# HUMAN HEALTH EFFECTS FROM TOXIC CHEMICALS IN THE GREAT LAKES

## Report of
## A Public Workshop
## July 19 - 21, 1990
## Georgina Inn, Jackson's Point, Lake Simcoe, Ontario

**Prepared by Great Lakes United**
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## SUMMARY

A two-day public workshop on human health effects from toxics in the Great Lakes area was held at the Georgina Inn at Jackson's Point on Lake Simcoe in Ontario from July 19 to 21, 1990. This workshop, which was jointly sponsored by Great Lakes United and Health and Welfare Canada, was the first large public consultation in Health and Welfare Canada's new $20 million Great Lakes Health Effects Program.

The purpose of the workshop was to focus attention on these health effects and to develop recommendations from the public on how to address them taking into account both the roles of Health and Welfare Canada and of non-governmental organizations.

Forty workshop participants, plus six federal government observers, examined the issues from five perspectives: public needs and concerns, research, prevention, public consultation, and self-protection.

For these highly involved members of the public, a pre-workshop questionnaire, completed by 29 participants, revealed that 92% were very or somewhat concerned about miscarriage, infant mortality, birth defects, subtle developmental defects, and the immune system in relation to toxics in the Great Lakes area. Other health items were of similar concern to 84% to 88% of the respondants.

Participant discussions revealed a common philosophical framework: the goal of a toxic-free ecosystem, a strong sense of responsibility for future generations, equal right to a healthy environment, and the need for all people to re-evaluate and change their philosophy of living in relation to human-environmental interactions.

Because of the urgency of this health problem and the cautious, conservative approach of the traditional scientific method, many specific recommendations were developed on new, non-traditional scientific approaches.

Some of the characteristics of the proposed new, non-traditional scientific method were: designing studies to be dynamic (i.e., capable of incorporating information updates) and up-to-date (e.g., no delays in use of new data or publication); a willingness to generalize or take action in the face of uncertainty, to make assumptions or extrapolations, and to involve the public more directly; more extensive examination of morbidity, subtle and secondary effects, and medical histories; and community-led health surveys.

Three governmental, "process" issues were raised: one was concern about possible conflict of interest in the multiple roles played

by government. The second was inadequate funding for the Health Effects Program. And the third, which is related to the validity and importance of local action on Great Lakes health issues, was the need for federal governmental support for such local action.

It was recommended that primary roles for Health and Welfare Canada were in the areas of research, prevention policies, public education and communication, personal protection guidelines, regulatory development, and coordination of various sectors involved in these health issues. Where possible, information-education activities should use existing education and communication sectors and structures, especially the public health sector.

Principles to guide Health and Welfare Canada's activities included: violation of environmental "commons" can not be tolerated, Canada will fulfil its commitments under the Great Lakes Water Quality Agreement, and Health and Welfare Canada is the appropriate body to assume responsibility for the environmental-health component of all governmental policies, programs, and actual impacts.

In the area of research, it was recommended that Health and Welfare Canada assume a strong coordinating role by establishing standardized methodologies of data collection, analysis, and reporting; by pooling, digesting, and disseminating data in a central clearinghouse; by establishing and/or coordinating intersectoral linkages; and by facilitating joint, complementary or centralized research.

Research needs included: literature reviews, identification of environmental health markers, pathways, effects (including synergistic, cumulative, non-specific, and chronic), and detoxification. Throughout the workshop an emphasis was placed on reproduction concerns.

The primary issue for prevention was seen as a reduction of toxics entering the environment. The first goal should be zero discharge of persistent toxics, even if this means that some substances must be banned. "End-of-pipe" control was not acceptable. Other toxic reduction recommendations made to further health protection included: standardized industrial codes of practice, required industrial environmental audits, automatic five-year review of Certificates of Approval, shift in the burden of proof toward proving safety, and public right-to-know.

Other prevention recommendations included: zero workplace exposure to bioaccumulating chemicals, revised building codes for new developments, revised guidelines for decommissioned industries, review and strengthening of food quality standards, improvements in the environmental and preventive education of health professionals, and professionally-supported public

interest representation in risk assessment processes.

In working with the public, it was recommended that a formal public consultation policy be developed by Health and Welfare Canada which should include public involvement in decision making and regulatory development, one-way education and communication activities, and a variety of two-way interactive opportunities.

Related recommendations included: a broad interpretation of "public;" various proposals for Health and Welfare Canada to fund NGOs to carry out some aspects of their Health Effects Program; establishment of a permanent educational advisory committee and a Public Advisory Committee which includes representatives from non-governmental organizations (NGOs), community-based information services, and a training program for environmental health communicators; supplementing the normal public meeting process by using existing information distribution systems or groups or by setting up new "focus" groups; and use of a variety of multi-faceted, multi-channel communication techniques to reach all sectors.

The most important tool for self-protection was identified as information. In addition to easily accessible public information on the quality of food (both commercial and natural), drinking water, breastmilk, and various environmental indicators, other requests included information on exposure pathways, risk assessment interpretation, and results of community health surveys. To assist individuals or communities facing specific problems or concerns, it was recommended that "Scientific Aid" offices, similar to Legal Aid be established.

