



Environment
Canada

Environnement
Canada

Environmental
Protection
Service

Service de la
protection de
l'environnement

MERCURY IN THE ONTARIO ENVIRONMENT

by

D. J. PASCOE

and

C. D. STEWART

TD
171.5.C3
C46
No.12
c.2

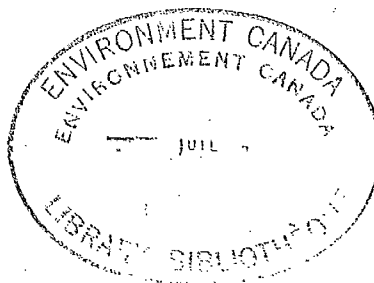
MERCURY IN THE ONTARIO ENVIRONMENT

by

D. J. PASCOE

and

C. D. STEWART



MS REPORT NO. O.R.-12



May 16th, 1979

Your file Votre référence

Our file Notre référence

This report was prepared by the Ontario Regional office of the Environmental Protection Service. The report presents the data available for mercury levels in the environment up to mid 1977. The data have been presented both in tables and on maps to facilitate the identification of areas within Ontario which may be of Environmental concern. No attempt has been made to provide a thorough interpretation of the results since established programs in the province already provide this service.

The report, prepared early in 1978, has only just been released because of a delay in the preparation of a national mercury overview report. The national report was available for distribution on May 8th, 1979, and is available on request.

The conclusions and recommendations sections have been removed from the regional report since their pertinence, because of the delay in the release of the report and the additional data available since preparation of the report, may be in doubt.

Any comments and recommendations for further study should be forwarded directly to the authors. Additional information relating to data acquired since the publishing of this report and to other studies in progress, may also be obtained by contacting the authors.

K. Shikaze

ABSTRACT

This report provides data on the level of mercury contamination in Ontario. Sampling has been carried out in this province by many agencies and as a result significant amounts of data are available for many parameters; fish, wildlife, water, sediment, air, vegetation, etc.

It is the intent of this report to present the available data in a manner which will facilitate the identification of those areas in the province which are of environmental concern. The data are contained in appendices to the report and are also displayed on maps using symbols to indicate various mercury concentration ranges.

RESUME

Ce rapport fournit des données sur le faux de contamination par le mercure en Ontario. Beaucoup d'agencies ont participé à l'échantillonnage dans cette province et comme résultat, une quantité importante de données est disponible pour les poissons, la faune, l'eau, les sédiments, l'air, la végétation, etc.

L'intention de ce rapport est de présenter les données disponibles d'une façon à faciliter l'identification de régions qui sont d'intérêt environmental. Les données sont contenues dans les appendices du rapport et sont aussi exposées sur des mappes se servant de symboles pour indiquer les concentrations variées de mercure.

TABLE OF CONTENTS

	<u>PAGE</u>
ABSTRACT	i
RESUME	ii
TABLE OF CONTENTS	iii
List of Figures	vii
List of Tables	ix
CONCLUSIONS AND RECOMMENDATIONS	x
 1 INTRODUCTION	 1
1.1 General	1
 2 DATA ACQUISITION	 3
2.1 General	3
2.2 Interpretation of Data	3
 3 DATA PRESENTATION	 5
3.1 General	5
 4 MERCURY IN FISH	 10
4.1 General	10
4.2 Concept of Standard Fish	10
4.3 Selection of Data	12
4.3.1 Arithmetic Mean Concentrations	15
4.3.2 Standard Concentrations	16
4.4 Discussion of Data	16
4.5 Ontario's Guide to Sportsfishermen	18
 5 MERCURY IN WILDLIFE (MAMMALS, AQUATIC BIRDS AND INVERTEBRATES)	 20
5.1 General	20
5.2 Selection of Data	20
5.3 Discussion of Data	22

		<u>PAGE</u>
6	MERCURY IN AIR	24
6.1	General	24
6.2	Selection of Data	24
6.3	Discussion of Data	24
7	MERCURY IN LAND VEGETATION AND AQUATIC PLANTS	27
7.1	General	27
7.2	Selection of Data	27
7.3	Discussion of Data	28
8	MERCURY IN SEDIMENTS, SOILS, ORES AND ROCKS	29
8.1	General	29
8.2	Selection of Data	29
8.3	Discussion of Data	44
9	MERCURY IN SNOW	47
9.1	General	47
9.2	Selection of Data	47
9.3	Discussion of Data	47
10	MERCURY IN WATER	50
10.1	General	50
10.2	Selection of Data	50
10.3	Discussion of Data	56
11	MERCURY IN INDUSTRIAL AND MUNICIPAL EFFLUENTS	58
11.1	General	58
11.2	Selection of Data	58
11.3	Discussion of Data	58

	<u>PAGE</u>
12	MERCURY IN BLOOD (HUMAN HEALTH) 61
12.1	General 61
12.2	Selection of Data 61
12.3	Discussion of Data 63
13	WABIGOON - ENGLISH RIVER SYSTEM 65
13.1	General 65
13.2	Mercury in Fish 67
13.3	Mercury in Sediments 70
13.4	Mercury in Aquatic Birds 72
13.5	Mercury in Invertebrates 72
13.6	Discussion of Data 76
BIBLIOGRAPHY 77	
ACKNOWLEDGEMENTS 78	
APPENDIX I	MERCURY IN FISH - DATA SHEETS 79
APPENDIX II	MERCURY IN WILDLIFE (MAMMALS, AQUATIC BIRDS AND INVERTEBRATES) - DATA SHEETS 123
APPENDIX III	MERCURY IN AIR - DATA SHEETS 128
APPENDIX IV	MERCURY IN LAND VEGETATION AND AQUATIC PLANTS - DATA SHEETS 130
APPENDIX V	MERCURY IN SEDIMENTS, SOILS, ORES AND ROCKS - DATA SHEETS 134
APPENDIX VI	MERCURY IN SNOW - DATA SHEETS 149
APPENDIX VII	MERCURY IN WATER - DATA SHEETS 152

	<u>PAGE</u>
APPENDIX VIII MERCURY IN INDUSTRIAL AND MUNICIPAL EFFLUENTS - DATA SHEETS	155
APPENDIX IX MERCURY IN BLOOD (HUMAN HEALTH) DATA SHEETS	159
APPENDIX X WABIGOON - ENGLISH RIVER SYSTEM - MERCURY IN FISH DATA SHEETS	162
APPENDIX XI WABIGOON - ENGLISH RIVER SYSTEM - MERCURY IN SEDIMENTS DATA SHEETS	178
APPENDIX XII WABIGOON - ENGLISH RIVER SYSTEM - MERCURY IN AQUATIC BIRDS DATA SHEETS	182
APPENDIX XIII WABIGOON - ENGLISH RIVER SYSTEM - MERCURY IN INVERTEBRATES DATA SHEETS	185
APPENDIX XIV SAMPLING PROCEDURES	188
APPENDIX XV ANALYTICAL PROCEDURES	193
APPENDIX XVI REFERENCES	197

LIST OF FIGURES

<u>FIGURE</u>		<u>PAGE</u>
1	MERCURY IN FISH SPECIES (Arithmetic Mean Concentrations)	13
2	MERCURY IN FISH SPECIES (Standard Concentrations)	14
3	MERCURY IN MAMMALS, AQUATIC BIRDS AND INVERTEBRATES	21
4	MERCURY IN AIR, AQUATIC PLANTS AND LAND VEGETATION	25
5	MERCURY IN SEDIMENTS, SOILS, ORES & ROCKS	31
6	SEDIMENT DEPOSITIONAL BASINS - L. ONTARIO	32
7	SEDIMENT DEPOSITIONAL BASINS - L. ERIE	33
8	SEDIMENT DEPOSITIONAL BASINS - L. HURON	34
9	SEDIMENT DEPOSITIONAL BASINS - GEORGIAN BAY	35
10	SEDIMENT DEPOSITIONAL BASINS - L. SUPERIOR	36
11	DISTRIBUTION OF MERCURY IN SURFICIAL SEDIMENTS - LAKE ONTARIO	37
12	DISTRIBUTION OF MERCURY IN SURFICIAL SEDIMENTS - LAKE ERIE	38
13	DISTRIBUTION OF MERCURY IN SURFICIAL SEDIMENTS - LAKE ST. CLAIR	39
14	DISTRIBUTION OF MERCURY IN SURFICIAL SEDIMENTS - LAKE HURON AND NORTH CHANNEL	40
15	DISTRIBUTION OF MERCURY IN SURFICIAL SEDIMENTS - GEORGIAN BAY	41
16	DISTRIBUTION OF MERCURY IN SURFICIAL SEDIMENTS - LAKE SUPERIOR	42
17	DISTRIBUTION OF MERCURY IN SURFICIAL SEDIMENTS - ST. LAWRENCE R. AT CORNWALL	43
18	MERCURY IN SNOW, SURFACE AND GROUND WATER	48
19	MERCURY CONTENT OF SURFACE WATER - LAKE ONTARIO	51
20	MERCURY CONTENT OF SURFACE WATER - LAKE ERIE	52

LIST OF FIGURES

<u>FIGURE</u>		<u>PAGE</u>
21	MERCURY CONTENT OF SURFACE WATER - LAKE HURON	53
22	MERCURY CONTENT OF SURFACE WATER - GEORGIAN BAY	54
23	MERCURY CONTENT OF SURFACE WATER - LAKE SUPERIOR	55
24	MERCURY IN INDUSTRIAL & MUNICIPAL EFFLUENTS	59
25	MERCURY IN BLOOD (HUMAN HEALTH)	62
26	WABIGOON - ENGLISH RIVER SYSTEM - MERCURY IN FISH (Arithmetic Mean Concentrations)	68
27	WABIGOON - ENGLISH RIVER SYSTEM - MERCURY IN FISH (Standard Concentrations)	69
28	WABIGOON - ENGLISH RIVER SYSTEM - MERCURY IN SEDIMENTS	71
29	WABIGOON - ENGLISH RIVER SYSTEM - MERCURY IN AQUATIC BIRDS	73
30	WABIGOON - ENGLISH RIVER SYSTEM - MERCURY IN INVERTEBRATES	75

LIST OF TABLES

<u>TABLE</u>		<u>PAGE</u>
1	MERCURY CONTAMINATION RANGES	5
2	BACK UP DATA SHEET FORMAT	7
3	CRAYFISH SAMPLING - CLAY LAKE AND CONTROL SAMPLING DATA	74

1 INTRODUCTION

1.1 General

The Environmental Protection Service (EPS) of Fisheries and Environment Canada (DFE) was charged with the responsibility of conducting a national overview of the mercury problem in Canada. The basic objectives of the overview were to provide answers to questions such as: Is there a general longrange environmental mercury problem? What are the specific environmental and human health problems? Are the problems site specific or are they regional or even national? What actions are necessary to protect the environment?

One of the most important phases of the national mercury program is that of problem definition. This involves the compilation and presentation of all the available data on mercury contamination of the environment. It is with this phase of the program that this report is concerned. It was decided that, once accumulated, the data would be presented graphically on a series of maps. Each regional office of EPS was to prepare maps for mercury content of sediments, water, fish, air and any other parameters for which sampling had been conducted in their region. The regional maps would then be used by the Contaminants Control Branch of EPS to prepare a national series of maps.

The overriding concept of this project is to present the available data in a manner which will facilitate the identification of areas of concern. This would include areas in which elevated levels of mercury have been determined in soil, sediment, water, biota or any other parameter which has been studied. Once the problem areas have been identified the secondary steps, involving determination of the source, the magnitude of the problem and possible remedial action, will be more easily achieved. Programs are also underway within DFE to gain information on long range

atmospheric transport characteristics, uptake of mercury by trees, effects and quantities of mercury used in golf course green treatments and several other short term projects aimed at providing some clues as to existing contamination problems. A complete report on these projects, which will include the national mercury contamination maps is scheduled for release in 1978.

This report presents the data obtained from sampling programs carried out in the province of Ontario.

With the exception of one area, the Wabigoon - English River System in northwestern Ontario, the data have been presented in separate sections for fish, sediment, water, etc. Because of the amount of data available, the Wabigoon - English River System has been treated in greater detail in a separate section.

2 DATA ACQUISITION

2.1 General

The data presented in this report have been provided both by government agencies and private industry. The process of accumulation and compilation of the data began early in 1977. Because of the vast amounts of material received it was not possible to include the results of all test programs. It is felt, however, that the bulk of the information obtained up until July of this year have been incorporated into this report.

The majority of information was received from the Ontario Ministry of the Environment, Fisheries and Environment Canada, Health and Welfare Canada and Energy, Mines and Resources Canada.

It has been made extremely evident, through the process of gathering this material, that much work has been carried out to determine mercury levels in fish, sediments, water, vegetation, wildlife and other parameters in this province. What is quite remarkable is that much of this information has not been published and in fact has only been brought to our attention by word of mouth and pure chance.

2.2 Interpretation of Data

The intent of this report is to present all the available data on the levels of mercury contamination in all parameters sampled. The major emphasis has been placed on identification of areas of environmental concern. Less effort has been placed on the evaluation of the routes of the contamination, however, where specific sources of mercury discharge to the environment are known they have been discussed in Section 11. The relative merits of using one contamination indicator over another (ie. fish rather than sediment) to classify a particular area have not been ad-

dressed in great detail.

There are instances where one set of data has been selected in place of another however valid reasons for those selections have been given in the sections in which the data are discussed. It is realized that in some situations, because of differences in sampling and/or analytical techniques, some data points plotted on the same maps are not strictly comparable. Once again, it is the primary intent of this report to present the data rather than to offer a thorough interpretation of the findings or to comment on their degree of acceptability.

It is hoped that, following a review of this document by those agencies who have contributed to this project as well as by other interested parties, recommendations can be made as to the reliability of the data, trends in environmental contamination, future monitoring programs in as yet unsampled regions, etc.

3 DATA PRESENTATION

3.1 General

Data have been displayed on a series of maps. Because of the difficulty, or impossibility, of plotting an exact concentration for each sample location, a system of symbols was adopted. The symbols have been used consistently by each regional office of EPS and by the Contaminants Control Branch. Each parameter is represented by one symbol. For each parameter the results of sampling fall into one of three ranges, each range being represented by a specific size of the parameter's symbol. The ranges are indicative of the level of contamination - low, medium and high. The ranges for each parameter are given in Table 1 below.

TABLE 1 MERCURY CONTAMINATION RANGES

Parameter	Contamination Range		
	Low	Medium	High
Air	< 500 ng/m ³	500-1000 ng/m ³	>1000 ng/m ³
Aquatic Birds	< 0.5 ppm	0.5-1.0 ppm	>1.0 ppm
Aquatic Invertebrates	< 0.5 ppm	0.5-1.0 ppm	>1.0 ppm
Aquatic Plants	<100 ppb	100-1000 ppb	>1000 ppb
Fish	< 0.5 ppm	0.5-1.0 ppm	>1.0 ppm
Blood (Human Health)	<20 ppb	20-100 ppb	>100 ppb
Industrial & Municipal Effluents	<0.1 lb/d	0.1-0.5 lb/d	>0.5 lb/d
Mammals	<0.5 ppm	0.5-1.0 ppm	>1.0 ppm
Sediments, Soils, Ores and Rocks	<100 ppb	100-1000 ppb	>1000 ppb
Snow	< 0.2 ppb	0.2-2.0 ppb	> 2.0 ppb
Vegetation	< 100 ppb	100-1000 ppb	>1000 ppb
Water	< 0.2 ppb	0.2-2.0 ppb	> 2.0 ppb

Each concentration range has been established based on known standards of environmental contamination as related to human health. For example a level of 0.5 ppm mercury in fish has become a commonly accepted cut-off point below which fish are considered acceptable for human consumption. The Fisheries and Marine Service Inspection Branch of Fisheries and Environment Canada utilizes the 0.5 ppm cut-off for classifying species and sizes of fish in areas to determine those areas in which it is or is not safe to fish commercially.

The loading ranges used for industrial and municipal effluents were chosen keeping in mind the federal Chlor-Alkali Mercury Regulations which permit a discharge of 0.005 pound of mercury per ton of chlorine produced per day. Based on an average chlorine production of 50 to 200 tons per day depending on the plant, the allowable daily mercury discharge would range from 0.25 to 1.0 pound per day. Many plants can operate with a discharge of less than a factor of ten below the allowable limit. Using this information the ranges of less than 0.1, 0.1-0.5 and greater than 0.5 lb/d were selected for the industrial and municipal effluent parameter.

In some cases the data available for a certain parameter are minimal and for that reason several of the maps produced contain data points for more than one parameter. Eight maps have been prepared to present the data for Ontario. They are:

1. Mercury in Fish (using arithmetic mean concentrations)
2. Mercury in Fish (using standard concentrations)
3. Mercury in Mammals, Aquatic Birds and Invertebrates
4. Mercury in Air, Aquatic Plants and Land Vegetation
5. Mercury in Sediments, Soils, Ores and Rocks
6. Mercury in Snow, Surface and Ground Water
7. Mercury in Industrial and Municipal Effluents
8. Mercury in Blood (Human Health)

It is stressed that maps be viewed only while referring to the appropriate sections of the text and the accompanying data sheets.

Beside each data point on the maps is a reference number. This number is used to refer to a series of back up data sheets. Data sheets have been prepared for each of the parameters plotted and an example of the information given in the data sheets is illustrated below (Table 2) for sediments.

TABLE 2 BACK UP DATA SHEET FORMAT

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING & ANALYTICAL METHOD	MERCURY ANALYSIS			REF.
				N	RANGE (ppb)	MEAN (ppb)	
1	Ashigami L. 4639,8034	1971	sediment S15,A7	1	-	121*	R18

The point on the sediment map with the numeral 1 beside it corresponds with a sample taken at Ashigami Lake. The latitude and longitude coordinates, in degrees and minutes, are also given under the "Location" column. The date during which the sample was taken is also given, normally with the month and year included. In the column headed "Species and/or Sampling & Analytical Method" two codes are given, one with the letter S followed by a number and the other with the letter A and a number. These codes refer to specific sampling and analytical techniques respectively. The codes and the techniques corresponding to them are listed numerically in Appendices XIV and XV.

The next three columns give the number of samples collected (N), the range of the sample analyses and the mean of the analyses. The units of concentration are given in parentheses below both "Range" and "Mean". The asterisk

beside the mean concentration indicates it is that concentration that has been plotted. In some cases more than one set of data is available for one location and the use of the asterisk facilitates identification of the particular set of data which has been selected for plotting. The final column again contains a code with the letter R followed by a number. This code refers to the source of the data whether it was taken from a letter, a report, a published paper, etc. The reference codes, and corresponding sources, are listed numerically in Appendix XVI.

The data point numbers listed in the data sheets are in numerical order. In most cases the locations are also in alphabetical order so the data sheets can be used to readily determine the available information for any sampling location. There are a few instances, where data were not received until some of the mapping exercise was completed, where the alphabetical order is interrupted. These cases are, however, very few in number.

Apart from the eight maps, there are some additional area maps. These were necessitated by the abundance of data for a particular area and therefore the impossibility of including all the data on the large scale maps. This situation arises for the Wabigoon - English River system in northwestern Ontario. It was necessary to prepare separate maps of this area for fish, sediment, aquatic birds and invertebrates. These data have been recorded on separate data sheets in Appendices X through XIII.

Because of the amount of information available for the area a separate section on the Wabigoon - English River system has been included in this report (See Section 13).

The same situation arises for the Great Lakes because of the amount of sampling that has been conducted for sediment and water quality. Individual maps have been included to illustrate the variability of sediment and water mercury concentrations throughout the Great Lakes.

Extensive sediment sampling in the Cornwall area of the St. Lawrence River also necessitated a separate map of that area to adequately present the data.

Discussions of the methods of plotting data for each parameter are presented in subsequent sections.

4 MERCURY IN FISH

4.1 General

Mercury in fish data have been obtained from two sources - Fisheries and Marine Service (FMS) of Fisheries and Environment Canada and the Laboratory Services Branch of the Ontario Ministry of the Environment (MOE).

The results obtained from FMS are all those available up until May 5, 1977. Those obtained from MOE were those available to June, 1977. The results of a continuing round robin program for the analysis of mercury in fish, in which both FMS and MOE are participants, illustrate a high degree of comparability between the two laboratories.

Mercury in fish data have been presented on two maps, Figures 1 and 2. Both FMS and MOE data have been plotted on each map using two techniques outlined in the following pages. Both techniques are recognized as methods allowing the identification of areas which are and which are not indicative of mercury contamination.

The data for one area of the province, the Wabigoon-English River system, have been presented on separate maps of that region because of the overwhelming abundance of fish data for that area. A discussion of that area appears in Section 13.

4.2 Concept of Standard Fish

The concentration of mercury in fish is affected by many factors - concentration and form of mercury in water and sediments, concentration of mercury in food, water quality, duration of exposure to contaminated areas, metabolic rate, species of fish, etc. [1] Apart from the concentration of mercury in the immediate area, the factor of most influence is metabolic rate and hence size of fish.

Many institutions conducting fish sampling and ana-

lytical programs are performing regression analyses on the data obtained for each species caught in a particular area. The Ontario Ministry of the Environment and Fisheries and Marine Service of Fisheries and Environment Canada both use geometric regression to relate fish size to mercury concentration.

A plot of the logarithmic transform of concentration versus the log of either length or weight of a fish species produces a line represented by the equation:

$$\log c = m \log s + b$$

where c is the mercury concentration in a fish of size s , m is the slope of the curve and b is the intercept of the $\log c$ axis. For any area under study, as the number of fish of the species being studied increases, the relationship between size and concentration generally becomes more statistically significant and the line approaches linearity. A measure of the straightness, or degree of fit of the data to a straight line equation, is given by the regression coefficient - a perfect fit having a coefficient of 1.

The phenomenon of fish size influencing the mercury concentration has created some doubt as to the suitability of using the mean mercury concentration to represent the level of contamination of a particular fish species. If the fish sample was composed of many small fish then the mean mercury concentration would likely not be representative of a larger fish caught in the same area. Similarly, a mean concentration calculated from large fish would not accurately reflect the level of contamination in smaller fish.

To avoid the possibility of misrepresenting the degree of mercury contamination in any location by using mean concentrations, the Ontario Ministry of the Environment has adopted the concept of a "standard" fish. Initially walleye (pickerel) 50 cm in length were chosen as the standard species. A 50 cm walleye was thought by the Ontario Ministry of Natural Resources to most represent the average length

fish of that species to be caught in Ontario.

All regression equations established for the areas sampled for walleye in Ontario are then used to obtain the concentration of mercury in the standard 50 cm walleye. This concentration - referred to as the standard concentration is used to represent the degree of contamination for walleye in the sample area. Before regression analyses are conducted the number of samples taken must be greater than or equal to five fish. A test is then run to determine whether or not the regression coefficient is significantly different from zero within 95% confidence limits. If the coefficient is not significantly different from zero the data are treated as being unsuitable for standard concentration determinations. Although five fish have been used as the cut-off point, MOE generally suggests that a minimum of between 15 and 25 fish of any one species be collected to represent any one area. FMS requires a minimum of 25 fish of one species before action or recommendations are made based on the regression analyses of the sample data.

Since the selection of walleye, both 60 cm pike and 60 cm lake trout have also been designated as standard fish through the process of calibration against walleye.

4.3 Selection of Data

As discussed earlier in this section, the data obtained for fish have been presented using two formats - the first, the use of arithmetic mean concentrations and the second, the use of standard concentrations. Two maps have been prepared, one for each method of presentation. Figure 1 presents the arithmetic mean concentrations while Figure 2 illustrates the standard concentrations. The accompanying data sheets, contained in Appendix I, give both arithmetic means and standard concentrations as well as the percentage of the number of fish with a mercury concentration greater than 0.5 ppm. The fish sampled in each area have been

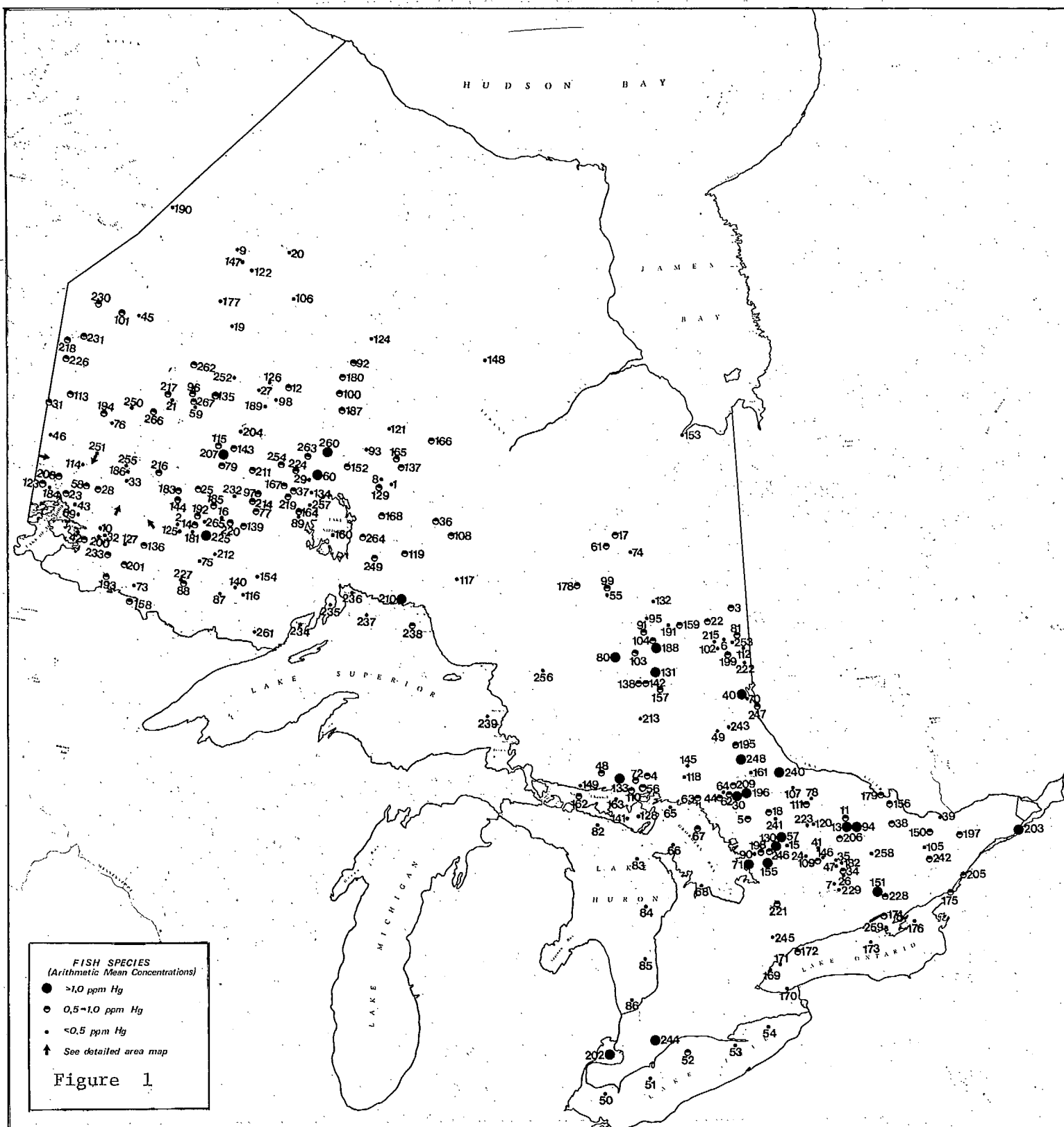


FIGURE 1 MERCURY IN FISH SPECIES (Arithmetic Mean Concentrations)
This map should be viewed while referring to Section 4 and Appendix I.

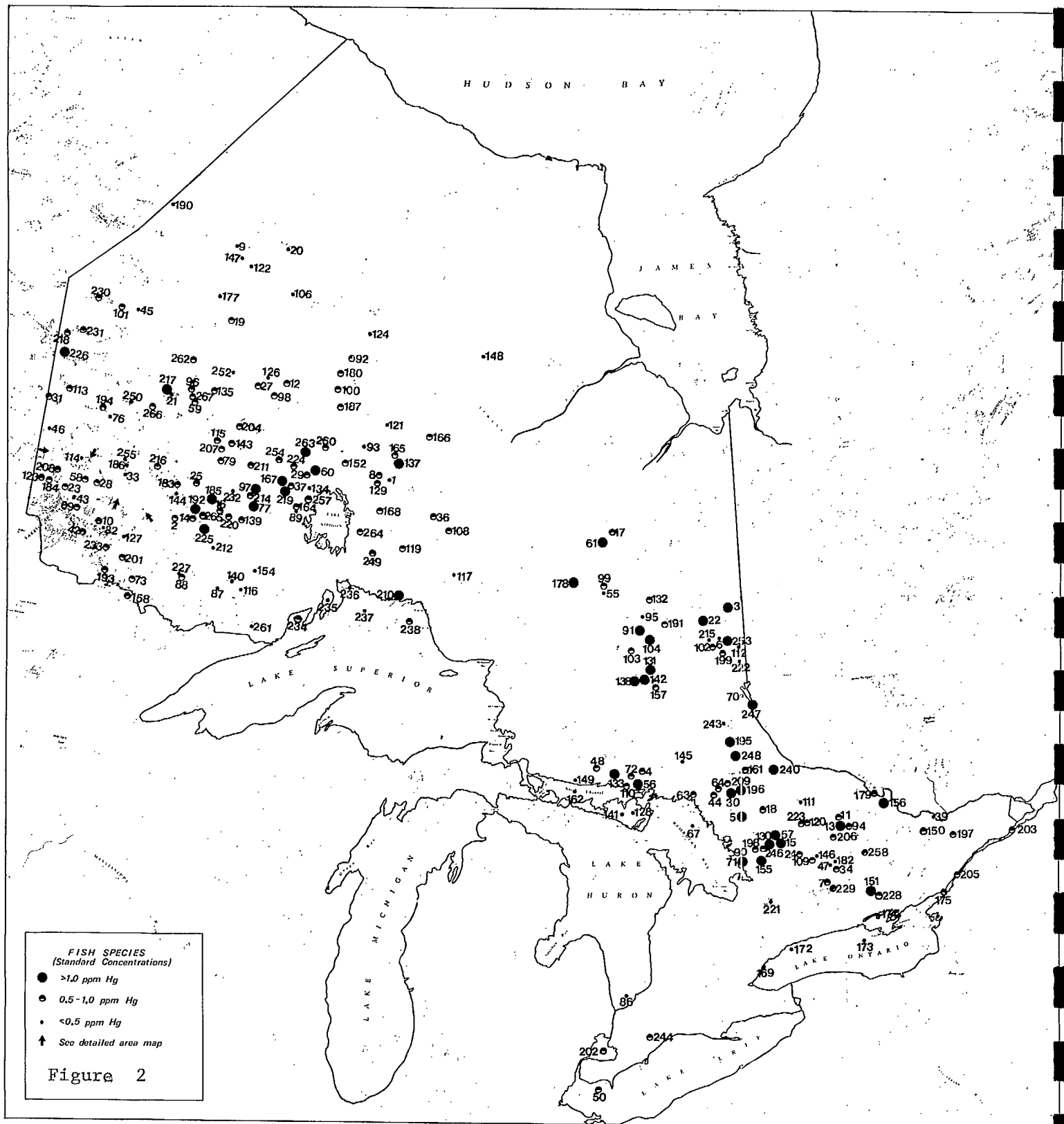


FIGURE 2 MERCURY IN FISH SPECIES (Standard Concentrations)
This map should be viewed while referring to Section 4 and Appendix I.

listed in alphabetical order. Data were not used where the number of fish sampled was less than five.

Data provided by the Ontario Ministry of the Environment are based on survey sampling. Fish are caught using nets and skinned fillets are taken from the epaxial muscle and submitted to the Ministry's central laboratory for individual analysis. Data supplied by Fisheries and Marine Service come in two forms - commercial monitoring data and lake survey data. Commercial monitoring is carried out using a minimum of three fish from each batch shipment, and the number and size of the fish selected for analysis are representative of the shipment. Filet samples are taken, skinned, homogenized and analysed as one sample. Lake survey data are obtained in a manner comparable to that of MOE.

Commercial monitoring data have not been used in this exercise because the number of fish in the samples is invariably small and to compare data derived using this particular sampling technique and that used by MOE on the same map would be misleading.

4.3.1 Arithmetic Mean Concentrations. Both MOE and FMS data printouts contain the number of fish sampled, the concentration range and the arithmetic mean concentration. These numbers have been presented on the accompanying data sheets. Only the most recent sampling results have been plotted on the map for any one area. Therefore if data are available from FMS for 1975 and from MOE for 1976, for the same water body, the MOE data will be plotted on the map. In cases where both MOE and FMS have sampled the same location or in cases where more than one species has been sampled, the mean used to represent that area on the map is the highest mean value. This has been signified on the data sheets by marking an asterisk adjacent to the concentration being plotted.

4.3.2 Standard Concentrations. The concept of standard concentrations and the acceptance of this procedure by MOE has already been established. Since the lake survey data supplied by FMS included regression equations and correlation coefficients, it was decided to use the lengths of the standard species derived by MOE to arrive at a standard concentration for each of the water bodies sampled by FMS. The data arrived at would therefore be comparable to that provided by MOE and could realistically be plotted on the same map.

As in the case of the arithmetic mean concentrations, only the most recent sampling results have been plotted for any one area. Where data for two or more of the three standard fish are available for the same water body, the standard concentration used to reflect the degree of contamination in the area is the highest standard concentration, bearing in mind the number of fish sampled and the correlation coefficient. For any given data point number containing multiple entries, the standard concentration plotted on the map is marked with an asterisk.

4.4 Discussion of Data

The combination of FMS and MOE data on the same map, irrespective of whether the map is presenting arithmetic mean concentrations or standard concentrations, is considered to be a realistic endeavour. It has already been pointed out that the methods used by each agency to sample fish are similar (excluding the commercial monitoring carried out by FMS). Furthermore it was also mentioned that round robin inter laboratory analytical checks have established that the analytical procedures utilized by FMS and MOE produce consistent and comparable results.

When comparing both maps it can be seen that the size of the symbol at any one point is not always the same

on both maps. This of course is because of the different methods which have been used in each case, and in particular to the concept of taking account of the size of the fish when using standard concentrations. In general the standard concentration map (Figure 2) tends to show a higher degree of contamination for any one area than does the arithmetic mean map (Figure 1). This of course does not interfere with the intent of this exercise - to identify areas of possible environmental concern.

Both maps indicate that extensive fish sampling has taken place in northwestern Ontario and in eastern Ontario. In both of these areas all three ranges of mercury contamination are in evidence. There are many areas in which the concentrations are in the upper range (greater than 1.0 ppm Hg) and which should therefore be investigated for possible causes.

It is difficult if not impossible, in most cases, to identify the reasons for elevated mercury levels in fish as portrayed in Figures 1 and 2. It must be remembered that, since fish are migratory, the level of contamination in a fish is not necessarily an indication of the level of contamination of the waterbody in which the fish was caught. There are of course some instances where definite sources are known. The large data point (210) on the northern shore of Lake Superior can be attributed to the operation of a chlor-alkali mercury cell plant at Marathon. A similar plant, in Sarnia, shut down in 1973, is primarily responsible for the contamination of fish in Lake St. Clair.

Readily noticeable from both maps are two areas, one in the southwestern portion of the province and the other almost centrally located, in which very little fish sampling has been conducted. One reason for the lack of data is that the commercial fishery in the area is somewhat limited and therefore no samples were required by Fisheries and Marine Service.

One further observation is that areas far removed from industrialization (data points 9, 20, 106, 122, 124, 147, 148, 177, 190, etc. in northwestern Ontario) show low levels of mercury contamination. That is not to say that all contaminated areas are the result of industrialization; natural mercury sources have been cited as contributing to mercury contamination in several areas of the province. It is just interesting to note that above a certain latitude (53°) the degree of contamination seems to decline.

4.5 Ontario's Guide to Sportsfishermen

In May 1977 the province of Ontario published a document entitled "Health Implications of Contaminants in Fish". The report is a first attempt at providing comprehensive guidelines for people wanting to eat the fish they catch.

Not all lakes in Ontario are included and not all species of fish are covered in those lakes surveyed. Fish tested are categorized A, B, C or D according to their mercury level and therefore their acceptability for consumption. Information on mercury concentration in relation to fish size was derived from regression analyses as discussed in Section 4.2. Where data were not suited to regression analysis, letters were assigned as a result of subjective judgements based on available data. The lettered categories are:

<u>Category</u>	<u>Mercury Content</u>	<u>Consumption Advice</u>
A	0.5 ppm or less	There are no restrictions on eating fish falling within this category.
B	0.5 to 1.0 ppm	Some fish from these categories can be eaten but consumption should be restricted to levels recommended in guidelines.*
C	1.0 to 1.5 ppm	

*Consumption guidelines in terms of meals (or pounds) per week are provided for anglers on 1, 2 and 3 week fishing trips and for long-term consumers.

<u>Category</u>	<u>Mercury Content</u>	<u>Consumption Advice</u>
D	Over 1.5 ppm	Fish in this category should not be eaten.

The report will be updated on a regular basis and health bulletins are issued to keep the public aware of new information on mercury in fish. Specific information for individual waterbodies within the province can be obtained from the Ontario Ministry of Natural Resources or the Ontario Ministry of the Environment.

5 MERCURY IN WILDLIFE (MAMMALS, AQUATIC BIRDS AND
 INVERTEBRATES)

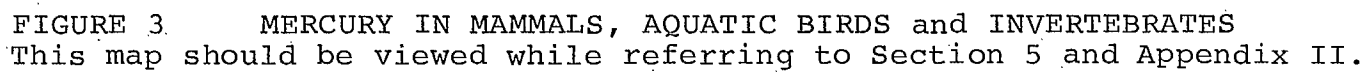
5.1 General

Apart from data for the Wabigoon-English River system, results for mercury levels in wildlife, including mammals, aquatic birds and invertebrates, were extracted solely from two reports published by the Toxic Chemicals Division of the Canadian Wildlife Service. One report contains data on herring gull contamination while the other is a compendium of data from published and unpublished reports as well as analyses from their own sampling programs.

The information pertaining to mammals and invertebrates consisted of results from surveys in only one or two areas of the province. Data for aquatic birds was somewhat more extensive. The wildlife data sheets are contained in Appendix II.

5.2 Selection of Data

The data selected for inclusion in the data sheets consist of the most recent analytical results for each species sampled. For example, for the Detroit River six species (scaup, mallard, green-winged teal, blue-winged teal, greater scaup and lesser scaup) were listed in the CWS report. Of those six species both lesser scaup and green-winged teal were listed twice since they have been sampled on two separate occasions. The data sheets in Appendix II include only the results for the latest sampling. Only one data point is plotted on the map (Figure 3) to represent the sampling conducted around the Detroit River. That data point is for greater scaup since it had the highest mean mercury concentration for the latest year of sampling. The fact that the greater scaup data have been used to represent the Detroit River on the map can also be seen by the aster-



isk beside the concentration. Asterisks have been inserted beside the concentrations of the species which have been chosen to represent each sampling area.

In addition to data point number, location and species, the data sheets give the number of analyses performed; the range of the results and the mean of the results. It is the mean that is plotted on the map. In most instances little was known as to sampling and analytical methods used. In all cases but for herring gull eggs the samples were of muscle tissue. The reference document cited does itself contain a bibliography of where the data were obtained and it is from this source that details of sampling and analyses can be traced.

Data for mammals, aquatic birds and invertebrates are plotted on the same map. Separate maps (Figures 29 and 30) of the data pertaining to the Wabigoon - English River system appear in Section 13 because of the amount of sampling undertaken in that region.

5.3 Discussion of Data

Data points 2, 3, 6, and 9 located in Lakes Erie, Huron, Ontario and Superior respectively are results of herring gull egg analyses. Herring gulls and their eggs have been used as indicators of environmental contamination because of their position at the top of the food chain. "The herring gull is a good species for monitoring the environmental health of the Great Lakes. Its position at the end of a food chain means that the levels of toxicants are higher than in other trophic levels. The food taken by herring gulls is very varied; aquatic organisms of all types, carrion, garbage and insects. Thus monitoring the levels of contaminants in the herring gull gives an overall picture of the contaminants in the lake system". [5]

Figure 3 shows that mercury levels in herring gull eggs taken from Lake Ontario colonies are higher than those

in the other Great Lakes. From examining the data in Appendix II it can be seen that the levels are roughly two to three times higher in Lake Ontario than in the other three lakes. One explanation for the high degree of egg contamination in Lake Ontario is that herring gulls are a migratory species and as such, eggs selected from a colony in Lake Ontario could have come from birds originating in a more contaminated area such as Lake Michigan. However, according to CWS reports there is little interlake movement and virtually none between Lake Ontario and the more contaminated Lake Michigan. It would appear therefore that the high mercury in egg levels are due to the contamination of Lake Ontario.

Other aquatic birds sampled in the Great Lakes area have, for the latest sampling period, shown mercury levels in the less than 0.5 ppm range. The point plotted in the Detroit River (data point 1) is in the 0.5-1.0 ppm Hg range however that particular sample was taken in 1970 when the Lake St. Clair area was considerably more contaminated than it is now. The latest samples taken in Lake St. Clair (1976) reveal low levels of mercury contamination.

Only two areas were sampled for mammals. Muskrat samples were taken from the St. Clair River in 1969 and from Lake St. Clair in 1976. Bearing in mind the closeness of the two sampling sites these data also indicate that mercury contamination in the Lake St. Clair area is declining. Fifteen samples were taken in 1969 and mercury levels ranged from 0.04 to 0.69 ppm whereas all of the sixteen samples collected in 1976 were at the 0.01 ppm level.

