RAP. The Commission views the RAP process as iterative and looks forward to annual updates on progress toward restoring and protecting beneficial uses in the St. Lawrence River Area of Concern.

In its review of the Cornwall Stage 1 RAP, the Commission concluded that while some additional work is required, the major environmental problems have been documented. However, the Commission believes that the situation involving the transboundary movement of pollutants will become even more challenging as more Stage 2 efforts are undertaken. The need to strive toward development of a comprehensive, ecosystemic RAP process that incorporates all relevant groups and communities remains a major concern of the Commission.

The Detroit River Binational Public Advisory Council (BPAC) will hold a celebration of the Detroit River on September 11, 1993. From Peche Island near Lake St. Clair to Holiday Beach in Lake Erie, activities will take place on both shores of the Detroit River.

The Detroit River BPAC is contacting local community councils, companies and citizen groups to become involved, including hosting industrial tours, organizing cleanups, setting up display booths and convening other river-based events. Companies are encouraged to demonstrate the actions taken to reduce hazardous emissions and showcase their facilities. Sponsors are also sought to work in partnership to produce promotional material. For more information contact Roberta Longley, Canadian Public Involvement Coordinator, Detroit River Remedial Action Plan, 110 Eugenie Street West, Suite 238, Windsor, ON N8X 4Y6, (519)972-8960 or Bill Parkus, Southeast Michigan Council of Governments, 1900 Edison Plaza, Detroit, MI 48226, (313)961-4266.

Thunder Bay Remedial Action Plan’s Public Advisory Committee hosted Wake Up to Your Waterfront, a shoreline community cleanup of Thunder Bay’s shoreline on June 11-12, 1993.

The event was the brainchild of a local Ontario Ministry of Natural Resources Biologist, Bob Hamilton, who
calculated that about 75 years of accumulated debris, including 100 cords of wood, old household furniture and appliances, and tonnes of plastic, paper and metal debris, littered Thunder Bay’s portion of the Lake Superior shoreline and local rivers. Hamilton took the idea of a community cleanup to the Public Advisory Committee, which planned the event, received support from the Great Lakes Cleanup Fund to hire two coordinators, and executed an extremely successful community event.

A direct mailout to waterfront industries asked them to clean up their own properties and support Wake Up to Your Waterfront through donations. The response was varied. Some chose not to participate at all, while others donated cash, lent heavy equipment or donated supplies.

About 125 kilometres (78 miles) of shoreline were cleaned over the two-day period. Participants included disabled individuals, families, boating clubs, schools, and representatives from businesses and industries. A wrap-up ceremony included local entertainers and speeches and presentations by local and provincial dignitaries.

Wake Up to Your Waterfront was a successful, community-based effort to make the local shoreline cleaner, safer and more beautiful in time for the busy tourist season. The initiative was one more step in Thunder Bay RAP’s campaign to “Make a Great Lake Superior.”

A similar initiative to clean up Clearwater Creek in Nipigon was undertaken by Nipigon Bay RAP, June 19, 1993. Both programs had a two-fold objective -- cleaning up the garbage and raising environmental awareness in the community.

For more information on either of these volunteer cleanups, contact Bob Hartley, Thunder Bay RAP Public Advisory Committee Chair, R.R. 13, Lakeshore Drive, Thunder Bay, ON, P7B 5E4. (807)683-5832.

"Our Lake: What's In It?" is the theme of the most recent issue of a semianual publication, Aquaticus, the journal of the John G. Shedd Aquarium. The full color, 56-page magazine examines four issues: a history of Lake Michigan fishes; the zebra mussel invasion; atmospheric deposition of toxics in the lake; and beach debris. Copies are available by writing Aquaticus, John G. Shedd Aquarium, 1200 S. Lake Shore Drive, Chicago, IL 60605. Please include $1.75 US per copy (postage and handling), payable to Shedd Aquarium.

Great Lakes: Great Gardening is a series of fact sheets that gives research-based information on topics such as composting yard wastes, organic gardening, soil erosion, pest management and water conservation practices. To order the series of 12 fact sheets at $2 US per packet, contact New York Sea Grant, 21 South Grove
Street, East Aurora, NY 14052-2398. (716)652-7874; fax (716)652-5073.