Recommendations on the role for NGOs included: continued advocacy; cooperation with Health and Welfare Canada's Human Health Effects Program; widening and strengthening the NGO network (e.g., new partners and linkages, intensified involvement, establishing a "health effects" umbrella group); and seeking funding for a variety of specific actions (e.g., assistance with community health surveys, maintaining a public information databank, developing a citizen's health manual, conducting a travelling workshop in the Great Lakes Basin on human health issues).

At the conclusion of the workshop, the participants requested that detailed descriptions of work undertaken as part of the Health Effects Program, including timetables for expected outcomes and opportunities for public consultation, be distributed widely. They also requested a response to their workshop input and an opportunity to re-convene as a group at a later date to discuss progress being made in the Health Effects Program.

# HUMAN HEALTH EFFECTS FROM TOXICS IN THE GREAT LAKES

## 1.0 INTRODUCTION

Great Lakes United conducted a public workshop from July 19 to 21, 1990 at the Georgina Inn at Jackson's Point on Lake Simcoe in Ontario on human health effects from toxics in the Great Lakes area. The workshop was the first major public consultation activity of Health and Welfare Canada in their $20 million Great Lakes Health Effects Program. (For a brief description of this program, see Appendix A.) This program is one aspect of an overall $125 million Great Lakes Action Plan to clean-up and preserve the lakes and the surrounding area.

The purpose of the workshop was to focus attention on human health concerns caused by toxic chemicals in the Great Lakes. A wide spectrum of participants with special interest or expertise in this issue was gathered together to exchange ideas and develop recommendations for action.

The participants included representatives from native communities, grassroot community organizations, multicultural groups, community workers, religion, education, farming, fishing, naturalists, industry, labour, research, and professional health workers, as well as citizens with personal health problems related to the environment.

The issues addressed by the participants centred around human health concerns, research needs, prevention actions, Health and Welfare Canada's plans for their Health Effects Program and public consultation, self-protection activities, and activities for non-governmental organizations.

These issues were discussed by forty public and six federal governmental participants (see Workshop Participants' List in Appendix B) in plenary and small-group sessions over an intensive two-day period. The results of these discussions have been summarized in this report under three major categories: public needs and concerns (Section 2), recommendations to Health and Welfare Canada (Section 3), and recommendations on the role for non-governmental organizations (Section 4).

An overriding theme was creating "a healthful environment" rather than protecting individuals from an unhealthy environment. However, in face of the existing reality, recommendations were made from every perspective: clean-up, prevention, and self-protection.

## 2.0 PUBLIC NEEDS AND CONCERNS

Participants expressed their needs and concerns in several ways, including a pre-workshop written questionnaire, plenary discussion, and small-group discussions.

Concerns. This group of highly involved participants expressed a fairly strong degree of concern about a number of health problems related to toxics in the Great Lakes. Responses to a pre-workshop questionnaire by 29 of the participants are shown in Table 1. If the "somewhat" and "very" concerned columns are summed, a total of 92% of the participants were concerned about miscarriage, infant mortality, birth defects, subtle developmental defects, and the immune system. The remaining items were of concern to 84% to 88% of the participants.

TABLE 1

Human Health Concerns
Related to Toxic Chemicals in the Great Lakes Area

Workshop Participants' Degree of Concern for Each Type of Problem
(by percent)

| Problem | Somewhat Unconcerned | Neutral | Concerned Somewhat | Concerned Very |
|---|---|---|---|---|
| Reproductive Problems | | | | |
| fertility | 4% | 8% | 42% | 46% |
| miscarriage | 4 | 4 | 46 | 46 |
| infant mortality | 4 | 4 | 34 | 58 |
| birth defects | - | 8 | 13 | 79 |
| low birth weight | - | 12 | 36 | 52 |
| subtle developmental defects | - | 8 | 16 | 76 |
| Cancer | - | 11 | 27 | 62 |
| Immune system | - | 8 | 34 | 58 |
| Respiratory problems | - | 16 | 36 | 48 |
| Decreased life span | 4 | 11 | 31 | 54 |

The high percentages for reproductive issues indicates a strong degree of concern for the future and for the continuing quality of health and life. These questionnaire concerns were reflected in the group discussions.

As part of the pre-workshop questionnaire, the participants

indicated their degree of interest in four possible topics for workshop discussion. These topics, in order of the participants' degree of interest, were:

1st What kind of public education/communication program should there be?

2nd What can I do to protect myself?

3rd What prevention policies should be adopted?

4th What research should be undertaken?

The large number of specific needs and concerns that were expressed before and during the workshop have been placed in the following categories:

- philosophical framework for considering environmental-health decisions
- process considerations
- communicating with the public
- specific issues
- information needed
- database methods
- positions and recommendations.

The first two of these are summarized below; the remaining have been integrated into various parts of Section 3, as appropriate.

Philosophical Framework. A number of philosophical positions were expressed throughout the workshop. They can be summarized as follows:

- We hold the responsibility for future generations
- Real "health" means health of the whole ecosystem
- Our goal is a toxic-free ecosystem
- The equity principle: everyone has the right to a healthy environment, food, water, etc.; standards must be applied equally to all
- Human life and health must be respected. (Note, however, that some participants viewed people as part of the ecosystem and others saw people as most important.)
- Quality is more important than quantity; environmentally-related health problems of even one person are of importance
- There is no "us-them" on this issue. We all must re-evaluate what we are doing personally and globally and re-think our philosophy of living in relation to human-environmental interactions.