Five snapping turtles were sampled from Lake St. Clair in 1976 and all showed mercury concentrations greater than 1.0 ppm. This is thought to be primarily due to the lifetime of this species. The lifetime of snapping turtles is considerable and therefore high mercury levels could well be attributed to mercury intake many years prior to the sampling date.

6 MERCURY IN AIR

6.1 General

Data used for this portion of the project were obtained solely from MOE air quality reports. Apart from areas in which specific mercury sources are located, mercury levels in ambient air are expected to be very low. It is for this reason that the amount of ambient air monitoring for mercury is very limited.

6.2 Selection of Data

The reports used provided thirty-minute averages for mercury concentrations as well as instantaneous peak maxima and minima. The peak concentrations were used in recording the mercury ranges in the data sheets and the thirty minutes averages were used to compute mean mercury concentrations over the sampling periods. Except in the case of the sampling conducted at Cornwall, the actual number of instantaneous samples taken was not known and therefore the column headed N contains a question mark. Data sheets can be found in Appendix III and the data have been plotted in Figure 4.

6.3 Discussion of Data

Mercury measured utilizing the ambient air technique employed by MOE includes any mercury in the free or inorganic form. A provincial thirty minute standard of 5000 ng/m³ has been set as the allowable safe ambient level for mercury in that form. This criterion applies at the perimeter of any industrial source. None of the four locations for which data have been recorded exceeded the MOE standard in a public area. At only one site, CIL in Cornwall, was a thirty minute average found to exceed 5000 ng/m³ within the boundary of the plant.

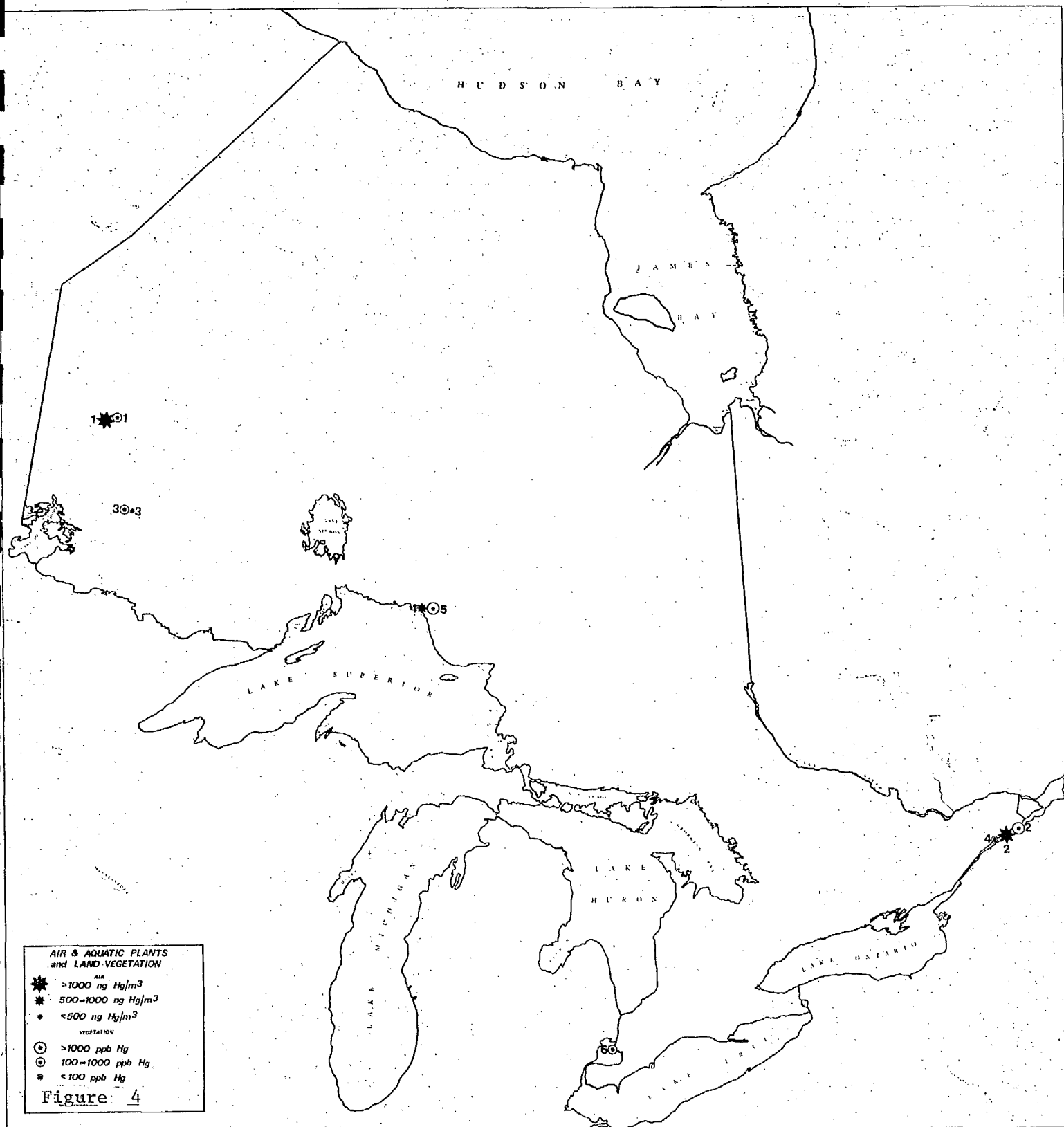


FIGURE 4 MERCURY IN AIR, AQUATIC PLANTS AND LAND VEGETATION
This map should be viewed while referring to Sections 6 and 7 and
Appendices III and IV.

Figure 4 demonstrates that of the four sampling areas, three are cause for concern. Data point 4 at Marathon will in all likelihood be significantly reduced now because of the closing of the chlor-alkali mercury cell plant in that town. The elevated level at data point 1, the Balmerton golf course, is thought to be due to the application of mercurial fungicides at that location. Measurements were taken very close to ground level.

7 MERCURY IN LAND VEGETATION AND AQUATIC PLANTS

7.1 General

The MOE air quality reports discussed in Section 6 also contain information on mercury levels in vegetation at the sampling locations. Apart from those areas there was only one other location for which data on either aquatic or land vegetation was available, that being Lake St. Clair.

7.2 Selection of Data

In the case of the testing conducted at Balmerton there is only a very vague reference to mercury sampling for vegetation. Apparently nine sample areas were used but the actual number of samples is not known. The only mention of the analytical results was to the extent that concentrations were low (< 500 ppb). It is this number that has been recorded in the data sheets even though it could be much lower than 500 ppb.

Data selected from the other MOE air quality reports were somewhat more comprehensive. Mean values were calculated and where data for both washed and unwashed samples were given the unwashed sample results were used. Where both dry and wet weight values are quoted, as in the case of the vegetables sampled at Cornwall, the dry weight data have been used.

In most cases the actual mercury concentration range of the samples taken in the Lake St. Clair marsh areas was not known. This was because any one sample was a composite of four plants of the same species. Although the plants were subsampled into various categories (0-40 cm shoots, 40-70 cm shoots, roots, etc.) the numbers listed in the data sheets, and hence the values used in preparing the map, are means calculated for each four-plant composite for the whole plant. All reported data have been used, however, because of the relatively small size of the area sampled one

point was chosen to represent Lake St. Clair. That point was the highest mean value calculated.

Appendix IV contains all aquatic plant and land vegetation data sheets. The data are mapped in Figure 4.

7.3 Discussion of Data

Sample sites 2, 3, and 5 are all in close proximity to chlor-alkali mercury cell plants and all samples were taken when the plants were still in operation. Since that time the plants at sites 3 and 5 have been shut down. Elevated levels of mercury for these three sites are directly attributable to the chlor-alkali plants.

Sample site 4 was a site selected to represent a background level to provide a valid comparison with one of the more contaminated sites. It can be seen from Appendix IV that mercury concentrations are significantly below those measured at sites 2, 3, and 5.

As already mentioned in 7.2, the sampling carried out at Balmerton resulted in mercury levels less than 500 ppb. It is not known how much less than 500 ppb the samples contained however it is expected that, since no sources other than the golf course are known, the analytical results are probably even less than 100 ppb.

Data point 6 in Lake St. Clair applies to aquatic plants. Extensive sampling was conducted and mercury levels ranged from means of 20 to 850 ppb. It is suspected that the elevated levels in this area are due to the past operation of two chlor-alkali mercury cell plants at Sarnia and the resultant contamination of sediments in that area.

8 MERCURY IN SEDIMENTS, SOILS, ORES AND ROCKS

8.1 General

The information available for this Section is somewhat more comprehensive than that received for the other parameters. In particular, much work has been conducted to determine the degree of mercury contamination in sediments throughout this province. Because of the extensive amount of data for the Great Lakes separate maps for each lake have been prepared to more accurately illustrate the levels of mercury in the sediments of those lakes.

8.2 Selection of Data

In many cases soil and sediment samples have been taken using coring devices and as a result data are available for the various depth fractions sampled. It was decided to use the upper fraction (usually the top 5 or 10 cm) to represent the soil or sediment mercury concentration. This facilitates the comparison of core sample and grab sample on the same map. There are some reports which contained no depth data and in those cases it was necessary to use a mean value for the whole sample as the point to be plotted. One report presented the data as soil profiles with the cores being subdivided into horizons of differing texture, colour and consistency. Again, no depth data were given so it was necessary to calculate a mean for the total sample. Examples of the nomenclature used in labelling the soil horizons can be seen by referring to the data sheets in Appendix V. (See data point 3 for Bearbrook). The capital letter H refers to the top humic layer and the other layers, in order of increasing depth, are designated as A,B,C, etc. [2]

The Geological Survey of Canada conducted an extensive sediment sampling survey in eastern Ontario (data point 14) in the summer of 1976. Over 1200 samples were taken in

an area bounded by latitudes of 44° and 46° and longitudes of 76° and 78°. All these data have been plotted individually by GSC on a series of maps which are readily available. Since it was not possible to plot the individual results for this project one mean value was used to represent that area.

The bulk of the sampling and analyses reported in the data sheets resulted from work conducted by many government and private consulting firms. These data points are too numerous to mention individually however all data points were derived by taking the mean of the analytical results available. Details of the sampling and analytical methods as well as a reference to where the results were obtained have been coded in the data sheets in Appendix V. Figure 5 presents the data.

The Great Lakes have been treated in a more intensive manner because of the amount of data available. Each lake has been subdivided into sediment depositional basins. Maps have been prepared illustrating the depositional zones for Lakes Ontario, Erie, Huron, Georgian Bay and Superior. These constitute Figures 6, 7, 8, 9, and 10 respectively. For each one of the depositional zones marked on the maps in Figures 6-10 the number of samples taken, the mercury concentration range and the mean mercury concentration have been recorded in the data sheets. A set of data has also been given to reflect the mean for the whole lake. The mean for each lake has been plotted on the Sediment, Soil, Ores and Rocks map.

In addition to this, separate maps for the Great Lakes have been prepared to illustrate the actual distribution of mercury in the surficial sediments in each lake. Figures 11-16 contain those maps for Lakes Ontario, Erie, St. Clair, Huron, Georgian Bay and Superior respectively and are based on work performed by R. L. Thomas over several years.

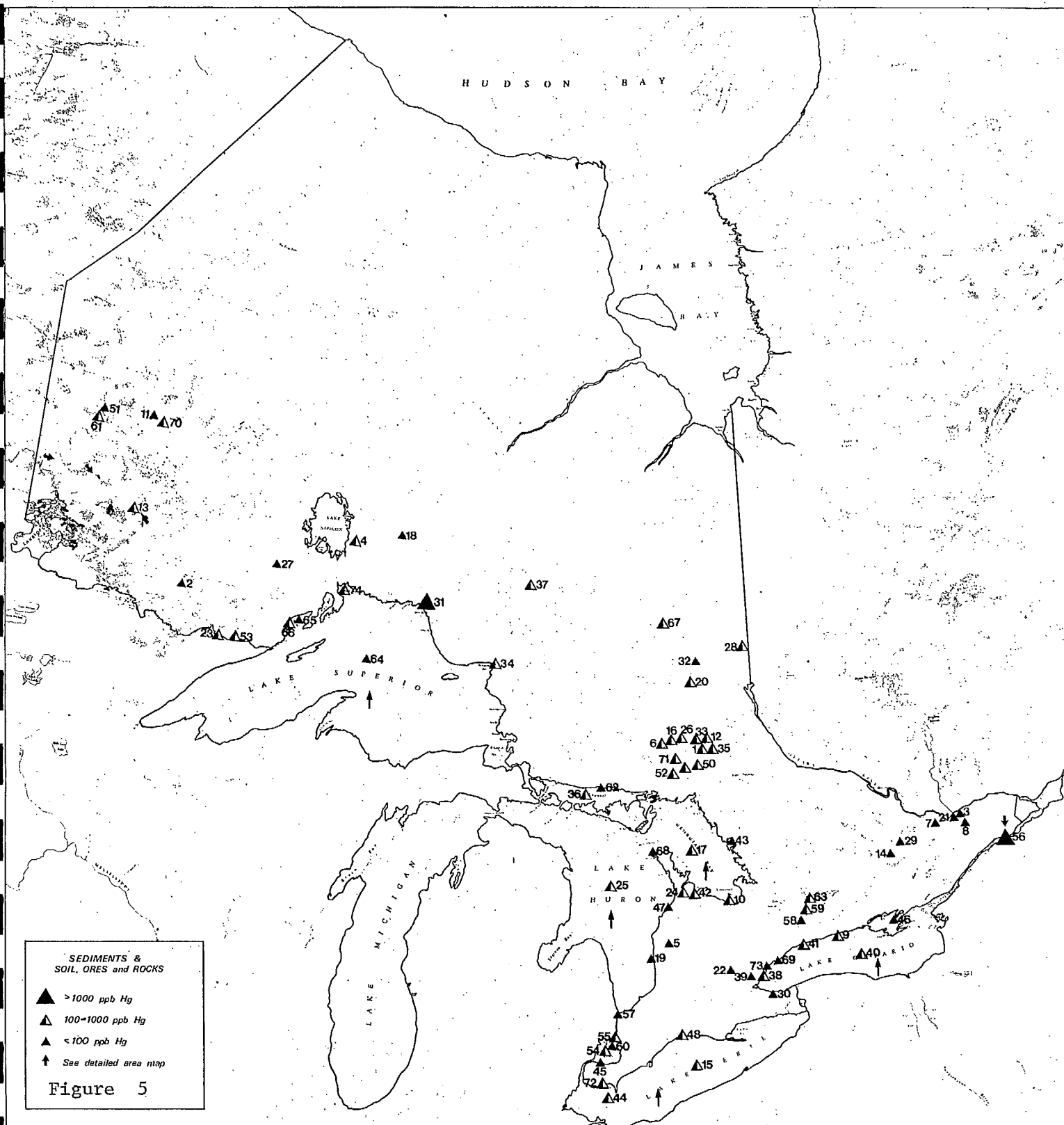


FIGURE 5 MERCURY IN SEDIMENTS, SOILS, ORES and ROCKS
This map should be viewed while referring to Section 8 and
Appendix V.

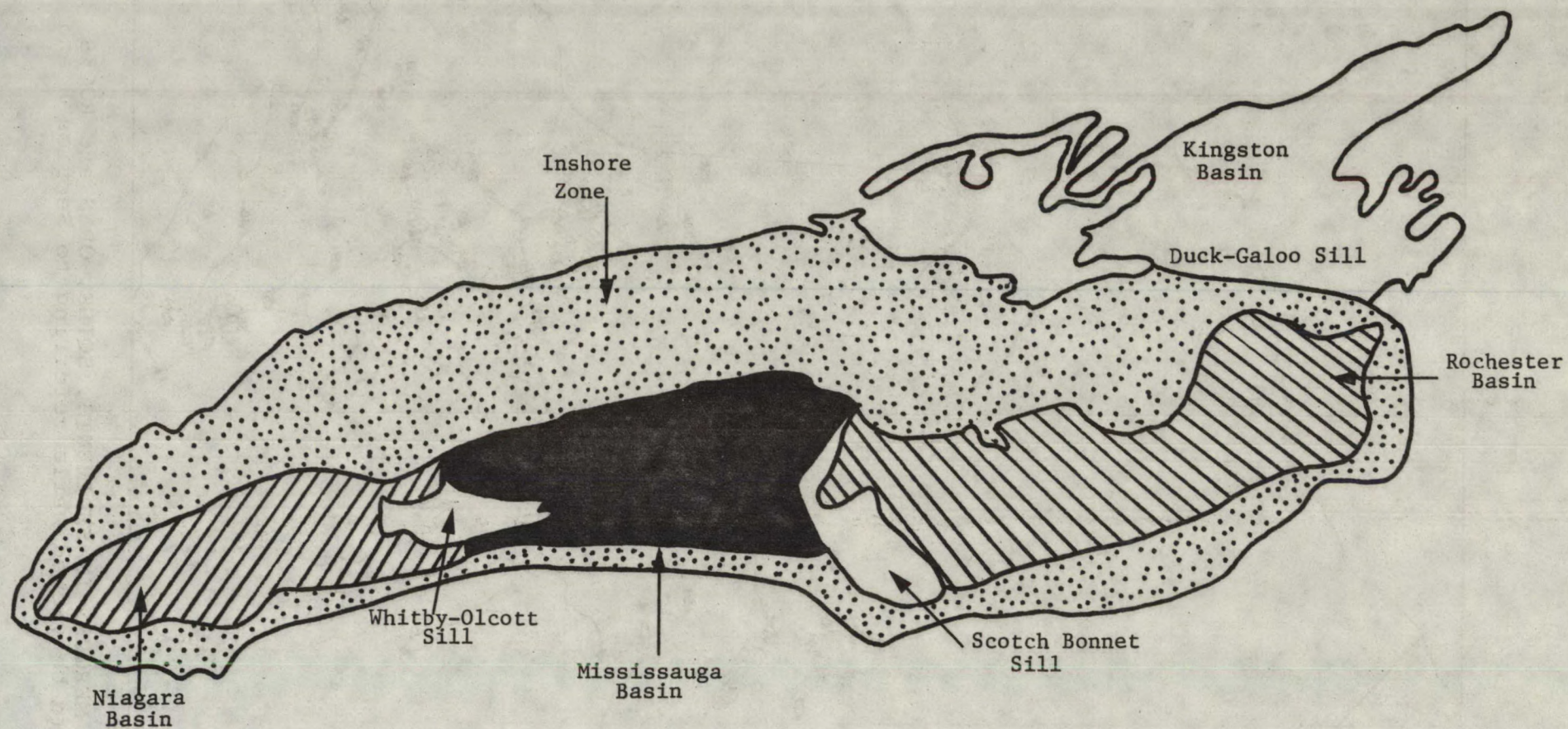


FIGURE 6 SEDIMENT DEPOSITIONAL BASINS - LAKE ONTARIO

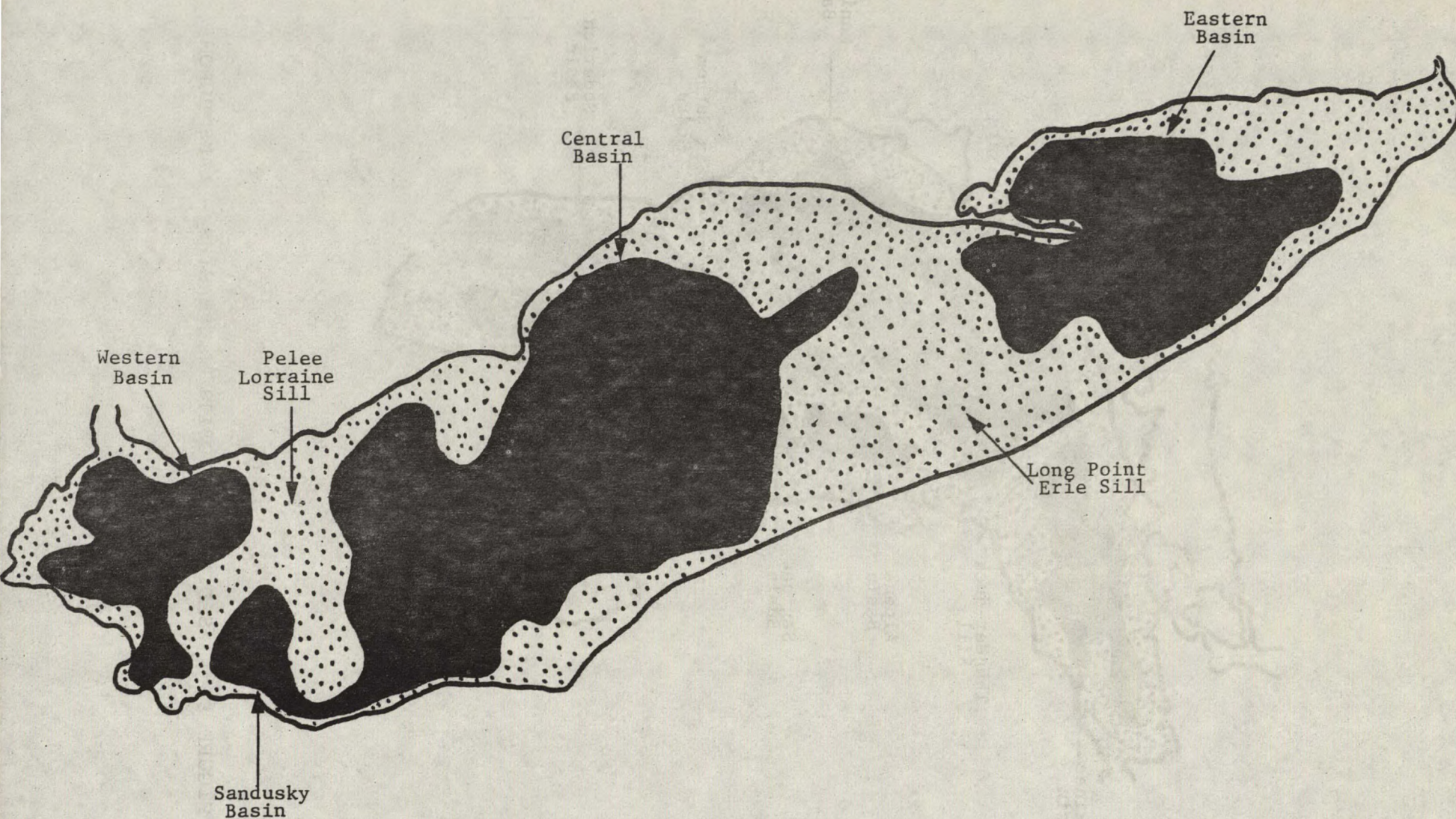


FIGURE 7 SEDIMENT DEPOSITIONAL BASINS - LAKE ERIE

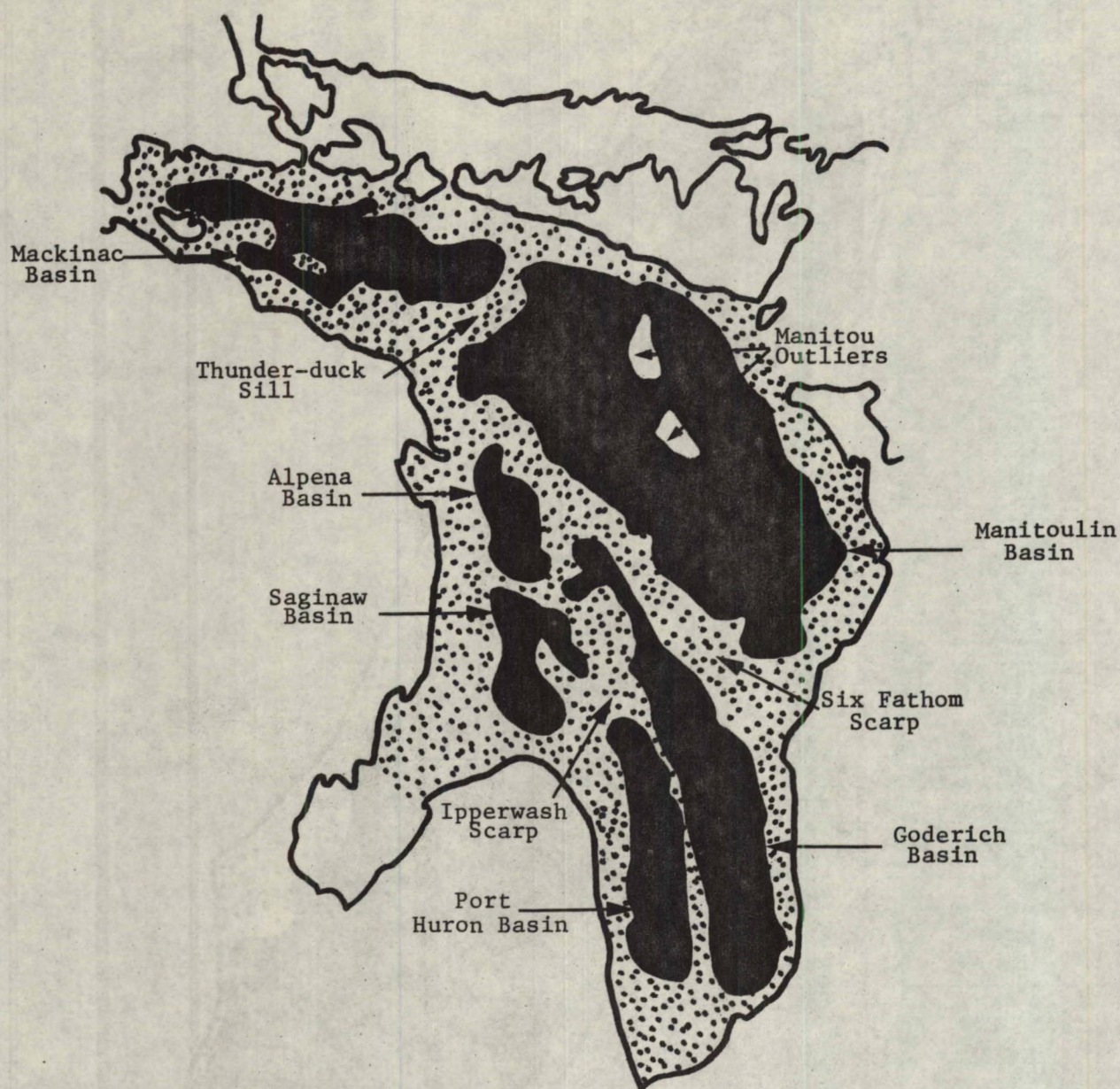


FIGURE 8 SEDIMENT DEPOSITIONAL BASINS - LAKE HURON

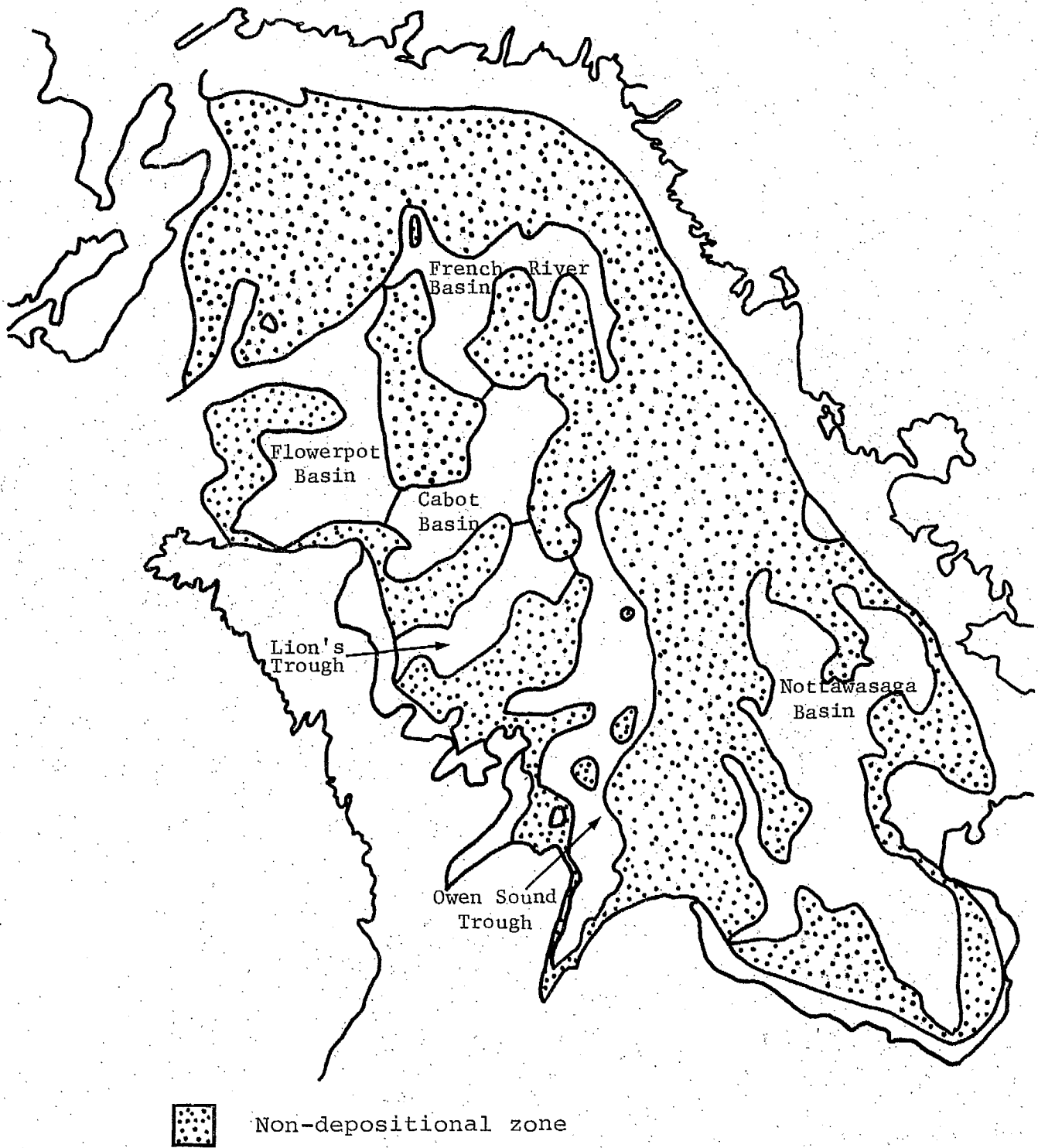


FIGURE 9. SEDIMENT DEPOSITIONAL BASINS - GEORGIAN BAY

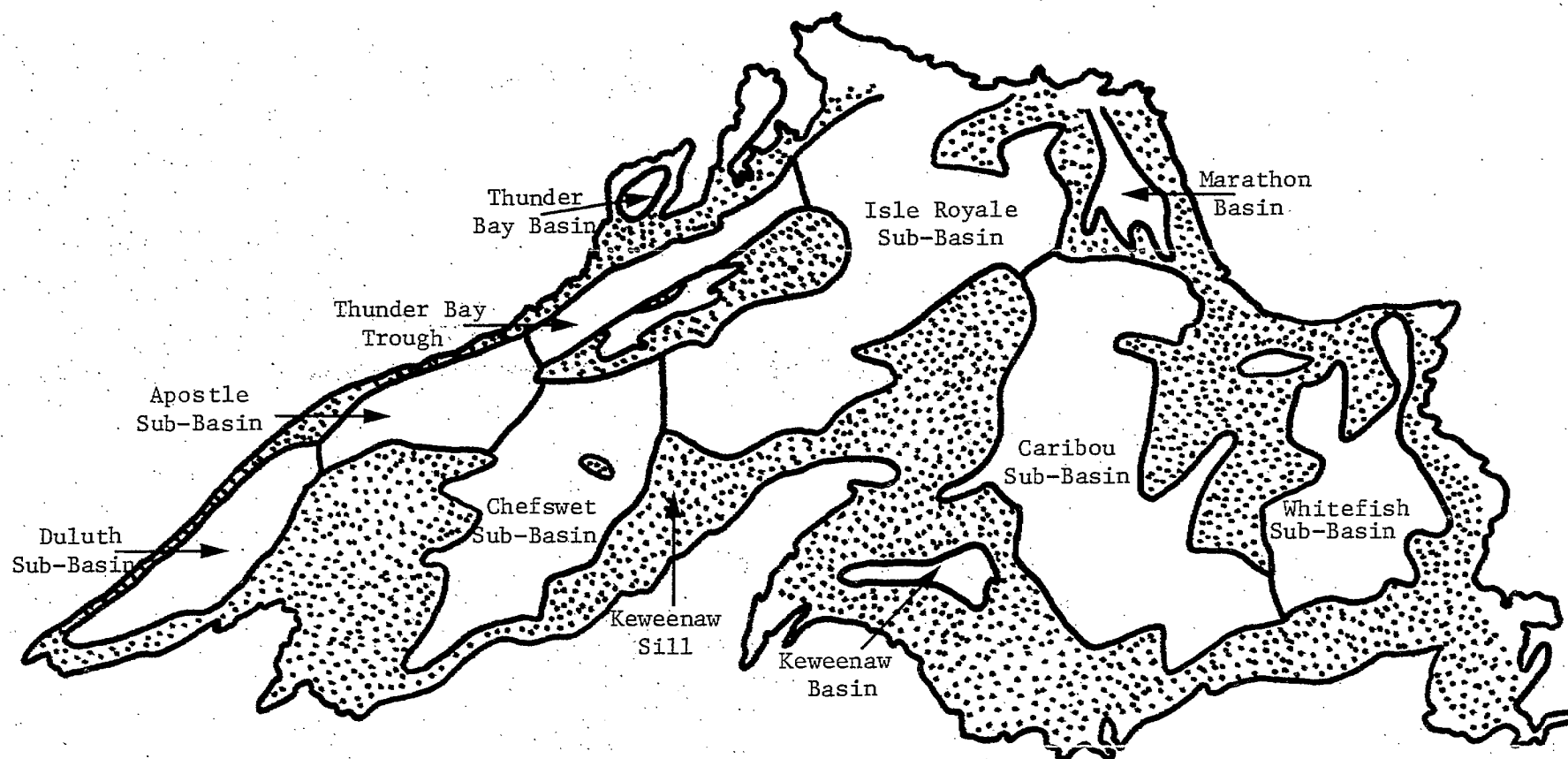


FIGURE 10 SEDIMENT DEPOSITIONAL BASINS - LAKE SUPERIOR

Total Hg - ppb



> 2000



1500-2000



1000-1500



500-1000



100-500



< 100

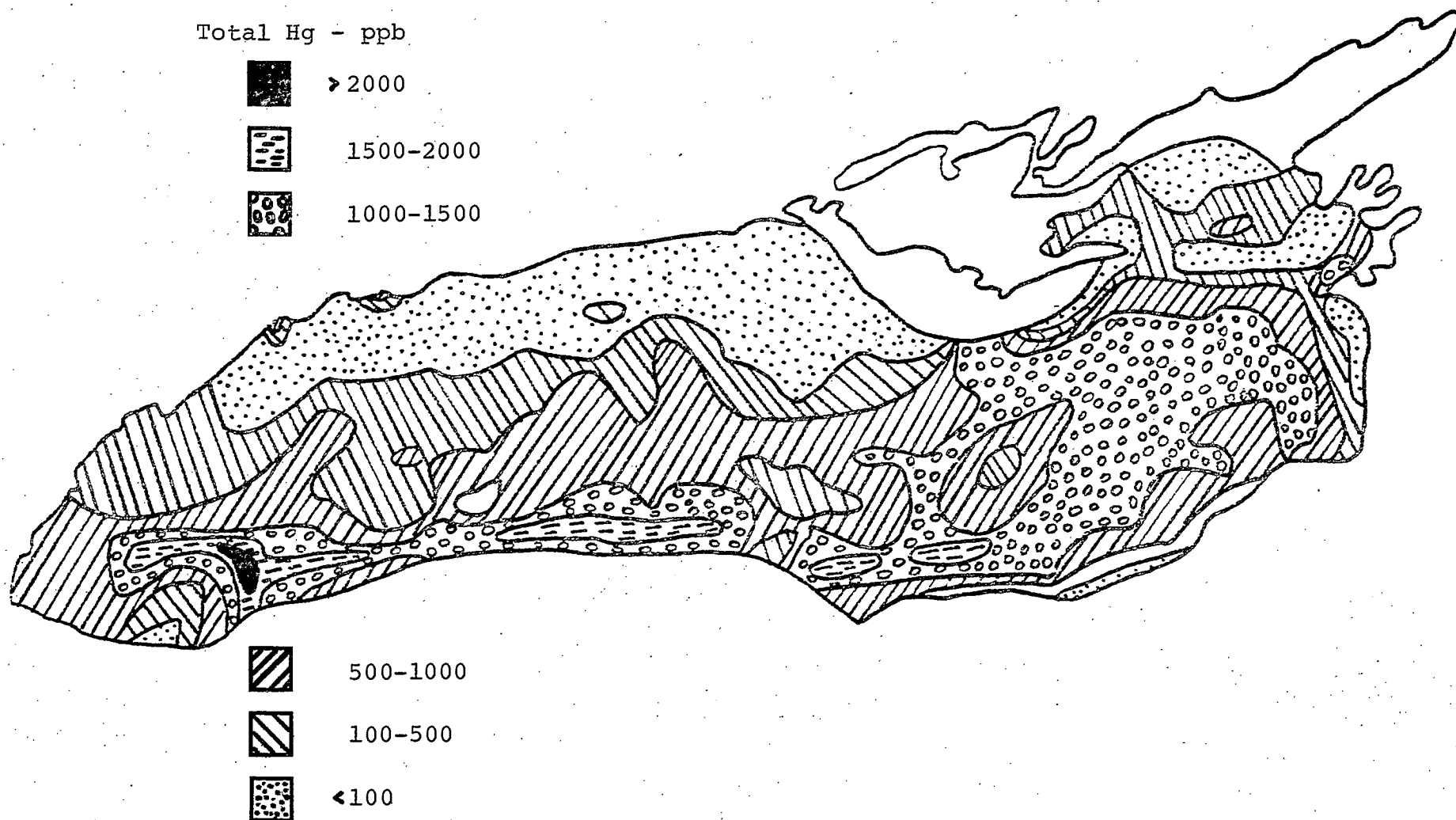


FIGURE 11 DISTRIBUTION OF MERCURY IN SURFICIAL SEDIMENTS - LAKE ONTARIO (1968)