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At the Source is a quarterly newsletter produced by staff at the Great Lakes Pollution Prevention Centre that highlights pollution prevention programs and activities basinwide. The centre is one component of the Great Lakes-St. Lawrence Pollution Prevention Initiative developed under the Canadian federal Green Plan. For a copy of the newsletter, or for more information on the centre, contact Marianne Lines, Communications Manager, Great Lakes Pollution Prevention Centre, 265 North Front Street, Suite 122, Sarnia, ON N7T 7X1. (519)337-3423; (800)667-9790; fax (519)337-3486.

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Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters describes the best methods or management measures to reduce or prevent nonpoint pollution in coastal waters. States will select a practice or series of practices appropriate for their local circumstances to achieve the national nonpoint pollution goals.

Coastal Nonpoint Pollution Control Program Development and Approval Guidance outlines how states can develop control programs to implement the management measures. States must create coastal nonpoint pollution programs by July 1995 or face losing a percentage of their coastal zone management and nonpoint source program funding. Both documents are available from Marcella Jansen, Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration, 1825 Connecticut NW, Room 725, Washington, D.C. 20460.

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Environmental Research, Technology Development and Awareness Activities covers programs coordinated through the Research and Technology Branch of the Ontario Ministry of Environment from April 1991 to March 1992. To receive the report or an issue of the newsletter The Proving Ground, contact Ontario Ministry of Environment and Energy, Research and Technology Branch, 135 St. Clair Avenue West, Toronto, ON M4V 1P5. (416)323-5879; fax (416)323-4437.

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Proceedings from a workshop held October 22-23, 1992 on Managing the Great Lakes Shoreline: Experiences and Opportunities is available to scientists, planners and others interested in coastal or shoreline management. Occasional Paper 21 can be ordered for $25 Cdn from Lisa Weber, Heritage Resources Centre, University of Waterloo, Waterloo, ON N2L 3G1. (519)885-1211 ext. 2072; fax (519)746-2031.

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A new bilingual activity booklet entitled Explore Water With Holly Heron/À la découverte de l’eau avec notre ami le héron has been developed in partnership by the Girl Guides of Canada and Environment Canada. The booklet provides simple activities and experiments showing five- to nine-year-old girls and boys how they can become better environmental citizens by increasing their knowledge about water. The publication is available through local Girl Guide stores and at the address below.

A Primer on Fresh Water contains questions and answers relating to the availability and management of Canada’s freshwater as well as practical advice on conserving water. A chapter is devoted to the issues faced by water resource managers in the Great Lakes and St. Lawrence River basin. To receive a free copy in English, French or Inuktitut, contact your local Environment Canada office or the Enquiry Centre, Environment Canada, Ottawa, ON K1A 0H2. Call toll free (800)668-6767; (819)997-2800; fax (819)953-2225.

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Un nouveau carnet d’activités bilingue intitulé Explore Water With Holly Heron/À la découverte de l’eau avec notre ami le héron a été élaboré conjointement par les Guides du Canada et Environnement Canada. Cette brochure présente des activités et des expériences simples qui montrent aux jeunes gens de cinq à neuf ans comment devenir de meilleurs citoyens respectueux de l’environnement en améliorant leurs connaissances au sujet de l’eau. On peut se procurer cette publication.
Dans les magasins locaux des Guides et à l’adresse sous-mentionnée.

La brochure Notions élémentaires sur l’eau douce contient les questions et les réponses relatives à la disponibilité et à la gestion des eaux douces du Canada ainsi que des conseils pratiques sur la conservation de l’eau. Un chapitre est consacré aux questions que doivent résoudre les gestionnaires des ressources en eau dans le bassin des Grands Lacs et du fleuve Saint-Laurent. Pour recevoir un exemplaire gratuit en anglais, français ou Inuktitut, s’adresser au bureau local d’Environnement Canada ou à l’Informatik, Environnement Canada, Ottawa, ON K1A OH2. Appelez sans frais au (800)668-6767; (819)997-2800; télécopieur (819)953-2225.

Wisconsin Sea Grant Advisory Services has produced a 200-page illustrated report featuring 24 papers about research and outreach on small- and large-scale composting techniques using fish and shellfish processing by-products. To order Proceedings of the 1991 Fisheries By-Products Composting Conference, contact the University of Wisconsin Sea Grant Communications Office, 1800 University Avenue, Madison, WI 53705-4094. (608)263-3259; fax (608)263-2063.