Process considerations. Workshop participants expressed both concerns and recommendations relating to a number of process considerations. One of the strongest of these was the need to be

working with a different type of scientific method that can allow us to take action even in the face of uncertainty.

While the accepted ways and use of science operate cautiously and conservatively in terms of taking action, the current human health situation -- which has no control group since we are all being affected -- demands new, non-traditional approaches. Society should begin to take action on the basis of how we feel about issues, concerns, or ideas that have a sufficient degree of obviousness and common sense to them.

Other problems related to use of the traditional scientific method were a separation of research data from health advisories or policy changes, the dependence on single and often gross health indicators (e.g., cancer deaths), and a tendency to treat complex, environmentally-related problems in a simplistic manner.

Because of the pressing nature of human health effects due to environmental pollution, the following possible characteristics of a new, non-traditional approach were discussed:

- design studies to be dynamic, that is, allowing for on-going information updates either specific to the study or generally on the issue
- be willing to make assumptions and extrapolations
- design studies to be "up-to-date" (e.g., indicators of recent toxic levels, fast publication and release time)
- examine morbidity (e.g., incidence of disease indicators such as allergy and asthma episodes per week) and subtle effects (blood chemistry changes), as well as mortality
- consider cause-and-effect relationships rather than just enumerating facts
- be willing to generalize even in the face of uncertainty
- investigate how to use participatory, action research
- acknowledge the role of the public in data collection and in interpretation of the results (e.g., present the results in lay language)
- examine human tissue levels of toxics in relation to reproductive outcome
- study chronic, low-level exposures
- examine secondary health, social or economic effects (e.g., community breakdown)
- examine whole-body effects as well as specific indicators
- examine a variety of indicators, including wildlife measures as a surrogate for evaluating and monitoring the potential for impacts on human health
- standardize the collection of medical history data
- focus on high-risk, high-exposure populations
- develop a policy for using native reservations as an on-going research laboratory
- put value into community expertise and wisdom.

In relation to government, three process points were raised. One was concern about possible conflict of interest in the multiple roles played by government. The second was inadequate funding for the Health Effects Program (see following paragraph). And the third, which is related to the validity and importance of local action on Great Lakes health issues, was the need for federal governmental support for such local action.

The existing $20 million was seen as totally inadequate to meet the health challenges. It was recommended that, as a starter, both industry and the province should come up with matching funds. However, given that the existing $20 million is now available, it should be used on one serious problem faced by the population group at highest risk. This activity could then be used to create public demand for more funds and action. In addition and as detailed more fully in Section 4, funds should be made available directly to the public to give them access to the process and to direct local action.

Finally, the participants urged that full use be made of the results of this workshop with a special request that the minister be told what the public is saying and that he become a public advocate for the Health Effects Program.

## 3.0 HEALTH AND WELFARE CANADA: RECOMMENDATIONS FROM THE PUBLIC

Workshop participants were made aware of the Health Effects Program through brief descriptive material, a plenary presentation, and occasional comments by the one or more Health and Welfare representatives present in each small group session.

The Health Effects Program includes development of specific chemical and ecosystem objectives, the use of new predictive exposure models, inclusion of a health focus in the Remedial Action Plans in the Great Lakes Areas of Concern, implementation of a human tissue and consumer product monitoring program, convening public workshops, development of new predictive tests using research animals, evaluating impacts of airborne contaminants, conducting epidemiological studies, and facilitating greater public participation and awareness.

The following sections detail the participants' comments on this program as well as their own ideas on what should be happening.

### 3.1 Role for Health and Welfare Canada

In the written questionnaire, the participants indicated that Health and Welfare Canada should place the greatest degree of emphasis on research (30%) and prevention (28%) (see Table 2). Other emphases were public education and communication at 21% and personal protection activities at 14%.

TABLE 2

Roles for Health and Welfare Canada

Suggested Role Emphasis by Workshop Participants
(average percent for each role)

| Role | Percent of Emphasis |
|---|---|
| Health and/or Environmental Research | 30% |
| Prevention Policies | 28 |
| Public Education and Communication | 21 |
| Personal Protection Guidelines | 14 |

In addition to these four areas, there was a strong recommendation that Health and Welfare become more involved with the regulatory process, including law enforcement. A second strong recommendation, reflected in more detail in the following sections, was the appropriateness of Health and Welfare assuming a strong coordinating role among the various relevant bodies and sectors.

A further set of recommendations related to the role Health and Welfare should play in setting the national agenda for health-related environmental issues. Among these recommendations was the need for Health and Welfare to assert a number of principles. These included:

- violation of the "commons" (e.g., the Great Lakes) can not be tolerated
- Canada will take whatever actions are necessary to fulfil their commitment to all parts of the existing, binational Great Lakes Water Quality Agreement
- in all environmental health problems the ecosystem approach will be used.

Other national agenda recommendations focused on:

- assuming responsibility for the environmental health impact component of both federal and provincial environmental assessment processes
- increased cooperation between the Health Protection and Health Promotion Branches of Health and Welfare Canada
- assuming responsibility for ensuring that all future environmental-health related policies and programs in any ministry are subject to public review and environmental assessment

- reviewing all existing policies and programs from the environmental-health perspective
- examining how to improve the linkage between environmentally related health effects and regulatory initiatives.

In carrying out their activities, it was recommended that Health and Welfare constantly remind itself to avoid becoming the conveyer of political messages.

