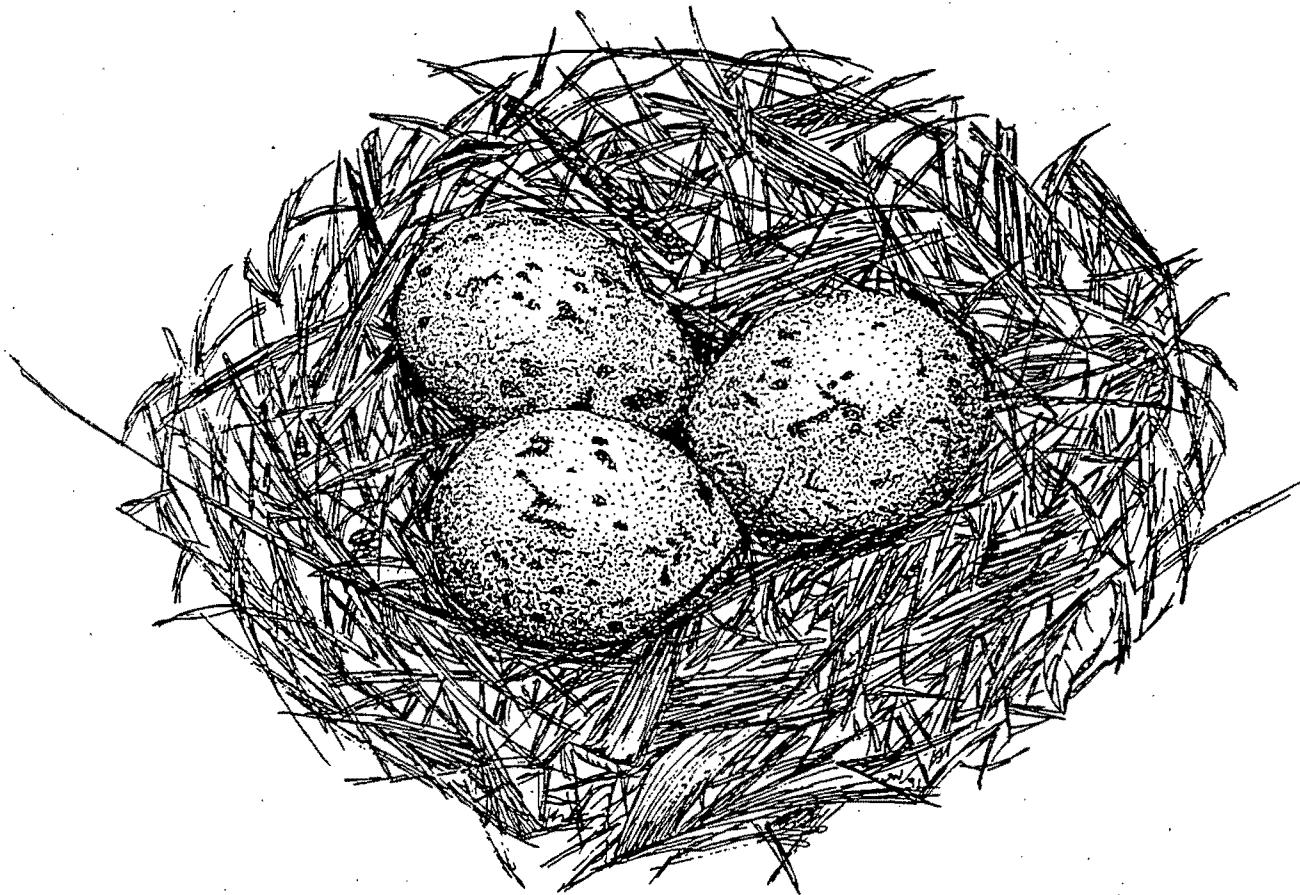


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**AN ATLAS OF CONTAMINANTS IN EGGS OF  
FISH-EATING COLONIAL BIRDS OF THE GREAT LAKES  
(1989-1992)**

Technical Report Series No. 193



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This report may be cited as: Pettit, K. E., C. A. Bishop, D. V.  
Weseloh, R. J. Norstrom. 1994. An atlas of contaminants in eggs  
of fish-eating colonial birds of the Great Lakes (1989-1992) Vol.  
I. Technical Report Series No. 193, Canadian Wildlife Service,  
Ecosystems Health Branch, Ontario Region.

Published by Authority of the  
Minister of the Environment  
Canadian Wildlife Service

© Minister of Supply and Services  
Catalogue No. CW69.5/193E  
ISBN 0-662-21445-5  
ISSN 0831-6481

Copies may be obtained from:  
Canadian Wildlife Service  
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## EXECUTIVE SUMMARY

During 1989-1992, Canadian Wildlife Service (Ontario) collected a total of 1495 eggs from fish-eating colonial birds from 50 colonies throughout the Great Lakes to measure the levels of 86 chlorinated hydrocarbon compounds, and the lipid concentrations present. These data were generated as part of a monitoring program started in 1970 to understand the temporal and spatial trends in environmental contaminant levels in biota of the Great Lakes. During 1989-1992, the levels of chlorinated hydrocarbons in colonial waterbird eggs have remained relatively stable within colonies across the Great Lakes. This is consistent with trends occurring in the mid-1980s in fish-eating colonial bird eggs from the Great Lakes as reported in *An atlas of contaminants in eggs of fish-eating colonial birds of the Great Lakes (1970-1988)* Volume I, Accounts by Species and *An atlas of contaminants in eggs of fish-eating colonial birds of the Great Lakes (1970-1988)* Volume II, Accounts by Chemical (Bishop et al., 1992a; 1992b).