Information about aquatic exotic species, the problems they cause, regulations to prevent their spread, and methods and permits for their control is available in a brochure entitled Field Guide to Aquatic Plants and Animals. To receive a single free copy, contact the Minnesota Department of Natural Resources, 500 Lafayette Road, St. Paul, MN 55155-4025, (612)296-2835 or Minnesota Sea Grant, Zebra Mussel Information Center, 208 Washburn Hall, 2305 East Fifth Street, Duluth, MN 55812, (218)726-8106.

Also available on loan from Dale Baker, Minnesota Sea Grant Extension Program is a videotape entitled "A LaMP (Lakewide Management Plan) for Great Lakes Stewardship." Telephone (218)726-8108.

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Easy Green is a handbook for youth programs designed for day and resident camps, and after-school programs. Readers learn about saving energy and water, reusing and recycling materials, reducing the use of toxic and hazardous materials and starting a composting program. The book contains more than 50 activities for teaching youth how to be earth-smart and is available for $19.95 US plus $3 shipping and handling from Grechen Perry Thropo, American Camping Association, Bradford Woods, 5000 State Road, 67 North Martinsville, IN 46151-7902. Call toll free in the U.S. (800)428-2267; (317)342-8456; fax (317)342-2065.

The Ohio Lake Erie Office has produced an 80-page State of the Lake Report discussing new objectives such as completing Ohio's Coastal Management Program, standardizing fish advisories throughout the Great Lakes, implementing the Great Lakes Water Quality Initiative and completing the Great Lakes Oil Spill Initiative. Six agency progress reports are also included. For a free copy, contact the Lake Erie Office, One Maritime Plaza, Fourth floor, Toledo, OH 43604. (419)245-2514.

A Profile of St. Marys River is an informative guide highlighting the history of the river's geology, settlement, development, fishery and food web. The booklet discusses the effects of contaminants and human development, and offers solutions and contacts for additional information. To receive a single free copy, or a similar profile of Lake St. Clair, call the International Joint Commission's Great Lakes Regional Office, (519)257-6700 in Canada; (313)226-2170 in the U.S.

For additional copies at $1 US each ($0.75 each for five or more copies), contact Michigan Sea Grant, Publications Office, University of Michigan, 2200 Bonisteel Boulevard, Ann Arbor, MI 48109-2099. (313)764-1138.
IJC Reviews Competing Water Uses in the St. Croix River System

by Lee Sochasky

The St. Croix River system of Maine and New Brunswick is bisected by the United States-Canada border from its source to the sea. While five international and four single-jurisdiction dams control its lakes and mainstem, the multiplicity of uses challenges the system’s ability to supply enough water when and where it is needed.

The St. Croix’s relationship with the International Joint Commission goes back to the Commission’s first water quality study in 1912 (see Focus, July/August 1992, pages 14-17). In 1915 the Commission approved construction of a dam at Grand Falls and appointed the International St. Croix Board of Control to oversee its operation.

A new chapter of this history opened in October 1992 when, in response to concerns raised at public meetings the previous summer, the Commission reviewed its 1965 order of approval. This order specifies operating conditions for the Vanceboro Dam, the pivotal water control structure in the upper St. Croix River basin, and for the upstream Forest City dam.

The review will be undertaken by the Commission’s International St. Croix Board of Control and the International Advisory Board on Pollution Control-St. Croix River, and will include a strong public consultation component.

Local interests cautiously await the outcome recalling that the Commission’s last review of its Vanceboro Dam order in 1973-1977 did little to address their concerns over conflicting water demands. Noncorporate and nongovernmental users also felt uncertain of their role in the process.

The current Vanceboro dam replaces the log drive and storage dams that have stood for over a century where Spednic Lake narrows to form the St. Croix River. It controls the 1,088 square-kilometre (480 square-mile) drainage of the St. Croix’s East Branch, including Spednic and East Grand Lakes, two of the largest lakes in Maine and New Brunswick. The dam also sets flows on a highly popular 48-kilometre (30-mile) river canoe run immediately downstream. It, like eight of the St. Croix’s nine dams, is owned by Georgia-Pacific Corporation as part of a hydropower network supplying the company’s Woodland pulp and paper mill, the area’s single largest employer.