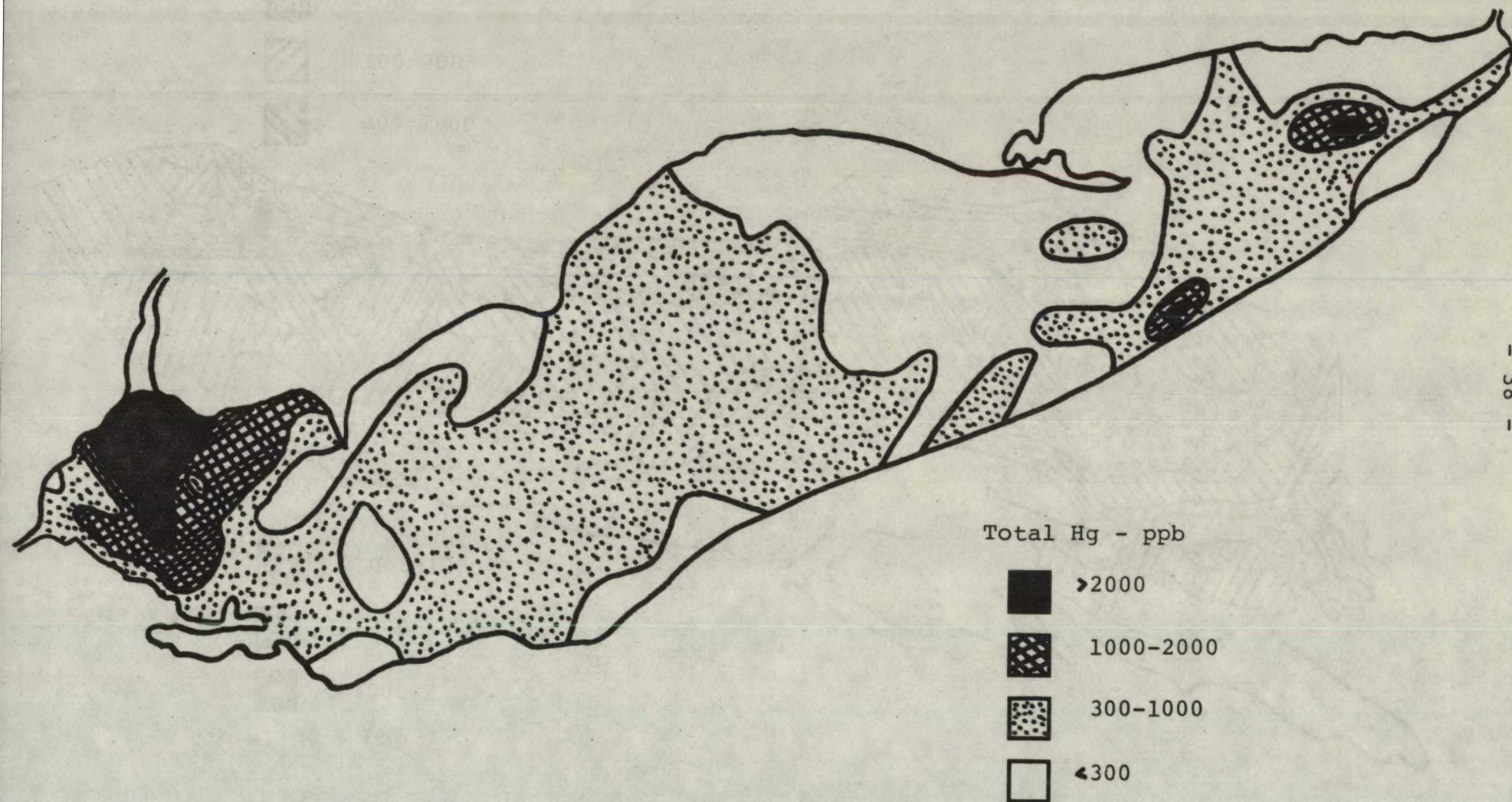


FIGURE 12 DISTRIBUTION OF MERCURY IN SURFICIAL SEDIMENTS - LAKE ERIE

Total Hg - ppb

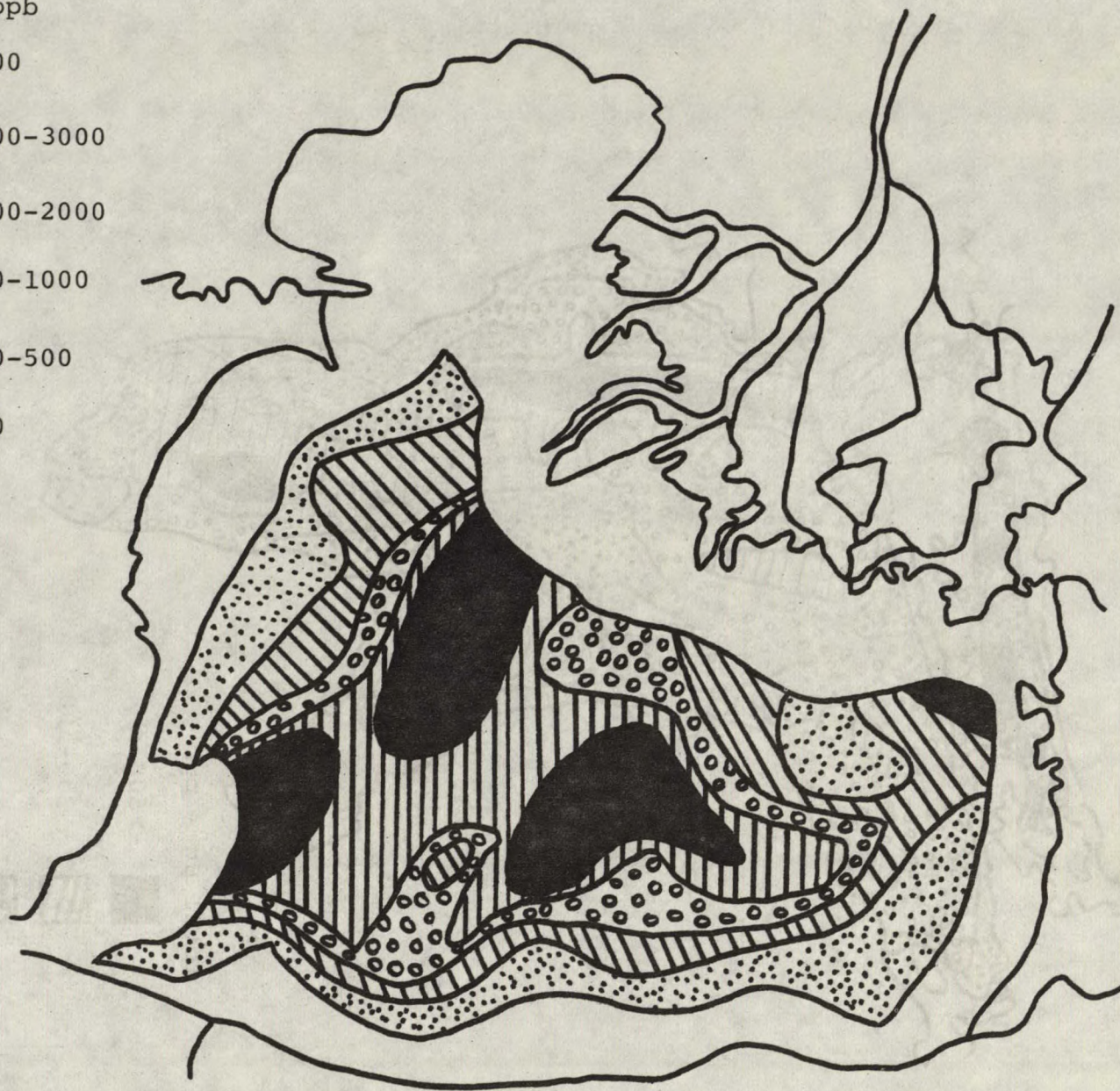
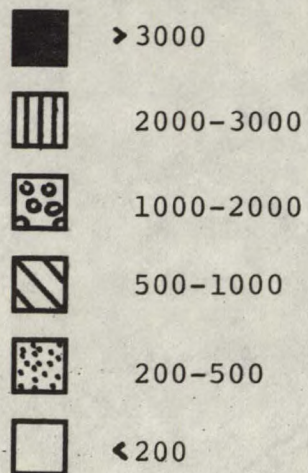


FIGURE 13 DISTRIBUTION OF MERCURY IN SURFICIAL SEDIMENTS - LAKE ST. CLAIR (1974)

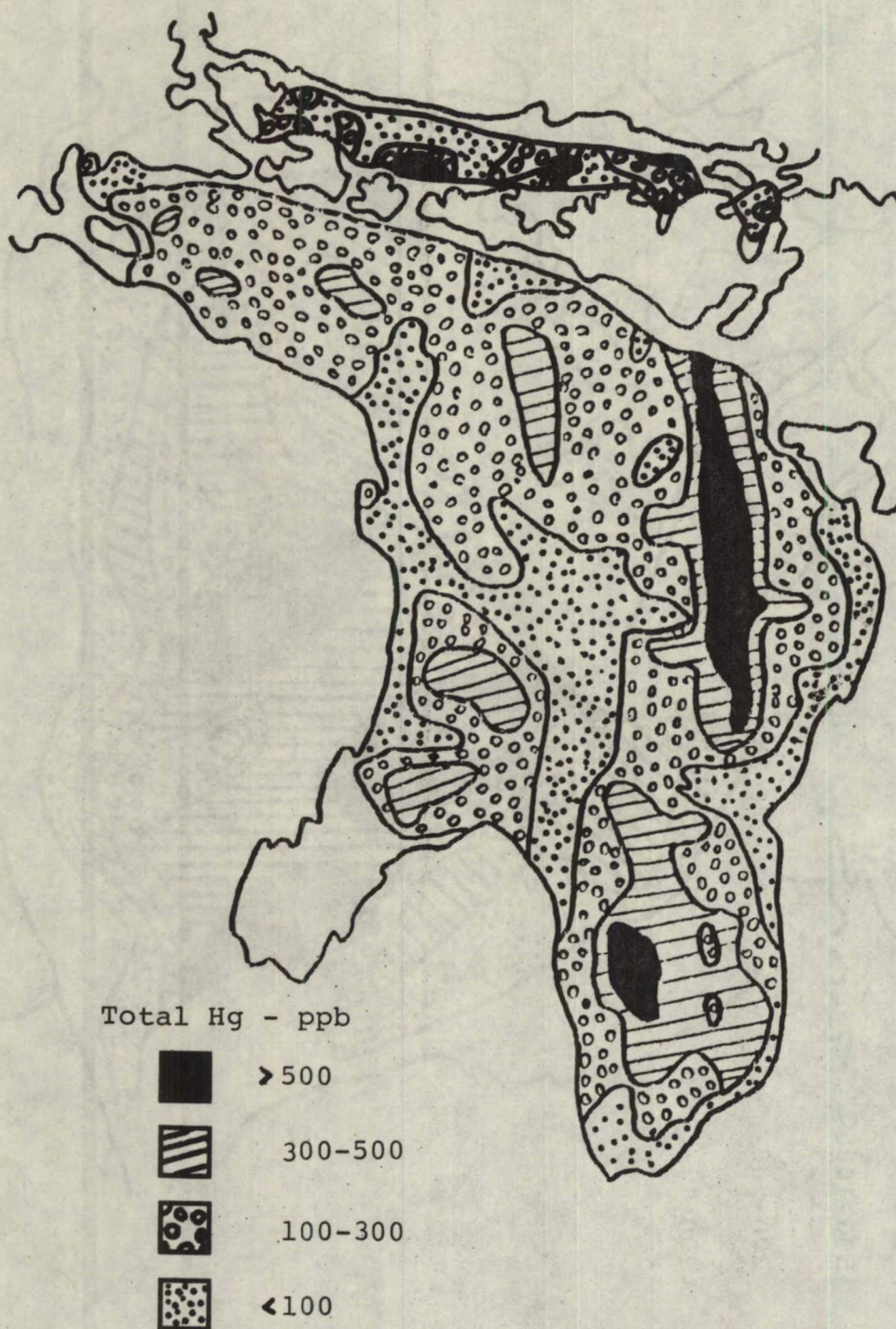


FIGURE 14 DISTRIBUTION OF MERCURY IN SURFICIAL SEDIMENTS -
LAKE HURON (1969) and NORTH CHANNEL (1973)

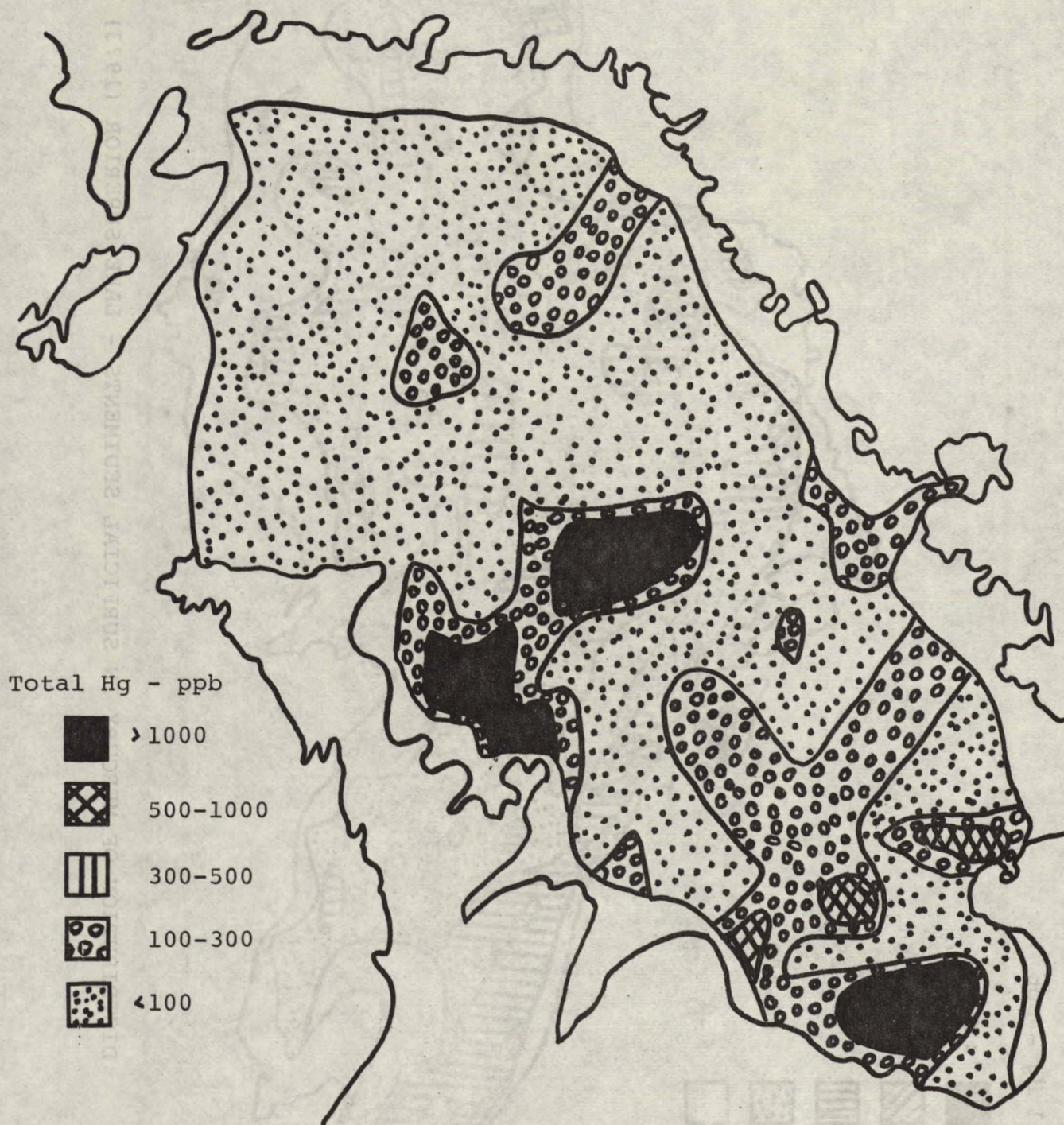


FIGURE 15

DISTRIBUTION OF MERCURY IN SURFICIAL SEDIMENTS -
GEORGIAN BAY (1973)

Total Hg - ppb

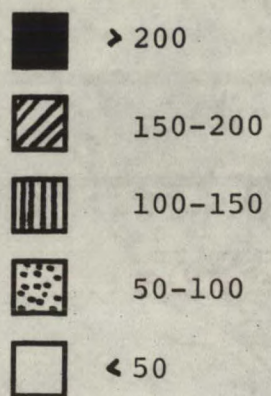


FIGURE 16 DISTRIBUTION OF MERCURY IN SURFICIAL SEDIMENTS - LAKE SUPERIOR (1973)

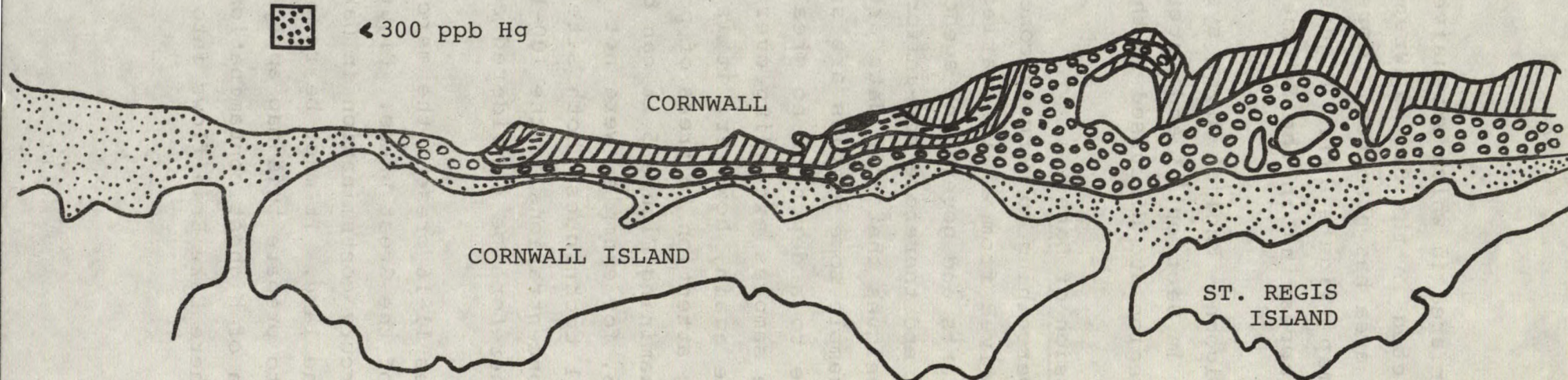
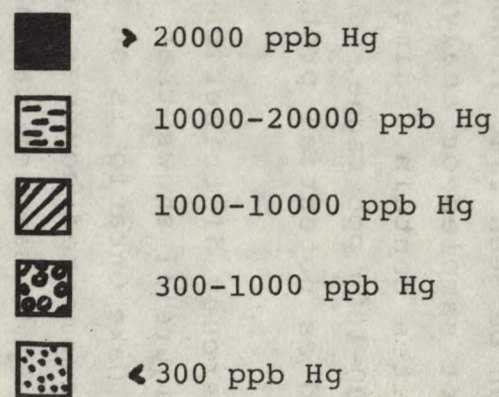


FIGURE 17

DISTRIBUTION OF MERCURY IN SURFICIAL SEDIMENTS -
ST. LAWRENCE RIVER AT CORNWALL (1975)

Another area in which extensive sediment sampling has been conducted is the St. Lawrence River area near Cornwall. This area has also been represented by use of a more detailed map (Figure 17). Figure 17 corresponds to data point 56 appearing in the Sediment, Soil, Ores and Rocks map.

The Wabigoon - English River system has been dealt with separately in Section 13 and mercury levels in sediments in that region are discussed in that section.

8.3 Discussion of Data

Data pertaining to mercury concentrations in sediments were received from a wide variety of sources, both private consultants and government agencies. It is because of this variety and therefore non-uniformity in sampling and analytical techniques that some data are not comparable to others. For example some samples are surface grab samples which penetrate to a depth of no greater than 5 cm while others are core samples extending over one meter into the sediment. Once again, however, it is the intent of this report to bring attention to areas of possible environmental concern. By examining Figure 5 it can be seen that although sites 38 and 66, for example, were not sampled or analysed using identical techniques, both sites contain sediments with mercury concentrations in the 100-1000 ppb range. Both sites should therefore be considered as potential problem areas.

Figures 11-16 present the mercury distribution in the sediments of the Great Lakes. Figure 11 shows that the bulk of the mercury contamination in Lake Ontario is on the U.S. side of the lake. It must be remembered however that the data used to prepare this map apply to samples taken in 1968. The area of highest contamination in Lake Ontario is at the point where Lake Erie flows into Lake Ontario by way

of the Niagara River. This appears to imply that mercury contaminated sediments are not stationary but are indeed able to move within a lake system.

This trend can be seen to continue when looking at Figure 12 of Lake Erie. Although these data apply to 1971, in general Lake Erie, with the exception of the Western Basin (see Figure 7), appears to be contaminated roughly to the same degree as Lake Ontario. The Western Basin of Lake Erie is significantly more contaminated than the rest of the lake and once again it appears to be due to the migration of contaminated sediments from an upstream (Lake St. Clair) source.

The mercury contamination in the sediments of Lake St. Clair (Figure 13) tends to confirm it as the source of the contamination in the Western Basin of Lake Erie.

Sediment mercury contamination in Lake Huron (Figure 14) is appreciably lower than that in Lake St. Clair and from this one can infer that the source of mercury contamination in Lake St. Clair is located between Lake Huron and Lake St. Clair. This in fact is, or was, the case since two mercury cell chlor-alkali plants were located at Sarnia and operated until 1973.

This is not to say that mercury contaminated sediment does not move from Lake Huron into Lake St. Clair. Figure 14 shows several zones of elevated mercury levels. The mercury present in the Saginaw and Port Huron Basins is thought to be primarily due to point source mercury discharges into Saginaw Bay resulting in a southerly migration of the mercury. The elevated levels found in the Manitoulin Basin cannot be attributed to a man made source and are thought to be the result of natural mineralization. The minor abnormalities observed in the North Channel are considered to be related to watershed sources to that waterbody.

Mercury distribution in the sediments of Georgian

Bay is presented in Figure 15. As in the case of Lake Huron the areas of high mercury concentration have been attributed to known sphalerite mineralization extending from deposits in the Bruce Peninsula rather than to industrial sources. It is possible that the two areas most removed from the Bruce Peninsula (Nottawasaga Bay and off-shore from Midland) have received mercury contributions as a result of the industrialization and population density associated with the Midland-Collingwood resort area.

Apart from one or two areas of known industrial inputs (Thunder Bay, Marathon) the mercury contamination in Lake Superior is minor in comparison with the other Great Lakes. Both Thunder Bay and Marathon had mercury cell chlor-alkali plants operating at one time (the Dow Chemical plant at Thunder Bay closed in 1973 and American Can at Marathon ceased operation in 1977) and both deposited their wastes into Lake Superior.

The high mercury levels in the Cornwall area of the St. Lawrence River (Figure 17) have been linked with the CIL chlor-alkali mercury cell plant located in Cornwall. Investigations are continuing to determine the effects of other past and present inputs, both industrial and municipal, to the St. Lawrence River.

9 MERCURY IN SNOW

9.1 General

The Monitoring and Surveys Section of the federal Water Quality Branch of the Inland Waters Directorate carried out a snow sampling survey early in 1977. The results of this survey plus the results of MOE sampling at Marathon are presented in this section.

9.2 Selection of Data

The snow sampling survey conducted by the Water Quality Branch included fifteen sampling stations arranged in a loop in the south central part of the province. One sample station, Marathon, was also sampled by MOE although this was done one year earlier. All results are listed in Appendix VI and plotted in Figure 18.

9.3 Discussion of Data

Apart from the samples collected at Marathon (data point 10) the snow sample analyses all showed mercury contamination to be less than the 0.2 ppb level, in fact, less by a factor of ten. The sample collected at Marathon by the Water Quality Branch contained mercury in the 0.2-2.0 range. The sample taken by MOE showed contamination significantly above 2.0 ppb Hg (8.34). The discrepancy between these two results is primarily due to the relative distances of each sample from the contamination sources - the chlor-alkali mercury cell plant in Marathon. The sample taken by the Water Quality Branch is in the town of Marathon while the samples taken by MOE were all very close to the chlor-alkali plant. Sampling and analytical differences were slight and are not considered to contribute to the difference between the two results.

The results suggest that the mercury content of

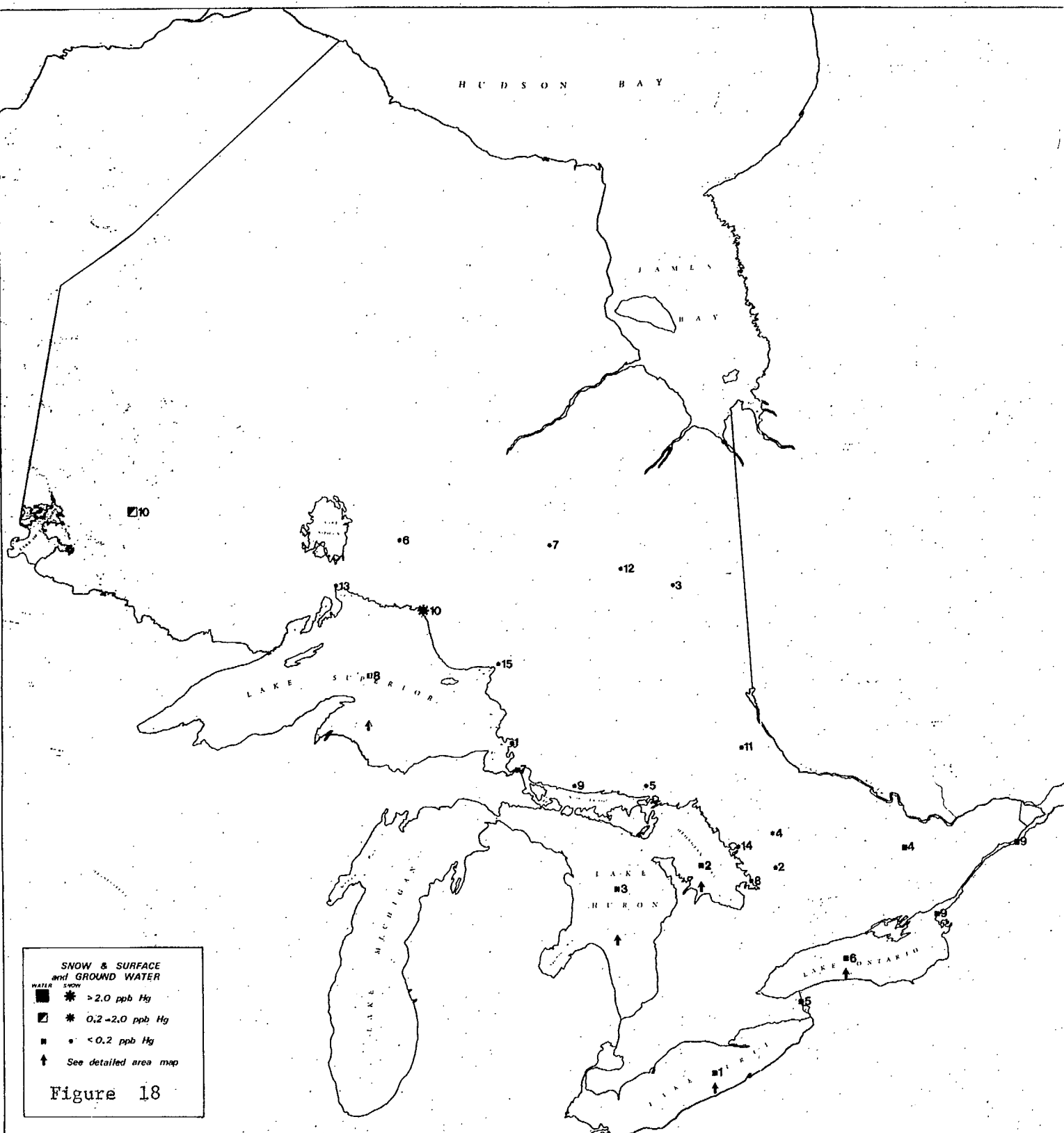


FIGURE 18 MERCURY IN SNOW, SURFACE AND GROUND WATER
This map should be viewed while referring to Sections 9 and 10 and
Appendices VI and VII.

precipitation is generally insignificant. Even in areas of known mercury sources the elevated levels in snow are considered to be primarily the result of atmospheric deposition of mercury.

10 MERCURY IN WATER

10.1 General

Water quality monitoring for mercury has not been carried out to any great extent in Ontario with the exception of the sampling surveys conducted in the Great Lakes by the Inland Waters Directorate (IWD) of EMS.

10.2 Selection of Data

Apart from the work of MOE in the Wabigoon River and that of the GSC in Perch and Lavant Long Lakes in eastern Ontario, IWD has performed the majority of the surface water sampling in Ontario. This data was made available through the NAQUADAT computerized information system and includes both connecting channel (St. Lawrence River, St. Mary's River and Niagara River) and Great Lakes monitoring results. Data from all sources are contained in Appendix VII.

The data in Appendix VII are presented on the Snow, Ground Water and Surface Water map (Figure 18). In many cases an average result has been plotted for certain areas (ie. the Great Lakes) because of the difficulty in putting all the available data on the map. The actual point for any one area which has been used to represent that area has been marked on the data sheets with an asterisk.

Separate maps for each of the Great Lakes and for Georgian Bay have been prepared (Figures 19-23). These maps present the sampling locations and results of the analyses for each location. The total number of samples, concentration range and mean concentration for each lake are listed in the data sheets.

Data for Lake Ontario were taken from IWD cruise 74-018 conducted in August of 1974. Two later cruises for Lake Ontario were made in 1975 and 1976, however, the data

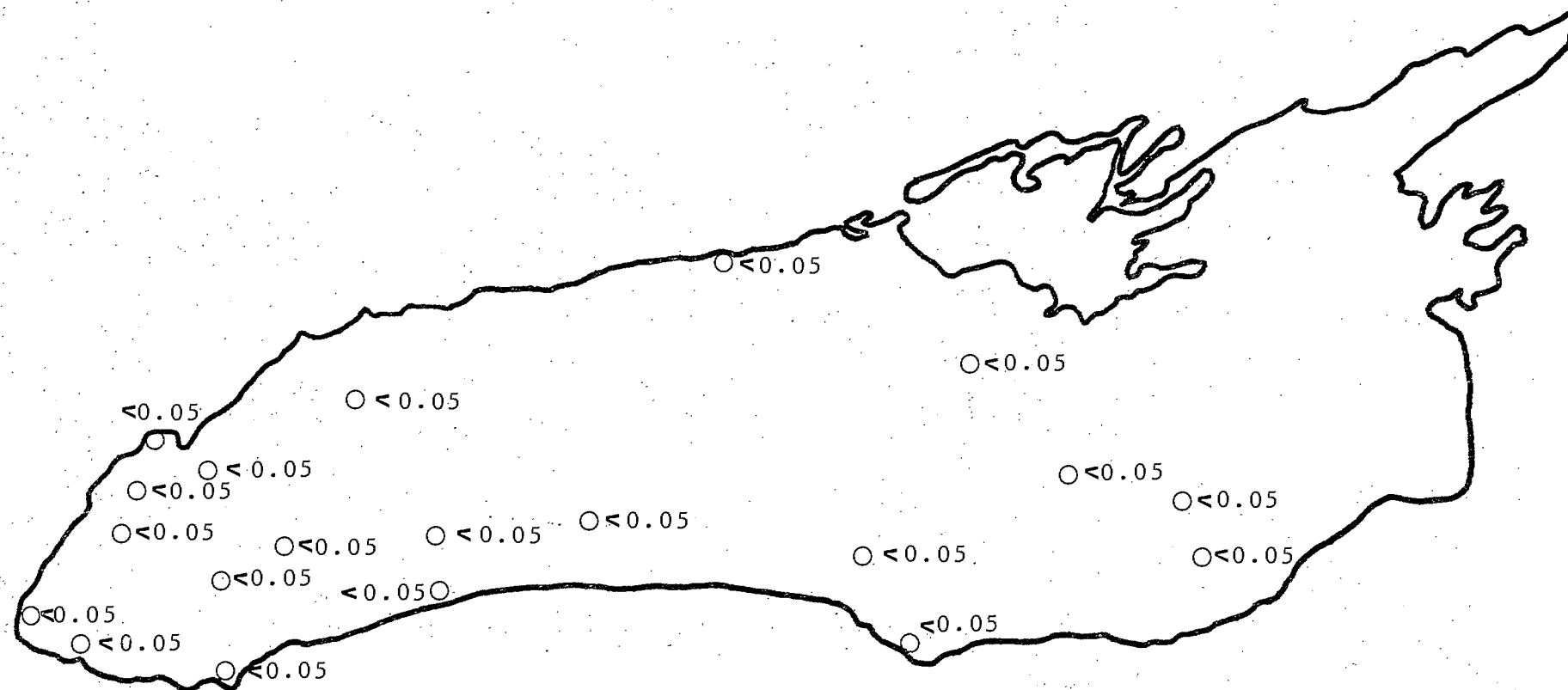


FIGURE 19 MERCURY CONTENT OF SURFACE WATER - LAKE ONTARIO (ppb)
(Cruise 74-018, August, 1974; depth = 10 m)

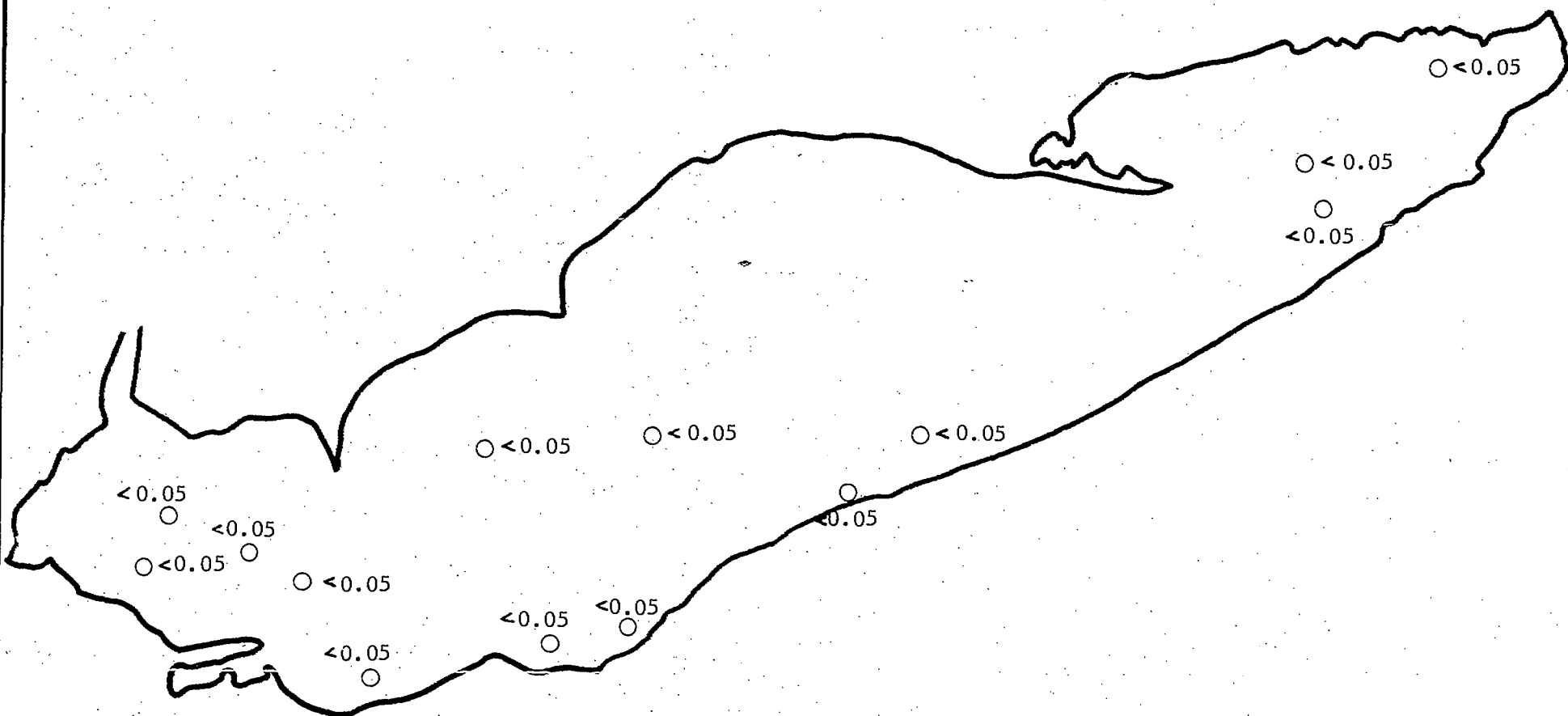


FIGURE 20

MERCURY CONTENT OF SURFACE WATER - LAKE ERIE (ppb)
(Cruise 74-104, August, 1974; depth = 10 m)

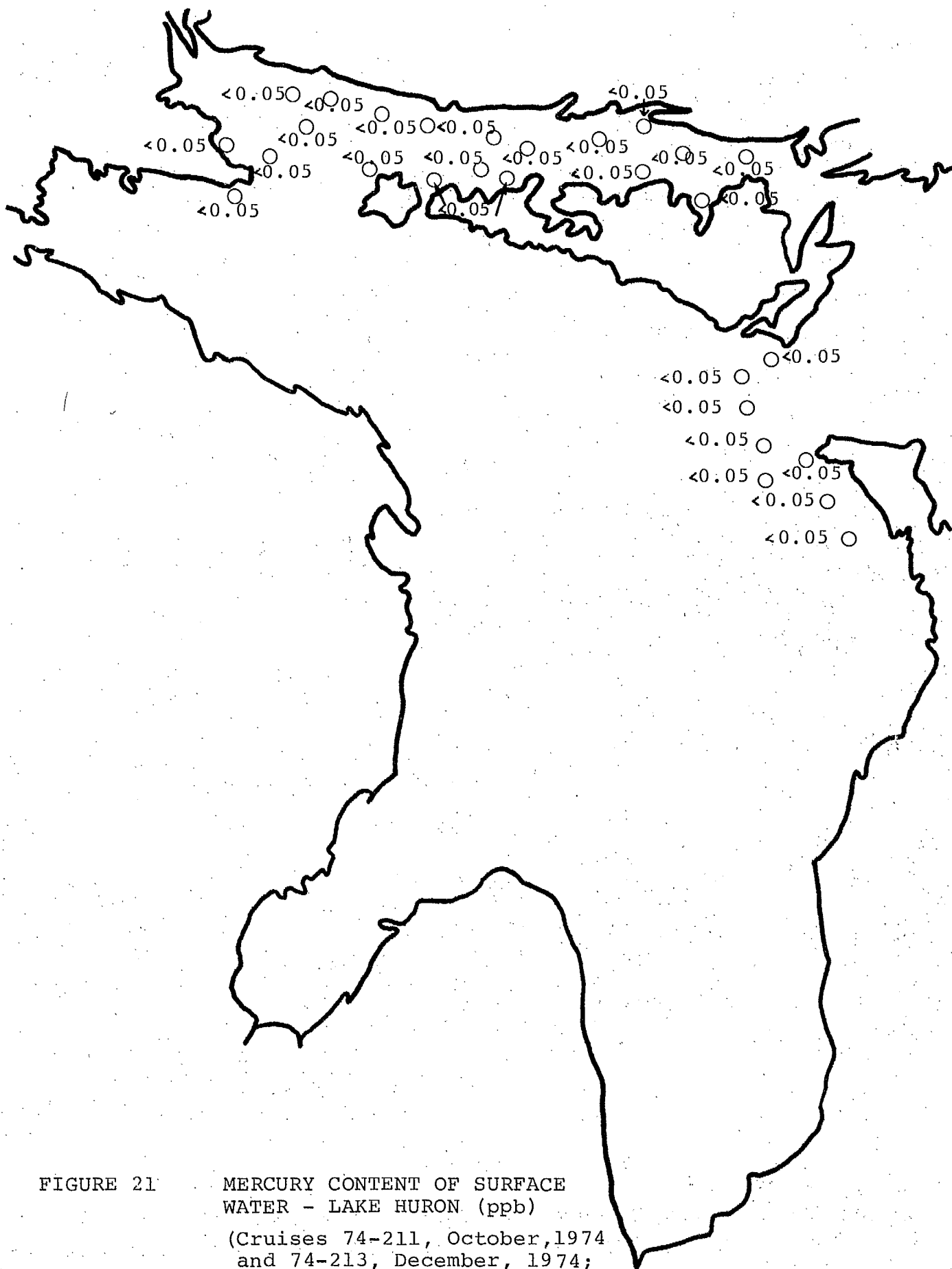


FIGURE 21

MERCURY CONTENT OF SURFACE
WATER - LAKE HURON (ppb)

(Cruises 74-211, October, 1974
and 74-213, December, 1974;
depth = 1 m)

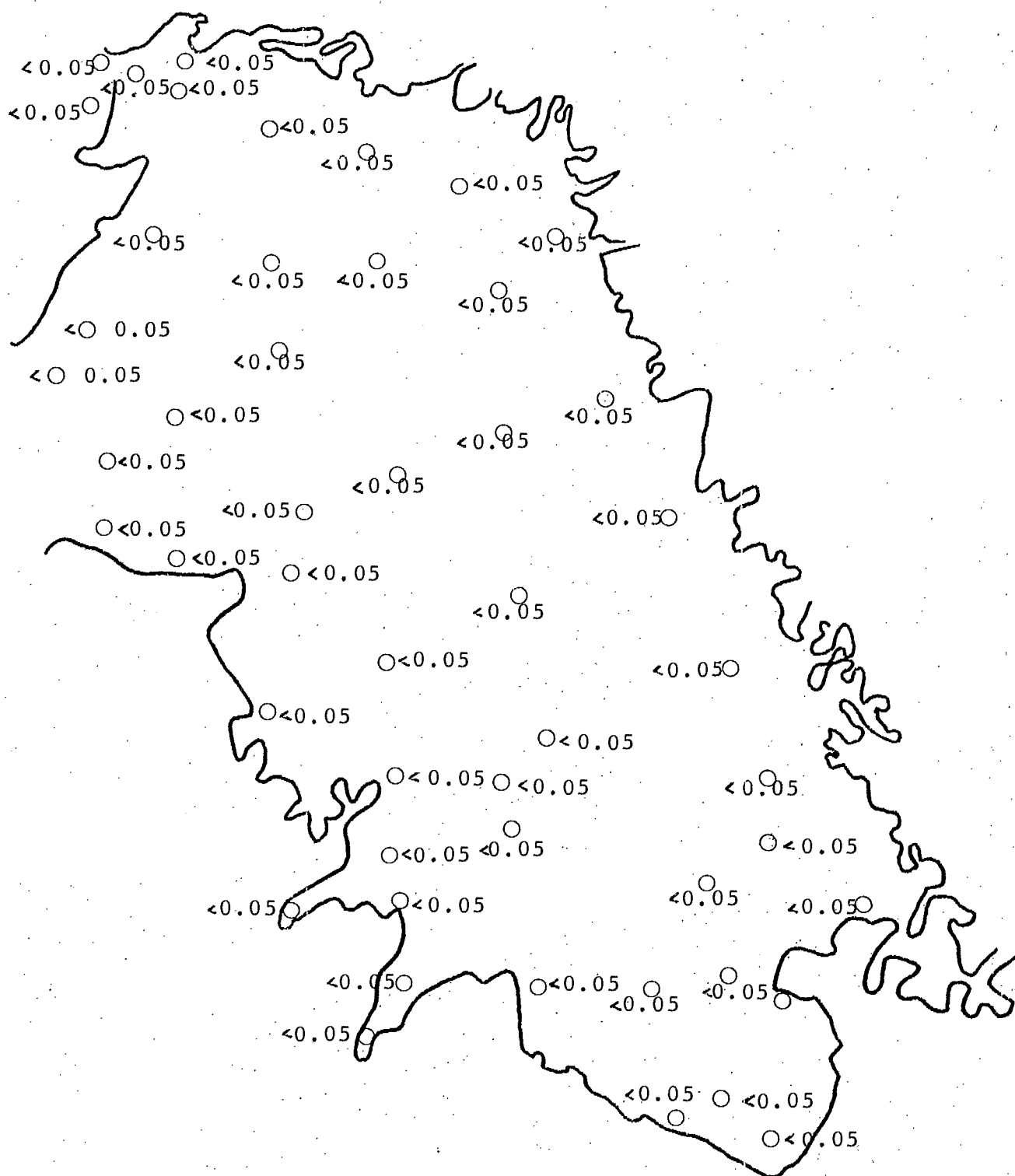


FIGURE 2.2

MERCURY CONTENT OF SURFACE WATER - GEORGIAN BAY (ppb).
(Cruises 74-512, October, 1974 and 74-514, December, 1974;
depth = 1 m)

for those two cruises were not used. In 1975 the sampling depth was not consistent, ranging from 6 to 80 meters, and was therefore not representative of surface water conditions. The data for 1976 were extremely irregular and apparently have not yet been properly checked by IWD.