The data from 1989-92 are summarized in two volumes. Volume I contains contaminant data summarized by location. Non-coplanar PCB congener levels, patterns and interpretation of these patterns are also included in Volume I for Herring Gull eggs from 14 annual monitoring colonies. Volume II contains contaminant data summarized by compound analyzed. Both volumes contain sample locations and number of samples collected for each species each year, and pooled values or means and standard deviations for organochlorine pesticide, polychlorinated biphenyls, dioxin and furan concentrations.

## SOMMAIRE

Entre 1989 et 1992, le Service canadien de la faune (Ontario) a recueilli un total de 1 495 oeufs d'oiseaux piscivores provenant de 50 colonies réparties dans la région des Grands Lacs. L'objectif était de mesurer les teneurs de 86 hydrocarbures chlorés et les concentrations de lipides. La collecte des données s'inscrivait dans un programme de surveillance qui a été institué en 1970 dans le but de comprendre les tendances géographiques et temporelles des concentrations de contaminants dans la biote des Grands Lacs. Pendant la période de 1989 à 1992, les concentrations d'hydrocarbures chlorés présentes dans les oeufs d'oiseaux aquatiques sont demeurées relativement stables dans les colonies des Grands Lacs. Ce résultat confirme la tendance qui a été observée au milieu des années 1980 dans les oeufs d'oiseaux piscivores des Grands Lacs et qui est décrite dans les publications *An atlas of contaminants in eggs of fish-eating colonial birds of the Great Lakes (1970-1988) Volume I, Accounts by Species* et *An atlas of contaminants in eggs of fish-eating colonial birds of the Great Lakes (1970-1988) Volume II, Accounts by Chemical* (Bishop et al., 1992a; 1992b).

Les données de 1989 à 1992 sont résumées dans les deux volumes ci-dessus. Le volume I énumère les contaminants selon le lieu d'échantillonnage. Le volume I aborde également les concentrations de congénères de BPC non coplanaires, les tendances générales et l'interprétation de ces tendances pour les oeufs de goéland argenté provenant de 14 colonies annuelles sous surveillance. Le volume II répartit les contaminants selon les composés analysés. Les deux volumes décrivent les lieux d'échantillonnage, le nombre d'échantillons recueillis annuellement pour chaque espèce, les valeurs des échantillons totalisés ou les moyennes, ainsi que l'écart type des échantillons individuels analysés pour la détection de pesticide organochloré, de biphenyles polychlorés, de dioxine et de furanne.

#### ACKNOWLEDGEMENTS

We would like to acknowledge the following people who have enthusiastically and diligently contributed to the study of contaminants in colonial waterbirds during 1989-1992 by collecting eggs or otherwise contributing to this project: Larry Benner, Hans Blokpoel, Sara Card, Rosalind Chaundy, Tom Clark, Neil Burgess, Mark Deakos, Peter Ewins, Ray Faber, Glen Fox, John Haig, Premek Hamr, Craig Hebert, Phil Holder, Alvaro Jaramillo, Michael Kasserra, Margie Koster, Nadine Litwin, Glen Lopinski, Jim Ludwig, Brian McHattie, Martin McNicholl, John Mitchell, Ralph Morris, Jan Neuman, Martin Parker, Jeff Robinson, Mark Ruthven, Laird Shutt, Murray Sindall and Gaston Tessier.

Access to nesting colonies was graciously provided by: Jim Day, Phillips Petroleum Company, Presqu'ile Provincial Park, Metropolitan Toronto Parks and Recreation, Metro Toronto Region Conservation Authority, Hamilton Harbour Commissioners, Ontario Hydro, Niagara Parks Commission, Dept. of Transport, Canadian Wildlife Service, Long Point Company, Cruse Moss, Ontario Ministry of Natural Resources, BASF Corporation, Walpole Island First Nation, and the U.S. Army Corps of Engineers.

Useful comments on draft manuscript(s) of the atlas were provided by Donna Stewart. Kate Seneco, Graham van der Slagt and Jan Neuman assisted in the proof reading of the data.

We also acknowledge support from the Great Lakes Action Plan. The project would not have been completed without funding from the Preservation Program. In addition, Environment Canada Great Lakes Cleanup Fund provided funds to print this report.

Many people have contributed to this work over the past twenty-two years. We hope that we have not forgotten anyone, but undoubtedly some volunteers who came out for a day or for a few hours to help may have been omitted; our apologies to those people. Here's to flat water forever!