While Georgia-Pacific seeks to accommodate fisheries, canoeing and flood management interests, as well as meeting minimum level and flow requirements and supplying power to its mill, all agree that the task is difficult at best. There are simply more demands than available water and no mutually acceptable means to address the fundamental conflicts that arise.

The situation is exacerbated during the winter when Spednic Lake is used as the system’s only major water supply and drawdowns from the watershed’s largest East and West Branch Lakes are curtailed at the request of fisheries agencies. The Commission has indicated that such interactions will be part of its review.

Residents generally acknowledge Georgia-Pacific’s precedence for water use and recognize that the dams make many nonindustrial activities possible. However, they feel that water levels and flows could be set more equitably and that communication could be improved. At the public meetings held by the Commission’s two St. Croix boards in 1992, partici-
pants voiced frustration over major unannounced drawdowns in lake levels and increases in river flows by Georgia-Pacific in summer 1991. These abrupt changes affected local fishing lodges, sports enthusiasts and shore residents.

The review of the order will likely benefit from two current activities to address concerns raised by residents. A watershed modeling study sponsored by the St. Croix International Waterway Commission and undertaken by Environment Canada is developing a computer program to help optimize the benefits from multiple use of the St. Croix’s available waters. In addition, recent publications by the International Joint Commission and Environment Canada now offer information on St. Croix River management.

Clearly much work lies ahead for the Commission’s two St. Croix Boards and local interests to address a water control issue that offers no simple solutions. By examining the operation of Vanceboro Dam in the context of a full multiple-use watershed, however, all parties can gain a better appreciation of the complexity of managing the waters of the St. Croix River system and perhaps find ways to improve it.

For further information contact Michael Keegan, U.S. Army Corps of Engineers, 424 Trapelo Road, Waltham, MA 02254-9149, (607)647-8087 or Peter Eaton, Environment Canada, 45 Alderney Drive, Fifth Floor, Dartmouth, NS B2Y 2N6, telephone (902)426-6141.

Sommaire

The following includes meetings scheduled by the International Joint Commission and its various boards. Please contact a Commission office for further information.

**September**
- 20-23 International Joint Commission Semi-Annual Meeting
  Ottawa, Ontario

**October**
- 21 Great Lakes Science Advisory Board
  Windsor, Ontario
- 21 Council of Great Lakes Research Managers
  Windsor, Ontario
- 21-22 Forum on Remedial Action Plans
  Windsor, Ontario
- 22-24 International Joint Commission
  1993 Biennial Meeting
  on Great Lakes Water Quality
  Windsor, Ontario

**General Conferences**

The Higgins Lake Environmental School is presenting *Understanding our Environment*, a course for teachers, youth group leaders, officials and others at the MacMullan Conference Center in Roscommon, Michigan on August 8-13, 1993. The course will emphasize field studies to observe the interrelationship of living organisms and their environment. For more information contact the MacMullan Conference Center, Environmental School, 104 Conservation Drive, Roscommon, MI 48653. (517)821-6200.

The Department of Chemical Engineering at Wayne State University offers Graduate Certificate and Masters Degree programs in *Hazardous Waste Management*. The programs provide instruction and training in state-of-the-art methods for managing, controlling, and disposing of a broad range of hazardous materials and reflect changes occurring in technology, law, policy and regulations. Register for fall 1993 from August 31-September 3. For further information contact the Advising Office, Department of Chemical Engineering, Wayne State University, Detroit, MI 48202. (313)577-3716.

The Toxicology Forum will hold a meeting on *Chlorinated Organic Chemicals -- The Environment and Human Health -- Past, Present and Future* September 8-10, 1993 in Washington, D.C. Discussion topics will include the sources, environmental and human health effects, and epidemiological evidence of health effects of chlorinated organic chemicals. For information contact Charlene Anderson, Administrator, the Toxicology Forum, 1575 I Street NW, Suite 800, Washington, DC 20005. (202)659-0030.