The results of cruise number 74-104, August, 1974, were used to represent Lake Erie. The data for a more recent cruise in 1975 were not used since a different analytical procedure had been followed and the results would not be comparable to those for the other lakes.

Two cruises, numbers 74-211 and 74-213, were carried out in October and December 1974 respectively, in Lake Huron. Both sets of data were combined since the cruise dates were so close together. No later information exists for Lake Huron.

Georgian Bay was also surveyed in October and December, 1974 on cruises 74-512 and 74-514 respectively. As in the case of Lake Huron, data from both cruises were combined to represent the water quality of Georgian Bay.

The most recent data available for Lake Superior were obtained on cruise 73-313 in November, 1973. Those data have been plotted on the Lake Superior map.

10.3 Discussion of Data

With the exception of samples taken in the Wabigoon River (data point 10) all water samples contained mercury in levels well below the lower 0.2 ppb level. Samples taken in the Wabigoon River were taken both up and downstream from the chlor-alkali mercury cell plant located at Dryden. The up and downstream mean concentrations were 0.127 and 1.8 ppb respectively. There is little doubt as to the source of this contamination.

By examining Figures 19-23 it can be seen that mercury levels in the Great Lakes are less than 0.1 ppb and in fact well over ninety percent of the samples taken were less

than 0.05 ppb. The levels are considered to be such that no threat is posed to any type of human activity in these waters. Although the data used for the Great Lakes apply to various depths; 10 meters for Lakes Ontario and Erie, 1 meter for Georgian Bay and Lake Huron and 5 meters for Lake Superior, the data are considered comparable. This statement is made after consideration of the turbulence of the Great Lakes and the resultant mixing of the surface layers.

11 MERCURY IN INDUSTRIAL AND MUNICIPAL EFFLUENTS

11.1 General

Industrial and municipal treatment plant effluent data have been presented on the same map and in the same data sheets. Apart from known mercury sources very few industries in Ontario have been sampled for mercury discharges. Most of the data recorded in this section pertain to effluents from sewage treatment plants. This information was obtained from a 1977 report based on a Canada-Ontario Agreement (COA) project to study the sources of metals in municipal wastewaters.

11.2 Selection of Data

Results reported in the COA project report were converted from concentration units (ppm) to loadings (lb/d) using the average daily flow rate listed for each treatment plant. The loadings are recorded in the data sheets in Appendix VIII. Abbreviations ASP and PTP have been used to distinguish whether a sewage treatment plant is either an activated sludge plant or a primary treatment plant respectively.

The industrial effluent data are the results of MOE and/or EPS surveys carried out at several plants in the province. Apart from commonly known mercury sources (CIL in Cornwall, American Can in Marathon and the Reed Ltd. complex in Dryden) two food industries and one mining operation were checked for mercury releases in their waste effluents. Data are presented in Figure 24.

11.3 Discussion of Data

The data reveal that only one municipal effluent, that from the sewage treatment plant in Ottawa exhibited a mercury level greater than 0.1 lb/d. All other plants,

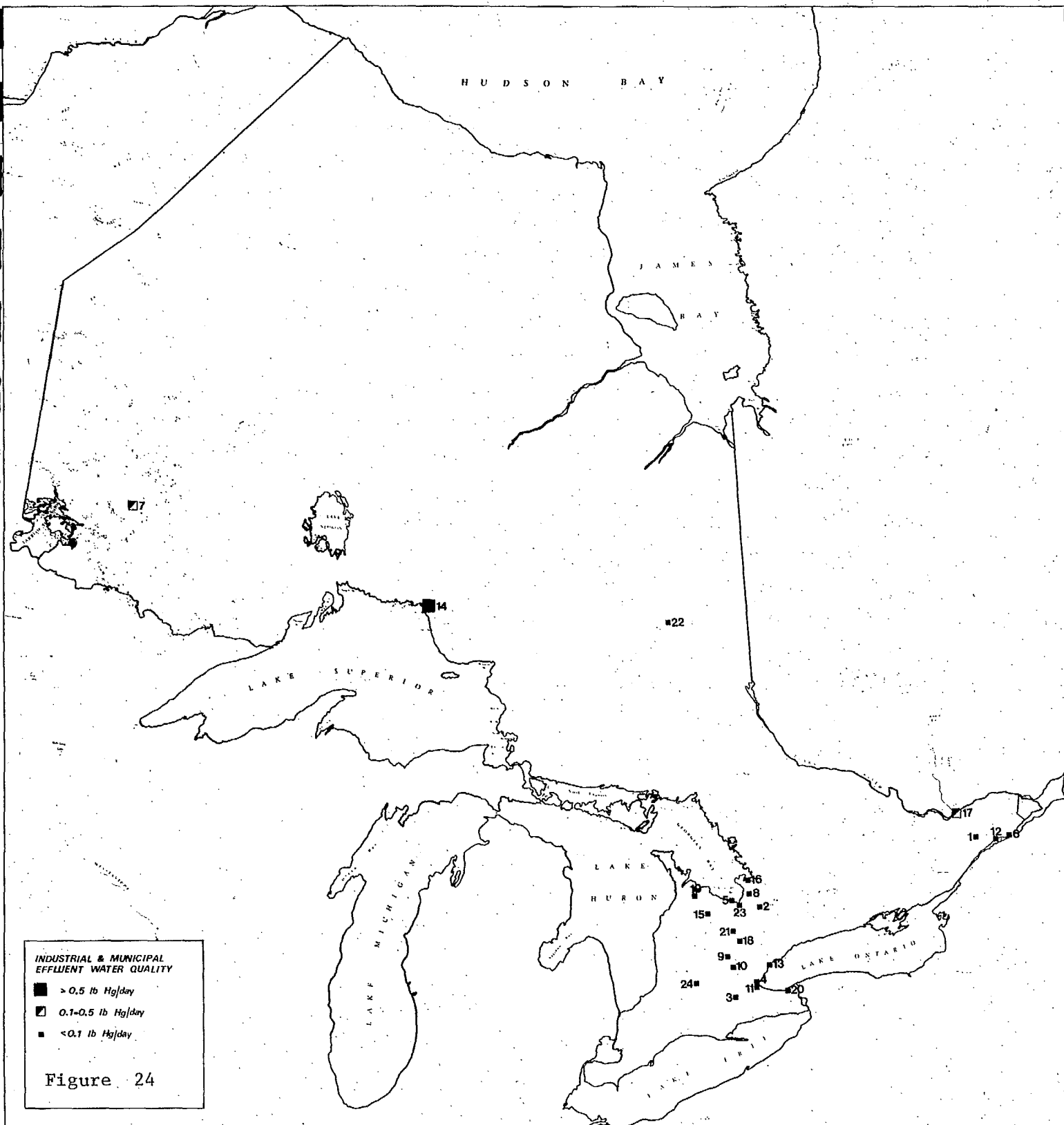


FIGURE 24 MERCURY IN INDUSTRIAL AND MUNICIPAL EFFLUENTS
This map should be viewed while referring to Section 11 and
Appendix VIII.

whether using primary or secondary treatment were able to produce an effluent with a mercury concentration significantly lower than 0.1 lb/d. If the mean of the results from the Ottawa plant is indicative of normal operation the plant would account for a yearly mercury output of approximately 150 pounds in its treated effluent. Treatment plants in other major urban centres also contribute appreciably to the mercury levels in Ontario waterways (Lakeview = 20 lb/y, Hamilton = 30 lb/y, Cornwall = 20 lb/y).

Of the three chlor-alkali mercury cell plant sites sampled, only two, American Can at Marathon (data point 14) and Reed Ltd. at Dryden (data point 7) were found to discharge effluent containing greater than 0.1 lb Hg/d. The American Can effluent was monitored during a week long survey in 1976 and an average of 1.3 lb Hg/d was measured in the effluent. That plant was closed in October, 1977. Despite the fact that the mercury cell plant at Dryden was shut down in 1975 a mercury loading of over 0.3 lb/d was measured in the total effluent from the Reed Ltd. pulp mill/chlor-alkali plant complex in 1977. It is expected that the majority of this mercury results from past contamination in the process and treatment equipment.

12 MERCURY IN BLOOD (HUMAN HEALTH)

12.1 General

Data for this section were obtained solely from Health and Welfare Canada. Information relating to eleven reserves in Ontario is presented in the data sheets in Appendix IX and on the map in Figure 25. The results are part of a continuing program to assess health related problems in native peoples of Canada.

12.2 Selection of Data

Appendix IX contains two sets of data, cumulative and latest. The cumulative data include all the sampling that has ever been conducted at any one reserve whereas the latest data include only the most recent sampling results. Figure 25 has been prepared using cumulative data.

A slightly different method has been used in the presentation of the analytical data. The number of people sampled, given in column N of the data sheets, is divided into one of the three concentration ranges in which their blood mercury levels fall. For example, 248 people have been sampled at the Dokis reserve. Of these, 234 were found to have blood mercury levels in the "normal"* range (<20 ppb), 13 in the "increased risk"* range (20-100 ppb) and 1 in the "excessive level"* (>100 ppb). The highest of the three ranges, in which at least one person is listed, is the range which has been plotted on the map. Therefore the Dokis reserve (data point 1) has been portrayed in Figure 25 by the symbol representing the highest range.

* This terminology is that of the Medical Services Branch of Health and Welfare Canada.

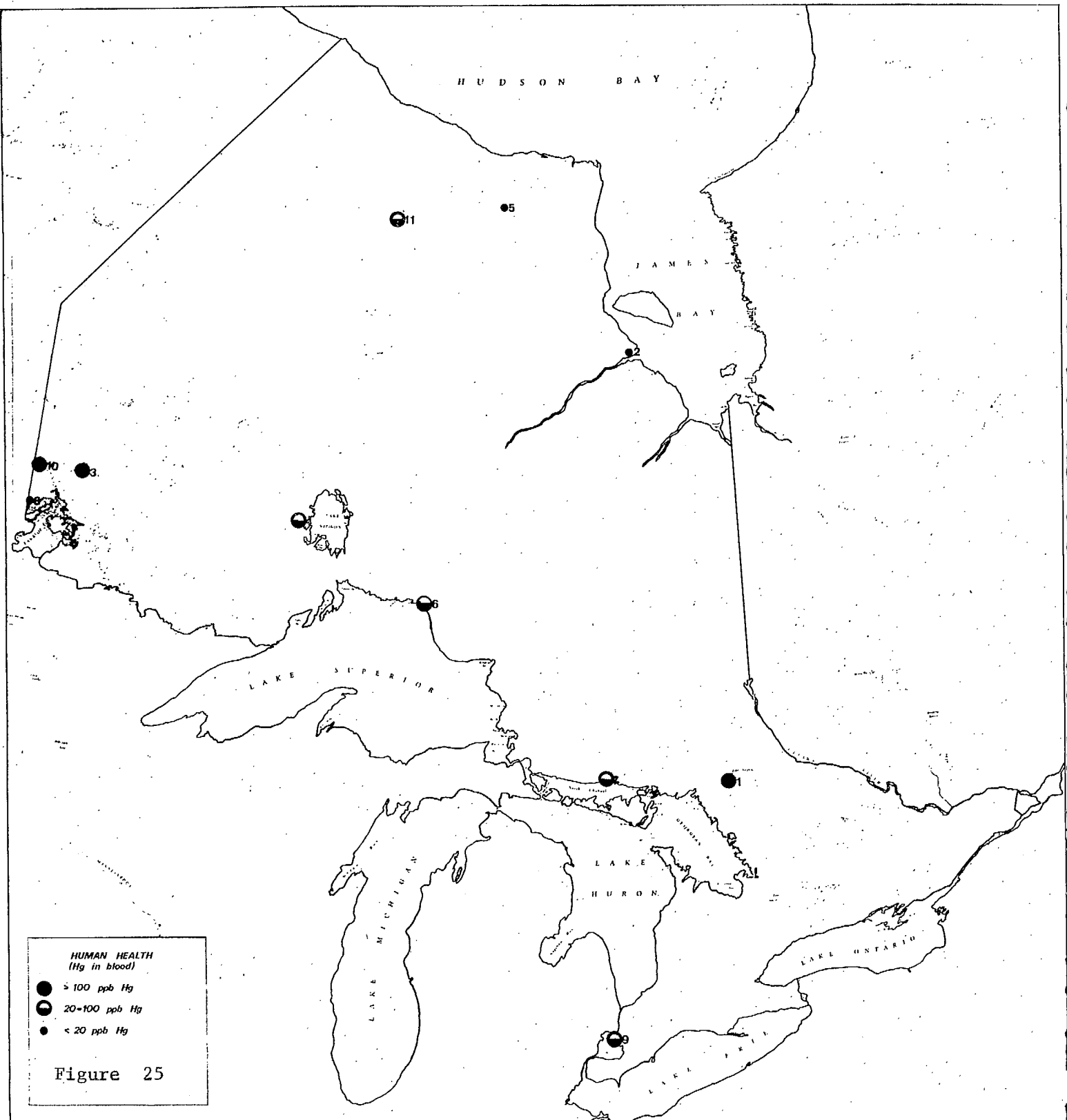


FIGURE 25 MERCURY IN BLOOD (HUMAN HEALTH)
This map should be viewed while referring to Section 12 and Appendix IX.

12.3 Discussion of Data

As exemplified by the blood mercury levels there are some Indian communities where a definite problem exists. Eleven reserves have been sampled. Of these, five have only been sampled once and therefore the cumulative and latest data are identical (Fort Albany, Gull River, Hawley Lake, Serpent River and Shoal Lake). Each of the other six reserves has been sampled at least twice.

In two cases, Whitedog and Pic River, there is a marked difference between latest and cumulative data. At Pic River the latest sampling, carried out in April 1977, showed that out of twelve people sampled all contained blood mercury levels below 20 ppb. The cumulative data however show that out of a total of 154 results, eleven were in the increased risk range of 20-100 ppb while the remaining 143 were below 20 ppb. At Whitedog the latest data reveal that out of 264 tests all but one were less than 20 ppb and the other was in the 20-100 ppb range. The cumulative data for that reserve show that out of 1727 results, 1445 were less than 20 ppb, 242 were in the 20-100 ppb range and 40 were greater than 100 ppb. For both these reserves, the symbols representing them in Figure 25 would be different had the latest data been used - Pic River would have been represented by a small dot and Whitedog would have been symbolized by a half filled in circle.

This problem arises because of the choice in using latest or cumulative data. If latest data are used there is no way of knowing if the results are indicative of the degree of contamination on the reserve unless each person living on the reserve is tested. On the other hand cumulative data can also be misleading. If the cumulative data go back several years and the data show that someone had a blood mercury level greater than 100 ppb it is quite possible that since the test was conducted that particular person could

have moved from the reserve or died. To use the cumulative data unless movement or death are taken into account could misrepresent the actual level of contamination in any one area.

13 WABIGOON - ENGLISH RIVER SYSTEM

13.1 General

The Wabigoon - English River system is located in northwestern Ontario in an area roughly bounded by the coordinates of 91°-95° latitude and 49°-51° longitude. It is recognized as an example of the deleterious effects of mercury discharges to the natural environment.

The problem was first identified in early 1970 when, as a result of federal and provincial sampling, high levels of mercury were found in fish in the Wabigoon River. The commercial fishery was immediately closed in the section of river system downstream from the most probable cause - the Dryden Chemical Ltd. chlor-alkali plant at Dryden. The chemical plant utilized a process involving mercury to produce chlorine and caustic soda for use in an adjacent pulp mill. The plant began operation in 1962 and its yearly mercury make up requirements were in the order of 6000 pounds. This figure represents losses of mercury to the air and water as well as small amounts to products, solid wastes and losses within the plant. Once the chemical plant was recognized as the source of the mercury contamination the provincial government imposed stringent requirements to limit the amount of mercury discharged to the environment.

Federal regulations were enacted in 1972 which further reduced the release of mercury to the Wabigoon River. In October, 1975 the chlor-alkali plant was taken out of service, to be replaced by a non-mercury using process.

Despite the fact that the mercury source has been removed, an estimated 20,000 pounds of mercury had been discharged to the watercourse, primarily during the period 1962-1970 before environmental controls were implemented. The levels measured in the river system are among the highest recorded for freshwater fish anywhere in the world. Mer-

cury levels in sediments and other parameters are also elevated considerably above what are considered to be normal background levels. The length of time required for the Wabigoon - English River system to return to an uncontaminated state is not known, however, estimates have been made which range up to over one hundred years.

It is because of the extreme contamination that so much research has been conducted in the area. Many universities, government, and private agencies have attempted to define the environmental as well as socio-economic and health implications of the contamination. The sole outcome of these studies is that at the very best, many decades will have elapsed before the mercury content of fish declines to a satisfactory level.

One concerned group, the federal-provincial Canada-Ontario Committee on Mercury in the Wabigoon - English River System has established a steering committee to prepare an Agreement to jointly assess the potential for speeding up the decontamination process. The Agreement is intent on determining where the mercury is located and subsequently the ways of reducing its availability for biological uptake. The objectives of the Agreement are "to carry out a study to evaluate and determine the feasibility of implementing mercury amelioration measures in the Wabigoon - English River system. The study should include:

- (a) a review of all data on sediment, water and biota mercury levels to determine the adequacy of existing information; and, depending on the findings thereof, a survey of pathways, transport, rates of accumulation and distribution of mercury in the Wabigoon-English River system;
- (b) a review of all available information to determine the factors affecting the availability of mercury for uptake by freshwater organisms, and, depending on the results thereof, experiments to measure the effectiveness of

alternative ways of reducing the availability of mercury in the Wabigoon - English River system;

- (c) an assessment of the engineering and economic implications of environmentally acceptable alternative remedial measures, and recommendations for preferred mercury amelioration measures."

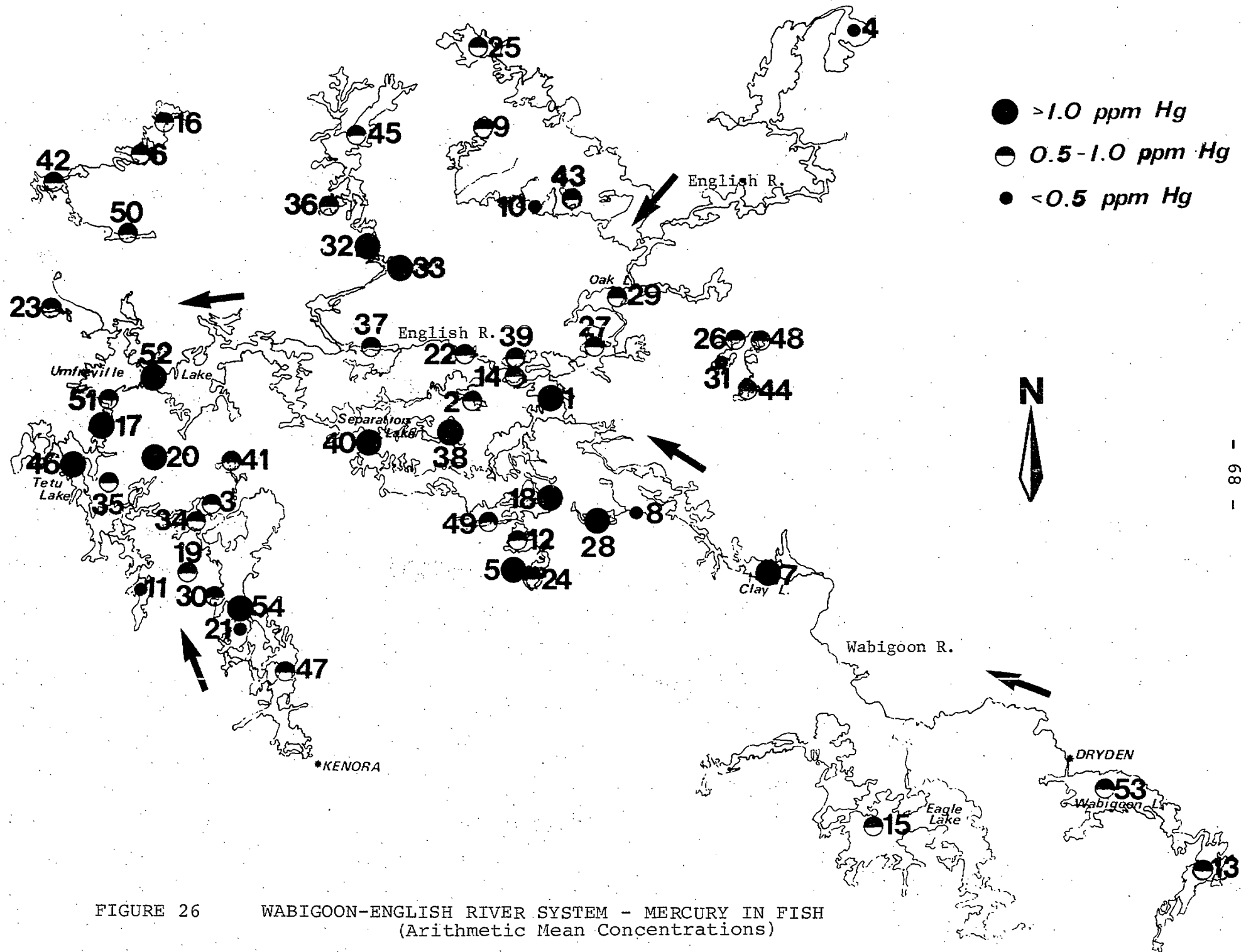
This section of the report presents some of the data which have been gathered from the Wabigoon - English River system.

Separate detailed maps of the area have been prepared so as to allow a better graphic presentation of some of these data. Maps are included for fish, sediments, aquatic birds and invertebrates. Information for other parameters (air, land vegetation, snow, water, industrial and municipal effluents and human health) were presented on the larger maps already discussed in Sections 6,7,9,10,11 and 12 respectively since the number of results did not warrant a more detailed treatment in this section.

Because of the many studies conducted in the area it is recognized that other results not included in this report do exist for the Wabigoon - English River system. Of the material made available for this project, only the latest data have been used for the preparation of the maps.

13.2 Mercury in Fish

Data were provided by both MOE and FMS and are listed in Appendix X. The use of two formats to present the fish data, arithmetic mean concentrations and standard concentrations, was discussed in Section 4. This same procedure has been followed for the Wabigoon-English River system. Figures 26 and 27 are maps of mercury in fish using arithmetic means and standard concentrations respectively. Only data where the number of fish sampled was greater than five were used. The highest arithmetic mean of the most recent sampling period for each sampling site, irrespective of the



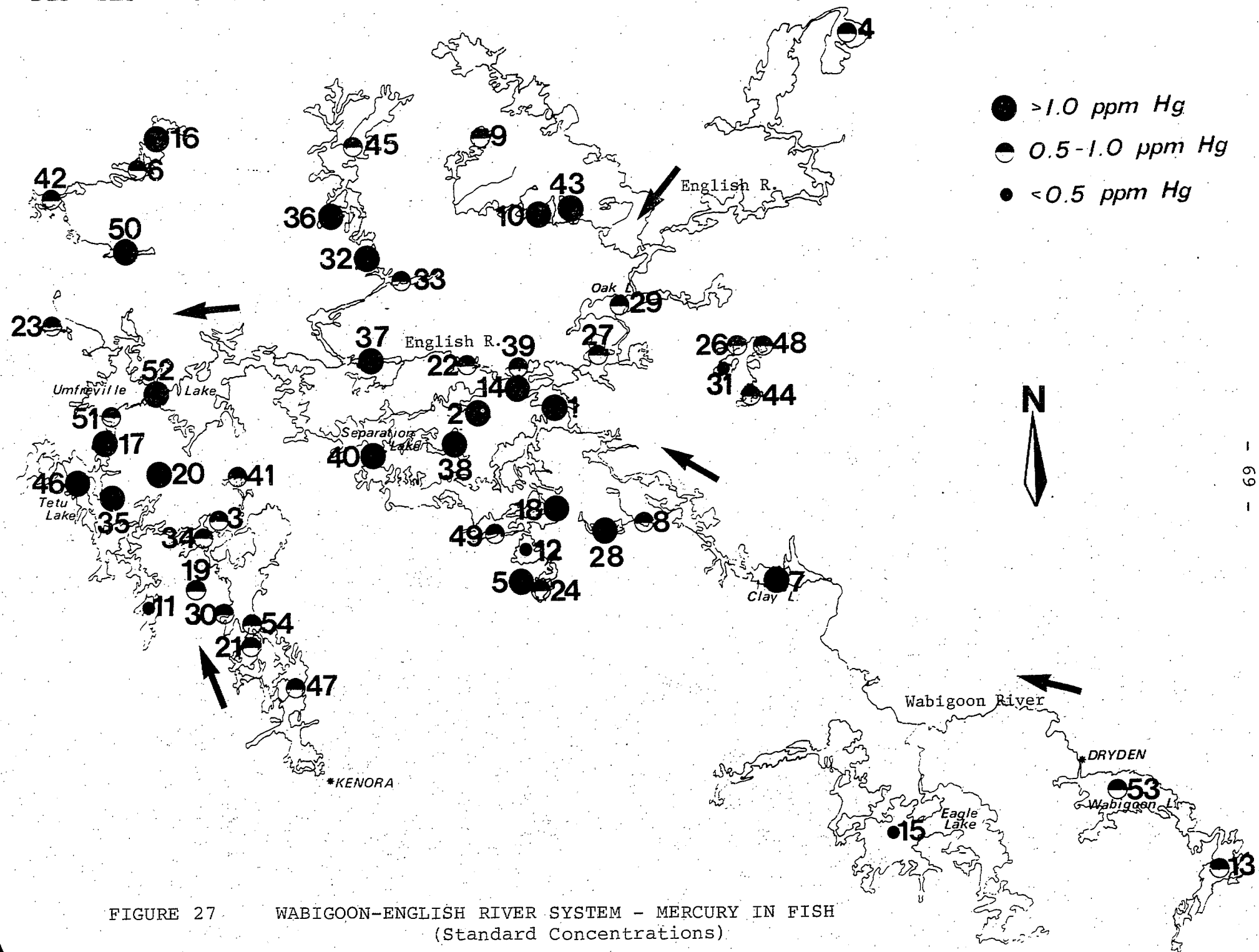


FIGURE 27 WABIGOON-ENGLISH RIVER SYSTEM - MERCURY IN FISH
(Standard Concentrations)

species or number of fish sampled, was chosen to plot on Figure 26.

Data plotted in Figure 27 are generally the highest standard concentrations derived for each area although account has been taken of the number of fish being sampled and the regression coefficient.

Both the arithmetic mean concentrations and the standard concentrations used for mapping are marked on the data sheets with asterisks.

Much of the data available for fish have been summarized in an MOE report.[3] This report presents the results of sampling conducted during the period 1970-1975 and includes both MOE and FMS data. Despite the addition of 1976 data the basic conclusion can be made that generally on-system lakes contain fish with higher mercury concentrations than off-system lakes.

This is readily demonstrated by both Figures 26 and 27.

13.3 Mercury in Sediments

Appendix XI contains the sediment data for the Wabigoon - English River system. The information was obtained exclusively from MOE as part of an intensive survey carried out during 1975. A report on the survey [4] discussed sampling in the Wabigoon - English River during the period 1970-1975. The data from Appendix XI have been plotted in Figure 28. From Figure 28 it can be readily observed that mercury in sediment levels decrease with distance downstream from Dryden. The two data points upstream from Dryden are in the <100 ppb range and are therefore considered uncontaminated. Sediments immediately downstream from Dryden to as far as Clay Lake have mean mercury concentrations above 1000 ppb. Below Clay Lake most of the samples fall within the middle 100-1000 ppb range.

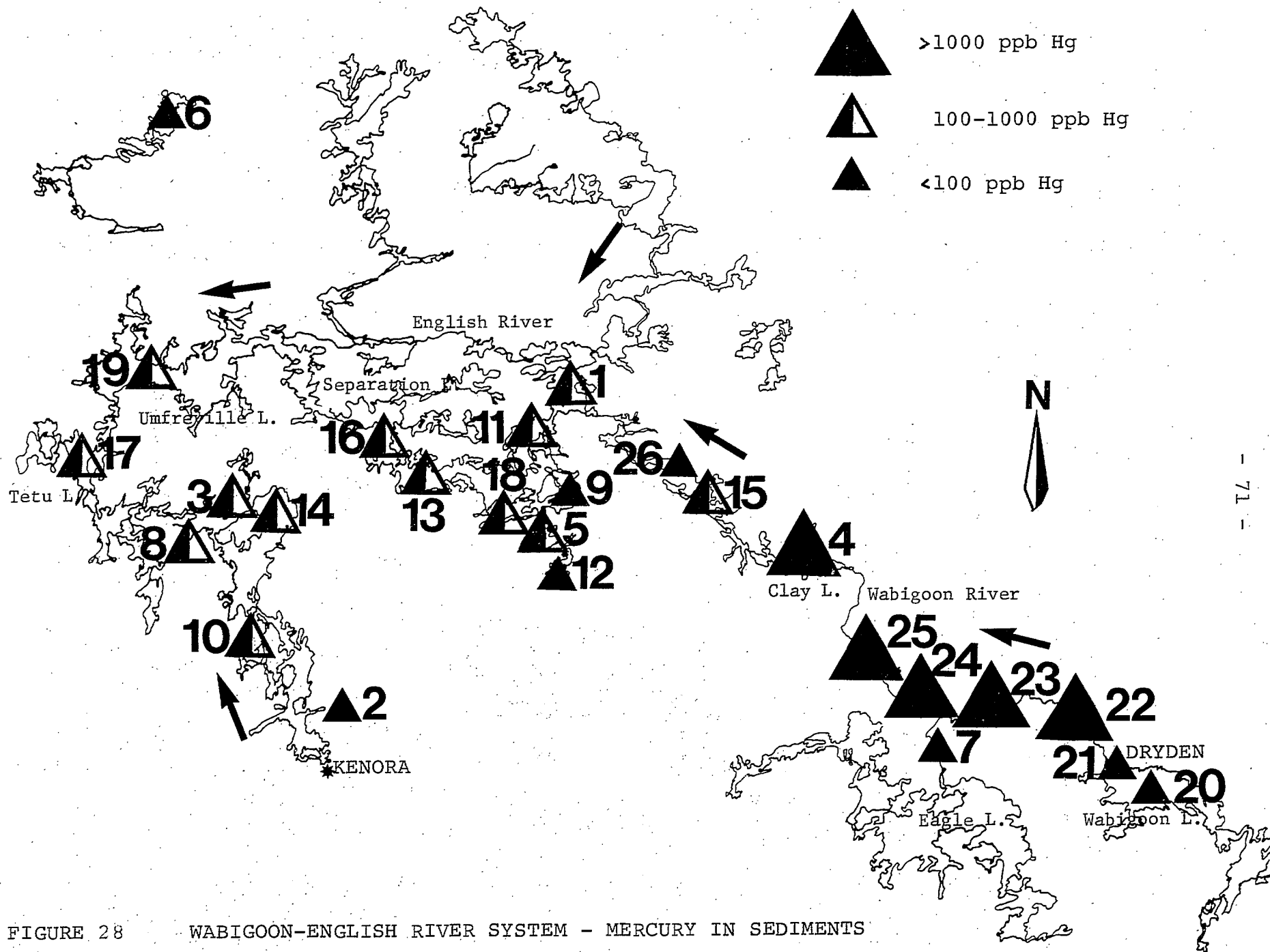


FIGURE 28

WABIGOON-ENGLISH RIVER SYSTEM - MERCURY IN SEDIMENTS

13.4 Mercury in Aquatic Birds

Data for aquatic birds were obtained almost entirely from a CWS report which acts as a bibliography for wildlife monitoring across Canada. The results of sampling of two species by MOE at Grassy Narrows Lake are also included in the data sheets tabulated in Appendix XII.

Figure 29 graphically presents the data found in Appendix XII.

For any one location it is the species showing the highest mean mercury concentration, for the most recent year, which has been represented on the map. An asterisk marks the points which have been plotted.

Unfortunately, apart from the MOE sampling at Grassy Narrows Lake in 1976 the other results are all based on samples collected in 1971 or 1972.

As in the case of fish and sediment maps (Figures 26, 27 and 28) the mean mercury concentrations in aquatic birds at, and downstream from Dryden are in the maximum range (>1.0 ppm). It is not as easy to establish trends relative to the distance from Dryden for several reasons - the major ones being the differences in sampling and analytical techniques from one location to another and the migratory nature of the parameter being considered.

13.5 Mercury in Invertebrates

The Freshwater Institute (FWI), located in Winnipeg has been conducting a crayfish sampling program in the Wabigoon - English River system since 1970. The program is divided into two parts; one a yearly check at Clay Lake plus a check at a control station (St. Malo, Manitoba) every third year and the second a full scale survey involving over thirty sample stations with multiple samples being taken at each station where the fish are present. The latest complete survey was carried out in the summer of 1974 and samples were taken from twenty eight stations in Ontario, including the

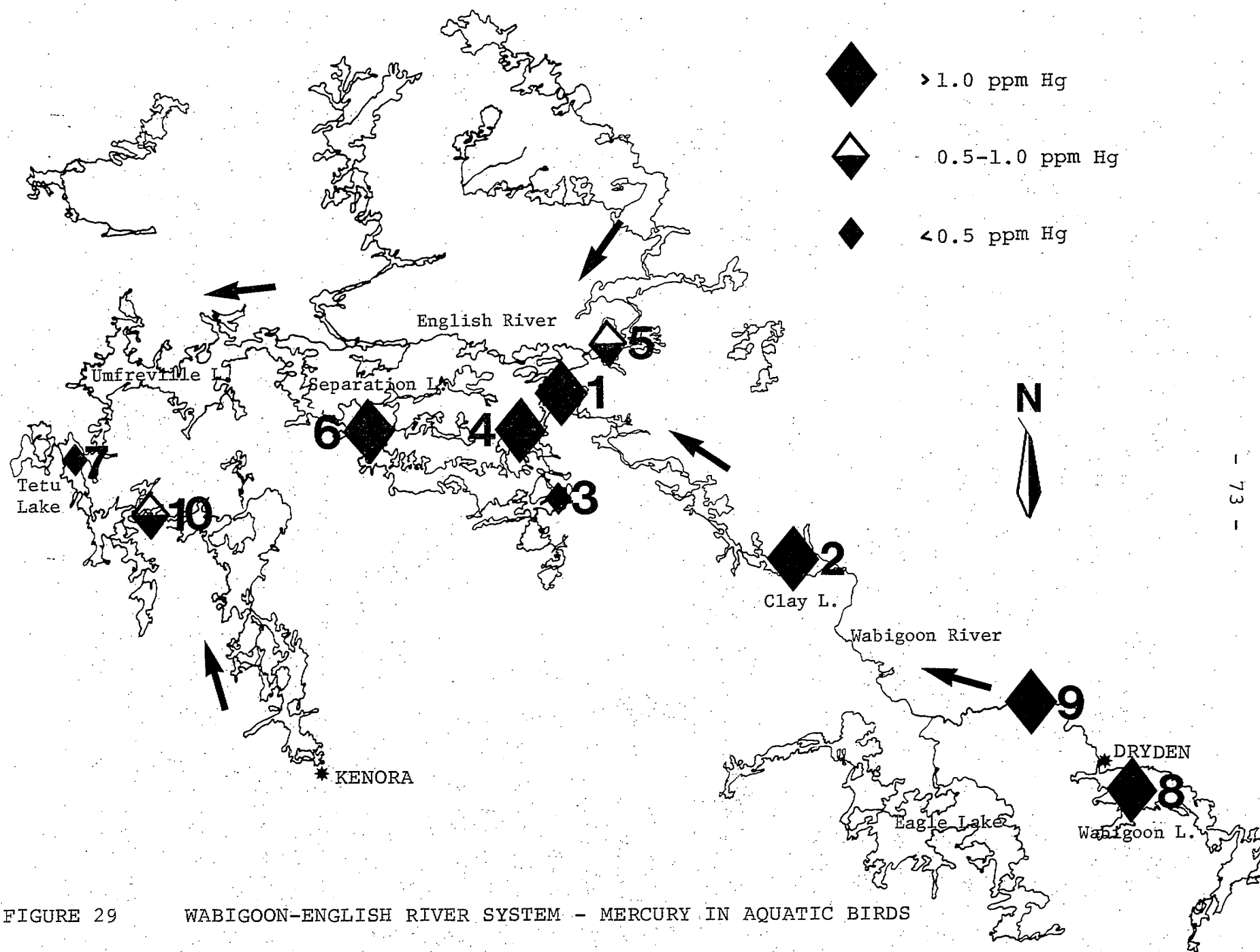


FIGURE 29

WABIGOON-ENGLISH RIVER SYSTEM - MERCURY IN AQUATIC BIRDS

yearly sample from Clay Lake. The data are tabulated in Appendix XIII and plotted on Figure 30. The Clay Lake yearly sample station is data point number 10.

Table 3 presents the yearly results from Clay Lake (sample station 10) and the results from the control station at St. Malo. From Table 3 it can be seen that although the mercury levels in crayfish caught in Clay Lake have dropped significantly since 1970 they are still at least a factor of ten higher than the normal background level represented by the St. Malo control station.

TABLE 3 CRAYFISH SAMPLING - CLAY LAKE AND CONTROL SAMPLING DATA

Date	Clay Lake (Sample Station 10)		Control Station (St. Malo, Man.)	
	N	Mean(ppm)	N	Mean(ppm)
June, 1970	1	10.5	-	-
June, 1971	30	6.57	3	0.13
June, 1972	32	4.18	-	-
June, 1973	19	3.80	-	-
June, 1974	14	2.00	13	0.14
June, 1975	16	2.00	-	-
June, 1976	34	2.30	-	-
June, 1977	36	1.46	11	0.08

Figure 30 demonstrates that the on-system water bodies, even as far as data point 18 (232 km downstream from Dryden), contain crayfish with mercury levels in the greater than 1 ppm range. The map also illustrates that the sample stations upstream from Dryden (numbers 1, 2 and 3) and the off-system stations (numbers 4, 5, 6, 7, 19 and 20) are in the less than 0.5 ppm range and therefore considered uncontaminated. This is the same trend as established for fish, sediments and aquatic birds already discussed in Sections 13.2, 13.3 and 13.4 respectively.

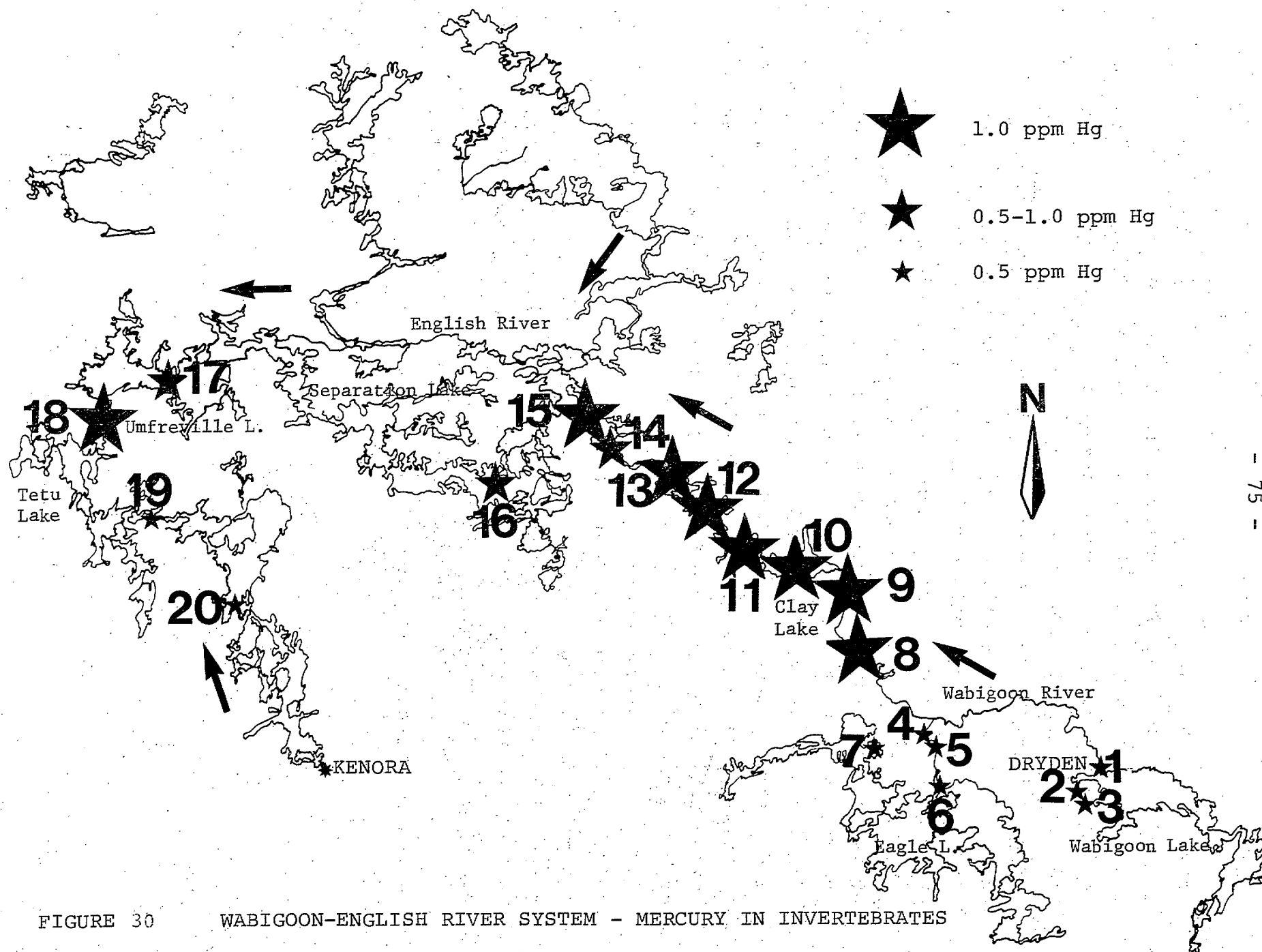


FIGURE 30

WABIGOON-ENGLISH RIVER SYSTEM - MERCURY IN INVERTEBRATES

13.6 Discussion of Data

Figures 26-30 clearly indicate that the Wabigoon - English River system is one which is highly contaminated with mercury. All five maps demonstrate that the contamination is highest immediately downstream from Dryden and decreases with distance from Dryden. Samples taken both upstream from Dryden and from off-system lakes are considerably lower in mercury content. It is recognized that fish and aquatic birds are migratory species and therefore may not accurately reflect the level of contamination of a particular water body on a constant basis. The two parameters most indicative of contamination in a particular area, because of their relatively stationary characteristics in comparison with fish or birds, are sediment and crayfish. The data received for both of these parameters leave no question as to the source of the contamination nor to the degree of contamination downstream from the source.