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## INTRODUCTION

During 1989-1992, Canadian Wildlife Service (Ontario) collected a total of 1495 eggs from fish-eating colonial waterbirds from 50 colonies throughout the Great Lakes to measure the levels of chlorinated hydrocarbons, and lipid concentrations present. These data were generated as part of a monitoring program started in 1970 to understand the temporal and spatial trends in environmental contaminant levels in biota of the Great Lakes. During 1989-1992, the levels of chlorinated hydrocarbons in colonial waterbird eggs have remained relatively stable within colonies across the Great Lakes. This is consistent with trends occurring in the mid-1980s in fish-eating colonial bird eggs from the Great Lakes (Bishop et al., 1992a, 1992b).

The present documents, *An atlas of contaminants in eggs of fish-eating colonial birds of the Great Lakes (1989-1992) Volume I, Accounts by Species* and *An atlas of contaminants in eggs of fish-eating colonial birds of the Great Lakes (1989-1992) Volume II, Accounts by Chemical*, are meant to continue two earlier volumes: *An atlas of contaminants in eggs of fish-eating colonial birds of the Great Lakes (1970-1988) Volume I, Accounts by Species* and *An atlas of contaminants in eggs of fish-eating colonial birds of the Great Lakes (1970-1988) Volume II, Accounts by Chemical*. To facilitate access to the data, we have organized the text and tables in these reports similarly to the earlier reports. These reports contain the means and standard deviations or pooled analysis values for organochlorine pesticide, polychlorinated biphenyls and polychlorinated dioxins and furan concentrations as well as PCB congener patterns in Herring Gulls (*Larus argentatus*) at 14 colonies.

Data from specific sampling locations or for specific compounds can be retrieved in a stepwise manner from this atlas and instructions for data retrieval are detailed below. We have summarized the data by the sample sizes of egg collections (Volumes I & II, Section 1, Table 1-10), by location sampled (Volume I, Section 2, Table 11), and by chemical (Volume II, Section 2, Table 11). The means and standard deviations are presented for PCB congeners contributing to the sum of PCBs for Herring Gulls (Volume I, Section 3, Table 12). We have also provided maps (Volumes I & II, Section 1, Figures 1-10) showing the locations of sample collections and bar graphs (Volume II, Section 3, Figures 11-24) of mean percent contribution of 40-42 individual congeners to the total PCB concentrations in Herring Gull eggs from 14 annual monitoring colonies.

## INSTRUCTIONS FOR USERS OF THIS ATLAS

The atlas is designed to be used in a stepwise manner. The quickest method of finding the data available for a specific location, species or chemical is described below.

- 1) The first step is designed to alert the user to the scope of the database in this document. Tables 1-10 are summaries of species sampled, compounds analyzed and number of eggs analyzed in each sample year (1989-1992) from colonies in the Great Lakes. The accompanying maps (Figures 1-10) illustrate the locations of Great Lakes colonies of fish-eating birds from which eggs were collected for contaminant analysis. The colony names are numbered on the maps and these correspond to numbers on the accompanying tables. These tables are included in both volumes.

If, for example, you were interested in types of contaminants and the levels found in eggs of fish-eating birds in the Kingston area, you would refer to Figure 2 (page 14), which illustrates the colonies sampled in eastern Lake Ontario. The colonies: Snake Island, West Brothers Island, Pigeon Island, and Little Galloo Island are located near Kingston. You would then refer to Table 2, which lists the species whose eggs were sampled at each of these colonies, the years of sampling and the contaminants measured in the eggs. This simply and quickly informs you of the amount of data available for species in every area of the Great Lakes.

- 2) The second step is to locate the mean, standard deviation and sample size for each contaminant measurement in the eggs of every species that has been sampled in the location of interest. Section 2 in both volumes contain summaries of the same data, but present the data in two different ways. In Volume I (Section 2, Table 11), the data are presented summarized by sampling location, and in Volume II (Section 2, Table 11), by types of chemicals measured in the eggs. Volume I, Section 3 (Table 12) provides the breakdown of the sum of PCBs for Herring Gulls at Great Lakes monitoring colonies.

If, for example, you were interested in data concerning species on Snake Island in Lake Ontario, refer to the data summary by sample location (Volume I, Section 2). If you are interested in Dieldrin levels throughout the Great Lakes or in the Kingston area, reference to the data summary by chemical (Volume II, Table 11) would be most suitable. If you are interested in individual non-coplanar PCB congener levels in Herring Gulls throughout the Great Lakes or in the Kingston area, reference to the data summary by PCB congener (Volume I, Table 12) would be most suitable.

NOTE:

It is important that the summary of methodologies and statistical notes pertaining to the current data (page 7) be examined by all readers to facilitate proper interpretation of the data.

The locations, chemicals analyzed, and species are listed in the following order in all indices and tables:

1. The lakes and colony locations are listed, generally, in east to west order.
2. The contaminants measured are listed, generally, in alphabetical order. A list of the order of the contaminants measured and the abbreviations used on the tables begins on page 4.
3. The species sampled are listed in the following order:  
Herring Gull (*Larus argentatus*)  
Double-crested Cormorant (*Phalacrocorax auritus*)  
Caspian Tern (*Sterna caspia*)  
Common Tern (*Sterna hirundo*)  
Black-crowned Night-Heron (*Nycticorax nycticorax*)  
Ring-billed Gull (*Larus delawarensis*)  
Forster's Tern (*Sterna forsteri*)  
Great Egret (*Casmerodius albus*)

This list is in sequential order which reflects the species for which we have the most (Herring Gull) to least data.