### 3.2 Research Activities

Coordination. As mentioned earlier, the public strongly recommended that Health and Welfare Canada assume a coordinating role on research on environmental health issues. This role was defined in terms of methodologies, information exchanges, and activity coordination.

The value of standardized methodologies for data collection, analysis, and reporting was supported throughout the workshop. The primary concern in this area was to ensure consistency in methodologies and data reporting. Health and Welfare must be the body that develops and disseminates standardized policies, programs and methods.

Data banks, on-going research, research plans, and other information exists in a variety of locations and sectors throughout Canada (e.g., academic, health, and private sector with their differences in approaches and issues). In order to coordinate existing knowledge, identify gaps needing further work, and facilitate communication among all the sectors, some centralized clearinghouse is needed. Workshop participants recommended that Health and Welfare establish this clearinghouse to pool, digest, and disseminate the best information available. In addition, Health and Welfare should establish the necessary links for it to function appropriately and for ensuring inter-sectoral linkages.

Some of the intersectoral linkages that were identified are among and between various ministries, various levels of government, educational and research institutions, and private sector research activities. International sources of information should also be included in the clearinghouse.

In addition to becoming a passive centre for information, Health and Welfare could facilitate joint or complementary research activities to examine specific issues. A joint research fund and intersectoral conferences would assist this approach.

A related recommendation called for the establishment of central research facilities that could coordinate the work of all public and private sectors. It was suggested that these facilities

should be funded in part by toxic-producing industries.

The public health sector was seen as an existing system that is not being used to its fullest extent in environmental health issues. There must be better connections between this sector and information, research, preventive methods, and public communication in the environmental health field.

Health and Welfare was seen as the appropriate body to facilitate increased involvement of the public health sector. For example, Health and Welfare could assist with system modifications and resources to channel diagnostic data directly from medical doctors to a central agency.

Research Needs. A variety of research needs were identified. These included:

- literature reviews on many issues, including changes in fertility, development, behaviour, and the immune system
- identification of simple, meaningful markers for environmental health effects
- details on the environmental partitioning and movement of contaminants, including through the food chain and in the human body
- effects of various contaminants on human health
- information on pathways (e.g., airborne toxics), loadings, and mass balances
- continued epidemiologic surveillance, including small area data
- levels of contaminants in breastmilk
- latency period for various types of health risks
- subtle environmental effects on reproduction and genetic makeup
- correlation of health impacts with body burdens
- health surveys ranging from the community to the national level
- cumulative and non-specific health effects
- synergistic effects of toxics
- chronic disease rates and age of occurrence by region
- measures to remove or prevent environmental contaminants
- methods to detoxify humans
- a tumour registry
- closer monitoring of pregnant and nursing mothers and babies
- facilitating a two-way dialogue between the public and health professionals.

Special emphases were placed on taking into account the ecosystem approach in all research work and on increased research activity related to reproductive outcome.

### 3.3 Prevention Activities

Toxic reduction. The first and strongest approach to prevention was a call for reduction of toxics in the environment. The most important class of toxics to reduce are persistent toxics. Point sources of this class should be addressed first and then non-point sources, including runoff and atmospheric deposition. The goal must be zero discharge of persistent toxics.

In order to reach this goal, it was clear to the workshop participants that some substances must be banned. End-of-pipe capture will not achieve zero discharge. Alternatives to banned substances should be evaluated before their use is permitted.

Other related recommendations included:

- development of standardized industrial codes of practice including a requirement for specific toxic reduction plans
- a requirement on industry to produce an environmental audit of all processes
- an automatic review of Certificates of Approval approximately every five years with opportunities for public input
- a fundamental shift in the burden of proof towards proving safety rather than proving harm when approving new chemicals or reviewing existing chemicals in use
- institution of a right-to-know system that includes yearly reports of industrial discharges, including use of agricultural chemicals, to all media.

In addition to reducing the input of new toxics to the environment, there should be cleanup of existing environmental pollutants. When planning for toxic reduction and cleanup, both accumulated impacts of chemicals and accumulated health damage should be taken into consideration.

At the municipal level, it was recommended that an Environmental Health Screening Program be developed to evaluate planning and construction of new developments (e.g., housing, office buildings, industries) and decommissioning of old facilities. To empower this program, legislative changes need to be made in the Federal Building Code, and other existing codes and guidelines need to be reviewed and updated to take into account health considerations. Historical industrial surveys should be used as part of this program to locate possible existing problems.

And finally, workplace standards for bioaccumulating chemicals should be set at zero. Labour negotiations can be one avenue for reducing industrial toxics.

Food quality. The basic food recommendation for prevention was virtual elimination of persistent toxics from food sources.

Recommended ways for achieving this were:

- no weakening of food standards
- routine reviews of existing standards for contaminants in food moving toward making Canadian standards the most stringent in the world
- provision for public involvement in proposed changes in standards or guidelines, with the opportunities for involvement communicated systematically and effectively to the public sector.

Education. Because of the vital role played by scientists and health professionals in environmental health issues, their educational system should be expanded and updated to better take into account these issues and concerns. These professionals should also be trained in how to communicate in lay language. Health and Welfare could assist in this process by preparing brochures for health professionals to provide to the public.

Risk assessment. Public interests must be represented in risk assessment processes, since they involve a combination of scientific information and value judgements. In order to represent public interests adequately, it was recommended that public and occupational health professionals must be involved routinely for assessing the risks and costs in terms of health and life. The proponents of the proposal undergoing risk assessment can be expected to speak to the economic and social benefits. In these assessments, the risk of inaction should also be considered. A third, public interest party should act as an arbitrator and be held accountable for the tradeoffs.