The data drastically demonstrate that despite the reduction of mercury discharges from the chlor-alkali plant at Dryden in 1970 and its subsequent closure in 1975 the mercury levels in the environmental parameters discussed in this section are significantly higher than the levels considered to represent an uncontaminated environment. The data also point toward the need for additional monitoring within the system to establish mercury decontamination trends.

BIBLIOGRAPHY

1. "The Decline in Mercury Concentration in Fish From Lake St. Clair, 1970-1976", MOE Report No. AQS77-3, May 1977.
2. Physical Geography, Second Edition, A.N. Strahler, John Wiley and Sons Inc., 1965.
3. "Mercury Levels in Fish From Northwestern Ontario, 1970-1975", MOE Report, April 1976, J.N. Bishop and B.P. Neary.
4. "Mercury in Sediment and Water in the Wabigoon - English River System 1970-75", MOE Report, June 1976, J.W. Parks.
5. "Herring Gull Productivity and Toxic Chemicals in the Great Lakes in 1975", CWS Report, 1975, G.A. Fox et al.

ACKNOWLEDGEMENTS

The data presented in this report have been made available by a variety of federal and provincial government agencies. In some cases the amount of time spent by personnel in these agencies was considerable and without that contribution this report would not have been possible.

I would like to thank the following people for the time and material they have provided and the support they have offered:

P.G. Calway	Fisheries and Marine Service, Fisheries and Environment Canada
J.J. Collins	Environmental Protection Service, Fisheries and Environment Canada
R.G. Garrett	Geological Survey of Canada, Energy, Mines and Resources Canada
W.E. Lowe	Environmental Management Service, Fisheries and Environment Canada
G.P. McRae	Fisheries and Marine Service, Fisheries and Environment Canada
A. Mudroch	Environmental Management Service, Fisheries and Environment Canada
B.P. Neary	Laboratory Services Branch, Ontario Ministry of the Environment
I.M. Price	Canadian Wildlife Service, Fisheries and Environment Canada
D.A. Shedden	Medical Services Branch, Health and Welfare Canada
I.G. Sherbin	Environmental Protection Service, Fisheries and Environment Canada
M.T. Shiomi	Environmental Management Service, Fisheries and Environment Canada
R.L. Thomas	Environmental Management Service, Fisheries and Environment Canada
D.J. Williams	Fisheries and Marine Service, Fisheries and Environment Canada

APPENDIX I

MERCURY IN FISH - DATA SHEETS

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
1	Abamasagi Lake	1973	pickerel	S42,A26	23	0.18-0.53	0.34	0.39	9
	5028,8715	1973	pike	S42,A26	16	0.20-0.58	0.37*	0.38*	13
2	Abamategwia L.	1972	pickerel	S42,A26	98	0.15-1.07	0.36*	0.47	10
	4940,9154	1972	pike	S42,A26	70	0.12-0.83	0.34	0.51*	14
3	Lake Abitibi	1974	cisco	S41,A25	14	0.04-0.11	0.08	-	0
	4842,7945	1974	goldeye	S41,A25	16	0.11-0.53	0.26	-	13
		1974	pickerel	S41,A25	35	0.35-1.60	0.70	1.01*	71
		1974	pickerel	S42,A26	11	0.43-1.13	0.87*	1.02	91
		1974	pike	S41,A25	15	0.15-1.30	0.52	0.57	33
		1974	pike	S42,A26	7	0.41-0.90	0.61	0.76	71
		1974	sauger	S41,A25	27	0.27-1.70	0.82	-	78
		1974	white sucker	S41,A25	6	0.17-0.42	0.29	-	0
4	Agnew Lake	1975	pickerel	S41,A25	26	0.30-1.80	0.66*	0.87*	65
	4622,8145	1975	pike	S41,A25	6	0.25-0.62	0.48	0.75	50
5	Ahmic Lake	1977	pickerel	S41,A25	31	0.46-4.30	0.91*	1.12*	94
	4537,7942	1977	whitefish	S41,A25	5	0.21-0.51	0.31	-	20
		1977	yellow perch	S41,A25	5	0.39-0.97	0.61	-	60
6	Amikougami L.	1976	pike	S41,A25	10	0.04-0.52	0.24*	0.45*	10
	4812,8005								

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
7	Anstruther L. 4445,7812	1976	lake trout	S41,A25	19	0.06-0.87	0.29*	0.81*	26
8	Ara Lake 5033,8728	1972	pickerel	S42,A26	76	0.12-0.93	0.42*	0.57*	21
		1972	pike	S42,A26	30	0.12-0.70	0.32	0.35	10
9	Asipoquobah L. 5340,9115	1973	pickerel	S42,A26	23	0.17-0.53	0.33*	0.40*	4
10	Atikwa Lake 4927,9334	1972	pickerel	S42,A26	99	0.18-1.29	0.47*	0.54*	35
		1972	pike	S42,A26	95	0.17-0.84	0.38	0.48	19
		1972	lake trout	S42,A26	5	0.21-0.51	0.38	0.78	20
11	Aylen Lake 4537,7751	1976	lake trout	S41,A25	9	0.24-1.20	0.66*	0.85*	56
		1976	whitefish	S41,A25	10	0.17-0.38	0.24	-	0
12	Badesdawa Lake 5145,8945	1976	pickerel	S41,A25	7	0.39-0.72	0.55*	0.63*	43
		1976	pike	S41,A25	10	0.31-0.98	0.53	-	40
13	Bark Lake 4527,7751	1976	lake trout	S41,A25	10	0.82-2.10	1.37*	1.45*	100
14	Barrel Lake 4939,9131	1976	cisco	S42,A27	20	0.24-0.57	0.37	-	5
		1976	pickerel	S42,A27	9	0.50-1.25	0.88*	0.85*	89
		1976	white sucker	S42,A27	6	0.16-0.53	0.30	-	17
		1976	whitefish	S42,A27	10	0.08-0.17	0.13	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
15	Lake of Bays	1977	smelt	S41,A25	10	0.08-0.11	0.10*	0
	4515,7904	1976	lake trout	S41,A25	22	0.62-2.00	1.37	100
	See also Buchanan Lake.							
16	Bell Lake	1971	pickerel	S42,A26	139	0.17-1.01	0.38*	15
	4948,9058	1971	pike	S42,A26	99	0.07-0.77	0.35	20
		1971	lake trout	S42,A26	27	0.14-1.18	0.37	11
	See also Mattawa Lake.							
17	Bennet Lake	1976	pickerel	S41,A25	12	0.32-1.10	0.53*	33
	4948,8218	1976	pike	S41,A25	6	0.29-0.57	0.47	33
	See also Guilfoyle Lake.							
18	Lake Bernard	1977	smelt	S41,A25	5	0.10-0.15	0.12	0
	4545,7923	1977	lake trout	S41,A25	32	0.40-1.30	0.67*	72
19	Berry Lake	1976	burbot	S42,A27	9	0.20-0.56	0.41	22
	5235,9110	1976	pickerel	S42,A27	48	0.10-1.28	0.29	8
		1976	pike	S42,A27	14	0.19-0.87	0.42*	29
		1976	rock bass	S42,A27	11	0.08-0.30	0.15	0
		1976	white sucker	S42,A27	10	0.05-0.34	0.22	0
		1976	whitefish	S42,A27	50	0.05-0.33	0.12	0
20	Big Trout Lake	1972	pickerel	S42,A26	96	0.11-0.46	0.25*	0
	5345,9000							

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
21	Birch Lake	1973	pickerel	S42,A26 100	0.22-1.26	0.44*	0.49*	28
	5123,9218	1973	pike	S42,A26 23	0.13-0.99	0.39	0.32	13
Black Bay - See data point 235.								
22	Black River	1976	pickerel	S41,A25 10	0.50-1.60	0.90*	1.41*	100
	4842,8038							
23	Black Sturgeon	1976	brown bullhead	S42,A27 10	0.07-0.28	0.13	-	0
	4951,9425	1976	burbot	S42,A27 9	0.17-0.42	0.28	-	0
		1976	crappie	S42,A27 28	0.09-0.98	0.39	-	29
		1976	pickerel	S42,A27 101	0.27-1.22	0.61	0.63*	59
		1976	pike	S42,A27 68	0.38-1.29	0.69*	0.60	81
		1976	redhorse sucker	" 18	0.08-0.50	0.13	-	0
		1976	smallmouth bass	" 24	0.31-1.32	0.56	-	50
		1976	tullibee	S42,A27 14	0.08-0.35	0.16	-	0
		1976	white sucker	S42,A27 28	0.06-0.24	0.15	-	0
		1976	whitefish	S42,A27 38	0.03-0.18	0.07	-	0
24	Boshkung Lake	1977	lake trout	S41,A25 20	0.18-0.89	0.44*	0.57*	30
	4504,7844							
25	Botsford Lake	1972	pickerel	S42,A26 73	0.11-1.11	0.36	0.56	16
	5008,9138	1972	pike	S42,A26 45	0.18-2.54	0.64*	0.80*	67

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
26	Bow Lake	1973	pickerel	S42,A26	78	0.23-0.89	0.46	0.51	28
	5139,9018	1973	pike	S42,A26	14	0.28-0.77	0.48*	0.82*	36
	Brockville - See data point 175.								
15	Buchanan Lake	1976	brook trout	S41,A25	20	0.11-0.34	0.17*	-	0
	4519,7908								
	Burlington Bay - See data point 169.								
28	Canyon Lake	1976	lake trout	S42,A27	10	0.32-1.66	0.71*	0.59*	60
	4959,9345	1976	whitefish	S42,A27	24	0.09-0.27	0.18	-	0
29	Caribou Lake	1972	lake trout	S42,A26	6	0.07-0.35	0.23	0.30	0
	5030,8910	1972	pickerel	S42,A26	78	0.19-0.93	0.46*	0.58*	33
		1972	pike	S42,A26	84	0.08-0.95	0.31	0.40	11
30	Caribou Lake	1976	pickerel	S41,A25	7	0.46-2.00	1.19*	1.18*	86
	4556,8004	1976	smallmouth bass	"	11	0.31-0.80	0.49	-	46
	See also Memesagamesing, Mud and Woodcock Lakes.								
31	Carroll Lake	1972	pickerel	S42,A26	102	0.17-1.71	0.54	0.78	40
	5107,9507	1972	pike	S42,A26	14	0.41-1.16	0.73*	0.70*	86
32	Caviar Lake	1972	lake trout	S42,A26	48	0.09-0.53	0.30	0.36	2
	4923,9346	1972	pickerel	S42,A26	69	0.17-0.52	0.28	0.29	1
		1972	pike	S42,A26	90	0.14-0.92	0.38*	0.45*	16

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
33	Cedar Lake	1972	pickerel	S42,A26	35	0.12-0.54	0.24	0.29*	3
	5009,9308	1972	pike	S42,A26	79	0.08-1.03	0.44*	0.36	29
34	Chandos Lake	1977	lake trout	S41,A25	9	0.08-1.30	0.54*	0.65*	33
	4448,7803								
35	Cheddar Lake	1976	brook trout	S41,A25	11	0.02-0.40	0.09	-	0
	4458,7808								
36	Chipman Lake	1973	pickerel	S42,A26	7	0.37-1.15	0.80*	0.86*	86
	4958,8615								
37	Collins Lake	1972	pike	S42,A26	10	0.31-1.43	0.62*	0.56*	40
	5016,8925								
38	Constant Lake	1976	pickerel	S41,A25	5	0.36-0.63	0.55*	-	80
	4524,7659								
39	Constance Lake	1976	pike	S41,A25	8	0.13-0.37	0.27*	0.49*	0
	4524,7559								
Credit River - See data point 169.									
40	Crosswise Lake	1975	pumpkin seed	S41,A25	10	0.37-0.67	0.48	-	30
	4724,7939	1975	white sucker	S41,A25	11	0.17-0.52	0.27	-	9
		1975	yellow perch	S41,A25	9	0.82-2.20	1.16*	-	100

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
41	Dog Lake 4513,7830	1976	brook trout S41,A25	19	0.06-0.23	0.12*	-	0
42	Dogpaw Lake 4923,9353	1971	pike S42,A26	5	0.37-1.01	0.58*	0.56*	40
43	Dogtooth Lake 4943,9410	1971	pickerel S42,A26	148	0.16-1.30	0.40*	0.48*	16
		1971	pike S42,A26	69	0.11-0.94	0.33	0.43	16
44	Dollars Lake 4556,8013	1976	pickerel S41,A25	11	0.40-0.86	0.56*	0.89*	73
45	Duckling Lake 5233,9321	1972	pickerel S42,A26	93	0.08-0.59	0.27*	0.48*	3
46	Eden Lake 5040,9459	1975	burbot S41,A25	21	0.18-0.47	0.28	-	0
		1975	lake trout S41,A25	39	0.09-0.80	0.33*	0.49*	18
		1975	white sucker S41,A25	8	0.04-0.19	0.10	-	0
		1975	whitefish S41,A25	50	0.02-0.14	0.07	-	0
47	Eels Lake 4454,7808 See also Silent Lake.	1976	lake trout S41,A25	13	0.05-0.35	0.09*	0.21*	0
48	Elliot Lake 4623,8242	1976	lake trout S41,A25	10	0.16-1.40	0.54*	0.89*	50

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
49	Emerald Lake 4654,8019	1976	lake trout	S41,A25	10	0.04-0.11	0.07*	-	0
50	Lake Erie No.1	1976	pickerel	S42,A27	193	0.09-1.25	0.31	0.52*	8
		1977	white bass	S42,A27	92	0.06-1.06	0.21*	-	5
51	" No.2	1977	white bass	S42,A27	12	0.14-0.82	0.46*	-	50
52	" No.3	1975	white bass	S42,A26	10	0.17-1.09	0.63*	-	70
53	" No.4	1976	alewife	S42,A27	10	0.07-0.10	0.08	-	0
		1976	carp	S42,A27	17	0.13-0.42	0.23*	-	0
		1976	coho salmon	S42,A27	14	0.11-0.35	0.20	-	0
54	No.5	1972	white bass	S42,A26	35	0.15-1.34	0.39*	-	20
55	Esmee Lake 4857,8228	1976	pickerel	S41,A25	17	0.12-0.48	0.28	0.46	0
	See also Pratt River.	1976	pike	S41,A25	21	0.14-1.20	0.40*	0.37*	24
56	Evangeline Lake 4608,8152	1976	pickerel	S41,A25	24	0.26-1.40	0.54*	1.13*	33
57	Fairy Lake 4520,7911	1977	lake trout	S41,A25	28	0.67-4.40	2.68*	2.25*	100
		1977	smallmouth bass	"	20	0.28-2.90	1.46	-	90
	See also Hunter's Bay and Vernon Lakes.								
58	Favel Lake 5000,9400	1975	burbot	S41,A25	7	0.73-1.10	0.91*	-	100
		1975	burbot	S42,A26	7	0.73-1.14	0.91	-	100

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
	Favel Lake	1975	lake trout	S41,A25	28	0.20-1.50	0.46	0.67*	25
		1975	lake trout	S42,A26	28	0.20-1.52	0.46	0.68	21
		1975	whitefish	S41,A25	50	0.09-0.40	0.17	-	0
		1975	whitefish	S42,A26	50	0.09-0.40	0.17	-	0
59	Fawcett Lake	1972	pickerel	S42,A26	15	0.15-0.55	0.32	0.30	13
	5120,9150	1972	pike	S42,A26	5	0.23-0.55	0.43*	0.64*	20
60	Fletcher Lake	1976	burbot	S42,A27	10	0.41-1.07	0.65	-	70
	5033,8859	1976	cicso	S42,A27	10	0.10-0.54	0.33	-	10
		1976	pickerel	S42,A27	230	0.20-2.43	0.94	1.28*	85
		1976	pike	S42,A27	51	0.37-2.46	1.06*	1.18	96
		1976	white sucker	S42,A27	10	0.20-0.61	0.41	-	10
		1976	whitefish	S42,A27	33	0.12-0.41	0.20	-	0
		1976	yellow perch	S42,A27	6	0.08-0.15	0.12	-	0
61	Francklyn Lake	1976	pickerel	S41,A25	26	0.58-1.30	0.92*	1.16*	100
	4937,8230								
62	Fraser Lake	1976	largemouth	S41,A25	30	0.27-0.96	0.54*	-	57
	4603,8005		bass						
	See also Robin Lake.								
63	French River	1976	burbot	S41,A25	10	0.16-0.70	0.35*	-	30
	4556,8054	1976	whitefish	S41,A25	10	0.06-0.18	0.12	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
64	French River	1976	pickerel S41,A25	23	0.32-1.20	0.50*	0.66*	39
	(Lower)	1976	smallmouth bass "	12	0.16-0.53	0.29	-	8
		1976	white sucker S41,A25	12	0.04-0.36	0.15	-	0
	(Upper)	1976	pickerel S41,A25	17	0.15-0.39	0.27*	0.50*	0
		1976	smallmouth bass "	18	0.12-0.47	0.24	-	0
		1976	white sucker S41,A25	16	0.06-0.43	0.14	-	0
See also Hamlock, Harris and Snigisi Lakes.								
65	Georgian Bay #1	1976	chub S42,A27	5	0.09-0.11	0.10*	-	0
		1976	round whitefish "	24	0.03-0.08	0.05	-	0
		1976	whitefish S42,A27	7	0.04-0.05	0.04	-	0
66	"	#2 1976	chub S42,A27	5	0.10-0.16	0.13*	-	0
67	" #3	1976	chub S42,A27	5	0.15-0.18	0.16	-	0
		1976	cisco S42,A27	11	0.10-0.18	0.14	-	0
		1976	white sucker S42,A27	7	0.05-0.10	0.08	-	0
		(Prisque Bay) 1977	pickerel S41,A25	30	0.28-1.20	0.57	0.46	63
		4541,8036 1977	pike S41,A25	22	0.19-0.97	0.38	0.33	18
		1977	yellow perch S41,A25	30	0.07-0.39	0.22	-	0
		(Raft Island) 1976	pickerel S41,A25	56	0.22-2.00	0.73*	0.48*	63
	4543,8039	1976	pike S41,A25	49	0.21-1.00	0.52	0.44	55
		(Seguin River) 1977	smelt S41,A25	10	0.07-0.14	0.10	-	0
		4520,8002						
		Georgian Bay #4 1976	chub S42,A27	5	0.15-0.20	0.17	-	0
		(Owen Sound) 1974	rainbow trout S41,A25	17	0.04-0.34	0.18	-	0
	4434,8056	1974	white sucker S41,A25	20	0.07-0.21	0.13	-	0
		1974	yellow perch S41,A25	19	0.19-0.45	0.30*	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
	Georgian Bay (Thornbury) 4434,8026	1974 1974 1974	rainbow trout white sucker yellow perch	S41,A25 S41,A25 S41,A25	10 10 10	0.05-0.56 0.06-0.12 0.13-0.33	0.20 0.10 0.22	- - -	10 0 0
69	Gibi Lake 4936,9407	1976 1976 1976	lake trout pike white sucker	S42,A27 S42,A27 S42,A27	30 5 5	0.13-1.35 0.26-0.46 0.06-0.15	0.43* 0.35 0.09	0.81* 0.34 -	23 0 0
70	Giroux Lake 4722,7940 See also Sasaginaga Lake.	1975	pike	S41,A25	23	0.19-0.45	0.26* 0.48*		0
	Goderich - See data point 85.								
71	Go Home Lake 4501,7951	1977	pickerel	S41,A25	25	0.47-2.90	1.11* 1.58*		96
72	Gough Lake 4618,8158	1975	pickerel	S41,A25	67	0.25-2.00	0.72* 0.91*		69
73	Grassy Lake 4840,9242	1977	pickerel	S41,A25	14	0.21-0.46	0.34* 0.59*		0
74	Groundhog River 4943,8158	1976	sturgeon	S41,A25	31	0.04-0.62	0.17* -		3

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
17	Guilfoyle Lake	1976	pickerel	S41,A25	18	0.19-0.73	0.34*	0.55*	11
	4945,8221	1976	pike	S41,A25	15	0.12-0.46	0.27	0.35	0
75	Gulliver Lake	1976	whitefish	S42,A27	10	0.08-0.16	0.12*	-	0
	4910,9119								
76	Gullrock Lake	1972	cisco	S42,A26	7	0.10-0.20	0.13	-	0
	5058,9340	1972	pickerel	S42,A26	117	0.12-0.83	0.30	0.37*	6
		1972	pike	S42,A26	41	0.09-0.48	0.26	0.38	0
		1972	rock bass	S42,A26	6	0.20-0.62	0.33	-	17
		1972	sauger	S42,A26	11	0.30-0.97	0.47*	-	27
		1972	whitefish	S42,A26	39	0.05-0.31	0.13	-	0
64	Hamlock Lake #1	1976	largemouth	S41,A25	29	0.20-1.40	0.48*	-	31
	4606,8006		bass						
	"	#2 1976	largemouth bass	"	26	0.03-0.56	0.21	-	4
		1976	rock bass	S41,A25	5	0.41-0.52	0.47*	-	60
		1976	yellow perch	S41,A25	7	0.14-0.67	0.40	-	29
77	Harmon Lake	1971	pickerel	S42,A26	121	0.26-1.46	0.59	0.97	53
	4956,9013	1971	pike	S42,A26	51	0.21-2.43	0.97*	1.04*	92
64	Harris Lake	1976	largemouth	S41,A25	28	0.24-0.96	0.46*	-	32
	4606,8007		bass						

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
78	Hogan Lake 4552,7830	1976	brook trout S41,A25	17	0.06-0.44	0.23*	-	0
79	Hooker Lake 5035,9101	1973	pickerel S42,A26	92	0.14-0.85	0.41	0.65*	26
		1973	pike S42,A26	6	0.28-1.18	0.75*	0.77	83
80	Horwood Lake 4800,8220	1976	pickerel S41,A25	6	1.20-2.10	1.77*	-	100
		1976	white sucker S41,A25	6	0.15-0.52	0.33	-	17
		1976	whitefish S41,A25	6	0.16-0.77	0.41	-	33
81	Howard Lake 4814,7949	1976	pickerel S41,A25	5	0.52-1.20	0.80*	-	100
		1976	pike S41,A25	10	0.37-0.85	0.56	-	60
57	Hunters Bay L. 4519,7914	1977	smallmouth bass	20	0.23-3.70	1.23	-	65
82	Lake Huron No.1	1976	coho salmon S42,A27	6	0.15-0.24	0.20*	-	0
		1976	white sucker S42,A27	12	0.08-0.24	0.12	-	0
83	" No.2	1976	whitefish S42,A27	5	0.05-0.06	0.06*	-	0
84	" No.3	1976	chub S42,A27	6	0.07-0.12	0.09	-	0
	(Saugeen)	1976	rainbow trout S41,A25	12	0.08-0.56	0.34*	-	25
	4430,8122	1976	whitefish S42,A27	10	0.03-0.08	0.05	-	0
85	Lake Huron No.4	1974	rainbow trout S41,A25	10	0.06-0.31	0.18	-	0
	(Goderich)	1974	white sucker S41,A25	10	0.10-0.23	0.14	-	0
	4345,8143	1974	yellow perch S41,A25	10	0.16-0.25	0.22*	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
86	Lake Huron No.5	1976	pickerel S42,A27	6	0.26-0.45	0.34*	0.49*	0
	See also North Channel (data points 162-163).							
87	Huronian Lake	1972	lake trout S42,A26	6	0.15-0.52	0.26*	0.36*	17
	4841,9047							
	See also Rudge Lake.							
88	Icy Lake	1975	pickerel S42,A26	7	0.26-1.32	0.58*	0.62	29
	4850,9130	1975	pike S42,A26	9	0.19-0.57	0.30	0.63*	11
89	Jackinnes Lake	1972	pickerel S42,A26	12	0.19-0.42	0.27*	0.37*	0
	4955,8913	1972	pike S42,A26	9	0.12-0.46	0.22	0.36	0
90	Lake Joseph	1977	lake trout S41,A25	25	0.14-0.63	0.37*	0.43*	28
	4510,7944	1977	smelt S41,A25	10	0.06-0.44	0.14	-	0
91	Jowsey Lake	1976	pickerel S41,A25	9	0.26-1.00	0.51*	1.20*	33
	4822,8144	1976	pike S41,A25	6	0.16-0.31	0.22	0.30	0
		1976	yellow perch S41,A25	15	0.08-0.29	0.17	-	0
92	Kabania Lake	1972	pickerel S42,A26	12	0.33-0.85	0.52*	0.66*	42
	5212,8820							
93	Kagianagami L.	1973	pickerel S42,A26	98	0.07-1.04	0.41	0.48	31
	5057,8750	1973	pike S42,A26	76	0.07-2.89	0.42*	0.32*	25

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
94	Kamaniskeg L. 4525,7741	1977	lake trout	S41,A25	10	0.50-5.30	1.68*	0.97*	100
95	Kamiskotia L. 4834,8138	1976	pike	S41,A25	8	0.19-0.38	0.28*	0.40*	0
96	Kapikik Lake 5132,9157	1972	pickerel	S42,A26	99	0.20-1.04	0.42	0.48	17
		1972	pike	S42,A26	62	0.30-1.74	0.78*	0.70*	85
97	Kawaweogama L. 5012,9010	1972	pickerel	S42,A26	125	0.05-1.67	0.79*	1.05*	85
		1972	pike	S42,A26	25	0.26-1.45	0.65	0.75	56
98	Kawinogans R. 5139,8955	1976	pickerel	S41,A25	21	0.17-0.59	0.37*	0.54*	14
		1976	redhorse sucker	"	9	0.03-0.62	0.22	-	11
99	Keenoa Lake 4859,8228	1976	pickerel	S41,A25	8	0.20-1.00	0.63*	0.85*	50
		1976	pike	S41,A25	10	0.17-0.74	0.36	0.51	20
	See also Shack Lake.								
100	Keezhik Lake 5145,8830	1972	pickerel	S42,A26	26	0.17-0.91	0.31	0.54*	8
		1972	pike	S42,A26	6	0.28-0.73	0.50*	0.63	50
101	Kennedy Lake 5234,9344	1973	pickerel	S42,A26	47	0.23-1.14	0.47	0.55	38
		1973	pike	S42,A26	25	0.19-1.57	0.77*	0.55*	68
	See also Warwick Lake.								

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
102	Kenogami Lake	1976	pickerel	S41,A25	10	0.26-0.57	0.37*	0.61*	10
	4806,8014	1976	pike	S41,A25	5	0.23-0.68	0.37	0.62	20
103	Kenogaming Lake	1976	pickerel	S41,A25	11	0.29-1.50	0.56*	0.99*	27
	4805,8155	1976	pike	S41,A25	39	0.12-0.71	0.29	0.40	3
		1976	white sucker	S41,A25	17	0.03-0.18	0.07	-	0
		1976	whitefish	S41,A25	14	0.11-0.25	0.16	-	0
104	Kenogamissi L.	1976	pickerel	S41,A25	17	0.26-1.30	0.52*	1.10*	41
	4815,8133								
105	Kerr Lake	1976	brown bullhead	S41,A25	7	0.08-0.19	0.12	-	0
	4502,7623	1976	yellow perch	S41,A25	5	0.23-0.42	0.30*	-	0
106	Kingfisher L.	1972	pickerel	S42,A26	89	0.04-0.33	0.14	0.30*	0
	5305,8950	1972	pike	S42,A26	16	0.07-0.30	0.18*	0.28	0
107	Kioshkokwi L.	1976	whitefish	S41,A25	8	0.16-0.73	0.39*	-	25
	4605,7853								
108	Klotz Lake	1976	pickerel	S42,A27	10	0.33-0.59	0.49	0.51	40
	4948,8552	1976	pike	S42,A27	12	0.26-1.50	0.67*	0.80*	58
109	Koshlong Lake	1976	lake trout	S41,A25	16	0.32-1.90	0.99*	0.89*	88
	4458,7829								

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
110	Lacloche Lake	1975	pickerel	S41,A25	32	0.34-1.60	0.92*	0.93*	88
	4610,8204	1975	pike	S41,A25	10	0.29-1.10	0.56	0.76	40
111	Lake Lamuir	1976	lake trout	S41,A25	11	0.14-1.20	0.50*	0.49*	46
	4550,7835								
112	Larder Lake	1976	lake trout	S41,A25	10	0.12-0.55	0.35*	0.42*	40
	4805,7938	1976	pike	S41,A25	10	0.16-0.55	0.34	0.42	10
		1976	whitefish	S41,A25	10	0.05-0.29	0.16	-	0
113	Larus Lake	1972	pickerel	S42,A26	98	0.20-0.91	0.48	0.56	43
	5117,9440	1972	pike	S42,A26	19	0.18-1.37	0.54*	0.58*	47
114	Lennan Lake	1976	lake trout	S42,A27	18	0.10-0.45	0.28*	0.34*	0
	5018,9412	1976	white sucker	S42,A27	25	0.02-0.07	0.04	-	0
115	Lindberg Lake	1972	pickerel	S42,A26	95	0.08-0.88	0.36	0.54	22
	5050,9110	1972	pike	S42,A26	19	0.17-1.18	0.66*	0.85*	63
116	Little Athelstane L.	1972	pike	S42,A26	12	0.14-0.26	0.18*	0.23*	0
	4845,9015								
117	Little Mose L.	1975	pickerel	S41,A25	17	0.13-0.64	0.26*	0.27*	12
	4908,8546	1975	white sucker	S41,A25	17	0.02-0.15	0.06	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
	Little Mose L. See also Mose Lake.	1975	yellow perch	S41,A25	13	0.03-0.14	0.07	-	0.
118	Lohi Lake 4623,8102	1976	brook trout	S41,A25	9	0.05-0.08	0.07*	-	0
119	Long Lake 4947,8632	1976	pickerel	S42,A27	19	0.20-0.72	0.32	0.70*	11
		1976	pike	S42,A27	17	0.25-1.15	0.71*	0.92	76
120	Lake Louisa 4528,7829	1976	lake trout	S41,A25	10	0.20-0.41	0.32*	0.59*	0
121	Makokibatan L. 5117,8720	1973	pickerel	S42,A26	32	0.16-0.59	0.31*	0.32*	9
122	Makoop Lake 5324,9050	1973	pickerel	S42,A26	29	0.05-0.47	0.18	0.39*	0
		1973	pike	S42,A26	6	0.14-0.36	0.27*	0.46	0
123	Malachi Lake 4953,9500	1976	cisco	S42,A27	114	0.07-0.29	0.18	-	0
		1976	pickerel	S42,A27	37	0.02-0.83	0.41	0.79	30
		1976	pike	S42,A27	17	0.18-1.38	0.52*	0.60*	29
124	Mameigwess L. 5235,8750	1972	pike	S42,A26	39	0.07-0.51	0.20*	0.14*	3

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
125	Mameigwess L. 4934,9149	1976	whitefish S42,A27	13	0.05-0.11	0.07*	-	0
126	Mamiegowish L. 5147,9015	1973	pickerel S42,A26	26	0.07-0.38	0.20*	0.21*	0
		1973	pike S42,A26	5	0.10-0.25	0.18	0.24	0
127	Lower Manitou 4915,9300	1972	lake trout S42,A26	12	0.22-0.79	0.41*	0.40*	17
		1972	pike S42,A26	14	0.21-0.49	0.32	0.30	0
128	Manitou Lake 4545,8200	1975	lake trout S41,A25	35	0.08-0.54	0.24*	0.28*	6
129	Marshall Lake 5025,8730	1972	pickerel S42,A26	61	0.22-0.82	0.53*	0.66*	52
		1972	pike S42,A26	19	0.14-0.63	0.41	0.43	21
130	Mary Lake 4515,7915	1977	lake trout S41,A25	30	0.31-9.50	3.27*	2.77*	90
		1977	smallmouth bass "	10	0.88-2.70	1.28	-	100
		1977	smelt S41,A25	10	0.26-0.84	0.49	-	40
131	Mattagami Lake 4754,8135	1976	pickerel S41,A25	36	0.52-2.10	0.90	1.41*	100
		1976	pike S41,A25	14	0.60-2.40	1.26*	1.67	100
		1976	whitefish S41,A25	6	0.23-0.52	0.34	-	17
132	Mattagami R. 4845,8132	1975	pickerel S41,A25	113	0.21-1.30	0.42*	0.53*	17
		1975	pike S41,A25	21	0.16-0.98	0.42	0.50	24

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
	Mattagami R.	1975	yellow perch	S41,A25	15	0.15-0.68	0.35	-	13
16	Mattawa Lake 4942,9058	1972	pike	S42,A26	27	0.31-1.49	0.84*	0.82*	81
133	McCarthy Lake 4619,8228	1976	pickerel	S41,A25	10	1.00-2.10	1.48*	1.02*	100
134	McKenzie River 5014,8907	1971	lake trout	S42,A26	6	0.03-0.24	0.14	0.37	0
		1971	pike	S42,A26	29	0.04-0.71	0.22*	0.28*	10
135	McVicar Lake 5134,9124	1972	pickerel	S42,A26	98	0.29-1.31	0.57*	0.77*	58
136	Meggisi Lake 4917,9236	1977	lake trout	S41,A25	8	0.45-0.86	0.55*	-	38
137	Melchett Lake 5042,8702	1973	pickerel	S42,A26	87	0.29-1.06	0.68*	1.18*	76
30	Memesagamesing 4600,8000	1975	lake trout	S41,A25	6	1.00-4.80	2.73*	1.77	100
		1975	pickerel	S41,A25	34	0.58-3.30	1.75	1.42*	100
		1975	pike	S41,A25	5	0.77-1.60	1.20	-	100
		1975	smallmouth bass	"	19	0.36-1.50	0.76	-	84

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
138	Mesomikenda L.	1976	pickerel	S41,A25	45	0.40-2.90	1.00*	1.42*	96
	4740,8153	1976	pike	S41,A25	7	0.30-0.95	0.55	1.19	57
		1976	white sucker	S41,A25	9	0.04-0.47	0.17	-	0
139	Metionga Lake	1973	pickerel	S42,A26	107	0.18-1.48	0.54	0.72	48
	4943,9028	1973	pike	S42,A26	34	0.18-1.23	0.57*	0.92*	53
140	Lac des Milles	1972	pickerel	S42,A26	90	0.01-1.25	0.35*	0.37*	19
	4850,9030	1972	pike	S42,A26	28	0.08-0.72	0.32	0.38	14
141	Mindemoya Lake	1975	pickerel	S41,A25	106	0.04-0.54	0.16	0.28*	2
	4545,8213	1975	yellow perch	S41,A25	37	0.05-0.32	0.18*	-	0
142	Minisinakwa L.	1976	cisco	S41,A25	21	0.16-0.36	0.23	-	0
	4739,8144	1976	pickerel	S41,A25	51	0.20-2.40	0.83*	1.26*	88
		1976	pike	S41,A25	12	0.25-2.20	0.74	1.09	75
		1976	white sucker	S41,A25	10	0.08-0.38	0.22	-	0
143	Miniss Lake	1972	pickerel	S42,A26	68	0.34-1.36	0.77*	0.78*	84
	5048,9050								
144	Minnitaki Lake	1976	pickerel	S42,A27	29	0.25-1.20	0.52*	0.46*	38
	5002,9153								

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
145	Minnow Lake	1975	white sucker S41,A25	50	0.02-0.08	0.02	-	0
	4629,8057	1975	yellow perch S41,A25	14	0.02-0.05	0.03*	-	0
See also Nepahwin and Ramsey Lakes.								
146	Miskwabi Lake	1977	lake trout S41,A25	20	0.03-0.40	0.13*	0.22*	0
	4503,7819							
147	Misquamaebin L.	1973	pickerel S42,A26	24	0.11-0.47	0.22	0.38	11
	5330,9105	1973	pike S42,A26	9	0.18-0.53	0.29*	0.37*	0
148	Missisa Lake	1972	pickerel S42,A26	50	0.19-0.83	0.47*	0.41*	42
	5218,8512							
149	Mississagi R.	1976	pickerel S41,A25	10	0.07-0.32	0.16*	0.35*	0
	4610,8301							
150	Mississippi R.	1976	brown bullhead S41,A25	11	0.10-0.38	0.18	-	0
	4526,7616	1976	eel S41,A25	10	0.11-0.42	0.24	-	0
		1976	pickerel S41,A25	32	0.25-3.10	0.80*	0.93*	66
		1976	redhorse sucker "	11	0.17-1.20	0.53	-	54
		1976	smallmouth bass "	22	0.27-1.00	0.64	-	73
		1976	white sucker S41,A25	10	0.20-0.52	0.33	-	10
151	Moira Lake	1976	pickerel S41,A25	40	0.68-1.80	1.18*	1.83*	100
	4430,7727	1976	pike S41,A25	7	0.58-0.99	0.72	0.87	100
		1976	smallmouth bass "	25	0.74-1.40	0.95	-	100

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
152	Mojikit Lake	1976	pickerel	S42,A27	81	0.11-1.00	0.46	0.60	36
	5040,8815	1976	pike	S42,A27	36	0.26-3.22	0.63*	0.75*	47
153	Moose River	1976	cisco	S41,A25	6	0.10-0.20	0.13*	-	0
	5120,8024								
117	Mose Lake	1975	pickerel	S41,A25	18	0.07-0.58	0.26*	0.38*	11
	4909,8545	1975	white sucker	S41,A25	20	0.01-0.17	0.05	-	0
		1975	yellow perch	S41,A25	12	0.03-0.13	0.07	-	0
30	Mud Lake	1976	pike	S41,A25	25	0.59-1.70	0.95*	1.36*	100
	4601,8000								
154	Muskeg Lake	1974	pike	S42,A26	85	0.05-0.70	0.29*	0.41*	14
	4900,9002								
155	Muskoka Lake	1976	lake trout	S41,A25	24	1.80-3.90	2.96*	2.58*	100
	4500,7925	1976	rock bass	S41,A25	6	0.44-0.99	0.71	-	83
156	Muskrat Lake	1977	lake trout	S41,A25	10	0.26-1.20	0.59	0.54	30
	4540,7655	1977	pike	S41,A25	6	0.29-1.10	0.61*	1.39*	33
		1977	smelt	S41,A25	22	0.22-0.84	0.39	-	18
157	Nabakwasi Lake	1976	pickerel	S41,A25	10	0.32-1.10	0.59	0.72*	60
	4733,8127	1976	pike	S41,A25	5	0.21-1.00	0.67*	3.11	80
		1976	white sucker	S41,A25	16	0.05-0.28	0.14	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
158	Namakan Lake	1976	pickerel	S42,A27	27	0.39-1.45	0.67	0.98	81
	4827,9235	1976	pike	S42,A27	27	0.33-1.65	0.70*	0.72*	81
45	Nepahwin Lake	1975	yellow perch	S41,A25	10	0.02-0.04	0.03*	-	0
	4627,8058								
159	Night Hawk Lake	1976	mooneye	S41,A25	10	0.35-0.86	0.63*	-	80
	4828,8058								
	Nipigon Bay - See data point 236.								
160	Lake Nipigon	1976	cisco	S42,A27	5	0.11-0.16	0.13*	-	0
	4950,8830								
161	Lake Nipissing	1976	brown bullhead	S41,A25	9	0.12-0.34	0.20	-	0
	4617,8000	1976	cisco	S42,A27	25	0.08-0.15	0.11	-	0
		1976	pickerel	S41,A25	19	0.24-0.69	0.45*	0.78*	42
		1976	pike	S41,A25	20	0.15-0.64	0.28	0.49	10
		1976	white bass	S41,A25	10	0.25-0.48	0.39	-	0
		1976	whitefish	S42,A27	18	0.03-0.16	0.07	-	0
		1976	yellow perch	S41,A25	10	0.13-0.42	0.31	-	0
162	N. Channel #1	1976	pickerel	S41,A25	212	0.11-0.92	0.38	0.43*	16
	4600,8300	1976	pike	S41,A25	9	0.30-0.64	0.52*	0.59	67
		1976	yellow perch	S41,A25	157	0.02-0.80	0.26	-	3
	4612,8239	1976	pickerel	S41,A25	10	0.11-0.51	0.22	0.39	10

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
163	N. Channel #2	1975	pike	S41,A25	10	0.17-0.45	0.25	-	0
	(Spanish R.)	1975	white sucker	S41,A25	10	0.03-0.14	0.06	-	0
	4611,8219	1975	yellow perch	S41,A25	7	0.16-0.38	0.27*	-	0
164	Obonga Lake	1972	pickerel	S42,A26	12	0.27-1.47	0.82*	0.93	92
	4957,8922	1972	pike	S42,A26	12	0.36-1.30	0.61	0.74*	58
165	Ogoki Lake	1973	pickerel	S42,A26	101	0.17-1.11	0.58	0.71*	59
	5050,8710	1973	pike	S42,A26	16	0.13-1.45	0.77*	0.71	69
		1973	white sucker	S42,A26	35	0.09-0.32	0.18	-	0
166	Ogoki River	1973	pickerel	S42,A26	52	0.55-1.39	0.82*	0.88*	100
	5138,8557								
167	Onamakawash L.	1972	pickerel	S42,A26	21	0.29-1.56	0.92*	1.36*	76
	5018,8935	1972	pike	S42,A26	20	0.30-1.55	0.87	1.05	85
168	Onaman Lake	1972	pickerel	S42,A26	94	0.22-1.11	0.65*	0.96*	78
	5008,8726								
169	Lake Ontario #1	1976	smelt	S41,A25	19	0.13-0.24	0.19	-	0
	(Burlington Bay)								
	4318,7948								
	(Credit River)	1975	brown bullhead	S41,A25	25	0.06-0.76	0.21	-	8
	4333,7935	1975	coho salmon	S41,A25	36	0.18-0.38	0.27	-	0