## OUTLINE OF DOCUMENT - VOLUME I

### Section 1 - Data Summary by Sample Size

For each area, a map (Figures 1-10) and a corresponding table (Tables 1-10) present the species sampled, and the compounds and sample size analyzed in samples from each site.

### Section 2 - Data Summary by Location Sampled

The index (page 34) lists the pages in Table 11 in which all contaminant data can be found concerning each species at each colony. Following the index, Table 11 presents contaminant data for eggs of fish-eating birds summarized by lakes, colonies and years sampled.

### Section 3 - Non-Coplanar PCB Congener patterns in Herring Gull Eggs

In Figures 11-24, a graphic representation of the mean (+/- standard deviation) percentage of each polychlorinated biphenyl congener measured routinely in Herring Gull eggs during 1989-1992 from 14 annual monitoring colonies is provided. The index (page 275) lists the pages in Table 12 on which PCB congener data can

be found for each monitoring colony. Following the index, Table 12 presents non-coplanar PCB congener data (with means and standard deviations for individual samples) summarized by colony and years sampled.

## OUTLINE OF DOCUMENT - VOLUME II

### Section 1 - Data Summary by Sample Size

For each area, a map (Figures 1-10) and a corresponding table (Tables 1-10) present the species sampled, and the compounds and sample size analyzed in samples from each site.

### Section 2 - Data Summary by Compound

The index (page 34) lists the pages in Table 11 on which data for each compound can be found for the colonies sampled in each lake. Table 11 presents contaminant data for eggs of fish-eating birds summarized by species, lakes, colonies and years sampled.

## COMPOUNDS ANALYZED IN EGGS OF FISH-EATING BIRDS OF THE GREAT LAKES

The following compounds are listed in alphabetical order except for "percent lipid in egg". The underlined sections of the chemical names are the words which were used to place the chemical in its alphabetical position in the list. Chemical congeners are listed in order of increasing chlorination. The order of names in this list is used consistently throughout the tables in this document. Abbreviations correspond to those on Table 1 through Table 10. Chemical Abstract System (CAS) numbers have been included, where they were available. PCB congener numbering follows Ballschmiter and Zell (1980).

### Compounds reported for all species at all colonies in Table 11 (Vols. I & II)

CAS #	COMPOUNDS	ABBREVIATION (used in tables 1-10)
5103-71-9	Percent lipid in egg . . . . .	% Lip
5103-74-2	Alpha(cis)- <u>chlordane</u> . . . . .	a-CHL
7304-13-8	Gamma(trans)- <u>chlordane</u> . . . . .	g-CHL
634-66-2	Oxy- <u>chlordane</u> . . . . .	o-CHL
	1,2,3,4- <u>chlorobenzene</u> . . . . .	1234-CB
	1,2,3,5/1,2,4,5- <u>chlorobenzene</u> . . . . .	1235/1245-CB
608-93-5	Pentachlorobenzene . . . . .	PeCB
118-74-1	Hexachlorobenzene . . . . .	HCB
72-54-8	pp'- <u>DDD</u> . . . . .	DDD
72-55-9	pp'- <u>DDE</u> . . . . .	DDE
50-29-3	pp'- <u>DDT</u> . . . . .	DDT

Compounds reported for all species at all colonies in Table 11  
(Vols. I & II)

CAS #	COMPOUNDS	ABBREVIATION (used in tables 1-10)
60-57-1	Dieldrin . . . . .	DIEL
1024-57-3	<u>Heptachlor</u> epoxide . . . . .	HEP EPX
39-84-6	<u>Alpha-hexachlorocyclohexane</u> . . . . .	a-HCH
39-85-7	<u>Beta-hexachlorocyclohexane</u> . . . . .	b-HCH
58-89-8	<u>Gamma-hexachlorocyclohexane</u> . . . . .	g-HCH
2385-85-5	<u>Mirex</u> . . . . .	MIR
39801-14-4	<u>Photomirex</u> . . . . .	P-MIR
5103-73-1	<u>Cis-nonachlor</u> . . . . .	c-NON
39765-80-5	<u>Trans-nonachlor</u> . . . . .	t-NON
	<u>Octachlorostyrene</u> . . . . .	OCS
11097-69-1	<u>PCB:1260</u> . . . . .	PCB 1260
11096-82-5	<u>PCB:1254-1260</u> . . . . .	PCB 1254:1260
7782-49-2	Total <u>PCB</u> congeners (non-coplanar) . . . . .	SUM PCB

Coplanar PCB Congeners

38444-90-5	PCB #37 3,4,4'-trichlorobiphenyl . . . . .	COP PCB
32598-13-3	PCB #77 3,3',4,4'-tetrachlorobiphenyl . . . . .	COP PCB
57465-28-8	PCB #126 3,3',4,4',5-pentachlorobiphenyl . . . . .	COP PCB
32774-16-6	PCB #169 3,3',4,4',5,5'-hexachlorobiphenyl . . . . .	COP PCB