### 3.4 Working with the Public

Public consultation policy. It was strongly recommended that Health and Welfare develop a formal policy on public consultation. Helpful models and experience for such a policy exist in a number of locations (e.g., Environment Canada).

In such a policy, the public should be defined to include the general public as well as those represented in non-governmental organizations (NGOs). In order to include this broader, general public, town hall type of meetings and public notification networks could be used. Other identified public sectors were industry, business, district health councils, health advocacy groups, environmental groups, and various coalitions and networks.

Some recommendations related to the public consultation policy were:

- design the policy to communicate the urgency of the problem of human health and environmental contamination

- establish a coalition of representatives from environmental and non-environmental NGOs to serve as an educational advisory group
- present potential new policies to all public sectors for comment, review, and change suggestions
- provide up-front funding and other resources to communities to support their involvement and make it more meaningful
- establish a community-based information referral service and/or clearinghouse
- when programs are being developed, involve the public in program design, related education activities, and program implementation
- adopt a serious commitment to listening non-defensively to the public and using their contributions in decision-making.
- work through public health associations
- work on developing the political will to act
- establish a Health and Welfare Canada position of "Environmental Health Communicator" to provide communication and public consultation skills training, to hold periodic workshops for medical professionals, and to develop an environmental assessment kit for use by medical professionals
- request the minister to make a public statement that all decisions will be guided by this policy.

Other recommendations specific to public meetings were:

- use a local "focus" group to define concerns and make suggestions appropriate to the local culture; these focus groups should include native chiefs and councils, public health units, and local citizen groups
- use a variety of types of meetings
- hire local groups to organize meetings
- invite public and health professionals to the same meetings
- promote attendance by targeting specific groups, holding meetings in the evening, attending meetings of existing groups, accepting written submissions, and holding conferences for local citizens.

<u>Decision-making process.</u> A number of public consultation recommendations were brought forward on the decision-making process. These included:

- develop a specific policy and process on public participation in rule making, standard setting, and health risks assessments
- give the public early admittance to this process (e.g., public comment long before a regulation is developed)
- investigate new structures, systems and partners in various approaches to public participation and social

control (e.g., multicultural orientations and media involvement)
- provide for funding to enable community groups to have meaningful access to the decision-making process.

Recommendations related to regulatory and legal issues included:

- create an ombudsperson to assist victims involved in litigation with health implications
- develop a "rule-making" process that includes provision for widespread notification for all stages from initial work to final decision
- ensure public comment is considered before a regulatory decision is made
- ensure the process includes provision for the position or evidence of either party to be critiqued or challenged
- ensure that all material, including critiques and responses to critiques, are made public
- ensure that the public is aware of all costs associated with a given issue (e.g., costs of the proposed "opportunity" and cost of the "no-action" alternative)
- provide a full rationale for all decisions and the response given to public comments
- ensure that there is a post-decision appeal process.

Types of consultation. It was recommended that Health and Welfare Canada work with the public in two forms: one-way actions and two-way interactions. Using either approach, it is important to remember that many people feel helpless because of fear, denial, victim-blaming, or actual helplessness.

One-way actions included traditional information and communication coming from Health and Welfare, as well as unsolicited input on health issues from the public or the private sector to Health and Welfare, or to another branch of government.

Recommendations on Health and Welfare's one-way activities included:

- use of broad, innovative, multi-faceted and multi-channel communication techniques for information dissemination (e.g., use visual as well as verbal material)
- relay a sense of empowerment (i.e., we can change environmental problems)
- use different approaches with different target groups; identify the appropriate approach by survey or pilot programs
- work to overcome barriers in target groups due to age, language, or socio-economic level
- use the following guidelines for information dissemination: avoid overload; give usable information; be accurate, clear, concise, understandable, and meaningful;

avoid blaming the victim; where appropriate, give detailed information with interpretation
- use existing information distribution systems such as public and school libraries, public health departments, schools, and service clubs
- use the existing public health framework to provide information on risks, especially those related to children
- consider environmental health exhibits at zoos, museums, and other public locations
- set up a 1-800 telephone line with an automated information selection service
- have a Health Effects Program booth at NGO conferences
- project a credible image by promptly releasing information, including health problems revealed by studies
- work on getting human health information related to environmental concerns into the news regularly
- regularly publish detailed data of the state of human health, reproductive measures, and environmental quality
- provide a list of actual names and numbers or addresses for the public to contact when they need assistance
- provide a list of available resources, including films and books.

Two-way interactions were strongly supported by the workshop participants. Many of these have been presented above in the public consultation policy section. Others include:

- set up an on-going Public Advisory Committee that includes representatives from NGOs
- support grassroot education-social change centres
- develop specific two-way communication networks with the public, government officials, scientists, researchers, health care workers, and industry
- work with the public on public education and communication plans, ways the public can cooperate in research projects, and how they can assist in implementing prevention policies
- be creative in motivating health professionals to become more involved in environmental health issues
- assist groups and individuals to become more effective partners in all aspects of creating a more healthful environment
- conduct local public "hearings" to discuss issues and/or concerns (e.g., results of a local health survey).