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
	Lake Ontario #1	1975	pike	S41,A25	8	0.13-0.52	0.27	0.38*	13
	(Credit River)	1975	white bass	S41,A25	7	0.05-0.98	0.25	-	14
		1975	white sucker	S41,A25	60	0.02-0.76	0.20	-	7
		1975	yellow perch	S41,A25	16	0.09-0.97	0.34*	-	6
170	(Port Dalhousie)	1976	coho salmon	S41,A25	10	0.15-0.23	0.19	-	0
	4312,7916	1976	smelt	S41,A25	10	0.09-0.21	0.13	-	0
171	(Toronto Island)	1975	alewife	S41,A25	6	0.08-0.11	0.09	-	0
	4337,7923	1975	pike	S41,A25	9	0.10-0.63	0.32*	-	22
		1975	white perch	S41,A25	11	0.06-0.38	0.18	-	0
		1975	white sucker	S41,A25	48	0.06-0.48	0.17	-	0
		1975	yellow perch	S41,A25	26	0.07-0.48	0.19	-	0
172	Lake Ontario #2	1975	black crappie	S41,A25	6	0.11-0.39	0.27	-	0
	(Rouge River)	1975	brown bullhead	S41,A25	64	0.09-1.10	0.35	-	22
	4348,7907	1975	carp	S41,A25	11	0.05-0.52	0.23	-	9
		1975	gizzard shad	S41,A25	6	0.01-0.32	0.07	-	0
		1975	pike	S41,A25	8	0.19-1.40	0.49	0.34*	-
		1975	rock bass	S41,A25	7	0.27-1.20	0.63	-	57
		1975	white bass	S41,A25	19	0.11-1.10	0.43	-	32
		1975	white perch	S41,A25	11	0.25-1.40	0.66*	-	64
		1975	white sucker	S41,A25	27	0.05-0.36	0.16	-	0
		1975	yellow perch	S41,A25	57	0.19-0.94	0.35	-	11
	Lake Ontario #2	1976	carp	S42,A27	8	0.25-0.40	0.35	-	0
173	Lake Ontario #3	1976	brown bullhead	S42,A27	9	0.07-0.13	0.10	-	0
		1976	carp	S42,A27	12	0.15-0.45	0.27*	-	0
		1976	pike	S42,A27	13	0.14-0.35	0.24	0.28*	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
174	Lake Ontario #3	1976	rock bass	S42,A27	7	0.16-0.35	0.24	-	0
		1976	smelt	S42,A27	8	0.14-0.24	0.20	-	0
		1976	sunfish	S42,A27	6	0.08-0.17	0.11	-	0
		1976	yellow perch	S42,A27	5	0.10-0.13	0.12	-	0
	Lake Ontario #4	1975	channel	S41,A25	7	0.04-1.10	0.47	-	43
	(Bay of Quinte)		catfish						
	4409,7715	1975	eel	S41,A25	11	0.04-0.61	0.32	-	36
		1975	largemouth bass	"	5	0.08-0.88	0.40	-	40
		1975	pickerel	S41,A25	15	0.07-1.50	0.34	0.33	13
		1975	pike	S41,A25	12	0.23-0.79	0.40	0.32	8
		1975	smallmouth bass	"	10	0.09-1.10	0.52	-	50
		1975	white perch	S41,A25	8	0.11-0.25	0.15	-	0
		1975	yellow perch	S41,A25	5	0.27-0.35	0.30	-	0
		1976	smallmouth bass	"	20	0.03-0.95	0.36	-	25
	Lake Ontario #4	1976	bowfin	S42,A27	25	0.23-1.13	0.51	-	48
		1976	brown bullhead	S42,A27	12	0.04-0.17	0.11	-	0
		1976	carp	S42,A27	18	0.07-0.60	0.21	-	6
		1976	catfish	S42,A27	23	0.22-0.64	0.43	-	35
		1976	crappie	S42,A27	7	0.07-0.14	0.12	-	0
		1976	pickerel	S42,A27	9	0.15-1.51	0.48	0.41*	22
		1976	pike	S42,A27	25	0.12-0.50	0.23	0.36	0
		1976	rock bass	S42,A27	8	0.25-0.48	0.34	-	0
		1976	sheepshead	S42,A27	23	0.13-1.58	0.56*	-	35
		1976	sunfish	S42,A27	8	0.06-0.27	0.16	-	0
	1976	white perch	S42,A27	7	0.15-0.25	0.19	-	0	

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
	Lake Ontario #4	1976	white sucker	S42,A27	15	0.05-0.22	0.13	-	0
		1976	yellow perch	S42,A27	8	0.15-0.27	0.19	-	0
175	Lake Ontario #5	1975	black crappie	S41,A25	25	0.12-0.60	0.25	-	4
	(Brockville)	1975	brown bullhead	S41,A25	148	0.08-0.34	0.20	-	0
	4435,7541	1975	largemouth bass	"	8	0.18-0.91	0.51	-	38
		1975	pike	S41,A25	20	0.25-2.42	0.89*	0.83*	75
		1975	pumpkinseed	S41,A25	60	0.12-0.50	0.23	-	2
		1975	white sucker	S41,A25	39	0.17-0.50	0.30	-	3
		1975	yellow perch	S41,A25	143	0.18-0.70	0.32	-	6
	Lake Ontario #5	1976	carp	S42,A27	25	0.17-0.45	0.30	-	0
		1976	sunfish	S42,A27	7	0.09-0.20	0.14	-	0
176	Lake Ontario #6	1976	carp	S42,A27	10	0.18-0.37	0.26*	-	0
	Lake Ontario #7								
	4508,7430	See Lake St. Francis (Data point 203).							
177	Opakopa Lake	1972	pickerel	S42,A26	67	0.09-0.40	0.16*	0.16*	0
	5254,9132								
178	Opasatika Lake	1974	pickerel	S41,A25	70	0.22-1.40	0.75*	1.11*	74
	4904,8306	1974	pike	S41,A25	58	0.14-1.60	0.56	-	45
179	Ottawa River	1977	pike	S41,A25	25	0.22-1.90	0.91*	0.68*	80
	4559,7720								

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
174	Lake Ontario #3	1976	rock bass	S42,A27	7	0.16-0.35	0.24	-	0
		1976	smelt	S42,A27	8	0.14-0.24	0.20	-	0
		1976	sunfish	S42,A27	6	0.08-0.17	0.11	-	0
		1976	yellow perch	S42,A27	5	0.10-0.13	0.12	-	0
	Lake Ontario #4	1975	channel	S41,A25	7	0.04-1.10	0.47	-	43
	(Bay of Quinte)		catfish						
	4409,7715	1975	eel	S41,A25	11	0.04-0.61	0.32	-	36
		1975	largemouth bass	"	5	0.08-0.88	0.40	-	40
		1975	pickerel	S41,A25	15	0.07-1.50	0.34	0.33	13
		1975	pike	S41,A25	12	0.23-0.79	0.40	0.32	8
		1975	smallmouth bass	"	10	0.09-1.10	0.52	-	50
		1975	white perch	S41,A25	8	0.11-0.25	0.15	-	0
		1975	yellow perch	S41,A25	5	0.27-0.35	0.30	-	0
		1976	smallmouth bass	"	20	0.03-0.95	0.36	-	25
	Lake Ontario #4	1976	bowfin	S42,A27	25	0.23-1.13	0.51	-	48
		1976	brown bullhead	S42,A27	12	0.04-0.17	0.11	-	0
		1976	carp	S42,A27	18	0.07-0.60	0.21	-	6
		1976	catfish	S42,A27	23	0.22-0.64	0.43	-	35
		1976	crappie	S42,A27	7	0.07-0.14	0.12	-	0
		1976	pickerel	S42,A27	9	0.15-1.51	0.48	0.41*	22
		1976	pike	S42,A27	25	0.12-0.50	0.23	0.36	0
		1976	rock bass	S42,A27	8	0.25-0.48	0.34	-	0
		1976	sheepshead	S42,A27	23	0.13-1.58	0.56*	-	35
		1976	sunfish	S42,A27	8	0.06-0.27	0.16	-	0
	1976	white perch	S42,A27	7	0.15-0.25	0.19	-	0	

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
	Lake Ontario #4	1976	white sucker S42,A27	15	0.05-0.22	0.13	-	0
		1976	yellow perch S42,A27	8	0.15-0.27	0.19	-	0
175	Lake Ontario #5	1975	black crappie S41,A25	25	0.12-0.60	0.25	-	4
	(Brockville)	1975	brown bullhead S41,A25	148	0.08-0.34	0.20	-	0
	4435,7541	1975	largemouth bass "	8	0.18-0.91	0.51	-	38
		1975	pike S41,A25	20	0.25-2.42	0.89*	0.83*	75
		1975	pumpkinseed S41,A25	60	0.12-0.50	0.23	-	2
		1975	white sucker S41,A25	39	0.17-0.50	0.30	-	3
		1975	yellow perch S41,A25	143	0.18-0.70	0.32	-	6
	Lake Ontario #5	1976	carp S42,A27	25	0.17-0.45	0.30	-	0
		1976	sunfish S42,A27	7	0.09-0.20	0.14	-	0
176	Lake Ontario #6	1976	carp S42,A27	10	0.18-0.37	0.26*	-	0
	Lake Ontario #7							
	4508,7430	See Lake St. Francis (Data point 203).						
177	Opakopa Lake	1972	pickerel S42,A26	67	0.09-0.40	0.16*	0.16*	0
	5254,9132							
178	Opasatika Lake	1974	pickerel S41,A25	70	0.22-1.40	0.75*	1.11*	74
	4904,8306	1974	pike S41,A25	58	0.14-1.60	0.56	-	45
179	Ottawa River	1977	pike S41,A25	25	0.22-1.90	0.91*	0.68*	80
	4559,7720							

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
Owen Sound - See data point 68.									
180	Ozhiski Lake	1972	pickerel	S42,A26	98	0.19-0.77	0.44	0.53*	23
	5201,8830	1972	pike	S42,A26	11	0.17-1.11	0.72*	0.96	82
181	Paguchi Lake	1976	whitefish	S42,A27	31	0.02-0.12	0.06*	-	0
	4934,9132								
182	Paudash Lake	1976	pickerel	S41,A25	9	0.21-0.75	0.42*	0.47*	33
	4458,7803								
183	Pelican Lake	1972	pickerel	S42,A26	48	0.11-0.69	0.32	0.42	13
	5007,9158	1972	pike	S42,A26	52	0.25-1.22	0.61*	0.68*	71
184	Pelicanpouch L.	1976	pickerel	S42,A27	65	0.11-0.46	0.23*	0.50*	0
	4952,9452	1976	white sucker	S42,A27	40	0.05-0.24	0.11	-	0
		1976	yellow perch	S42,A27	11	0.04-0.24	0.15	-	0
185	Penassi Lake	1972	pickerel	S42,A26	32	0.16-1.44	0.58*	1.13*	47
	4957,9111	1972	pike	S42,A26	17	0.25-1.19	0.51	0.67	47
186	Perrault Lake	1972	pickerel	S42,A26	24	0.13-0.49	0.26	0.28	0
	5018,9308	1972	pike	S42,A26	49	0.14-0.84	0.44*	0.31*	33

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
187	Petawanga Lake	1972	pickerel	S42,A26	36	0.27-1.07	0.48	0.54	28
	5129,8825	1972	pike	S42,A26	5	0.24-0.70	0.52*	0.66*	60
188	Peterlong Lake	1976	pickerel	S41,A25	9	0.90-1.70	1.31*	-	100
	4805,8125								
189	Pickle Lake	1975	white sucker	S41,A25	7	0.05-0.11	0.08*	-	0
	5128,9015								
	See also Ponsford Lake.								
190	Pierce Lake	1971	pike	S42,A26-100		0.09-0.62	0.23*	0.22*	2
	5409,9256								
189	Ponsford Lake	1976	pike	S41,A25	6	0.13-0.27	0.22*	-	0
	5130,9020	1976	white sucker	S41,A25	12	0.07-0.25	0.14	-	0
191	Porcupine Lake	1976	pike	S41,A25	18	0.16-1.00	0.49*	0.51*	44
	4829,8111	1976	white sucker	S41,A25	10	0.04-0.23	0.14	-	0
	Port Dalhousie - See data point 170.								
55	Pratt River	1976	pickerel	S41,A25	16	0.11-0.44	0.26	0.36	0
	4857,8230	1976	pike	S41,A25	21	0.11-0.84	0.34*	0.32*	19
192	Press Lake	1971	pickerel	S42,A26	86	0.25-1.88	0.83*	1.22*	83
	4947,9128	1971	pike	S42,A26	79	0.24-1.78	0.76	0.92	81

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
Prisque Bay - See data point 67.									
Quinte (Bay of) - See data point 174.									
Raft Island - See data point 67.									
193	Rainy Lake	1977	pickerel	S41,A25	21	0.26-1.70	0.59	-	52
	4838,9255	1977	pike	S41,A25	50	0.44-1.50	0.88*	0.70*	96
145	Ramsey Lake	1975	pike	S41,A25	8	0.04-0.20	0.11*	0.13*	0
	4629,8057	1975	yellow perch	S41,A25	30	0.02-0.02	0.02	-	0
194	Red Lake	1971	lake trout	S42,A26	19	0.23-0.56	0.36	0.36	11
	5100,9400	1971	pickerel	S42,A26	100	0.16-1.19	0.33	0.69*	11
		1971	pike	S42,A26	15	0.18-1.08	0.53*	0.61	47
195	Red Cedar Lake	1976	cisco	S41,A25	9	0.06-0.66	0.33	-	33
	4645,7954	1976	pickerel	S41,A25	13	0.25-1.70	0.88*	1.09*	77
196	Restoule Lake	1976	pickerel	S41,A25	26	0.85-2.30	1.55*	2.20*	100
	4603,7946	1976	whitefish	S41,A25	6	0.44-0.62	0.53	-	50
197	Rideau River	1976	black crappie	S41,A25	12	0.19-0.54	0.33	-	17
	4527,7542	1976	brown bullhead	S41,A25	21	0.06-0.18	0.10	-	0
		1976	muskie	S41,A25	7	0.18-0.48	0.37	-	0
		1976	pickerel	S41,A25	48	0.23-1.70	0.71*	0.80*	56
		1976	pike	S41,A25	13	0.17-0.70	0.38	0.59	23
		1976	smallmouth bass	"	11	0.29-1.20	0.55	-	46

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
62	Robin Lake 4603,7958	1976	largemouth bass	S41,A25	21	0.28-1.50	0.91*	-	86
198	Lake Rosseau 4510,7935	1977	lake trout	S41,A25	30	0.32-1.70	0.97*	1.00*	93
		1977	smelt	S41,A25	5	0.12-0.29	0.18	-	0
Rouge River - See data point 172.									
199	Round Lake 4801,8002	1976	pickerel	S41,A25	10	0.50-1.10	0.69*	0.64*	100
200	Rowan Lake 4918,9332	1972	whitefish	S42,A26	8	0.06-0.11	0.09*	-	0
87	Rudge Lake 4842,9044	1972	lake trout	S42,A26	6	0.17-0.37	0.26*	0.34*	0
201	Ryckman Lake 4858,9259	1976	pike	S42,A27	8	0.65-1.32	0.92*	0.92*	100
See also Winkle Lake.									
202	Lake St. Clair 4228,8240	1976	bluegill	S41,A25	7	0.47-0.80	0.63	-	71
		1976	black crappie	S41,A25	48	0.22-2.00	0.69	-	63
		1976	carp	S41,A25	104	0.16-1.50	0.79	-	76
		1976	channel catfish	"	55	0.35-1.89	0.77	-	84

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
	Lake St. Clair	1976	largemouth bass	S41,A25 16	0.89-2.10	1.34	-	100
		1976	pickerel	S41,A25 246	0.11-3.00	0.93	0.87*	66
		1976	pike	S41,A25 50	0.20-3.80	1.64*	1.16	92
		1976	rock bass	S41,A25 77	0.17-2.20	1.05	-	87
		1976	smallmouth bass	" 9	0.24-3.67	1.19	-	93
		1976	white bass	S41,A25 65	0.10-2.03	0.93	-	79
		1976	white sucker	S41,A25 11	0.06-1.90	0.83	-	70
		1976	yellow perch	S41,A25 14	0.11-2.86	0.98	-	71
203	L. St. Francis	1976	brown bullhead	S42,A27 9	0.10-0.23	0.15	-	0
	4508,7425	1976	pickerel	S41,A25 19	0.60-3.40	1.32*	0.93*	100
		1976	white sucker	S41,A25 15	0.20-0.79	0.51	-	53
204	L. St. Joseph	1976	pickerel	S41,A25 17	0.10-0.75	0.22	-	12
	5105,9035	1976	pike	S41,A25 5	0.19-0.77	0.36*	0.59*	20
		1976	white sucker	S41,A25 8	0.06-0.25	0.12	-	0
205	St. Lawrence R.	1975	pike	S41,A25 32	0.25-2.42	0.79*	0.73*	-
	4520,7358							
206	Lake St. Peter	1976	lake trout	S41,A25 10	0.12-1.80	0.81*	0.75*	50
	4519,7802	1976	lake trout	S41,A25 7	0.26-2.10	0.55	0.97	14
207	St. Raphael L.	1972	pickerel	S42,A26 118	0.27-1.57	0.75	0.71*	81
	5043,9107	1972	pike	S42,A26 41	0.58-2.03	1.13*	1.08	100

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
208	Sand Lake	1976	pickerel	S41,A25	37	0.14-1.10	0.44	0.73	32
	5005,9439	1976	pike	S41,A25	27	0.21-1.20	0.55	0.53*	59
		1976	sauger	S41,A25	9	0.44-1.80	0.78*	-	67
		1976	smallmouth bass	"	6	0.14-0.71	0.43	-	50
		1976	white sucker	S41,A25	10	0.03-0.35	0.11	-	0
		1976	yellow perch	S41,A25	10	0.10-0.46	0.22	-	0
209	Sandy Lake #1	1976	pike	S41,A25	15	0.37-1.00	0.64*	0.95*	80
	Sandy Lake #2	1976	pike	S41,A25	15	0.30-0.86	0.57	0.71	53
	4607,8002								
210	Santoy Lake	1977	pike	S41,A25	18	0.50-2.70	1.30*	1.04*	100
	4852,8653	1977	white sucker	S41,A25	12	0.17-0.50	0.27	-	8
		1977	whitefish	S41,A25	17	0.08-0.60	0.26	-	12
70	Sasaginaga Lake	1976	cisco	S41,A25	6	0.14-0.22	0.18*	-	0
	4724,7942								
	Saugeen - See data point 84.								
211	Savant Lake	1976	pickerel	S42,A27	66	0.14-1.03	0.52*	0.86*	45
	5030,9025								
212	Savoy Lake	1976	pickerel	S42,A27	61	0.01-0.24	0.13	0.32	0
	4916,9100	1976	pike	S42,A27	17	0.09-0.52	0.24*	0.47*	6
		1976	white sucker	S42,A27	19	0.03-0.39	0.13	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
213	Secord Lake 4711,8152	1976	brook trout	S41,A25	10	0.04-0.06	0.05*	-	0
Seguin River - See data point 67.									
214	Seseganaga L. 5000,9028	1972	pickerel	S42,A26	100	0.09-1.44	0.54*	0.75*	53
215	Sesekinika L. 4811,8014	1976	pickerel	S41,A25	10	0.16-0.46	0.28*	0.40*	0
		1976	pike	S41,A25	9	0.08-0.42	0.23	0.31	0
216	Lac Seul 5020,9216	1975	pickerel	S42,A26	33	0.22-1.13	0.60	0.64*	55
		1975	pike	S42,A26	12	0.26-1.72	0.84*	0.90	83
217	Shabumeni L. 5125,9230	1972	pickerel	S42,A26	95	0.19-1.83	0.80*	1.59*	77
		1972	pike	S42,A26	8	0.17-1.33	0.77	1.40	75
99	Shack Lake 4857,8231	1976	pickerel	S41,A25	13	0.31-1.00	0.64*	0.83*	69
		1976	pike	S41,A25	17	0.26-0.71	0.38	0.39	12
218	Sharpstone L. 5202,9457	1973	pickerel	S42,A26	14	0.17-1.02	0.43	0.64*	29
		1973	pike	S42,A26	5	0.49-0.93	0.65*	0.66	60
219	Shawanabis L. 5015,8929	1972	pickerel	S42,A26	24	0.40-1.90	0.76	0.95	79
		1972	pike	S42,A26	21	0.32-1.67	0.93*	1.17*	95

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
220	Shikag Lake	1973	pickerel	S42,A26 123	0.09-1.25	0.44	0.61	30
	4945,9045	1973	pike	S42,A26 21	0.13-1.51	0.68*	0.83*	57
47	Silent Lake	1976	lake trout	S41,A25 15	0.06-0.92	0.24*	0.39*	7
	4455,7804							
221	Lake Simcoe	1976	pickerel	S41,A25 50	0.18-1.70	0.98*	0.44*	84
	4425,7920							
222	Skeleton Lake	1977	lake trout	S41,A25 30	0.15-0.89	0.37	0.44	20
	4752,7939	1977	pickerel	S41,A25 28	0.11-1.40	0.40*	0.40*	10
	See also Wendigo Lake.							
223	Smoke Lake	1977	lake trout	S41,A25 10	0.05-0.54	0.22*	0.53*	10
	4531,7841							
224	Smoothrock L.	1972	pike	S42,A26 79	0.11-1.41	0.62*	0.79*	54
	5030,8930							
209	Snigisi Lake	1976	largemouth	S41,A25 9	0.32-0.64	0.44	-	33
	4603,7959		bass					
		1976	pike	S41,A25 24	0.24-1.50	0.54*	0.68*	29
225	Sowden Lake	1972	pickerel	S42,A26 126	0.12-2.24	0.89	1.36	87
	4932,9112	1972	pike	S42,A26 32	0.45-2.13	1.31*	1.57*	97

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
Spanish River - See data point 163.									
226	Spoonbill Lake 5144,9454	1973	pickerel	S42,A26	12	0.15-1.13	0.50*	1.38*	33
227	Steep Rock Lake 4848,9140	1975	pickerel	S42,A26	20	0.14-0.82	0.36*	0.37*	20
228	Stoco Lake 4428,7717	1976	pickerel	S41,A25	16	0.48-1.10	0.70*	0.80*	94
		1976	pike	S41,A25	12	0.20-0.81	0.41	0.45	33
229	Stony Lake 4433,7806	1977	burbot	S41,A25	19	0.04-0.47	0.32	-	0
		1977	cisco	S41,A25	12	0.08-0.37	0.21	-	0
		1977	pickerel	S41,A25	8	0.12-0.68	0.39*	0.82*	25
230	Stork Lake 5240,9415	1972	pickerel	S42,A26	99	0.20-1.28	0.53	0.77	42
		1972	pike	S42,A26	100	0.21-1.43	0.64*	0.59*	69
231	Stout Lake 5208,9435	1973	pickerel	S42,A26	102	0.03-0.85	0.25	0.33	3
		1973	pike	S42,A26	9	0.30-0.89	0.53*	0.71*	33
232	Sturgeon Lake 5000,9045	1976	pickerel	S42,A27	31	0.13-0.98	0.26*	0.48*	3
		1976	white sucker	S42,A27	22	0.05-0.31	0.16	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
233	Sullivan Lake 4910,9335	1976	lake trout S42,A27	6	0.29-0.84	0.53*	0.54*	33
234	L. Superior #1 (Thunder Bay) 4820,8910	1976 1976 1976	lake trout white sucker whitefish S42,A27 S42,A27 S42,A27	9 13 9	0.14-0.46 0.04-0.16 0.02-0.16	0.31* 0.10 0.07	0.61* - -	0 0 0
235	L. Superior #2 (Black Bay) 4835,8830	1976 1976 1976 1976 1976 1976	lake trout sauger white sucker whitefish whitefish yellow perch S42,A27 S42,A27 S42,A27 S42,A27 S42,A27 S42,A27	8 49 12 19 8 12	0.09-0.24 0.23-1.28 0.01-0.03 0.01-0.07 0.02-0.02 0.07-0.16	0.15 0.41* 0.02 0.03 0.02 0.13	0.25* - - - - -	0 10 0 0 0 0
236	L. Superior #3 (Nipigon Bay) 4855,8800	1976 1976	lake trout whitefish S42,A27 S42,A27	8 8	0.08-0.45 0.01-0.04	0.19* 0.03	0.32* -	0 0
237	L. Superior #4 4825,8730	1976	lake trout S42,A27	44	0.11-1.32	0.47*	0.48*	30
238	L. Superior #5 4844,8625	1976 1976 1976 1976	lake trout smelt white sucker whitefish S41,A25 S41,A25 S41,A25 S41,A25	73 7 24 18	0.16-1.90 0.08-0.48 0.07-2.10 0.08-2.10	0.82 0.20 0.79 0.86*	0.71* - - -	74 0 75 67
239	L. Superior #7 4700,8845	1976 1976	whitefish whitefish S42,A27 S42,A27	6 6	0.05-0.07 0.06-0.14	0.06 0.09*	- -	0 0
240	Talon Lake 4618,7905	1975 1975	burbot cisco S41,A25 S41,A25	20 13	0.40-1.80 0.17-0.69	0.96 0.42	- -	95 31

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
	Talon Lake	1975	lake trout S41,A25	13	0.20-0.67	0.41	0.46	23
		1975	pickerel S41,A25	37	0.37-2.10	1.01*	1.20*	95
		1975	smallmouth bass "	19	0.35-0.69	0.50	-	53
		1975	whitefish S41,A25	9	0.24-0.51	0.37	-	22
241	Tank Lake 4537,7913	1976	brook trout S41,A25	24	0.02-0.05	0.04*	-	0
242	Tay River 4453,7607	1976	black crappie S41,A25	5	0.26-1.10	0.63*	-	60
		1976	largemouth bass "	10	0.15-0.52	0.34	-	10
243	Lake Temagami 4700,8005	1976	cisco S41,A25	9	0.01-0.07	0.04	-	0
		1976	lake trout S41,A25	5	0.05-0.08	0.06	-	0
		1976	pickerel S41,A25	7	0.04-0.59	0.26*	0.28*	14
		1976	whitefish S41,A25	11	0.01-0.08	0.04	-	0
244	Thames River 4235,8150	1976	pickerel S41,A25	28	0.37-3.10	1.25*	0.99*	96
245	Thompson Lake 4355,7929	1977	rainbow trout S41,A25	28	0.04-0.13	0.08*	-	0
	Thornbury - See data point 68.							
246	Three Mile L. 4510,7927	1977	pickerel S41,A25	20	0.29-1.40	0.67*	0.92*	55

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
---------------	----------	--------------------	---	---	---------------------------	---------------------------	-------------------	---------------------------------

Thunder Bay - See data point 234.

247	L. Timiskaming	1976	cisco	S41,A25	5	0.14-0.30	0.23	-	0
	4652,7915	1976	pickerel	S41,A25	7	0.41-1.50	0.80	1.34*	71
		1976	pike	S41,A25	6	0.47-1.10	0.65	0.73	50
		1976	sauger	S41,A25	5	0.48-1.30	0.87*	-	80
248	Tomiko Lake	1976	pickerel	S41,A25	33	0.71-1.80	1.15*	1.36*	100
	4632,7949	1976	smallmouth bass	"	6	0.72-1.50	1.03	-	100
		1976	white sucker	S41,A25	6	0.07-0.40	0.27	-	0

Toronto Island - See data point 171.

249	Trapnarrows L.	1972	pickerel	S42,A26	25	0.38-1.36	0.81*	0.74*	88
	4923,8732								
250	Trout Lake	1973	pike	S42,A26	11	0.19-0.55	0.34*	0.23*	9
	5115,9315								
251	Unexpected L.	1976	whitefish	S42,A27	6	0.07-0.11	0.08*	-	0
	5030,9352								
252	Upturned Root	1973	pickerel	S42,A26	35	0.19-0.88	0.37*	0.42*	14
	5150,9105								

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
57	Vernon Lake	1977	lake trout	S41,A25	30	0.49-10.0	4.49*	3.47*	98
	4520,7917	1977	smallmouth bass	"	20	0.25-3.60	0.92	-	75
		1977	smelt	S41,A25	5	0.38-0.51	0.45	-	20
253	Victoria Lake	1976	pike	S41,A25	7	0.28-0.80	0.45*	1.14*	29
	4811,7953	1976	smallmouth bass	"	15	0.20-0.48	0.28	-	0
254	Wabakimi Lake	1973	pickerel	S42,A26	89	0.13-0.95	0.38	0.42	25
	5038,8945	1973	pike	S42,A26	42	0.09-1.24	0.62*	0.79*	52
255	Wabaskong Lake	1972	pickerel	S42,A26	100	0.12-0.77	0.27	0.39	8
	5026,9313	1972	pike	S42,A26	104	0.09-0.89	0.34*	0.31*	18
	See also Wine Lake.								
101	Warwick Lake	1973	pickerel	S42,A26	21	0.22-1.32	0.75*	0.89*	76
	5234,9344	1973	pike	S42,A26	9	0.25-1.11	0.54	0.65	44
256	Watson Lake	1976	brook trout	S41,A25	12	0.03-0.05	0.04*	-	0
	4748,8350								
257	Waweig Lake	1972	lake trout	S42,A26	15	0.21-1.60	0.49*	0.60*	27
	5008,8905	1972	pike	S42,A26	16	0.14-0.80	0.31	0.29	13
222	Wendigo Lake	1976	pickerel	S41,A25	10	0.21-1.10	0.40*	1.21*	30
	4752,7943	1976	pike	S41,A25	8	0.27-0.54	0.37	0.50	25

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
258	Weslemkoon L. 4502,7725	1977	lake trout S41,A25	20	0.12-0.51	0.29*	0.53*	5
259	West Lake 4356,7717	1971	brown bullhead S42,A26	5	0.04-0.24	0.12	-	0
		1971	white perch S42,A26	18	0.07-0.43	0.15	-	0
		1971	yellow perch S42,A26	26	0.18-0.73	0.42*	-	4
260	Whiteclay Lake 5053,8845	1973	pickerel S42,A26	60	0.44-1.35	0.83	0.93	93
		1973	pike S42,A26	23	0.49-2.33	1.05*	0.99*	91
261	Whitefish Lake 4813,9000	1972	pickerel S42,A26	25	0.06-0.51	0.32*	0.33*	4
262	Whitestone L. 5157,9157	1973	pickerel S42,A26	53	0.19-1.32	0.64*	0.79*	68
263	Whitewater L. 5048,8910	1972	pickerel S42,A26	97	0.34-1.72	0.93*	1.40	87
		1972	pike S42,A26	43	0.15-1.31	0.64	1.03*	58
264	Windigokan L. 4942,8751	1972	pickerel S42,A26	5	0.24-0.65	0.41	0.56*	20
		1972	pike S42,A26	9	0.22-0.94	0.52*	0.46	44
255	Wine Lake 5026,9319	1972	lake trout S42,A26	5	0.15-0.45	0.23	0.25	0
		1972	pickerel S42,A26	8	0.24-0.57	0.42	0.38	25
		1972	pike S42,A26	239	0.14-0.84	0.48*	0.41*	41

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
201	Winkle Lake 4901,9258	1976	pike	S42,A27	9	0.23-0.90	0.50*	0.66*	44
265	Wintering Lake 4943,9118	1972	pickerel	S42,A26	37	0.15-0.63	0.31	0.51	3
		1972	pike	S42,A26	30	0.09-0.95	0.33*	0.66*	7
266	Woman Lake 5112,9245	1972	lake trout	S42,A26	10	0.11-0.65	0.27	0.24	10
		1972	pickerel	S42,A26	56	0.33-1.39	0.63*	0.70	71
		1972	pike	S42,A26	120	0.10-2.17	0.61	0.55*	58
30	Woodcock Lake 4602,8004	1976	largemouth bass	S41,A25	8	0.33-0.99	0.67	-	75
		1976	pickerel	S41,A25	37	0.52-1.40	0.89*	1.19*	100
		1976	pike	S41,A25	17	0.31-1.20	0.62	-	77
267	Zionz Lake 5125,9152	1972	pickerel	S42,A26	98	0.20-1.18	0.46	0.59	28
		1972	pike	S42,A26	13	0.09-1.17	0.50*	0.69*	46

APPENDIX II

MERCURY IN WILDLIFE (MAMMALS, AQUATIC BIRDS AND
INVERTEBRATES) - DATA SHEETS

WILDLIFE (AQUATIC BIRDS)

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	MERCURY ANALYSIS			REFERENCE
				N	RANGE (ppm)	MEAN (ppm)	
1	Detroit River 4203,8309	Oct.-Nov., 1969	Scaup sp	10	0.03-0.80	0.26	R60
		Sept.,1970	Mallard	9	0.10-0.24	0.15	R60
		Sept.,1970	Green-Winged Teal	1	-	0.09	R60
		Sept.,1970	Blue-Winged Teal	7	0.30-0.75	0.45	R60
		Apr., 1970	Greater Scaup	2	0.70-0.94	0.82*	R60
		Apr., 1970	Lesser Scaup	14	0.40-0.90	0.61	R60
2	Lake Erie	1975	Herring Gull eggs A28	22	0.11-0.35	0.22*	R61
3	Lake Huron	1975	Herring Gull eggs S43,A28	20	0.13-0.50	0.25*	R61
4	James Bay 5110,7952	Fall, 1970	Blue Goose	4	0.01-0.03	0.02*	R60
5	Kapuskasing 4925,8226	Aug., 1970	Mallard	5	0.06-0.62	0.22*	R60
			Black Duck	9	0.06-0.26	0.13	R60
6	Lake Ontario	1975	Herring Gull eggs S43,A28	20	0.38-1.47	0.66*	R61
7	Ottawa River (near Thurso) 4536,7515	Sept.,1970	Mallard	3	0.01-0.61	0.23*	R60
			Black Duck	3	0.07-0.22	0.15	R60
8	Lake St. Clair 4233,8229	July, 1976	Mallard	pooled	0.08-0.40	0.24	R60
		Sept.,1970	Blue-Winged Teal	15	0.03-2.04	0.25	R60

WILDLIFE (AQUATIC BIRDS)

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE
					RANGE (ppm)	MEAN (ppm)	
	Lake St. Clair	July, 1976	Redhead	pooled	0.04-0.12	0.07	R60
		Oct., 1970	Greater Scaup	4	0.03-0.18	0.06	R60
		Nov., 1970	Lesser Scaup	1	-	0.59	R60
		1970	American Coot	5	0.10-0.92	0.37	R60
		Nov., 1970	Bufflehead	3	0.28-1.30	0.75	R60
		Nov., 1970	Scaup sp	5	0.16-0.28	0.23	R60
		April, 1970	Canvasback	5	0.77-2.10	1.5	R60
		April, 1970	Shoveler	1	-	0.14	R60
		Sept., 1970	Pintail	2	0.14-0.50	0.32	R60
		Sept., 1970	Black Duck	5	0.04-0.11	0.07	R60
9	Lake Superior	1975	Herring Gull eggs S43, A28	20	0.22-0.63	0.39*	R61

WILDLIFE (MAMMALS)

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE
					RANGE (ppm)	MEAN (ppm)	
1	Lake St. Clair 4233,8229	1976	Muskrat	16	<0.01-0.01	<0.01*	R60
2	St. Clair River 4233,8240	1969	Muskrat	15	0.04-0.69	0.42*	R60

WILDLIFE (INVERTEBRATES)

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE
					RANGE (ppm)	MEAN (ppm)	
1	Lake St. Clair 4233,8229	1976	Snapping Turtle	5	1.15-3.86	2.54*	R60

APPENDIX III

MERCURY IN AIR - DATA SHEETS

AIR

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE	
					RANGE (ng/m ³)	MEAN (ng/m ³)		
1	Balmerton (golf course) 5104,9341	July, 1975	ambient air	S4,A4	?	100-5080	1800*	R1
2	Cornwall (outside CIL property) 4502,7444	Aug., 1976	ambient air	S4,A4	270	75-1898	699	R8
	(inside CIL property)	Aug., 1976	ambient air	S4,A4	871	0-64270	15967*	R8
3	Dryden (City) 4947,9250	July, 1975	ambient air	S4,A4	?	0-3560	265*	R3
4	Marathon (airport) 4843,8623	May, 1976	ambient air	S4,A4	?	<10-20	<10	R4
	(near pulp mill)	May, 1976	ambient air	S4,A4	?	<10-7040	711*	R4

APPENDIX IV

MERCURY IN LAND VEGETATION AND AQUATIC PLANTS - DATA SHEETS

LAND VEGETATION

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE	
					RANGE (ppb)	MEAN (ppb)		
1	Balmerton 5104,9341	July, 1975	trembling aspen	Sl,A1	?	< 500	< 500*	R1
2	Cornwall(outside CIL property) 4502,7444	Aug., 1976	maple foliage (unwashed)	Sl,A1	31	70-15000	1753*	R2
			tomato fruit	Sl,A1	4	10-40	23	R2
			cucumber	Sl,A1	3	10-120	67	R2
			lettuce	Sl,A1	2	80-1800	940	R2
			beets	Sl,A1	1	-	20	R2
			beet greens	Sl,A1	1	-	410	R2
3	Dryden 4947,9250	July, 1975	trembling aspen	Sl,A1	9	50-1840	594*	R3
		Aug., 1972	moss	Sl,A1	6	72-3460	685	R3
4	Ingleside 4500,7500	Aug., 1976	tomato fruit	Sl,A1	1	-	20	R2
			cucumber	Sl,A1	1	-	20	R2
			lettuce	Sl,A1	1	-	10	R2
			beets	Sl,A1	1	-	20	R2
			beet greens	Sl,A1	1	-	30*	R2
5	Marathon (near pulp mill) 4843,8623	July, 1976	cow parsnip	Sl,A1	7	800-25700	5770*	R4
		Aug., 1975	trembling aspen	Sl,A1	4	140-590	325	R63

AQUATIC PLANTS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE
					RANGE (ppb)	MEAN (ppb)	
6	Lake St. Clair Goose Lake 4232,8231	July, 1976	Scirpus validus S2,A2	4	ND	70	R5
	Johnston Bay 4230,8230	July, 1976	Typha latifolia S2,A2	4	ND	146	R5
	Johnston Channel 4229,8230	July, 1976	Typha latifolia S2,A2	12	ND	142	R5
			Potamogeton crispus S2,A2	4	ND	850*	R5
			Nymphaea odorata S2,A2	4	ND	60	R5
			Nuphar advena S2,A2	4	ND	30	R5
	Johnston Marsh	July, 1976	Typha latifolia S2,A2	4	ND	145	R5
			Nymphaea odorata S2,A2	8	ND	45	R5
			Potamogeton crispus S2,A2	4	ND	120	R5
			Scirpus validus S2,A2	4	ND	90	R5
			Nuphar advena S2,A2	4	ND	40	R5
	Pottowatamie cut 4233,8111	July, 1976	Nymphaea odorata S2,A2	4	ND	37	R5
			Nuphar advena S2,A2	4	ND	28	R5
			Potamogeton crispus S2,A2	4	ND	90	R5

ND - No data available.

AQUATIC PLANTS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD		N	MERCURY ANALYSIS		REFERENCE
						RANGE (ppb)	MEAN (ppb)	
6	Lake St. Clair Seaway Island 4232,8238	Oct., 1974	Quill Weed	S3,A3	2	150-920	535	R6
	Walpole Island 4233,8229	Sept., 1975	Melilotus alba	S3,A3	3	< 20	< 20	R7
	Squirrel Island 4230,8233	Sept., 1975	Melilotus alba	S3,A3	3	< 20	< 20	R7
			Sporobolus cryptandruss	S3,A3	3	< 20	< 20	R7

APPENDIX V

MERCURY IN SEDIMENTS, SOILS, ORES AND ROCKS - DATA SHEETS

SEDIMENTS, SOILS, ORES and ROCKS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD		N	MERCURY ANALYSIS		REFERENCE
						RANGE (ppb)	MEAN (ppb)	
1	Ashigami Lake 4639,8034	1971	Sediment	Sl5,A7	1	-	121*	R18
2	Atikokan 4845,9137	1971	Shale and Volcanic Rock	A7	27	ND	60*	R18
3	Bearbrook 4527,7527	1974	Soil H	A9	1	-	120	R25
			Aeg	A9	1	-	22	R25
			Bgf	A9	1	-	18	R25
			Cg	A9	1	-	42	R25
			Arith. Mean	A9			51*	R25
	(See also Laplaine)							
4	Beardmore 4936,8757	1971	Shale and Volcanic Rock	A7	7	ND	122*	R18
5	Brookston 4357,8136	1974	Soil Ah	A9	1	-	100	R25
			Bg	A9	1	-	50	R25
			Cg	A9	1	-	36	R25
			Arith. Mean	A9			62*	R25
6	Carness Lake 4643,8130	1971	Sediment	Sl5,A7	1	-	182*	R18
	(See also Seal Lake)							

ND - No data available.