An open house at the Little River Pollution Control Plant in Windsor, Ontario on September 11-12 will provide preliminary information from the *Windsor Water Environmental Planning Study*. The study is examining the combined sewer and storm drain system, loadings to the Detroit River, and possible bacterial contamination and heavy metal inputs. For more information contact Windsor Water Environment Plan, 3260 Devon Drive, Windsor, ON N8X 4L4. (519)996-2250.

Computational Hydraulics International is sponsoring a hands-on *Stormwater Management Modelling Workshop* entitled “USEPA SWMM42 and XP-SWMM” September 10-11, 1993 in Niagara Falls, Ontario. The workshop is scheduled in conjunction with the Sixth International Storm Drainage Conference. For more information contact Evelyn James, Computational Hydraulics International, 36 Stuart Street, Guelph, ON (519)767-0197; fax (519)767-2770.

The Environmental Health Network will present its Fourth Scientific Assembly September 17-18, 1993 in Washington, D.C. to discuss *chlorinated chemicals and health problems*, heavy metal exposure and current developments in environmental science, health and law. For more information contact the Environmental Health Network, Great Bridge Station, P.O. Box 16267, Chesapeake, VA 23328-6267. (804)424-1162.

The Ohio Lake Erie Office will hold its annual Coastweek celebration for the *Ohio Lake Erie shoreline* September 18-October 11, 1993. Cleanups, nature walks, environmental lectures, fairs focusing on the lake, bird watching and canoe trips are some of the planned events. For more information contact Cherie A. Blevins, Coastweeks Coordinator, Ohio Lake Erie Office, One Maritime Plaza, Fourth floor, Toledo, OH 43604-1866. (419)245-2514; fax (419)245-2519.

The sale of *Lake Erie license plates* is raising funds to protect Ohio’s Great Lake as a unique economic and recreational resource. Administered by the Ohio Lake Erie Commission, a set...
of plates costs Ohioans $25 above
regular vehicle registration fee (per-
sonalized for an additional fee), with $15
from each sale going to the Lake Erie
Protection Fund. Information and order
forms are available from local deputy
registrars or by calling (800)589-TAGS.

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The First International Specialized
Conference on Diffuse (Nonpoint
Source) Pollution: Sources, Preven-
tion, Impact and Abatement will be
held in Chicago, Illinois on September
20-24, 1993. For more information
contact Dr. Vladimir Novotny, Depart-
ment of Civil and Environmental
Engineering, Marquette University,
1515 West Wisconsin Avenue, Milwau-
kee, WI 53223. (414)288-3524; fax
(414)288-7082.

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The North American Association for
Environmental Education will hold its
annual international conference
September 24-29, 1993 in Big Sky,
Montana. For more information
contact Janet Thoreen, NAAEE
Conference Headquarters, P.O. Box
400, Troy, OH 45373. (513)676-2514.

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The Water Environment Federation
Annual Conference will be held in
Anaheim, California on October 2-7,
1993. For more information contact
Maureen Novotne, Water Environment
Federation, 601 Wythe Street, Alexan-

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Looking for the latest information on
recycling markets, collections and
processing, education or source
reduction? The National Recycling
Coalition 12th Annual Congress and
Exposition October 11-14, 1993 in
Nashville, Tennessee provide over 60
sessions with an emphasis on what is
working and what will make recycling
work in the future. For more informa-
tion contact the National Recycling
Coalition, 1101 30th Street NW, Suite
305, Washington, DC 20007.
(202)625-6406.

The second international conference
on the Environmental Management of
Enclosed Coastal Seas will held
November 10-13, 1993 in Baltimore,
Maryland. The conference focuses on
coastal and semi-enclosed seas such as
the Baltic, the Mediterranean and the
Great Lakes. For more information
contact Helene Tenner, Center for
Environmental Estuarine Studies,
Department of Natural Resources,
Tawes State Office Building E3,
Annapolis, MD 21401. (410)974-5047;
fax (410)974-3158.

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A call for papers has been issued for
the Fifth International Symposium on
Society and Resource Management to
be held June 7-10, 1994 on the campus
of Colorado State University. Those
wishing to present at the conference
should submit abstracts to Michael J.
Manfredo, Program Chair, Human
Dimensions in Natural Resources Unit,
Colorado State University, Fort
Collins, CO 80523. (303)491-6591; fax
(303)491-2255.

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