Dioxins

1746-01-6	2,3,7,8-tetrachlorodibenzo-p-dioxin . . . . .	DIOXIN
40321-76-4	1,2,3,7,8-pentachlorodibenzo-p-dioxin . . . . .	DIOXIN
	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin . . . . .	DIOXIN
39227-28-6	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin . . . . .	DIOXIN
19408-74-3	1,2,3,7,8,9-hexachlorodibenzo-p-dioxin . . . . .	DIOXIN
35822-46-9	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin . . . . .	DIOXIN
3268-87-7	Octachlorodibenzo-p-dioxin . . . . .	DIOXIN

Furans

51207-31-9	2,3,7,8-tetrachlorodibenzofuran . . . . .	FURAN
	1,2,3,7,8/1,2,3,4,8-pentachlorodibenzofuran . . . . .	FURAN
	1,2,4,8,9/2,3,4,6,7-pentachlorodibenzofuran . . . . .	FURAN
57117-31-4	2,3,4,7,8-pentachlorodibenzofuran . . . . .	FURAN
	1,2,3,4,6,9/1,2,3,6,8,9-hexachlorodibenzofuran . . . . .	FURAN
	1,2,3,4,7,8-hexachlorodibenzofuran . . . . .	FURAN
55684-94-1	1,2,3,6,7,8-hexachlorodibenzofuran . . . . .	FURAN
	1,2,3,7,8,9-hexachlorodibenzofuran . . . . .	FURAN
	1,2,3,6,8,9-hexachlorodibenzofuran . . . . .	FURAN
	2,3,4,6,7,8-hexachlorodibenzofuran . . . . .	FURAN
	1,2,3,4,6,7,8-heptachlorodibenzofuran . . . . .	FURAN
	1,2,3,4,7,8,9-heptachlorodibenzofuran . . . . .	FURAN
	Octachlorodibenzofuran . . . . .	FURAN

Compounds reported for Herring Gulls at annual monitoring colonies in Table 12 (Volume I)

CAS #	COMPOUNDS	ABBREVIATION (not applicable)
<u>Non-coplanar PCB congeners</u>		
16606-02-3	PCB #28 2,4,4'-trichlorobiphenyl	
7012-37-5	PCB #31 2,4',5-trichlorobiphenyl	
36559-22-5	PCB #42 2,2',3,4'-tetrachlorobiphenyl	
41464-39-5	PCB #44 2,2',3,5'-tetrachlorobiphenyl	
41464-40-8	PCB #49 2,2',4,5'-tetrachlorobiphenyl	
35693-99-3	PCB #52 2,2',5,5'-tetrachlorobiphenyl	
33025-41-1	PCB #60 2,3,4,4'-tetrachlorobiphenyl	
52663-58-8	PCB #64 2,3,4',6-tetrachlorobiphenyl	
32598-10-0	PCB #66 2,3',4,4'-tetrachlorobiphenyl	
32598-11-	PCB #70 2,3',4',5-tetrachlorobiphenyl	
32690-93-0	PCB #74 2,4,4',5-tetrachlorobiphenyl	
38380-02-8	PCB #87 2,2',3,4,5'-pentachlorobiphenyl	
41464-51-1	PCB #97 2,2',3',4,5-pentachlorobiphenyl	
38380-01-7	PCB #99 2,2',4,4',5-pentachlorobiphenyl	
37680-73-2	PCB #101 2,2',4,5,5'-pentachlorobiphenyl	
32598-14-4	PCB #105 2,3,3',4,4'-pentachlorobiphenyl	
38380-03-9	PCB #110 2,3,3',4',6-pentachlorobiphenyl	
3108-00-6	PCB #118 2,3',4,4',5-pentachlorobiphenyl	
38380-07-3	PCB #128 2,2',3,3',4,4'-hexachlorobiphenyl	
55215-18-4	PCB #129 2,2',3,3',4,5-hexachlorobiphenyl	
35694-06-5	PCB #137 2,2',3,4,4',5-hexachlorobiphenyl	
35065-28-2	PCB #138 2,2',3,4,4',5'-hexachlorobiphenyl	
52712-04-6	PCB #141 2,2',3,4,5,5'-hexachlorobiphenyl	
51908-16-8	PCB #146 2,2',3,4',5,5'-hexachlorobiphenyl	
38380-04-0	PCB #149 2,2',3,4',5',6-hexachlorobiphenyl	
52663-63-5	PCB #151 2,2',3,5,5',6-hexachlorobiphenyl	
35065-27-1	PCB #153 2,2',4,4',5,5'-hexachlorobiphenyl	
74472-42-7	PCB #158 2,3,3',4,4',6-hexachlorobiphenyl	
35065-30-6	PCB #170 2,2',3,3',4,4',5-heptachlorobiphenyl	
52663-70-4	PCB #171 2,2',3,3',4,4',6-heptachlorobiphenyl	
52663-74-8	PCB #172 2,2',3,3',4,5,5'-heptachlorobiphenyl	
38411-25-5	PCB #174 2,2',3,3',4,5,6'-heptachlorobiphenyl	
35065-29-3	PCB #180 2,2',3,4,4',5,5'-heptachlorobiphenyl	
60145-23-5	PCB #182 2,2',3,4,4',5,6'-heptachlorobiphenyl	
52663-69-1	PCB #183 2,2',3,4,4',5',6-heptachlorobiphenyl	
52712-05-7	PCB #185 2,2',3,4,5,5',6-heptachlorobiphenyl	
35694-08-7	PCB #194 2,2',3,3',4,4',5,5'-octachlorobiphenyl	
52663-78-2	PCB #195 2,2',3,3',4,4',5,6-octachlorobiphenyl	
40186-71-8	PCB #200 2,2',3,3',4,5',6,6'-octachlorobiphenyl	
52663-75-9	PCB #201 2,2',3,3',4,5,5',6'-octachlorobiphenyl	
52663-76-0	PCB #203 2,2',3,4,4',5,5',6-octachlorobiphenyl	
40186-72-9	PCB #206 2,2',3,3',4,4',5,5',6-nonachlorobiphenyl	