In all two-way interactions, there must be a built-in procedure to ensure full consideration of and response to public input. Input that is simply received and acknowledged does not become part of an interactive process and is, therefore, useless and will not be continued.

## 3.5 Self-protection Activities

Over one-third of the workshop participants indicated that they had personal knowledge of or experience with health effects due to toxics in the Great Lakes. A number were already engaged in various personal acts of protection including using bottled water or organic food and not swimming in or eating fish from the Great Lakes.

Role of Information. Many participants stated that what they needed for self-protection was accurate, specific information. Such information should include sources of exposure and health effects due to various levels of different pollutants. Methods to fulfil this information need were discussed above in detail in Section 3.4 "Working with the Public."

Some specific information requests were:

- environmental audit of various sources of drinking water
- environmental audit of various foods: both natural foods (e.g., fish, berries) and cultivated foods; a special focus on dioxin levels
- concerning toxics in breastmilk: levels of contamination in the general public; public access to a testing program; rapid disclosure of test result; risks and benefits of breastfeeding vs the alternatives at various levels of contamination
- clarification of and meaningful information about pathways
- comprehensive health studies of consumers of uncultivated, natural foods
- development of community based health surveys with Health and Welfare Canada assisting with funding, information, and methodological support
- development of community based environmental quality indicators
- development and routine distribution to communities of information on environmental health indicators; the indicators should include reproductive information, such as health and development of babies and pregnancy outcome; the indicators can be expected to vary in different communities.
- impacts of various agricultural practices
- interpretation of risk assessment
- publicly accessible data from tissue and other environmental data laboratories
- relationships between specific chemicals and specific health effects (e.g., effects on the immune system)
- suggested lifestyle changes to avoid or reduce exposure including specific preventive actions
- potential for detoxification or protection by nutritional adjustments.

Other suggestions included:

- the development of some kind of mechanism for providing practical support for those already suffering from environmental health problems
- the joint consideration of spiritual, mental and physical health
- the need to pay attention to individual needs and concerns both for the importance of individuals and for the fact that they often serve as an indicator of more widespread problems
- the establishment and support of offices for "Scientific Aid" similar to Legal Aid offices.

## 4.0 ROLE FOR NON-GOVERNMENTAL ORGANIZATIONS: RECOMMENDATIONS FROM THE PUBLIC

Workshop participants suggested a number of roles and activities for non-governmental organizations (NGOs) that can be grouped into three categories: governmental relations, networking, and actions.

Recommendations on governmental relations included:

- a continuation of the traditional NGO advocacy role at both the political and bureaucratic levels
- becoming an active participant in public consultation program(s) related to environmental-health effects
- stick with such program(s) and other governmental interactions long enough for the dialogue to become productive
- proactively communicate NGO-group ideas, recommendations, and positions to Health and Welfare or other relevant departments
- work with Health and Welfare to set up area-wide and national conferences
- work on achieving tax-deductible status on individual income tax returns for time and expenses volunteered to environmental organizations
- be aware of and utilize the fact that NGOs can be a bridge between different levels of government.

A number of recommendations on networking focused on widening and strengthening network activities in a variety of ways. These included:

- setting up a "health effects" umbrella group that could channel concerns collectively and strongly
- setting up area "health committees" to work with Health and Welfare on issues of common concern
- intensify the involvement of the membership of various groups in the network by bringing them directly into the issue through whatever means are appropriate for particular

issues and groups
- provide assistance (e.g., information, guidance, speakers, funding, etc.) to member groups in the network when requested
- work on strengthening links among the networks in different sectors, with a special focus on the public health sector
- establish partnership links between environmental and non-environmental NGOs (e.g., health groups)
- hold community meetings
- in order to make networking links more operational, find opportunities to personalize the links and take the time to develop the right connections
- increase contact with universities for data, research, public outreach, and student projects.

The prerequisite for actions was good information. In order to ensure that the information communicated by NGOs is credible, a data bank needs to be established. Sources of information for the data bank could be the groups themselves, the government, technical sources, and the international community. Group's use of the information should take into account whether the information was primary (e.g., specific research results) or secondary (e.g., "digested" material, reviews, comments).

Some of the recommendations for specific actions were:

- set up model sites and demonstrations for living in a way that does not destroy the environment (e.g., organic farm)
- develop a list of environmental-health questions for political candidates
- compile lists of politicians and others that are supportive or non-supportive on environmental issues
- work with Health and Welfare on implementing the health effects program by providing test samples, assisting with community-level pilot projects, or working on community health surveys
- expand the network's resource base to tackle these issues by seeking appropriate funding and partners
- write letters to politicians at all levels on the importance and urgency of human health issues related to environmental contamination
- send a jar of water with some of these letters and ask to have its quality tested; send a carbon copy of these letters to the media.

Several actions recommended that funding be sought from Health and Welfare or other appropriate bodies for projects such as:

- developing and maintaining a data bank for public use
- preparing and distributing a "citizen's manual" on the issue

- preparing a "how-to" guide for conducting community health surveys
- developing and implementing a travelling workshop to bring health issues to and hear health concerns from the public throughout the Great Lakes basin
- surveying and compiling a report on environmental health concerns of environmental NGOs
- prepare and conduct information sessions with elementary and secondary schools
- development of a "health protection bill of rights" that has as its goals zero human exposure and zero ecosystem burden
- develop an "environmental health agenda" for Canada.