SEDIMENTS, SOILS, ORES and ROCKS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD			MERCURY ANALYSIS		REFERENCE
						N	RANGE (ppb)	MEAN (ppb)
7	Carp 4520,7601	1974	Soil Ap	A9	1	-	44	R25
			Bm	A9	1	-	20	R25
			Cg	A9	1	-	15	R25
			Arith. Mean	A9			26*	R25
8	Castor 4518,7532	1974	Soil Ah	A9	1	-	100	R25
			Bgf	A9	1	-	30	R25
			Ckg	A9	1	-	8	R25
			Arith. Mean	A9			46*	R25
9	Cobourg Harbour 4358,7310	May, 1976	Sediment 0-1' core	S27,A11	6	50-160	103	R40
			0-4" grab	S28,A11	6	50-180	108*	R40
10	Collingwood 4430,8013	1974	Sediment	S30,A10	3	84-189	146*	R45
11	Confederation Lake 5105,9244	1971	Sediment	S14,A7	1	-	38*	R18
56	Cornwall 4502,7444	Aug., 1976	Soil (top 0-5 cm)	S11,A10	33	40-5100	698	R2
12	Donald Lake 4648,8031	1971	Sediment	S15,A7	1	-	221*	R18
13	Dryden 4947,9250	July, 1975	Soil (top 0-5 cm)	S11,A10	18	50-1170	211*	R3

SEDIMENTS, SOILS, ORES and ROCKS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE	
					RANGE (ppb)	MEAN (ppb)		
14	Eastern Ontario 44-46°, 76-78°	May/June, 1976	Sediment	S29,A17	1254	ND	71*	R43
15	Lake Erie Inshore	Summer, 1971	Sediment	S36,A22	102	8-1881	287	R53
	Western Basin				34	484-2929	1622	R53
	Sandusky Basin				8	271-1810	710	R53
	Central Basin				85	56-1030	544	R53
	Eastern Basin				31	45-977	483	R53
	Lake Erie Total				259	8-2929	582*	R53
16	Foy Lake 4647,8115	1971	Sediment	S15,A7	1	-	266*	R18
17	Georgian Bay Inshore	1973	Sediment	S36,A21	76	ND	184	R65
	Nottawasaga Basin				14	ND	301	R65
	Owen Sound Trough				6	ND	65	R65
	Lion's Trough				2	ND	4800	R65
	Cabot Basin				4	ND	72	R65
	Flowerpot Basin				7	ND	75	R65
	French River Basin				3	ND	79	R65
	Parry Sound Basin				1	-	200	R65
	Georgian Bay Total				117	12-9500	257*	R56

ND - No data available.

SEDIMENTS, SOILS, ORES and ROCKS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD		MERCURY ANALYSIS			REFERENCE
					N	RANGE (ppb)	MEAN (ppb)	
18	Geraldton 4944,8657	1971	Shale and Volcanic Rock	A7	48	ND	99*	R18
19	Goderich Harbour 4345,8144	May, 1975	Sediment	S22,A11	8	10-30	21*	R33
20	Gowganda 4739,8046	1971	Shale and Volcanic Rock	A7	24	ND	100*	R18
21	Grenville 4525,7536	1974	Soil Ah	A9	1	-	52	R25
			Bm	A9	1	-	47	R25
			Ck	A9	1	-	16	R25
			Arith. Mean	A9			38*	R25
(See also Rubicon, St. Samuel and Uplands)								
22	Guelph 4341,8015	1974	Soil Ah	A9	1	-	65	R25
			Bt	A9	1	-	70	R25
			BC	A9	1	-	34	R25
			Ck	A9	1	-	6	R25
			Arith. Mean	A9			44*	R25
23	Gunflint 4806,9041	1971	Shale and Volcanic Rock	A7	46	ND	749*	R18

ND - No data available.

SEDIMENTS, SOILS, ORES and ROCKS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD		N	MERCURY ANALYSIS		REFERENCE
						RANGE (ppb)	MEAN (ppb)	
24	Harkaway 4440,8105	1974	Soil Bm	A9	1	-	130	R25
			Ck	A9	1	-	20	R25
			Arith. Mean	A9			75*	R25
25	Lake Huron Inshore	June/July, 1969	Sediment	S36,A22	89	54-655	171	R51
	Mackinac Basin				11	122-384	229	R51
	Alpena Basin				2	ND	82	R65
	Manitoulin Basin				38	77-805	301	R51
	Saginaw Basin				4	ND	307	R65
	Port Huron Basin				5	131-560	391	R51
	Goderich Basin				14	63-475	262	R51
	Lake Huron Total (excludes Georgian Bay & N. Channel)				163	54-805	222*	R51
	Lake Huron (Southern Tip)	1972	Sediment	A18	7	10-36	21	R44

ND - No data available.

SEDIMENTS, SOILS, ORES and ROCKS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE	
					RANGE (ppb)	MEAN (ppb)		
72	Kingsville Harbour 4202,8245	July, 1977	Sediment	S32,A11	2	40-130	85	R47
				S33,A11	2	230-290	260*	R47
26	Kumska Lake 4648,8102	1971	Sediment	S15,A7	1	-	243*	R18
27	Lac des Iles 4912,8937	1971	Shale and Volcanic Rock	A7	48	ND	60*	R18
3	Laplaine 4529,7527	1974	Soil Cg1	A9	1	-	16	R25
			Co4	A9	1	-	8	R25
			Arith. Mean	A9			12*	R25
28	Larder Lake 4805,7943	1971	Shale and Volcanic Rock	A7	47	ND	100*	R18
29	Lavant Long Lake 4508,7644	1971	Sediment	S15,A7	29	30-150	92*	R18
	(See also Perch Lake)							
30	Lincoln 4311,7935	1974	Soil Ap	A9	1	-	30	R25
			Bgf	A9	1	-	70	R25
			Cg	A9	1	-	16	R25
			Arith. Mean	A9			39*	R25
31	Marathon (near pulp mill) 4843,8623	May, 1976	Soil (top 0-5 cm)	S11,A10	99	100-47500	6700*	R4

ND - No data available.

SEDIMENTS, SOILS, ORES and ROCKS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD		N	MERCURY ANALYSIS		REFERENCE
						RANGE (ppb)	MEAN (ppb)	
32	Matachewan 4756,8039	1971	Shale and Volcanic Rock	A7	9	ND	64*	R18
33	Matashigami Lake 4647,8036	1971	Sediment	S15,A7	1	-	212*	R18
34	Michipicoten 4758,8454	1971	Shale and Volcanic Rock	A7	7	ND	187*	R18
35	Murray Lake 4640,8026	1971	Sediment	S15,A7	1	-	182*	R18
36	North Channel 4600,8300	1973	Sediment	S36,A21	55	8-1112	151*	R56
37	Oba 4904,8406	1971	Shale and Volcanic Rock	A7	5	ND	286*	R18
38	Oakville Harbour 4327,7941	Sept., 1976	Sediment	S27,A11	4	170-970	460*	R38
39	Oneida 4326,7950	1974	Soil Ah	A9	1	-	48	R25
			Ae	A9	1	-	22	R25
			Bt	A9	1	-	32	R25
			Ck	A9	1	-	22	R25
			Arith. Mean	A9			31*	R25

ND - No data available.

SEDIMENTS, SOILS, ORES and ROCKS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD		N	MERCURY ANALYSIS		REFERENCE
						RANGE (ppb)	MEAN (ppb)	
40	L. Ontario Inshore	Summer, 1968	Sediment	S36,A22	126	32-1820	335	R52
	Niagara Basin				24	323-2100	1149	R52
	Mississauga Basin				41	380-1945	905	R52
	Rochester Basin				57	220-1640	958	R52
	Kingston Area				13	480-8480	ND	R52
	Wolfe Island				7	1010-20600	ND	R52
	Lake Ontario Total				248	32-2100	651*	R52
41	Oshawa Harbour 4352,7849	May, 1976	Sediment 0-1'	S27,S25,A11	5	50-170	114*	R42
42	Owen Sound 4435,8056	1974	Sediment	S30,A10	5	26-435	174*	R45
43	Parry Sound/Parry Sound Harbour/ Depot Harbour 4520,8005	1974	Sediment	S30,A10	21	8-534	82*	R45
44	Pelee Island (Scudder Harbour) 4147,8240	April, 1976	Sediment	S22,A11	6	100-180	140*	R39
45	Pike Creek (L. St. Clair) 4219,8251	Feb., 1976	Sediment	S26,A15	6	10-87	27*	R37
29	Perch Lake 4508,7645	1971	Sediment	S15,A7	8	20-200	89*	R18

ND - No data available.

SEDIMENTS, SOILS, ORES and ROCKS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD		N	MERCURY ANALYSIS		REFERENCE
						RANGE (ppb)	MEAN (ppb)	
46	Picton-L. Ontario 4401,7708	Sept., 1975	Sediment	S22,A11	6	0.05-120	58*	R41
73	Port Credit Harbour 4333,7935	July, 1977	Sediment	S31,A19	8	20-90	55*	R46
47	Port Elgin/ Southampton 4430,8130	1974	Sediment	S30,A10	4	6-45	18*	R45
48	Port Stanley Harbour 4240,8113	Sept., 1974	Sediment	S33,A20	10	20-880	117*	R48
49	Raft Lake 4624,8057	1971	Sediment	S15,A7	1	-	181*	R18
50	Red Deer Lake 4624,8045	1971	Sediment	S15,A7	1	-	336*	R18
51	Red Lake 5101,9350	1971	Shale and Volcanic Rock	A7	12	ND	54*	R18
		1971	Sediment	S14,A7	3	38-49	44*	R18
52	Round Lake 4619,8112 (See also Whitefish Lake)	1971	Sediment	S15,A7	1	-	230*	R18
53	Rove 4805,9021	1971	Shale and Volcanic Rock	A7	137	ND	282*	R18
21	Rubicon 4525,7535	1974	Soil Ae	A9	1	-	12	R25
			Bhf	A9	1	-	44	R25
			Cg	A9	1	-	5	R25
			Arith. Mean	A9			19*	R25

ND - No data available.

SEDIMENTS, SOILS, ORES and ROCKS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD		N	MERCURY ANALYSIS		REFERENCE
						RANGE (ppb)	MEAN (ppb)	
54	L. St. Clair Total 4228,8240	Summer, 1974	Sediment	S35,A21	54	ND	568*	R49
	S.E. Bend Cut-off	Oct., 1975	Sediment (top 0-6 cm)	A12	5	100-410	234	R27
		Oct/Dec. 1974	Sediment (top 0-6")	S16,A11	15	110-3900	797	R6,R26
	Chenal Ecarte	Feb., 1976	Sediment	S21,A11	8	950-4360	2055	R32
55	St. Clair River (S. of Port Lambton) 4233,8240	Sept., 1976	Sediment	S20,A10	40	10-870	185*	R31
56	St. Lawrence River (at Cornwall) 4502,7444	1975	Sediment	A10	132	< 300->20000 (See detail map)	ND	R50
21	St. Samuel 4535,7535	1974	Soil Ah	A9	1	-	50	R25
			Aeg	A9	1	-	16	R25
			Bgf	A9	1	-	45	R25
			Cg	A9	1	-	10	R25
			Arith. Mean	A9			20*	R25
57	Sarnia (Elevator Co. Slip) 4258,8223	Feb., 1977	Sediment	S25,A10	3	30-120	67*	R36

ND - No data available.

SEDIMENTS, SOILS, ORES and ROCKS

DATA POINT	LOCATION		SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE	
						RANGE (ppb)	MEAN (ppb)		
58	Lake Scugog 4410,7850	≠	Oct., 1975	Sediment 0-10 cm	S23,A10	6	<10	<10*	R34
59	Scugog River 4424,7845	≠	Oct., 1975	Sediment 0-10 cm	S23,A10	17	< 0-1980	382*	R34
6	Seal Lake 4642,8123		1971	Sediment	S15,A7	1	-	139*	R18
60	Seaway Island (L. St. Clair) 4232,8238		Sept., 1975	Soil	S12,A11	4	< 50	< 50*	R7
(See also Squirrel Island and Walpole Island)									
61	Snib Lake 5100,9353		1971	Sediment	S14,A7	1	-	122*	R18
62	Spragge 4612,8240		May, 1977	Sediment	S24,A16	3	50-80	63*	R35
60	Squirrel Island (L. St. Clair) 4230,8233		Sept., 1975	Soil	S12,A11	6	< 80	< 80*	R7
63	Sturgeon Lake 4428,7843	≠	Oct., 1975	Sediment 0-10 cm	S23,A10	19	110-1310	555*	R34
64	Lake Superior Duluth Basin		1973	Sediment	S36,A21	27	ND	136	R54
	Chefswet Basin					27	ND	86	R54
	Apostle Basin					13	ND	112	R54

ND - No data available.

≠ Data from Lake Scugog, Sturgeon Lake and the Scugog River apply to the Lower Scugog River and the Trent Canal near Lindsay.

SEDIMENTS, SOILS, ORES and ROCKS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE	
					RANGE (ppb)	MEAN (ppb)		
	Lake Superior Isle Royale Basin	1973	Sediment	S36,A21	50	ND	100	R54
	T. Bay Trough Basin				17	ND	134	R54
	T. Bay Basin				5	ND	326	R54
	Caribou Basin				49	ND	94	R54
	Marathon Basin				6	ND	101	R54
	Keweenaw Basin				4	ND	120	R54
	Whitefish Basin				18	ND	74	R54
	Non-Depositional Zone				188	ND	53	R54
	Lake Superior Total				404	ND	83*	R54
	Inshore near Montreal River				10	6-72	33	R55
	Offshore from Terrace Bay				8	26-1160	204	R55
	Offshore from St. Ignace Island				5	1-89	47	R55
	Peninsula Harbour				10	10-38500	6100	R55
	Jackfish Bay				6	27-746	279	R55

ND - No data available.

SEDIMENTS, SOILS, ORES and ROCKS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE	
					RANGE (ppb)	MEAN (ppb)		
	Lake Superior Nipigon Bay (See also data point 74)	1973	Sediment	S36,A21	2	62-113	88	R55
	Black Bay				3	20-50	34	R55
	Pine Bay				4	15-104	46	R55
	Thunder Bay				13	44-27000	2970	R55
65	Thunder Bay Harbour 4824,8912	June, 1975	Sediment	S17,A13	7	10-20	14*	R28
66	Thunder Bay (McKellar Island Slip #2) 4823,8914	Feb., 1976	Sediment	S18,A14	25	82-1245	309*	R29
67	Timmins 4828,8120	1971	Shale and Volcanic Rock	A7	141	ND	208*	R18
68	Tobermory Harbour 4516,8140	1974	Sediment	S30,A10	3	55-92	68*	R45
69	Toronto (Outer Harbour Headland) 4338,7922	Sept/Oct. 1976	Sediment	S19,A15	6	<10-170	71*	R30
70	Uchi Lake 5105,9233	1971	Sediment	S14,A7	1	-	143*	R18

ND - No data available.

SEDIMENTS, SOILS, ORES and ROCKS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD		N	MERCURY ANALYSIS		REFERENCE
						RANGE (ppb)	MEAN (ppb)	
21	Uplands 4525,7535	1974	Soil Ae	A9	1	-	8	R25
			Bf	A9	1	-	63	R25
			C	A9	1	-	5	R25
			Arith. Mean	A9			24*	R25
60	Walpole Island (L. St. Clair) 4233,8229	Sept., 1975	Soil	S12,A11	3	< 80	<80*	R7
52	Whitefish Lake 4623,8111	1971	Sediment	S15,A7	1	-	154*	R18
71	Whitewater 4632,8109	1971	Shale and Volcanic Rock	A7	16	ND	548*	R18
72	Kingsville Harbour 4202,8245	July, 1977	Sediment	S32,A11	2	40-130	85	R47
			Sediment	S33,A11	2	230-290	260*	R47
73	Port Credit Harbour 4333,7935	July, 1977	Sediment	S31,A19	8	20-90	55*	R46
74	Lake Superior W. Nipigon Bay	June, 1974	Sediment	S37,A23	44	30-420	118*	R57

ND - No data available.

APPENDIX VI

MERCURY IN SNOW - DATA SHEETS

SNOW

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE
					RANGE (ppb)	MEAN (ppb)	
1	Batchawana Bay 4653,8430	Feb. 19,1977	S5,A5	1	-	0.02*	R9
2	Bracebridge 4502,7919	Mar. 1, 1977	S5,A5	2	0.01-0.02	0.02*	R9
3	Cochrane 4904,8101	Feb. 22,1977	S5,A5	1	-	0.01*	R9
4	Emsdale 4532,7919	Mar. 1, 1977	S5,A5	1	-	0.02*	R9
5	Espanola 4615,8146	Feb. 19,1977	S5,A5	2	0.02	0.02*	R9
6	Geraldton 4944,8657	Feb. 21,1977	S5,A5	2	0.01-0.04	0.03*	R9
7	Hearst 4941,8340	Feb. 21,1977	S5,A5	1	-	0.01*	R9
8	Honey Harbour 4452,7949	Feb. 18,1977	S5,A5	2	0.01	0.01*	R9
9	Iron Bridge 4617,8314	Feb. 19,1977	S5,A5	1	-	0.02*	R9
10	Marathon (town) 4843,8623	Feb. 20,1977	S5,A5	1	-	0.29	R9
	(near mill)	Jan-Mar,1976	S6,A6	21	0.3-83.4	8.34*	R4
11	Marten River 4644,7954	Mar. 1, 1977	S5,A5	1	-	0.01*	R9

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE
					RANGE (ppb)	MEAN (ppb)	
12	Moonbeam 4921,8209	Feb. 21,1977	S5,A5	1	-	0.01*	R9
13	Nipigon 4901,8816	Feb. 20,1977	S5,A5	1	-	0.01*	R9
14	Parry Sound 4521,8002	Feb. 18,1977	S5,A5	1	-	0.03*	R9
15	Wawa 4759,8447	Feb. 20,1977	S5,A5	2	0.01-0.02	0.02*	R9

APPENDIX VII

MERCURY IN WATER - DATA SHEETS

WATER

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD		N	MERCURY ANALYSIS		REFERENCE
						RANGE (ppb)	MEAN (ppb)	
1	Lake Erie Total	Aug., 1974	Depth - 10 m	S7,A5	14	<0.05	<0.05*	R10
2	Georgian Bay Total	Oct.-Dec., 1974	Depth - 1 m	S7,A5	90	<0.05	<0.05*	R11
3	Lake Huron Total	Oct.-Dec., 1974	Depth - 1 m	S7,A5	46	<0.05	<0.05*	R12
4	Lavant Long Lake 4508,7644	1971	Surface water	S13,A7	33	0.015-0.030	0.019*	R18
5	Niagara River 4316,7903	May, 1976	Surface water	S8,A5	1	-	<0.05*	R16
6	Lake Ontario Total	Aug., 1974	Depth - 10 m	S7,A5	20	<0.05	<0.05*	R13
4	Perch Lake 4508,7645	1971	Surface water	S13,A7	8	0.015-0.090	0.044*	R18
7	St. Marys River 4609,8402	May, 1976	Surface water	S8,A5	1	-	<0.05*	R17
8	Lake Superior Total	Nov., 1973	Depth - 5 m	S7,A5	26	<0.05-0.06	<0.05*	R14
9	St. Lawrence R. 4414,7624	June, 1975	Surface water	S7,A5	3	<0.05	<0.05	R15
	4422,7555				1	-	<0.05	R15
	4436,7539				3	<0.05	<0.05	R15
	4447,7522				3	<0.05	<0.05*	R15
	4454,7509				3	<0.05	<0.05	R15

WATER

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE	
					RANGE (ppb)	MEAN (ppb)		
	St. Lawrence R. 4510,7441	June, 1975	Surface water	S7,A5	2	<0.05	<0.05	R15
10	Wabigoon River (800 m upstream from Reed) 5015,9356	Jan.-Nov., 1975	Surface water	A6	9	0.08-0.29	0.127	R19
	(1100 m down- stream from Reed)	Jan.-Dec., 1975	Surface water	A6	9	0.05-15.3	1.8*	R19

APPENDIX VIII

MERCURY IN INDUSTRIAL AND MUNICIPAL EFFLUENTS - DATA SHEETS

INDUSTRIAL and MUNICIPAL EFFLUENTS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE	
					RANGE (lb/day)	MEAN (lb/day)		
1	Ault Foods Winchester 4506,7521	Sept., 1976	Lagoon effluent	S10,A8	3	-	$< 1.8 \times 10^{-4}$	R21
2	Barrie (ASP) 4424,7940	May 18,1976	Final effluent	S9,A6	1	-	2.5×10^{-3}	R20
3	Brantford (ASP) 4308,8016	Aug.19,1976		S9,A6	1	-	5.1×10^{-3}	R20
4	Burlington (ASP) (Elizabeth Gardens) 4319,7947	Feb.-April, 1976		S9,A6	1	-	$< 3.0 \times 10^{-4}$	R20
5	Collingwood (PTP) 4429,8013	Jun.29,1976		S9,A6	1	-	1.2×10^{-3}	R20
6	Cornwall (PTP) 4502,7444	Aug., 1976		S9,A6	1	-	6.2×10^{-2}	R2
	(CIL)	June, 1977		S9,A6	1	-	1.0×10^{-1}	R22
7	Dryden (Reed complex) 4947,9250	Apr.12,1977		S9,A6	2	0.26-0.47	3.6×10^{-1}	R22
		Apr.15,1977		S9,A6	2	0.18-0.43	3.1×10^{-1}	R22
		Oct. 9-14, 1975		S9,A6		0.13-0.46	1.9×10^{-1}	R23
8	Elmvale (single cell lagoon) 4435,7952	Jun.30,1976		S9,A6	1	-	9.0×10^{-5}	R20
9	Fergus (ASP) 4342,8022	Mar-Apr,1976		S9,A6	1	-	4.5×10^{-4}	R20

INDUSTRIAL and MUNICIPAL EFFLUENTS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE
					RANGE (lb/day)	MEAN (lb/day)	
10	Guelph (ASP) 4333,8015	Feb-Mar,1976	S9,A6	1	-	1.1×10^{-2}	R20
11	Hamilton (ASP) 4315,7951	Apr.27,1976	S9,A6	1	-	8.6×10^{-2}	R20
12	Kraft Foods Ingleside 4500,7500	Sept., 1976	Treated effluent S10,A8	2	-	$< 1.3 \times 10^{-4}$	R21
13	Lakeview (ASP) 4335,7934	Jan-Apr,1976	S9,A6	1	-	5.6×10^{-2}	R20
14	Marathon (American Can) 4843,8623	May 17-21, 1976	Total complex effluent S9,A6	1	-	1.3×10^{-1}	R24
15	Markdale (single cell lagoon) 4419,8039	Jul.14,1976	S9,A6	1	-	$< 8.0 \times 10^{-5}$	R20
16	Midland (PTP) 4445,7953	May 17,1976	S9,A6		-	1.2×10^{-3}	R20
17	Ottawa (STP) 4525,7542	Feb., 1976	S10,A8	10	0.27-0.73	4.3×10^{-1}	R21
18	Orangeville(ASP) 4355,8006	Aug.24,1976	S9,A6	1	-	1.8×10^{-4}	R20
19	Owen Sound (PTP) 4434,8056	May 27, 1976	S9,A6	1	-	$< 2.0 \times 10^{-3}$	R20
20	Port Weller(ASP) 4313,7914	May 12, 1976	S9,A6	1	-	$< 4.0 \times 10^{-3}$	R20

INDUSTRIAL and MUNICIPAL EFFLUENTS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE	
					RANGE (lb/day)	MEAN (lb/day)		
21	Shelburne (multi-cell lagoon) 4404,8012	Jul.15,1976	S9,A6	1	-	4.2x10 ⁻⁴	R20	
22	South Porcupine (Dome Mines) 4828,8113	1972	Tailings (1.3 mgd)	S9,A6	1	-	4.0x10 ⁻³	R22
23	Stayner (multi-cell lagoon) 4425,8005	Jun.29,1976	S9,A6	1	-	2.0x10 ⁻⁵	R20	
24	Stratford (ASP) 4322,8057	Aug.20,1976	S9,A6	1	-	<1.3x10 ⁻³	R20	

APPENDIX IX

MERCURY IN BLOOD (HUMAN HEALTH) - DATA SHEETS

BLOOD - CUMULATIVE DATA

DATA POINT	LOCATION	LATEST SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS (1) RANGE (ppb Hg)			REFERENCE
					<20	20-100	>100	
1	Dokis 4605,8000	Oct.-Dec., 1976	S40,A24	248	234	13	1*	R59
2	Fort Albany 5220,8145	Nov., 1976	S40,A24	2	2*	0	0	R59
3	Grassy Narrows 5010,9358	Apr., 1977	S40,A24	1113	804	267	42*	R59
4	Gull River 4949,8908	Nov.-Dec., 1976	S40,A24	1	0	1*	0	R59
5	Hawley Lake 5430,8439	Jan., 1977	S40,A24	7	7*	0	0	R59
6	Pic River 4837,8615	Apr., 1977	S40,A24	154	143	11*	0	R59
7	Serpent River 4610,8230	Nov., 1976	S40,A24	73	72	1*	0	R59
8	Shoal Lake 4930,9507	May, 1977	S40,A24	1	1*	0	0	R59
9	Walpole Island 4234,8230	Jan., 1976	S40,A24	229	198	31*	0	R59
10	Whitedog 5008,9453	May, 1977	S40,A24	1727	1445	242	40*	R59
11	Winisk 5415,8715	Jan., 1977	S40,A24	238	198	40*	0	R59

(1) The numbers of samples analysed include all samples taken at each reserve not just the samples taken during the latest sampling period. These include all samples taken up to and including June 30, 1977. These data have been used to prepare the map in Figure 25.

BLOOD - LATEST DATA

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS (1) RANGE (ppb Hg)			REFERENCE
					< 20	20-100	> 100	
1	Dokis 4605,8000	Oct.-Dec., 1976	S40,A24	68	57	10	1	R59
2	Fort Albany 5220,8145	Nov., 1976	S40,A24	2	2	0	0	R59
3	Grassy Narrows 5010,9358	Apr., 1977	S40,A24	155	125	27	3	R59
4	Gull River 4949,8908	Nov.-Dec., 1976	S40,A24	1	0	1	0	R59
5	Hawley Lake 5430,8439	Jan., 1977	S40,A24	7	7	0	0	R59
6	Pic River 4837,8615	Apr., 1977	S40,A24	12	12	0	0	R59
7	Serpent River 4610,8230	Nov., 1976	S40,A24	73	72	1	0	R59
8	Shoal Lake 4930,9507	May, 1977	S40,A24	1	1	0	0	R59
9	Walpole Island 4234,8230	Jan., 1976	S40,A24	9	7	2	0	R59
10	Whitedog 5008,9453	May, 1977	S40,A24	26	22	4	0	R59
11	Winisk 5415,8715	Jan., 1977	S40,A24	89	63	26	0	R59

(1) The numbers of samples analysed include only the most recent samples taken at each reserve.

APPENDIX X

WABIGOON - ENGLISH RIVER SYSTEM - MERCURY IN FISH
DATA SHEETS

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
1	Ball Lake 5018,9400	1976	mooneye	S41,A25	10	0.56-1.60	0.92	-	100
		1976	pickerel	S41,A25	48	0.28-4.70	2.23	4.63*	88
		1976	pike	S41,A25	49	0.38-9.40	2.95*	3.03	94
		1976	sauger	S41,A25	47	0.58-5.70	1.96	-	100
		1976	white sucker	S41,A25	18	0.11-2.30	1.13	-	72
		1976	whitefish	S41,A25	23	0.20-1.70	0.79	-	70
		1976	yellow perch	S41,A25	15	0.35-2.40	1.00	-	87
2	Beauty Lake 5017,9414	1976	burbot	S41,A27	15	0.21-0.93	0.51	-	53
		1976	pike	S41,A27	30	0.17-1.36	0.62	1.55*	60
		1976	smallmouth bass	"	5	0.24-0.65	0.44	-	40
		1976	lake trout	S41,A27	5	0.17-1.91	0.79*	1.29	60
		1976	white sucker	S41,A27	15	0.10-0.42	0.24	-	0
3	Blueberry Lake 5009,9444	1975	mullet	S41,A26	19	0.05-0.31	0.16	-	0
		1975	pickerel	S41,A25	47	0.19-1.22	0.58	0.72	57
		1975	pickerel	S41,A26	17	0.16-1.16	0.54	0.68	49
		1975	pike	S41,A26	89	0.16-2.94	0.70	0.89	60
		1975	pike	S41,A25	89	0.17-3.02	0.71*	0.91*	64
		1975	white sucker	S41,A25	19	0.05-0.32	0.17	-	0
		1975	yellow perch	S41,A25	41	0.06-0.22	0.12	-	0
		1975	yellow perch	S41,A26	40	0.06-0.23	0.10	-	0
4	Bruce Lake 5050,9320	1974	pickerel	S41,A26	42	0.07-0.77	0.32*	0.50*	12
		1974	pike	S41,A26	50	0.13-0.57	0.25	0.33	4
		1974	sauger	S41,A26	13	0.17-0.55	0.29	-	8

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
5	Buck Lake 5004,9402	1975	lake trout	S41,A26	16	0.76-2.55	1.43*	1.79*	100
6	Chase Lake 5037,9457	1975	cisco	S41,A25	41	0.07-0.15	0.10	-	0
		1975	mullet	S41,A26	50	0.03-0.29	0.11	-	0
		1975	pickerel	S41,A25	53	0.10-1.00	0.47	0.79*	42
		1975	pike	S41,A25	82	0.13-1.40	0.52	0.57	50
		1975	pike	S41,A26	44	0.13-1.43	0.54*	0.58	52
7	Clay Lake 5003,9330	1976	pickerel	S41,A25	50	4.50-12.10	7.83*	7.75*	100
		1976	pike	S41,A25	51	3.60-13.00	5.84	5.20	100
		1976	whitefish	S41,A25	5	0.75-2.60	1.19	-	100
8	Colonna Lake 5007,9353	1973	pickerel	S41,A26	22	0.24-0.88	0.38	0.53*	18
		1973	pike	S41,A26	29	0.08-0.57	0.41*	0.44	17
9	Confusion Lake 5039,9410	1974	lake trout	S41,A26	17	0.09-2.04	1.00*	1.52	71
		1974	pickerel	S41,A26	59	0.09-1.05	0.37	0.63*	22
		1974	pike	S41,A26	44	0.13-1.24	0.32	0.49	16
		1974	whitefish	S41,A26	8	0.02-0.29	0.14	-	0
10	Conifer Lake 5034,9402	1975	pickerel	S41,A26	28	0.16-1.06	0.43*	1.05*	32
		1975	pike	S41,A26	5	0.16-0.57	0.35	0.52	20
		1975	smallmouth bass	"	6	0.17-0.53	0.26	-	17

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
11	Cygnet Lake 5000,9453	1973	cisco	S41,A26	10	0.03-0.08	0.05	-	0
		1973	pickerel	S41,A26	15	0.21-0.70	0.37*	0.39*	13
		1973	pike	S41,A26	19	0.18-0.58	0.33	0.30	5
Lake of the Dalles - See data point 47.									
12	Delaney Lake 5005,9403	1975	burbot	S41,A25	27	0.10-0.68	0.44	-	26
		1975	burbot	S41,A26	27	0.12-1.08	0.58	-	78
		1975	crappie	S41,A26	15	0.18-0.75	0.32	-	13
		1975	lake trout	S41,A25	31	0.14-0.55	0.27	0.27	4
		1975	lake trout	S41,A26	31	0.19-0.58	0.33	0.35	6
		1975	pike	S41,A25	11	0.12-0.75	0.48	-	55
		1975	pike	S41,A26	11	0.26-1.20	0.74*	0.42*	73
		1975	rock bass	S41,A25	35	0.09-0.69	0.23	-	3
		1975	rock bass	S41,A26	20	0.17-1.09	0.38	-	25
		1975	smallmouth bass	"	25	0.15-0.78	0.35	-	16
		1975	"	S41,A25	24	0.12-0.58	0.27	-	9
		1975	whitefish	S41,A25	18	0.08-0.35	0.14	-	0
		1975	whitefish	S41,A26	18	0.09-0.60	0.17	-	6
		1975	white sucker	S41,A25	52	0.03-0.25	0.09	-	0
		1975	white sucker	S41,A26	52	0.03-1.00	0.17	-	4
13	Dinorwic Lake 4937,9233	1972	pickerel	S41,A26	24	0.24-1.64	0.57*	0.80*	50

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
14	Dumpy Lake	1976	cisco	S41,A27	45	0.09-1.63	0.29	-	4
	5019,9404	1976	lake trout	S41,A27	5	0.24-0.72	0.49	0.36	60
		1976	pickerel	S41,A27	39	0.24-2.87	0.87*	0.97	82
		1976	pike	S41,A27	51	0.33-1.98	0.78	1.05*	71
		1976	white sucker	S41,A27	7	0.09-0.19	0.15	-	0
		1976	whitefish	S41,A27	55	0.06-0.44	0.15	-	0
15	Eagle Lake	1975	pike	S41,A26	10	0.28-0.71	0.51*	0.47*	60
	4942,9313								
16	Eagle Lake	1975	burbot	S41,A25	10	0.36-0.87	0.61	-	80
	5040,9453	1975	burbot	S41,A26	10	0.36-0.87	0.61	-	80
		1975	cisco	S41,A25	10	0.15-0.41	0.26	-	0
		1975	cisco	S41,A26	11	0.15-0.41	0.26	-	0
		1975	pickerel	S41,A25	165	0.35-1.60	0.90	1.09*	92
		1975	pickerel	S41,A26	50	0.49-1.45	0.93*	1.05	98
		1975	pike	S41,A25	181	0.20-2.00	0.85	0.97	79
		1975	pike	S41,A26	31	0.20-1.80	0.72	1.04	65
		1975	white sucker	S41,A25	70	0.06-0.46	0.20	-	0
		1975	white sucker	S41,A26	49	0.06-0.46	0.19	-	0
		1975	whitefish	S41,A25	51	0.06-0.19	0.10	-	0
		1975	whitefish	S41,A26	51	0.06-0.19	0.10	-	0
		1975	yellow perch	S41,A25	6	0.09-0.21	0.12	-	0
		1975	yellow perch	S41,A26	6	0.09-0.21	0.12	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
17	English River	1976	pickerel S41,A27	9	0.21-1.96	1.02*	1.06*	78
	5012,9500	1976	pike S41,A27	8	0.12-1.20	0.65	0.66	75
		1976	redhorse sucker "	46	0.20-0.77	0.47	-	41
		1976	white sucker S41,A27	28	0.07-0.56	0.28	-	7
		1976	whitefish S41,A27	17	0.05-0.15	0.09	-	0
18	Garden Lake	1976	cisco S41,A25	12	0.16-0.39	0.25	-	0
	5010,9400	1976	pickerel S41,A25	56	0.50-2.40	1.21*	1.64*	100
		1976	pike S41,A25	46	0.38-2.20	1.06	1.58	98
		1976	white sucker S41,A25	18	0.09-0.71	0.32	-	11
		1976	yellow perch S41,A25	5	0.18-0.68	0.46	-	40
See also Grassy Narrows Lake.								
19	Gooseneck Lake	1975	cisco S41,A25	44	0.14-0.72	0.31	-	9
	5002,9448	1975	cisco S41,A26	44	0.14-0.67	0.28	-	5
		1975	lake trout S41,A25	31	0.30-1.91	0.73	0.69	71
		1975	lake trout S41,A26	31	0.27-2.05	0.73	0.68	65
		1975	pike S41,A25	78	0.33-1.46	0.81	0.70	85
		1975	pike S41,A26	78	0.33-1.84	0.87	0.73*	86
		1975	redhorse sucker " ,A25	5	0.14-0.27	0.20	-	0
		1975	" S41,A26	5	0.11-0.22	0.16	-	0
		1975	smallmouth bass " ,A25	33	0.53-1.69	0.98*	-	100
		1975	" S41,A25	33	0.48-1.44	0.83	-	97
		1975	white sucker S41,A25	48	0.05-0.50	0.18	-	2
		1975	white sucker S41,A26	48	0.04-0.39	0.16	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
20	Goshawk Lake 5012,9452	1976	burbot	S41,A27	10	0.45-1.67	0.91	-	90
		1976	cisco	S41,A27	14	0.19-0.72	0.36	-	14
		1976	pickerel	S41,A27	34	0.29-4.74	1.67*	1.60	94
		1976	pike	S41,A27	51	0.34-2.78	1.42	2.34*	92
		1976	white sucker	S41,A27	10	0.08-0.45	0.15	-	0
		1976	whitefish	S41,A27	37	0.12-0.30	0.18	-	0
18	Grassy Narrows 5009,9359	1976	cisco	S41,A25	15	0.08-0.49	0.27	-	0
		1976	mooneye	S41,A25	15	0.42-1.40	0.73	-	93
		1976	pickerel	S41,A25	54	1.10-5.10	2.02	2.29	100
		1976	pike	S41,A25	64	0.08-7.20	2.72*	2.71*	97
		1976	sauger	S41,A25	43	1.10-3.50	2.15	-	100
		1976	white sucker	S41,A25	22	0.22-1.60	0.53	-	55
		1976	whitefish	S41,A25	33	0.07-0.54	0.23	-	6
		1976	yellow perch	S41,A25	8	0.34-0.68	0.46	-	38
21	Gun Lake 4957,9439	1975	cisco	S41,A25	14	0.08-0.26	0.12	-	0
		1975	cisco	S41,A26	14	0.06-0.23	0.12	-	0
		1975	mooneye	S41,A25	9	0.22-0.38	0.29	-	0
		1975	mooneye	S41,A26	9	0.26-0.42	0.32	-	0
		1975	pickerel	S41,A25	147	0.28-2.02	0.84	0.79	88
		1975	pickerel	S41,A26	143	0.24-2.09	0.90	0.84*	89
		1975	pike	S41,A25	68	0.35-1.85	0.84	0.67	93
		1975	pike	S41,A26	67	0.34-5.17	1.01	0.78	87
		1975	white sucker	S41,A25	66	0.04-0.49	0.23	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
	Gun Lake	1975	white sucker	S41,A26	68	0.04-4.39	0.41	-	16
		1975	yellow perch	S41,A25	16	0.13-0.24	0.18	-	0
		1975	yellow perch	S41,A26	16	0.10-0.23	0.17	-	0
		1976	whitefish	S41,A27	15	0.07-0.30	0.13*	-	0
22	Helder Lake	1976	cisco	S41,A27	22	0.08-0.24	0.16	-	0
	5021,9412	1976	lake trout	S41,A27	20	0.10-2.76	0.56*	0.98*	35
		1976	white sucker	S41,A27	41	0.01-0.25	0.10	-	0
		1976	whitefish	S41,A27	26	0.08-0.27	0.15	-	0
23	Huston Lake	1976	lake trout	S41,A27	32	0.17-1.42	0.62	0.68	56
	5024,9507	1976	pike	S41,A27	51	0.19-1.32	0.81*	0.99*	84
		1976	white sucker	S41,A27	10	0.04-0.20	0.09	-	0
		1976	yellow perch	S41,A27	12	0.08-0.33	0.19	-	0
24	Keys Lake	1975	burbot	S41,A25	10	0.33-0.93	0.52*	-	40
	5002,9401	1975	burbot	S41,A26	11	0.13-0.61	0.35	-	18
		1975	lake trout	S41,A25	15	0.20-0.95	0.41	0.62*	20
		1975	lake trout	S41,A26	15	0.17-0.88	0.35	0.57	13
		1975	white sucker	S41,A25	38	0.04-0.23	0.10	-	0
		1975	white sucker	S41,A26	39	0.03-0.19	0.08	-	0
		1975	whitefish	S41,A25	15	0.18-0.52	0.24	-	7
		1975	whitefish	S41,A26	15	0.12-0.46	0.20	-	0
25	Long-Legged L.	1972	pike	S41,A25	100	0.21-1.43	0.64*	-	-
	5040,9415								

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD		N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
26	Marshaluk Lake	1975	cisco	S41,A25	5	0.06-0.13	0.10	-	0
	5022,9335	1975	cisco	S41,A26	5	0.06-0.13	0.10	-	0
		1975	pickerel	S41,A26	21	0.21-0.97	0.59*	0.79*	67
		1975	pike	S41,A26	8	0.29-0.91	0.59	0.54	63
		1975	white sucker	S41,A26	5	0.04-0.18	0.10	-	0
		1975	whitefish	S41,A25	43	0.01-0.13	0.04	-	0
		1975	whitefish	S41,A26	44	0.01-0.13	0.04	-	0
27	Maynard Lake	1976	burbot	S41,A25	6	0.09-0.68	0.29	-	33
	5022,9354	1976	mooneye	S41,A25	10	0.09-1.30	0.32	-	10
		1976	pickerel	S41,A25	54	0.13-1.30	0.42	0.67	22
		1976	pike	S41,A25	38	0.17-2.00	0.74*	0.80*	82
		1976	sauger	S41,A25	10	0.31-0.97	0.57	-	50
		1976	white sucker	S41,A25	10	0.01-0.10	0.06	-	0
		1976	whitefish	S41,A25	29	0.01-0.17	0.07	-	0
28	Meandering L.	1975	pickerel	S41,A25	45	0.40-2.30	1.09*	1.07	93
	5007,9354	1975	pickerel	S41,A26	45	0.40-2.33	1.08	1.08*	93
		1975	pike	S41,A25	48	0.33-2.30	1.02	0.91	94
		1975	pike	S41,A26	48	0.33-2.30	1.03	0.92	94
		1975	white sucker	S41,A25	20	0.06-0.80	0.23	-	5
		1975	white sucker	S41,A26	20	0.06-0.80	0.23	-	5
29	Oak Lake	1975	cisco	S41,A26	43	0.01-0.28	0.10	-	0
	5026,9350	1975	mooneye	S41,A26	33	0.10-0.28	0.16	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
	Oak Lake	1975	pickerel	S41,A26	28	0.11-0.86	0.42	0.60*	18
		1975	pike	S41,A26	20	0.27-1.34	0.53*	0.55	50
		1975	whitefish	S41,A26	24	0.05-0.17	0.11	-	0
30	Pistol Lake	1975	cisco	S41,A26	53	0.13-0.72	0.31	-	4
	5000,9443	1975	pickerel	S41,A26	18	0.42-1.84	0.92*	0.68	94
		1975	pike	S41,A26	56	0.48-1.44	0.89	0.74*	95
		1975	white sucker	S41,A26	10	0.09-0.23	0.15	-	0
		1975	whitefish	S41,A26	46	0.03-0.27	0.09	-	0
31	Portal Lake	1973	pickerel	S41,A26	26	0.22-0.90	0.44*	0.47*	35
	5021,9337	1973	whitefish	S41,A26	26	0.03-0.93	0.19	-	4
32	Right Lake	1976	pickerel	S41,A27	133	0.40-2.36	1.06	1.12*	95
	5029,9425	1976	pike	S41,A27	38	0.42-3.48	1.30*	1.21	97
		1976	redhorse sucker	"	15	0.19-0.44	0.28	-	0
		1976	white sucker	S41,A27	10	0.10-0.35	0.16	-	0
		1976	whitefish	S41,A27	48	0.09-0.27	0.15	-	0
33	Roger Lake	1976	burbot	S41,A27	10	0.33-0.78	0.50	-	50
	5028,9420	1976	cisco	S41,A27	10	0.12-0.45	0.25	-	0
		1976	pickerel	S41,A27	107	0.22-2.12	0.92	1.00*	87
		1976	pike	S41,A27	42	0.34-2.69	1.06*	0.90	95
		1976	redhorse sucker	"	6	0.24-0.47	0.33	-	0
		1976	smallmouth bass	"	9	0.35-1.16	0.52	-	22