METHODOLOGICAL AND STATISTICAL NOTES SPECIFIC TO TABLES 11-12  
(VOLS I & II)

1. All analytical data have been calculated on a wet weight basis.
2. All means and standard deviation values are reported at four significant digits. Trailing zeros in these values are truncated.
3. Dioxin and Furan compounds are reported in pg/g (ppt). All other compounds are reported in  $\mu\text{g}/\text{g}$  (ppm).
4. All sample sizes reported as ( $N=1$ ) represent a sample size of 10 eggs which were pooled and analyzed as a single sample.
5. Analytical results for DDD and DDT which are equal to or less than twice the detection limit (i.e.  $0.01 \mu\text{g}/\text{g}$ ) should not be considered absolute values. Rather they are indicative of very low levels which are approaching the detection limits of these chemicals.
6. The detection limits used in the analytical determination of PCBs, chlorinated benzenes, and organochlorine pesticides varied with the laboratory and methodology used. Changes in methodology principally affected determination and quantification of the PCBs. Detection limits have not been determined formally in every sample but, generally, the following can be used as a guide:

All chlorinated benzenes       $0.001 \mu\text{g}/\text{g}$   
All organochlorine pesticides     $0.005 \mu\text{g}/\text{g}$   
All polychlorinated biphenyls    $0.01 \mu\text{g}/\text{g}$

The minimum detection limits for dioxin and furan compounds from 1989 to 1991 exist within the ranges listed below. Fluctuations in detection limits occur subject to the cleanliness of the samples at the time of analysis and the condition of the ion source of the mass spectrometer at any given time. Trace amounts below the detection limit (signal/noise ratio between 2 and 3) are estimated and values are placed in brackets, ( ).

Tetrachlorodioxins/furans	1-2 pg/g
Pentachlorodioxins/furans	2-3 pg/g
Hexachlorodioxins/furans	3-4 pg/g
Heptachlorodioxins/furans	6-8 pg/g
Octachlorodioxins/furans	8-12 pg/g

Detection limits for dioxin and furan compounds for 1992 are within the ranges listed below. Compounds detected with incorrect ion ratio are reported and indicated by an "i".

Tetrachlorodioxins/furans	0.1-1.2 pg/g
Pentachlorodioxins/furans	0.3-4.4 pg/g
Hexachlorodioxins/furans	0.3-2.4 pg/g
Heptachlorodioxins/furans	0.6-4.9 pg/g
Octachlorodioxins/furans	0.5-4.3 pg/g

7. Sum of PCB congeners ( $\Sigma$ PCB) refers to the following congeners in 1989-90:

28, 31, 42, 44, 49, 52, 60, 64, 66, 70, 87, 97, 99,  
101, 105, 110, 118, 128, 129, 137, 138, 141, 146, 151,  
153, 158, 170, 171, 172, 174, 180, 182, 183, 185, 194,  
195, 200, 201, 203, 206.

Congeners #74 and 149 were added to the analysis in 1991-92. Therefore, sum of PCB congeners are based on 40 congeners in 1989-90 and on 42 congeners in 1991-92.

8. All PCB data have been expressed as Aroclor 1254:1260 1:1 mixture or Aroclor 1260, as well as  $\Sigma$ PCB. These Aroclor values have been obtained using determination of PCB congeners #138 and 180.

However, the results of the Aroclor 1254:1260 1:1 mixture appear to be roughly twice that of results obtained by  $\Sigma$ PCB. Factors have been calculated to convert Aroclor 1254:1260 1:1 mixture results to  $\Sigma$ PCB results for Herring Gulls in the Great Lakes only (Turle et al., 1991). Those factors are:

Lake Ontario	0.461
Lake Erie	0.444
Lake Huron	0.484
Lake Superior	0.450

9. Organochlorine pesticide and PCB analyses were performed by Henry Won at the CWS National Wildlife Research Centre (NWRC) (Peakall et al., 1986).

Dioxins, furans and coplanar PCB congeners were analyzed by Mary Simon or John Moisey at NWRC (Norstrom et al., 1986). These methods have been automated.

10. Chlordane isomers have been presented as alpha-chlordane, trans-chlordane, and oxy-chlordane. Alpha-chlordane is synonymous with cis-chlordane, and trans-chlordane is synonymous with gamma-chlordane.