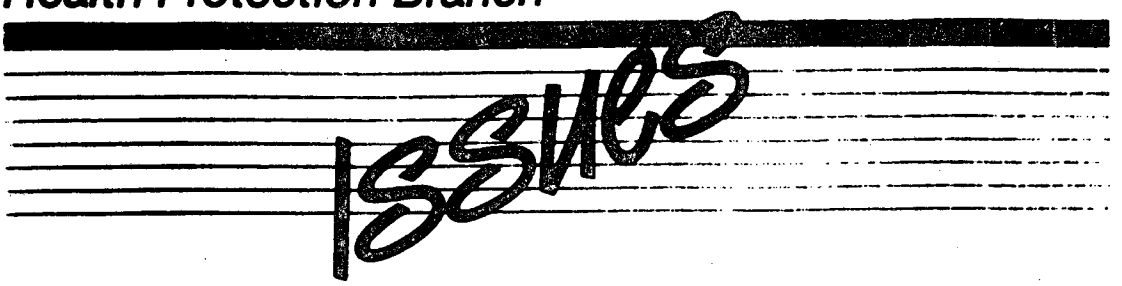
## 5.0 Conclusion

At the conclusion of the workshop, the participants asked for detailed descriptions of the current work being undertaken by the Health Effects Program. It was recommended that these detailed descriptions be widely distributed and include timetables for expected outcome dates and opportunities for public consultation.

The participants in this workshop requested that Health and Welfare Canada prepare a response to their input at this workshop and that they be re-convened at a later date to hear and comment on progress being made in the Health Effects Program.

APPENDIX A

## Health Protection Branch




*THE GREAT LAKES*
*ACTION ON HUMAN HEALTH CONCERNS NOW*

# GREAT LAKES HEALTH EFFECTS PROGRAM

- *1990-95 Federal Program starting January 1990*
- *In partnership with the public and communities around the Great Lakes Basin*
- *Budget: 20 million dollars over 5 years*
- *Part of the Great Lakes Action Plan, which also provides a Great Lakes Cleanup Fund and a Preservation Program*
- *Required by the Great Lakes Water Quality Agreement (1987 Protocol) signed by Canada and USA*
- *Administered by Health and Welfare Canada (Environmental Health Directorate) with other Departmental participation*

| | |
|---|---|
| ***THE PUBLIC*** | *through polls, consultation meetings* |
| ***RESEARCHERS*** | *through Workshops, studies* |
| ***REGULATORS*** | *through binational Agreements* |
| *...SAY THAT:* | ***• There are risks to health*** |
| | ***• The extent is unknown*** |
| | ***• It is time to act now*** |

*THE GREAT LAKES BASIN IS HOME, WORKPLACE, COMMUNITY FOR OUR FAMILIES...NOW AND IN THE FUTURE*

*The Great Lakes Basin:*

- *contains 20% of the world supply of fresh water*
- *is one of the most densely populated and industrialized regions in North America*
- *contains over 800 identified chemicals, only 300 of which can be evaluated with available information*
- *provides major economic and social underpinning for residents (industry, recreation, drinking water, transportation, food)*

## ACTIVITIES OF THE HEALTH EFFECTS PROGRAM:

- ***A HEALTH FOCUS AND RESOURCE FOR THE PUBLIC*** *throughout the Great Lakes Basin and especially in "Areas of Concern" where Remedial Action Plans (RAPs) are under development.*
- ***PUBLIC CONSULTATION*** *with an emphasis on ongoing public participation and the sharing of information. Through a public advisory committee to the Program, community meetings, media reports of health effects data and action plan options, collaboration with various non-government sectors, etc. the Program becomes a resource for public and private action.*
- ***JOINT CANADIAN/AMERICAN OBJECTIVES*** *for specific contaminants and the ecosystem that are fully protective of health.*
- ***HEALTH INDICATORS*** *to help measure progress in environmental cleanup and preservation, such as the monitoring of contaminants in human tissue.*
- ***IDENTIFY POPULATIONS AT RISK*** *from exposures to contaminants from air, water, soil, food, and/or consumer products and provide ways for these groups to reduce the risks to their health.*
- ***STUDIES*** *on the health implications of contaminants in the Great Lakes Basin which are solution oriented. This includes research (with findings available to the public) on such concerns as birth defects, cancer, childhood development, and respiratory health.*

***FOR INFORMATION AND PARTICIPATION CONTACT:***

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Health and Welfare Canada
Public Works Canada
Transport Canada

Santé et Bien-Être Social Canada
Travaux Publics Canada
Transports Canada

## *The Health Effects Program*

The Health Effects Program of the federal Great Lakes Action Plan is designed to meet the new requirements of the 1987 Protocol to the 1978 Great Lakes Water Quality Agreement. It is based on five features:

- acquisition and evaluation of data on the levels and effects of environmental contaminants (chemical and microbiological) with respect to human populations;
- health-risk assessment of current and potential impacts on populations within the basin;
- protection of public health from concurrent exposure to mixtures of chemicals from all sources;
- public participation and information exchange on health issues in the basin;
- sound inter-agency program co-ordination and management.

The program will be administered by the Environmental Health Directorate of the Health Protection Branch of Health and Welfare Canada. The Health Effects Program will complement current activities covered under the Department's responsibilities for the Canadian Environmental Protection Act and the Food and Drug Act.