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
	Roger Lake	1976	white sucker	S41,A27	10	0.12-0.28	0.19	-	0
		1976	whitefish	S41,A27	34	0.10-0.34	0.19	-	0
34	Roughrock Lake	1975	cisco	S41,A25	8	0.09-0.18	0.14	-	0
	5006,9446	1975	cisco	S41,A26	8	0.09-0.18	0.14	-	0
		1975	pickerel	S41,A25	49	0.28-2.00	0.86*	0.89*	84
		1975	pickerel	S41,A26	49	0.28-2.04	0.86	0.89	84
		1975	pike	S41,A25	50	0.24-1.60	0.77	0.67	72
		1975	pike	S41,A26	50	0.24-1.60	0.77	0.67	72
		1975	white sucker	S41,A25	79	0.07-0.57	0.31	-	5
		1975	white sucker	S41,A26	50	0.07-0.57	0.31	-	2
		1975	yellow perch	S41,A25	7	0.16-0.38	0.27	-	0
		1975	yellow perch	S41,A26	7	0.16-0.38	0.27	-	0
35	Routine Lake	1975	cisco	S41,A25	25	0.19-0.31	0.24	-	0
	5010,9459	1975	cisco	S41,A26	25	0.19-0.31	0.24	-	0
		1975	pickerel	S41,A25	48	0.42-1.50	0.89	1.04	92
		1975	pickerel	S41,A26	47	0.42-1.53	0.90*	1.05*	91
		1975	pike	S41,A25	28	0.32-2.30	0.85	0.78	71
		1975	pike	S41,A26	28	0.32-2.27	0.85	0.79	71
		1975	smallmouth bass "	,A25	11	0.31-1.20	0.60	-	64
		1975	"	S41,A26	11	0.31-1.21	0.60	-	64
36	Rowdy Lake	1971	pickerel	S41,A26	116	0.13-1.77	0.77	1.02*	75
	5033,9429	1971	pike	S41,A26	94	0.27-2.07	0.98*	0.96	87

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
37	Salveson Lake	1976	cisco	S41,A27	9	0.25-0.56	0.38	-	11
	5022,9423	1976	pickerel	S41,A27	137	0.19-3.70	0.97*	1.58*	84
		1976	pike	S41,A27	43	0.47-1.93	0.92	1.00	98
		1976	white sucker	S41,A27	9	0.11-0.52	0.27	-	11
		1976	whitefish	S41,A27	19	0.11-1.29	0.33	-	5
38	Scenic Lake	1976	pike	S41,A27	32	0.19-2.59	1.05*	1.59*	81
	5014,9413	1976	smallmouth bass	"	61	0.48-1.84	0.85	-	93
		1976	white sucker	S41,A27	11	0.08-0.30	0.16	-	0
		1976	whitefish	S41,A27	11	0.07-0.50	0.15	-	0
39	Scotty Lake	1976	pickerel	S41,A27	29	0.21-1.31	0.54	0.64	45
	5021,5404	1976	pike	S41,A27	38	0.21-4.45	0.59*	0.77*	34
		1976	white sucker	S41,A27	5	0.07-0.09	0.08	-	0
40	Separation L.	1976	burbot	S41,A25	6	0.32-1.20	0.69	-	67
	5014,9424	1976	cisco	S41,A25	10	0.27-0.64	0.40	-	20
		1976	mooneye	S41,A25	18	0.35-1.40	0.75	-	83
		1976	pickerel	S41,A25	39	0.79-4.10	2.11	2.82	100
		1976	pike	S41,A25	30	0.80-8.50	2.68*	3.12*	100
		1976	redhorse sucker	"	10	0.56-3.10	1.56	-	100
		1976	sauger	S41,A25	22	1.20-5.10	2.57	-	100
		1976	white sucker	S41,A25	9	0.36-0.79	0.49	-	22
		1976	whitefish	S41,A25	6	0.25-0.83	0.41	-	17

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD		N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg
41	Snook Lake 5011,9441	1975	cisco	S41,A25	21	0.16-0.37	0.27	-	0
		1975	cisco	S41,A26	21	0.14-0.41	0.27	-	0
		1975	lake trout	S41,A25	48	0.35-2.33	0.76	0.85	88
		1975	lake trout	S41,A26	48	0.34-2.60	0.82*	0.89*	83
		1975	pike	S41,A25	42	0.24-1.11	0.70	0.62	79
		1975	pike	S41,A26	42	0.23-1.93	0.77	0.70	79
		1975	white sucker	S41,A25	25	0.08-0.51	0.24	-	4
		1975	white sucker	S41,A26	25	0.08-0.48	0.23	-	0
42	Snowshoe Lake 5034,9507	1975	burbot	S41,A25	19	0.30-0.74	0.51	-	53
		1975	burbot	S41,A26	19	0.30-0.74	0.51	-	47
		1975	cisco	S41,A25	16	0.09-0.32	0.17	-	0
		1975	cisco	S41,A26	16	0.09-0.32	0.17	-	0
		1975	pickerel	S41,A25	39	0.34-1.30	0.78	0.96*	85
		1975	pickerel	S41,A26	39	0.34-1.25	0.77	0.95	82
		1975	pike	S41,A25	38	0.36-1.50	0.92*	0.84	84
		1975	pike	S41,A26	38	0.36-1.53	0.92	0.84	84
		1975	white sucker	S41,A25	45	0.04-0.29	0.13	-	0
		1975	white sucker	S41,A26	45	0.04-0.29	0.13	-	0
		1975	whitefish	S41,A25	39	0.03-0.20	0.09	-	0
		1975	whitefish	S41,A26	39	0.03-0.20	0.09	-	0
43	Sumach Lake 5035,9358	1975	pickerel	S41,A26	49	0.16-1.05	0.59*	1.11*	-
		1975	whitefish	S41,A26	20	0.06-0.30	0.14	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
44	Sup Lake	1975	pickerel	S41,A25	50	0.14-1.00	0.51	0.52	50
	5017,9333	1975	pickerel	S41,A26	50	0.14-1.02	0.51*	0.53*	42
		1975	white sucker	S41,A26	10	0.06-0.18	0.11	-	0
		1975	whitefish	S41,A25	51	0.01-0.38	0.06	-	0
		1975	whitefish	S41,A26	51	0.01-0.38	0.06	-	0
45	Sydney Lake	1971	pickerel	S41,A26	99	0.13-1.06	0.38	0.43	20
	5040,9425	1971	pike	S41,A26	88	0.19-1.42	0.53*	0.51*	42
46	Tetu Lake	1976	cisco	S41,A25	20	0.04-0.76	0.24	-	15
	5011,9502	1976	pickerel	S41,A25	48	0.65-3.90	1.65	2.37	100
		1976	pickerel	S41,A25	10	1.20-3.90	1.91	3.01	100
		1976	pike	S41,A25	47	0.92-6.20	2.23	3.00*	100
		1976	pike	S41,A25	30	1.10-6.20	2.27*	2.90	100
		1976	sauger	S41,A25	20	1.00-3.10	1.64	-	100
		1976	white sucker	S41,A25	10	0.26-1.40	0.78	-	70
		1976	whitefish	S41,A25	25	0.02-0.82	0.33	-	28
47	The Dalles	1976	brown bullhead	S41,A25	6	0.19-0.31	0.23	-	0
	(Lake of)	1976	cisco	S41,A25	10	0.11-0.30	0.19	-	0
	4953,9432	1976	pickerel	S41,A25	40	0.27-1.40	0.54	0.83*	45
		1976	pike	S41,A25	48	0.20-1.90	0.55	0.81	42
		1976	redhorse sucker	"	7	0.11-0.30	0.19	-	0
		1976	sauger	S41,A25	9	0.34-0.80	0.57*	-	56
		1976	white sucker	S41,A25	9	0.06-0.53	0.25	-	11
		1976	yellow perch	S41,A25	10	0.10-0.21	0.14	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
48	Toole Lake	1975	pickerel	S41,A25	30	0.41-1.30	0.72*	0.74*	90
	5022,9332	1975	pickerel	S41,A26	30	0.41-1.28	0.72	0.73	90
		1975	white sucker	S41,A25	10	0.06-0.23	0.11	-	0
		1975	white sucker	S41,A26	10	0.06-0.23	0.11	-	0
		1975	whitefish	S41,A25	43	0.03-0.35	0.10	-	0
		1975	whitefish	S41,A26	43	0.03-0.35	0.10	-	0
49	Toothpick L.	1975	burbot	S41,A25	5	0.40-0.78	0.57	-	60
	5006,9407	1975	burbot	S41,A26	5	0.54-1.29	0.86*	-	100
		1975	cisco	S41,A25	50	0.09-0.19	0.13	-	0
		1975	cisco	S41,A26	49	0.11-0.39	0.20	-	0
		1975	pickerel	S41,A25	44	0.42-1.60	0.73	0.76	89
		1975	pike	S41,A25	56	0.19-1.57	0.83	0.83*	82
		1975	white sucker	S41,A25	14	0.06-0.48	0.25	-	0
50	Trapline Lake	1975	cisco	S41,A25	21	0.10-0.32	0.22	-	0
	5030,9457	1975	cisco	S41,A26	21	0.10-0.32	0.22	-	0
		1975	pickerel	S41,A25	56	0.39-1.70	0.90	1.29	89
		1975	pickerel	S41,A26	56	0.39-1.71	0.89	1.30*	88
		1975	pike	S41,A25	15	0.40-2.40	1.00*	1.03	67
		1975	pike	S41,A26	15	0.40-2.43	1.00	1.05	60
		1975	white sucker	S41,A25	50	0.04-0.35	0.15	-	0
		1975	white sucker	S41,A25	50	0.04-0.35	0.15	-	0

FISH

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or SAMPLING AND ANALYTICAL METHOD	N	MERCURY RANGE (ppm)	ANALYSIS MEAN (ppm)	STANDARD (ppm)	% GREATER THAN 0.5 ppm Hg	
51	Trout Lake	1973	lake trout	S41,A26	8	0.17-0.62	0.35	0.50	13
	5013,9455	1973	pike	S41,A26	19	0.25-2.07	0.56*	0.84*	37
52	Umfreville L.	1976	burbot	S41,A25	5	0.28-2.10	1.35	-	60
	5018,9445	1976	cisco	S41,A25	6	0.23-0.43	0.31	-	0
		1976	pickerel	S41,A25	50	0.44-4.90	1.61	2.32	98
		1976	pike	S41,A25	48	0.67-10.0	2.32*	2.94*	100
		1976	sauger	S41,A25	24	0.62-3.40	1.65	-	100
		1976	white sucker	S41,A25	10	0.07-1.10	0.58	-	70
		1976	whitefish	S41,A25	10	0.37-0.90	0.62	-	60
		1976	yellow perch	S41,A25	7	0.28-1.00	0.54	-	57
53	Wabigoon Lake	1976	pickerel	S41,A25	50	0.39-1.30	0.69	0.56*	88
	4944,9244	1976	pike	S41,A25	50	0.20-1.80	0.73*	0.53	82
		1976	whitefish	S41,A25	5	0.05-0.07	0.05	-	0
54	Winnipeg River	1975	mooneye	S41,A26	22	0.19-0.58	0.31	-	5
	4950,9440	1975	pickerel	S41,A26	68	0.16-2.43	0.83	0.68	85
		1975	pike	S41,A26	45	0.44-2.63	1.06*	0.86*	91
		1975	sauger	S41,A26	19	0.26-1.08	0.61	-	58
		1975	smallmouth bass	"	9	0.23-1.01	0.49	-	44
		1975	white sucker	S41,A26	13	0.09-0.38	0.19	-	0
		1975	white sucker	S41,A26	74	0.06-0.74	0.29	-	5

APPENDIX XI

WABIGOON - ENGLISH RIVER SYSTEM - MERCURY IN SEDIMENTS
DATA SHEETS

SEDIMENTS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE
					RANGE (ppb)	MEAN (ppb)	
1	Ball Lake 5018,9400	1975	S38,A10	3	50-280	190	R58
2	Black Sturgeon Lake 4951,9425	1975	S38,A10	1	-	80	R58
3	Blueberry Lake 5009,9444	1975	S38,A10	1	-	140	R58
4	Clay Lake 5003,9330	1975	S38,A10	12	270-5400	2820	R58
5	Delaney Lake 5005,9403	1975	S38,A10	1	-	100	R58
6	Eagle Lake 5040,9453	1975	S38,A10	1	-	20	R58
7	Eagle River 4950,9312	1975	S38,A10	1	-	80	R58
8	Gooseneck Lake 5002,9448	1975	S38,A10	1	-	310	R58
9	Grassy Narrows Lake 5009,9359	1975	S38,A10	3	40-100	67	R58
10	Gun Lake 4957,9439	1975	S38,A10	1	-	200	R58
11	Indian Lake 5013,9404	1971	S39,A10	1	-	220	R58
12	Keys Lake 5002,9401	1975	S38,A10	1	-	10	R58

SEDIMENTS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE
					RANGE (ppb)	MEAN (ppb)	
13	Lount Lake 5010,9417	1971	S39,A10	1	-	260	R58
14	Sand Lake 5005,9439	1975	S38,A10	1	-	380	R58
15	Segise Lake 5009,9339	1975	S38,A10	1	-	630	R58
16	Separation Lake 5014,9424	1975	S38,A10	3	220-400	310	R58
17	Tetu Lake 5011,9502	1975	S38,A10	2	140-160	150	R58
18	Toothpick Lake 5006,9407	1975	S38,A10	1	-	120	R58
19	Umfreville Lake 5018,9445	1975	S38,A10	1	-	400	R58
20	Wabigoon Lake 4944,9244	1975	S38,A10	3	10-50	30	R58
21	Wabigoon River 5015,9356 (50 m upstream from Reed)	1975	S38,A10	3	20-60	40	R58
	1 km downstream	1975	S38,A10	3	2300-29000	13300	R58
	1.5 km downstream	1975	S38,A10	3	630-18000	10000	R58
	2.5 km downstream	1975	S38,A10	3	4800-11100	7700	R58
	6 km downstream	1975	S38,A10	3	8400-9600	9100	R58

SEDIMENTS

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE
					RANGE (ppb)	MEAN (ppb)	
	Wabigoon River (11 km downstream from Reed)	1975	S38,A10	3	9000-10600	9500	R58
22	18 km downstream	1975	S38,A10	3	8800-12000	10600	R58
	26 km downstream	1975	S38,A10	3	3600-6100	4900	R58
23	34 km downstream	1975	S38,A10	3	1000-3000	2000	R58
24	43 km downstream	1975	S38,A10	3	5200-7800	6800	R58
	55 km downstream	1975	S38,A10	3	3800-9700	7000	R58
25	63 km downstream	1975	S38,A10	2	560-8200	4400	R58
26	125 km downstream	1975	S38,A10	1	-	300	R58

APPENDIX XII

WABIGOON - ENGLISH RIVER SYSTEM - MERCURY IN AQUATIC BIRDS
DATA SHEETS

WILDLIFE (AQUATIC BIRDS)

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE
					RANGE (ppm)	MEAN (ppm)	
1	Ball Lake 5018,9400	Sept., 1972	Common Goldeneye	9	0.62-2.60	1.43	R60
			Hooded Merganser	2	0.65-2.94	1.80	R60
			Common Merganser	15	0.51-7.23	3.04*	R60
2	Clay Lake 5003,9330	Aug., 1971	Mallard	16	1.67-9.43	4.78	R60
			Green-Winged Teal	2	0.79-1.05	0.92	R60
			Blue-Winged Teal	17	3.20-9.10	5.91	R60
			American Widgeon	5	0.30-0.90	0.48	R60
			Common Goldeneye	10	0.58-14.7	7.45	R60
			Hooded Merganser	7	3.90-17.6	12.31*	R60
			Common Merganser	17	4.40-13.1	6.79	R60
3	Grassy Narrows 5009,9357	Aug. 4, 1976	Common Merganser S44, A29	16	0.18-0.43	0.27*	R62
		Oct. 17, 1976	North American Coot S44, A29	4	0.03-0.14	0.07	R62
4	Indian Lake 5015,9404	Fall, 1971	Mallard	3	0.22-0.90	0.50	R60
			Common Goldeneye	2	0.39-0.55	0.47	R60
		Fall, 1972	Common Merganser	2	2.08-3.49	2.79*	R60
5	Maynard Lake 5022,9350	July, 1971	Common Goldeneye	5	0.09-1.18	0.54	R60

WILDLIFE (AQUATIC BIRDS)

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE
					RANGE (ppm)	MEAN (ppm)	
6	Separation Lake 5014,9424	Fall, 1972	Common Goldeneye	3	0.40-0.73	0.56	R60
			Common Merganser	2	1.14-2.68	1.91*	R60
7	Tetu Lake 5011,9502	Fall, 1971	Mallard	3	0.06-0.21	0.15	R60
			Green-Winged Teal	3	0.15-0.19	0.18*	R60
			Common Goldeneye	3	0.07-0.24	0.15	R60
8	Wabigoon Lake 4945,9244	July, 1971	Common Goldeneye	4	0.20-0.46	0.37	R60
			Common Merganser	3	1.01-1.37	1.17	R60
9	Wabigoon River 5015,9356	Sept., 1972	Common Goldeneye	2	1.52-1.75	1.64*	R60
			Common Merganser	2	0.64-1.89	1.26	R60
10	Winnipeg River 5014,9509	Fall, 1971	Mallard	4	0.09-0.13	0.12	R60
			Hooded Merganser	2	0.78-0.98	0.93*	R60

APPENDIX XIII

WABIGOON - ENGLISH RIVER SYSTEM - MERCURY IN INVERTEBRATES
DATA SHEETS

WILDLIFE (INVERTEBRATES)

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE
					RANGE (ppm)	MEAN (ppm)	
1	1.6 km upstream from Dryden	1974	S45,A30	15	-	0.15*	R64
	3 km upstream	1974	S45,A30	6	-	0.10	R64
2	8 km upstream	1974	S45,A30	2	-	0.15*	R64
3	11 km upstream	1974	S45,A30	6	-	0.13*	R64
4	Eagle River 4950,9312	1974	S45,A30	4	-	0.08	R64
		1974	S45,A30	5	-	0.15*	R64
5		1974	S45,A30	6	-	0.12*	R64
6	Eagle Lake 4942,9313	1974	S45,A30	7	-	0.07*	R64
7		1974	S45,A30	6	-	0.09*	R64
8	61 km downstream from Dryden	1974	S45,A30	10	-	1.49*	R64
	65 km downstream	1974	S45,A30	10	-	1.28	R64
9	70 km downstream	1974	S45,A30	19	-	1.82*	R64
	73 km downstream	1974	S45,A30	10	-	1.70	R64
	75 km downstream	1974	S45,A30	7	-	1.62	R64
	77 km downstream	1974	S45,A30	4	-	1.57	R64
	78 km downstream	1974	S45,A30	10	-	1.63	R64
10	80 km downstream (Clay Lake)	1977	S45,A30	36	0.64-3.80	1.46*	R64

WILDLIFE (INVERTEBRATES)

DATA POINT	LOCATION	SAMPLING PERIOD	SPECIES and/or ANALYTICAL METHOD	N	MERCURY ANALYSIS		REFERENCE
					RANGE (ppm)	MEAN (ppm)	
11	98 km downstream	1974	S45,A30	3	-	1.00*	R64
12	100 km downstream	1974	S45,A30	8	-	1.79*	R64
13	107 km downstream	1974	S45,A30	7	-	2.96*	R64
14	123 km downstream	1974	S45,A30	5	-	0.93*	R64
15	130 km downstream	1974	S45,A30	15	-	3.93*	R64
16	152 km downstream	1974	S45,A30	24	-	0.84*	R64
17	220 km downstream (Kettle Rapids)	1974	S45,A30	1	-	0.59*	R64
18	232 km downstream	1974	S45,A30	3	-	1.00*	R64
19	Whitedog Lake 5009,9453	1974	S45,A30	5	-	0.22*	R64
20	Pistol Lake 5000,9443	1974	S45,A30	4	-	0.27*	R64

APPENDIX XIV

SAMPLING PROCEDURES

- S1 - MOE - Vegetation samples were collected from the identified sources. Approximately 500 g. samples of fresh foliage were placed in polyethylene bags and refrigerated prior to analysis.
- S2 - CCIW - Four randomly chosen plants were collected from the major species present at each sample location. The samples were washed, frozen and freeze dried. Dried samples were blended to a coarse powder that was further ground in an agate dish of an automatic grinder to no. 100 (149 u) size.
- S3 - J.F. MacLaren Limited - Samples of the major species of vegetation were taken.
- S4 - MOE - A mobile monitoring unit containing a scintrex analyser was operated by MOE Air Resources Branch. Measurements are made for periods of at least 30 minutes.
- S5 - IWD - Snow core samples were taken in polypropylene bottles, preserved with sulphuric acid and potassium dichromate and stored.
- S6 - MOE - Snow was collected from clean areas (50 cm x 50 cm surface area and a depth of 20 cm) using a clean plastic shovel, placed in large, heavy-gauge polyethylene bags and stored.
- S7 - IWD - Water samples were collected using PVC VanDorn bottles and PVC pumps to provide an aliquot sample for storage in polypropylene bottles. Samples were preserved with sulphuric acid.
- S8 - IWD - As per S7 except that samples were preserved using sulphuric acid and potassium dichromate.
- S9 - MOE - Samples were collected in glass bottles and preserved with nitric acid and potassium permanganate.
- S10 - EPS Ontario Region Laboratory - as per S9.
- S11 - MOE - Samples were collected using a 2.5 cm O.D. stainless steel corer. Surface debris and visible organic material were removed prior to insertion of the corer. Samples were air dried for 48 hours, coarsely screened to remove gravel and organic debris and finely screened through an 80 mesh sieve.
- S12 - J.F. MacLaren Limited - Soil samples were taken using a 6-inch diameter hand auger.

- S13 - GSC - Water samples were collected in polyethylene bottles and preserved with potassium permanganate and sulphuric acid.
- S14 - GSC - Sediment core samples were collected using a Phleger sampler. Sieved (sub 63u), air dried fractions were used for analyses (results are the top 0-5 cm).
- S15 - GSC - Sediment surface grab samples (less than 5 cm) were taken using an Eckman-Birge dredge. Samples were air dried and pulverized before analysis.
- S16 - J.F. MacLaren Limited - Core samples were taken using a vibra-corer.
- S17 - DPW, Thunder Bay - Grab samples.
- S18 - Golder Associates - Samples were taken with a split spoon corer.
- S19 - Beak Consultants Limited - Sediment grab samples were obtained using a Ponar dredge.
- S20 - MOE - Sediment grab samples were taken using a Shipek sampler.
- S21 - DPW, London - Grab samples.
- S22 - DPW - Grab samples.
- S23 - MOE - Core samples were taken using a plastic tube suction corer.
- S24 - William Trow and Associates Limited - Core samples were taken by manually pushing a Shelby tube corer into the sediments to obtain approximately one foot core composites.
- S25 - Geocon Offshore - Core samples were taken by manually pushing a thin walled Shelby tube corer into the sediments to obtain approximately 30 inch core composites. Samples were sealed in sample tubes and later extruded into glass jars for analysis.
- S26 - Beak Consultants Limited - Core samples were taken to a depth of 25 cm.
- S27 - Geocon Offshore - Core samples were taken by manually pushing a split spoon sampler into the sediments to a depth of 90 cm. The samples were separated into three 30 cm long sections for analysis.

- S28 - Geocon Offshore - Grab samples were taken of the top 4 inches of sediment using a Shipek sampler.
- S29 - GSC - Sediment sampling program.
- S30 - MOE - Composite sediment samples were used with a minimum of two Shipek grab samples being taken from each sample site. The samples represent the top 0-5 cm.
- S31 - MOE/EPS - Sediment samples were taken using a push corer (top 0-15 cm are reported).
- S32 - DPW - Two core samples were taken using a Benthos sampler (top 0-12 inches are reported).
- S33 - DPW - Two grab samples were taken using a Shipek sampler.
- S34 - MOE/EPS - Sediment core samples were taken by divers.
- S35 - CCIW - Sediment grab samples were collected using a Shipek sampler. The top 2 cm of sample was freeze dried and later sieved with a 20 mesh screen and then ground and homogenized to pass 100 mesh prior to analysis.
- S36 - CCIW - Sediment grab samples were collected using a Shipek sampler. The top 3 cm of sample was freeze dried and later ground to 100 mesh and homogenized.
- S37 - CCIW - Sediment grab samples were collected using a Ponar sampler. The top 1 cm of sample was freeze dried and ground to 100 mesh before analysis.
- S38 - MOE - Sediment grab samples were collected using a dredge. Eighty percent of the sample stations on the Wabigoon-English system were sampled with 3 dredges and the remaining 20% were sampled with 9 dredges. The top 5 cm of sediment was used for analysis.
- S39 - MOE - Sediment core samples were collected at a rate of 3 cores per site.
- S40 - Medical Services Branch, NHW - Blood samples are collected using specially prepared equipment.
- S41 - MNR/MOE - Provincial fish sampling is conducted using nets - normally for the predator species (pike, walleye, lake trout). Samples are submitted as skinned fillets taken from the epaxial muscle (behind the head) to obtain 100 grams of tissue. Samples are wrapped in foil and refrigerated.

- S42 - FMS - Fish sampling as per S41.
- S43 - CWS - Herring Gull eggs were sampled by taking a single egg from each of ten randomly selected nests, in each of two colonies, located in each of the Great Lakes.
- S44 - MNR - Wildlife samples were collected for analysis by MOE.
- S45 - FWI - Crayfish samples were collected as part of an ongoing monitoring program in the Wabigoon-English River system.

APPENDIX XV
ANALYTICAL PROCEDURES

- A1 - MOE - Vegetation sample processing was conducted by the Phytotoxicology Section, Air Resources Branch. Each sample was oven dried at 80°C for 30 hours and subsequently ground in a Wiley mill equipped with a 1 mm pore size screen. All samples were analysed using flameless atomic absorption spectrometry by the Air Quality Laboratory, Laboratory Services Branch.
- A2 - CCIW - Total mercury in plant samples was determined by cold vapour method as per J.A. Capobianco, 1975 - unpublished report - CCIW.
- A3 - J.F. MacLaren Limited - Vegetation samples were analysed using the method described in "Federal Register," Volume 39, No. 208, October 25, 1974, Method No. 105.
- A4 - MOE - The Scintrex mercury vapour analyser was used for the detection and determination of mercury. It is a UV spectrophotometer with a sensitivity of 0.005 ug/m .
- A5 - IWD - Preserved samples are oxidized to inorganic mercury compounds by heating with sulphuric acid, potassium permanganate and potassium persulphate. After oxidation the mercuric compounds are reduced with stannous sulphate in an hydroxylamine sulphate - sodium chloride solution to elemental mercury. This mercury is air sparged from solution and passed through an absorption cell situated in the light path of a mercury lamp (cold vapour atomic absorption method).
- A6 - MOE - See analytical method A5 (nitric acid is also used in the initial digestion process).
- A7 - GSC - Cold vapour atomic absorption method as specified in "Field and laboratory methods used by the Geological Survey of Canada in geological surveys. No. 12. Mercury in ores, rocks, soils, sediments and water; Geol. Surv. Can., Paper 73-21, 22 p., I.R. Jonasson, J.J. Lynch and L.J. Trip."
- A8 - EPS Ontario Region Laboratory - as per A6.
- A9 - Mercury determinations per "Amounts of mercury in soils of some golf course sites", Can. J. Soil Sci. 53, 130-132, 1973, A.J. Maclean, B. Stone and W.E. Cordukes.
- A10 - MOE - Sediment samples were heated in aqua regia, cooled and digested after the addition of potassium

permanganate. After cooling and reduction with hydroxylamine sulphate the samples are filtered, reduced with stannous sulphate and aerated. The air stream is analysed by flameless atomic absorption.

- A11 - Enviroclean Limited - Sediment samples were dried overnight at 60°C, heated in aqua regia and digested after the addition of potassium permanganate. After cooling the cold vapour atomic absorption technique was applied. (See U.S. Federal Register, Volume 39, No. 208, October 25, 1974, Method No. 105).
- A12 - MOE/Enviroclean - Five core samples were analysed by both Enviroclean (A11) and MOE (A10).
- A13 - Thunder Bay Testing Limited.
- A14 - Barringer Research Limited - Pressure broadening atomic absorption technique as specified in J. Applied Earth Science, 75, pp. B120-124, 1966, A.R. Barringer.
- A15 - Beak Consultants Limited - Air dried samples were digested in a nitric acid/hydrochloric acid solution. Following reduction to its metallic state, mercury was determined using flameless atomic absorption.
- A16 - Pollutech - Sediment samples were analysed according to the procedures specified in the Environment Canada Analytical Methods Manual using a Perkin 109AA.
- A17 - Golder Associates/Chemex Labs - Samples were air dried and ball milled to obtain a minus 80 mesh fraction for analysis. Mercury analyses were conducted by Chemex Labs using the procedure specified in A7.
- A18 - MOE - Sediment samples were analysed by pyrolysis and oxidation/digestion hot plate to yield an average result.
- A19 - ORF - Sediment samples were analysed using flameless atomic absorption.
- A20 - Chemex Labs (Alberta) - Samples were analysed as per the method in the Chemex Procedures Manual, 1972.
- A21 - Bondar Clegg Limited - Sediment samples were digested in a nitric acid/hydrochloric acid solution, reduced with hydroxylamine solution and stannous sulphate and analysed on a Coleman 50 meter.
- A22 - Barringer Research Limited - Sediment samples were

analysed using the total combustion procedure developed by Barringer.

- A23 - CCIW - Sediment samples were analysed by flameless atomic absorption after acid extraction.
- A24 - Medical Services Branch, NHW - Blood samples are analysed by atomic absorption according to the procedure given in the Journal of the AOAC 55, 5, 966, 1972. Results are reported as total mercury on a per person basis.
- A25 - MOE - Fish samples are analysed using a technique of digestion, oxidation and reduction followed by flameless atomic absorption as specified in "Determination of Total Mercury in Biological Material", January, 1973.
- A26 - FMS - Prior to January, 1976, fish samples were analysed using low temperature digestion as specified in "Semi-Automated Method for the Determination of Total Mercury in Fish", M.R. Hendzel and D.M. Jamieson, FMS.
- A27 - FMS - After January, 1976, fish samples are analysed using a technique of digestion oxidation and reduction followed by flameless atomic absorption as specified in Journal of Analytical Chemistry 48, 6, 926, May, 1976.
- A28 - ORF - Herring gull egg samples were analysed using flameless atomic absorption.
- A29 - MOE - Wildlife samples are analysed using the technique specified in A25.
- A30 - FWI - Crayfish samples are analysed using a technique of digestion, oxidation and reduction followed by flameless atomic absorption detection of the air stream passing over the sample. The method is described in Atomic Absorption Newsletter 10, 5, 101, September/October, 1971.

APPENDIX XVI

REFERENCES

- R1 - "Air Quality Balmerton, Annual Report 1975"; MOE Report, June, 1976, H.D. Griffin.
- R2 - "EPS/MOE Joint Mercury Monitoring Program - CIL Cornwall", Report OR-4, November, 1976, D.J. Pascoe.
- R3 - "Air Quality Dryden, Annual Report 1975"; MOE Report, July, 1976, H.D. Griffin.
- R4 - "Air Quality Marathon, Annual Report 1976"; MOE Report, June, 1977, H.D. Griffin.
- R5 - "Mercury Content in Selected Areas at St. Clair River Delta", June, 1977, A. Mudroch and J. Capobianco.
- R6 - "Report on Environmental Studies - Southeast Bend Cut-Off Channel - St. Clair River" to Department of Public Works, January, 1975, J.F. MacLaren Limited.
- R7 - "Report of Phase 3 Environmental Studies Southeast Bend Cut-Off Channel - St. Clair River" to Department of Public Works, November, 1975, J.F. MacLaren Limited.
- R8 - "Report on Air Quality Survey in Cornwall", MOE Report ARB-TDA No. 36-77, January, 1977.
- R9 - Internal IWD memorandum containing raw data analyses, provided by M.T. Shiomi.
- R10 - CCIW Naquadat printout for Lake Erie Cruise No. 74-104, August, 1974.
- R11 - CCIW Naquadat printout for Georgian Bay Cruise No. 74-512 and 74-514, October and December, 1974.
- R12 - CCIW Naquadat printout for Lake Huron Cruise No. 74-211 and 74-213, October and December, 1974.
- R13 - CCIW Naquadat printout for Lake Ontario Cruise No. 74-018, August, 1974.
- R14 - CCIW Naquadat printout for Lake Superior Cruise No. 73-313, November, 1973.
- R15 - CCIW Naquadat printout for connecting channels - St. Lawrence River, June, 1975.
- R16 - CCIW Naquadat printout for connecting channels - Niagara River, May, 1976.
- R17 - CCIW Naquadat printout for connecting channels - St.

Mary's River, May, 1976.

- R18 - "Mercury and Arsenic Levels in Lake Sediments From the Canadian Shield", R.J. Allan, E.M. Cameron, and I.R. Jonasson, GSC 1974.
- R19 - "Mercury in Sediment and Water in the Wabigoon - English River System 1970-75", MOE Report, June, 1976, J.W. Parks.
- R20 - "Sources of Metals and Metal Levels in Municipal Wastewaters", COA Project 75-1-43, 1977, E.D. Atkins and J.R. Hawley.
- R21 - EPS Ontario Region Laboratory Reports.
- R22 - MOE Regional Monitoring Program.
- R23 - "Mercury in the Effluents from Chlor-Alkali Plants: Second Survey at Dryden, October, 1975", MOE Report, February, 1976.
- R24 - "American Can of Canada Limited Chemical Plant Survey, May 17-21, 1976, Interim Report", MOE Report, June, 1976, J. Drummond.
- R25 - "Mercury in Horizons of Some Soil Profiles in Canada", Can. J. Soil Sci. 54, 503-507, November, 1974, J.A. McKeague and B. Kloosterman.
- R26 - "Supplementary Report on Environmental Studies Undertaken in the Area of the Southeast Bend Cut-Off Channel - St. Clair River" to Department of Public Works, January, 1975, J.F. MacLaren Limited.
- R27 - "St. Clair River, Ontario, Soil Sampling at North End of Cut-Off Channel", October, 1975, J.F. MacLaren Limited.
- R28 - EPS Memorandum re "Improvements to Main Harbour Entrance, Thunder Bay, Ontario", September, 1975.
- R29 - "Lake Bottom Pollution Assessment Survey, Slip No. 2, McKellar Island Coal Handling Facility, Thunder Bay, Ontario", March, 1976, Golder Associates.
- R30 - Report on "Environmental Monitoring Program - Outer Harbour, East Headland and Aquatic Park" to Toronto Harbour Commissioners, March, 1977, Beak Consultants Limited.
- R31 - MOE Memorandum re "St. Clair River Dredging",

September, 1976.

- R32 - DPW Memorandum re "Snye River (Chenal Ecarte) - Proposed Dredging", April, 1976.
- R33 - DPW Memorandum re "Goderich, Ontario. Redredging Approach Channel", May, 1975.
- R34 - "Sediment Contamination in Scugog Branch - Trent Canal, MOE Report, Johnson and Persaud.
- R35 - Report on "Spragge Acid Depot" to MOT, May, 1977, Alberly, Pullerits, Dickson and Associates.
- R36 - Report on "Sarnia, Ontario - Sediment Sampling No. 082829D900" to Department of Public Works, March, 1977, Geocon Offshore.
- R37 - Memorandum re Pike Creek sampling program from Beak Consultants Limited to Department of Public Works, May, 1977.
- R38 - Report on "Oakville Harbour Sediment Sample Study" to DPW, September, 1976, Geocon Offshore.
- R39 - DPW Memorandum re "Peelee Island, Ontario - Proposed Redredging", May, 1976.
- R40 - Report on "Sediment Sampling Programmes, Cobourg Harbour and Oshawa Harbour, Ontario" to DPW, June, 1976, Geocon Offshore.
- R41 - DPW Memorandum re "Picton, Ontario - Dredging to Lake Ontario Co. Cement Dock", October, 1975.
- R42 - Report on "Oshawa, Ontario - Sediment Sample Study" to DPW, July, 1976, Geocon Offshore.
- R43 - GSC Open Files 405 and 406 - National Geochemical Reconnaissance Program, 1976".
- R44 - "Mercury Levels in Lake Huron Sediment", MOE Report, January, 1973, J.N. Bishop.
- R45 - "Water Quality Assessment of Some Ontario Embayments on Lake Huron, Including Goderich, Port Elgin, Southampton, Tobermory, Owen Sound, Collingwood, and Parry Sound", MOE Report for ULRG project D-27, May, 1977.
- R46 - EPS Memorandum re Port Credit Harbour sediment sampling, August, 1977.

- R47 - DPW Memorandum re "Kingsville, Ontario - Dredging, 1977", August, 1977.
- R48 - "Port Stanley Dredging Disposal Study 1974", report by Chemex Labs (Alberta) Limited for DFW, August, 1975.
- R49 - "Sedimentation Processes and Associated Changes in Surface Sediment Trace Metal Concentrations in Lake St. Clair, 1970-1974", R.L. Thomas, J.M. Jaquet, and A. Mudroch.
- R50 - MOE report (unpublished as of August, 1977) prepared by Southeastern Regional office giving details of 1975 mercury monitoring program in the St. Lawrence River near Cornwall.
- R51 - "The Distribution of Mercury in the Surficial Sediments of Lake Huron", Can. J. Earth Sci. 10, 194, 1973, R.L. Thomas.
- R52 - "The Distribution of Mercury in the Sediments of Lake Ontario", Can. J. Earth Sci. 9, 636, 1972, R.L. Thomas.
- R53 - "Mercury in the Surficial Sediments of Lake Erie", J.F.R.B. 33, 3, 404, 1976, R.L. Thomas and J.M. Jaquet.
- R54 - "The Waters of Lake Huron and Lake Superior, Volume III (Part B), Lake Superior", Upper Lakes Reference Group report to the IJC, 1977.
- R55 - "The Waters of Lake Huron and Lake Superior, Volume III (Part A), Lake Superior", Upper Lakes Reference Group report to the IJC, 1977.
- R56 - "The Distribution and Transport of Mercury in the Sediments of the Laurentian Great Lakes System", 1974, R.L. Thomas.
- R57 - "Effect of Pulp Mill Effluent on the Surficial Sediments of Western Nipigon Bay, Lake Superior", J.F.R.B. 34, 6, 817, 1977, R.G. Sandilands.
- R58 - "Mercury in Sediment and Water in the Wabigoon - English River System, 1970-75", MOE Report, June, 1976, J.W. Parks.
- R59 - Health and Welfare Canada - Minister's Briefing Notes, Ontario Regional results to June 30, 1977.

- R60 - "Mercury in Canadian Fish and Wildlife Used in the Diets of Native Peoples", CWS report No. 35, 1976, P. Desai-Greenaway and I.M. Price. (Individual references to reported data are given).
- R61 - Herring Gull Productivity and Toxic Chemicals in the Great Lakes in 1975", CWS report No. 34, 1975, G.A. Fox, A.P. Gilman, D.J. Hallett, R.J. Norstrom, F.I. Onuska and D.B. Peakall.
- R62 - MOE laboratory report "Mercury Levels in Ducks - Grassy Narrows Lake", February, 1977.
- R63 - "Air Quality Marathon, Annual Report 1975"; MOE Report, July, 1976, H.D. Griffin.
- R64 - Private communication from Mr. G.P. McRae, FWI.
- R65 - "The Waters of Lake Huron and Lake Superior, Volume II (Part B), Lake Huron, Georgian Bay and the North Channel", Upper Lakes Reference Group report to the IJC, 1977.



Fisheries and Environment
Canada

Pêches et Environnement
Canada

0043202H

CANADA. ENVIRONMENTAL PROTECTION
SERVICE. ONTARIO REGION. MS REPORT
NO. OR

22/1/80

DUE DATE

NOV 18 1991

201-6503

Printed
in USA