**SECTION 1 - DATA SUMMARIZED BY SAMPLE SIZE**

**Figures 1-10. Colonies of Fish-eating Birds from which Eggs Were Collected for Contaminant Analysis**

**Tables 1-10. Sample Size of Eggs Analyzed Each Year (1989-1992)  
Arranged by Collection Site, Species Sampled, and Compound  
Analyzed**



#### LIST OF ABBREVIATIONS

Col No.	colony number
Spec.	species
Yr.	year of collection
HERG	Herring Gull
DCCO	Double-crested Cormorant
CATE	Caspian Tern
COTE	Common Tern
BCNH	Black-crowned Night-Heron
RBGU	Ring-billed Gull
FOTE	Forster's Tern
GREG	Great Egret

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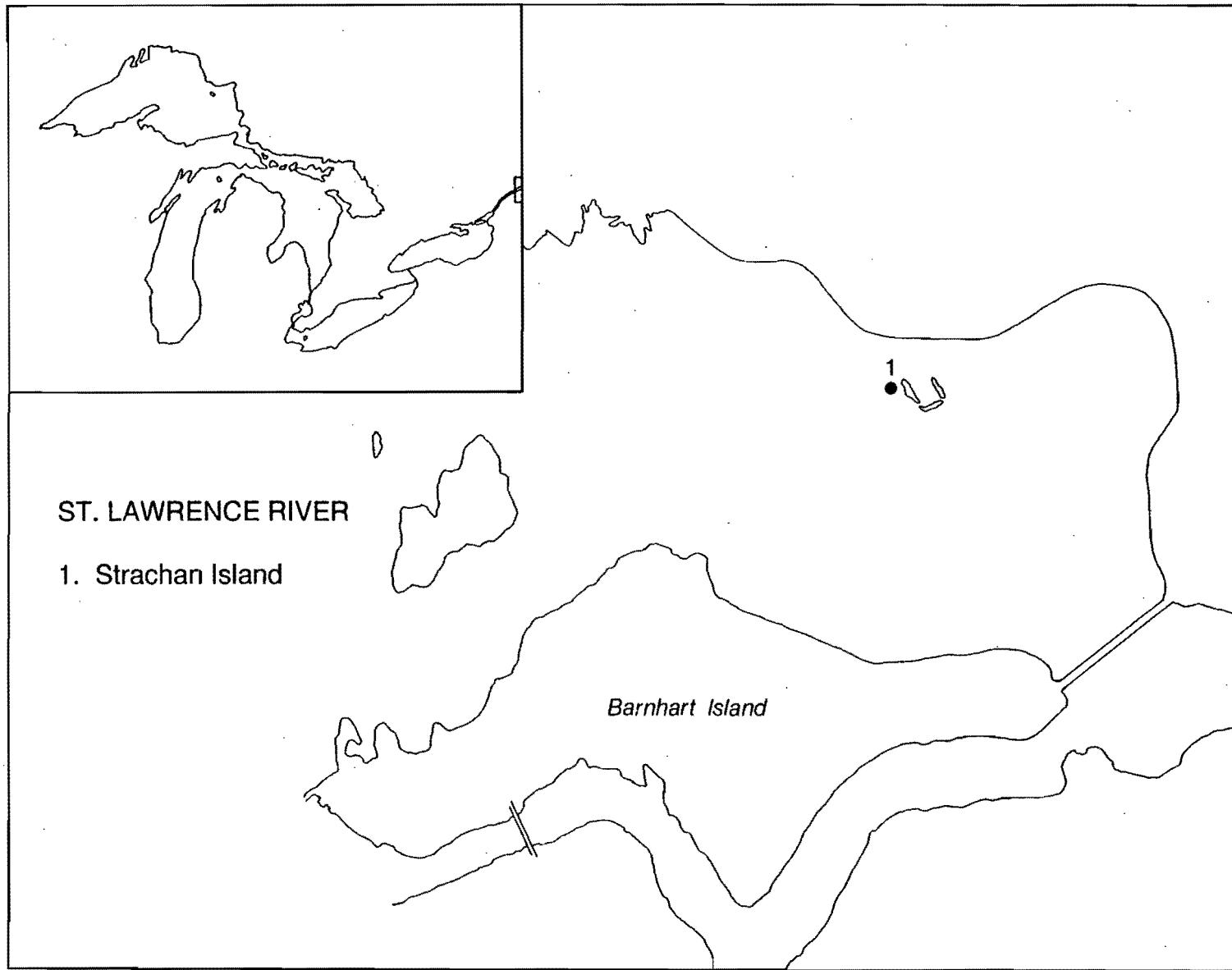


Figure 1. St. Lawrence colonies of fish-eating birds from which eggs were collected for contaminant analysis.