### *Activities*

The major activities to be covered in the program include:

- the development of specific chemical objectives and ecosystem objectives that are fully protective of health. These objectives must take account of human exposure from all sources and the reality that people are exposed to mixtures of chemicals, not single chemicals.
- the use of new, sophisticated models that can predict human exposure to a wide range of chemicals, microbiological agents and radionuclides based on levels in air, soil, water, food and consumer products. These models will help to identify populations at special risk and ways to reduce these risks.
- promoting a health focus for plans to remediate Areas of Concern in the basin. Protection of public health in these areas is a major concern and can be achieved through committed dialogue between health professionals, the public, and environmental engineers.
- implementing an extensive and co-ordinated monitoring program for environmental contaminants in human tissues and in the air, water, soil, food and consumer products to which humans are exposed. Monitoring is essential if we are to be effective in locating new sources of contamination and assess the effectiveness of measures taken to reduce human exposures.
- convening workshops to evaluate public concern, to develop approaches to reduce exposure, to consider early warning indicators provided by wildlife studies or biological assays to assess temporal trends. These workshops will make use of technical expertise within and outside the government and require public participation.
- developing new predictive tests that use fewer experimental animals but maintain a high degree of relevance for assessing potential health impacts. These assays will enable research scientists to identify potential problems sooner and conduct health assessments that have less uncertainty.
- evaluating impacts of airborne contaminants on health. A wide range of chemicals are transported long distances into the Great Lakes basin, others are produced in the basin and still others move from sinks within the basin to other areas.
- epidemiological studies of populations in the basin. Some groups, such as infants, heavy fish consumers or individuals with respiratory problems, may be at greater risk than the general population. Innovative approaches to study infant behavioural development, respiratory health, reproductive potential etc., must be developed.
- greater emphasis on public participation and sharing of information. Biennial reporting of health effects data and the health status of populations, the preparation of chemical summaries, and exchanges of ideas between stakeholders in the basin will promote public awareness of what we know and what can be done.

Canada

June, 1990

1990-91 PROJECTS

GREAT LAKES HEALTH EFFECTS PROGRAM

THe Great Lakes Health Effects Program (GLHEP) was announced by Perrin Beatty, Minister of Health and Welfare Canada, in October 1989. It initiated Projects for the fiscal year 1990-91 to start the process of fulfilling its five-year mandate. These projects are listed below.

IT IS TIMELY TO RECEIVE PUBLIC INPUT TOWARDS DEFINING PROJECTS FOR THE NEXT FOUR REMAINING FISCAL YEARS.

Public Consultation Projects:

*__Citizen's Guide__ describing Canadian health-based environmental regulations, standards, and guidelines in use in the Great Lakes basin. Great Lakes United will write and distribute this Guide.

*__Public Consultation Workshop__ in July 1990 to define health and environmental issues and advise on public consultation strategy.

*__Public Teleconference, Video, and Users Guide__ on chemical risks to health in the Great Lakes environment. These initiatives are being coordinated through the Great Lakes Program at the State University of New York in Buffalo.

*__Annotated Bibliography of Audio-visual Materials__ on environmental health issues related to Great Lakes contaminants.

*__"Human Health and Environment" national publication,__ scheduled for release in May 1991, to complement the Environment Canada Report on the "state of the environment".

*__Coordinate GLHEP with the Great Lakes Action Plan, the RAPs, and other related programs in the Basin.__

Epidemiological (Study of Disease in Humans) Projects:

*__Fish-eater Study__ to establish health effects in groups of people who are exposed to large amounts of chemical contaminants found in the Great Lakes basin.

***Birth Defects Study** to examine specific types and rates of birth defects in relation to residence in Great Lakes communities or presence of chemical contaminants in Great Lakes basin.

***Community Health and Environmental Study Database** to be established. Measure of mortality and morbidity on a community wide scale will be matched to indicators of environmental quality, for example food, air and water contaminants, to provide information trends.

***Cancer Incidence Study** to relate types and ratios of incidence of cancers in populations living in the Great Lake basin.

Projects on Toxic Chemicals:

***Study of Health Impacts of Lead** to obtain a better understanding of the movement of lead from the mother to the fetus.

***Strategies to Study the effects of chemical contaminants on reproduction and early child development.** A study of contaminants close to the human egg and their implications is now underway.

***Study on PCBs,** a Great Lakes Priority Chemical, in terms of its most toxic components and residues found in Great Lakes fish and human tissue.

***Study of the interaction of chemicals mixtures** to which all populations are exposed.

Projects on Ecosystem Objectives and Remedial Measures:

***Development of Canadian/American Ecosystem Objectives** that protect health. Also the development of health indicators to establish goals and to measure trends in terms of Great Lakes clean-up and environmental improvements.

***Participation in International Joint Commission Committees and Programs in the Great Lakes Action Plan** in order to address the health issues related to Great Lakes contamination and the remedial programs.

Surveillance Projects:

***Establishing a national tissue bank** in order to have trend information over time about human exposure to chemical contaminants. This includes the development of a strategy and protocol for assessing trends in the build up of multiple contaminants in human tissue samples (blood, fat, milk, urine).

***Fish and wildlife consumption patterns** will be monitored over time to assess the human health significance of contaminant levels in the Great Lakes fish.

***Native Peoples Study** to assess the extent of exposure of native populations living in the Great Lakes Basin to chemical contaminants.

## Appendix B

## WORKSHOP PARTICIPANTS' LIST

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