**Table 1. The sample size of eggs analyzed in each year (1989–1992) from the St. Lawrence River, arranged by collection site, species sampled, and compound analyzed.**

Col No.	Spec.	Yr.	%	a-Chl	b-Chl	c-Chl	1234	1235	PeCB	HCB	DDD	DDT	DIET	FURAN	HEP	a-HCH	b-HCH	g-HCH	P-MIR	c-MIR	t-MIR	OCS	PCB 1260	PCB 1254	SUM PCB	COP PCB
1	HERG	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	

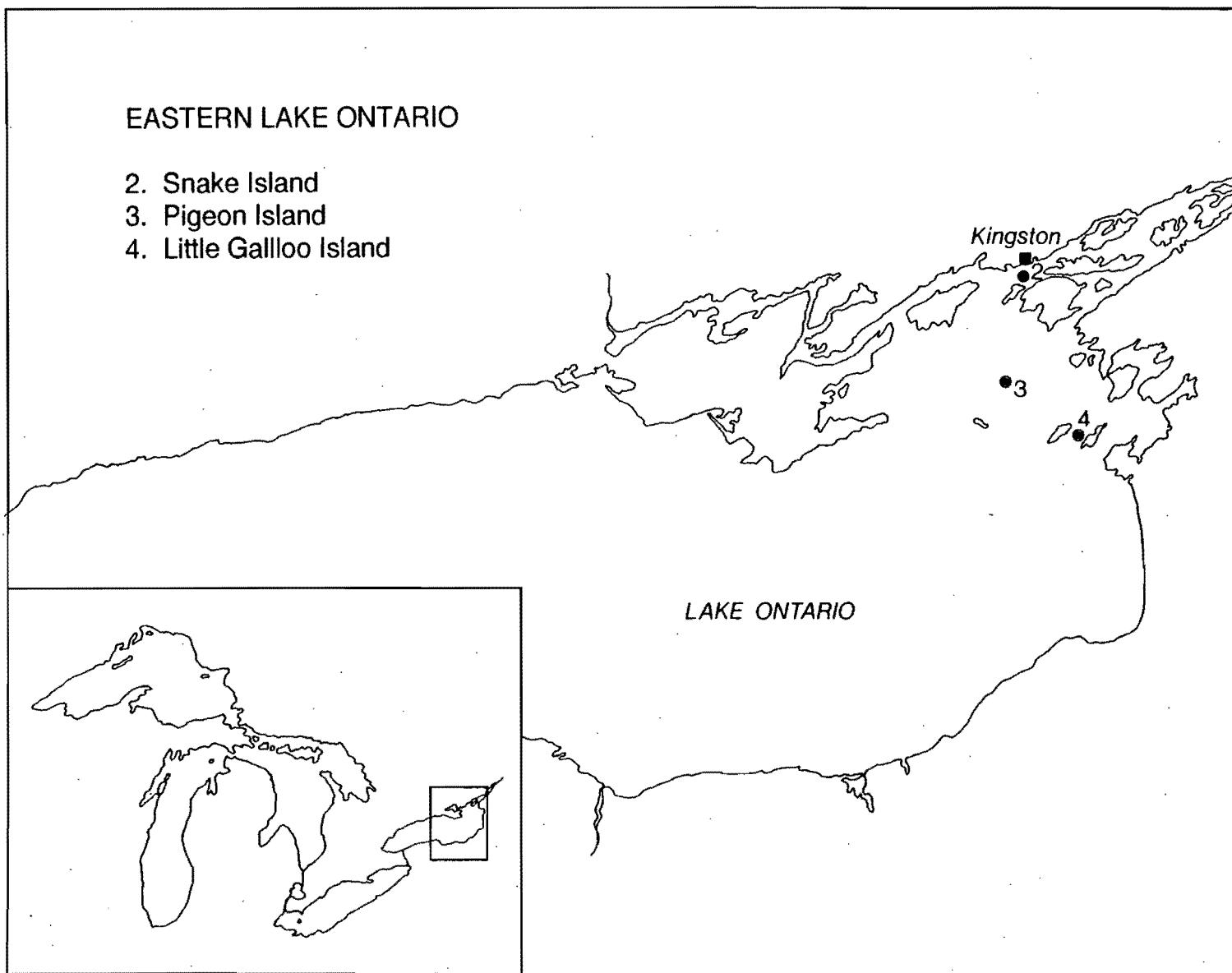


Figure 2. Eastern Lake Ontario colonies of fish-eating birds from which eggs were collected for contaminant analysis.

Table 2. The sample size of eggs analyzed in each year (1989–1992) from eastern Lake Ontario, arranged by collection site, species sampled, and compound analyzed.

Cd No.	Spec	Yr.	% Lip	a-CHL	b-CHL	c-CHL	1234 CB	1235 CB	PeCB 1245 CB	HCB	DDE DDD	DDT	DIET	FURAN DIOXIN	HEP EPX	a-HCH	b-HCH	g-HCH	MIR	P-MIR	c-NON	t-NON	OCS 1260	PCB 1260	PCB 1254	SUM PCB	COP PCB
2 HERG	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
	90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
	91	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	0	
	92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
BCNH	89	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
3 DCCO	89	4	4	4	4	4	4	4	4	4	4	4	4	0	0	4	4	4	4	4	4	4	4	4	4	0	
	90	3	3	3	3	3	3	3	3	3	3	3	3	1	1	3	3	3	3	3	3	3	3	3	3	0	
	91	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	5	
CATE	91	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
4 DCCO	90	3	3	3	3	3	3	3	3	3	3	3	3	0	0	3	3	3	3	3	3	3	3	3	3	0	

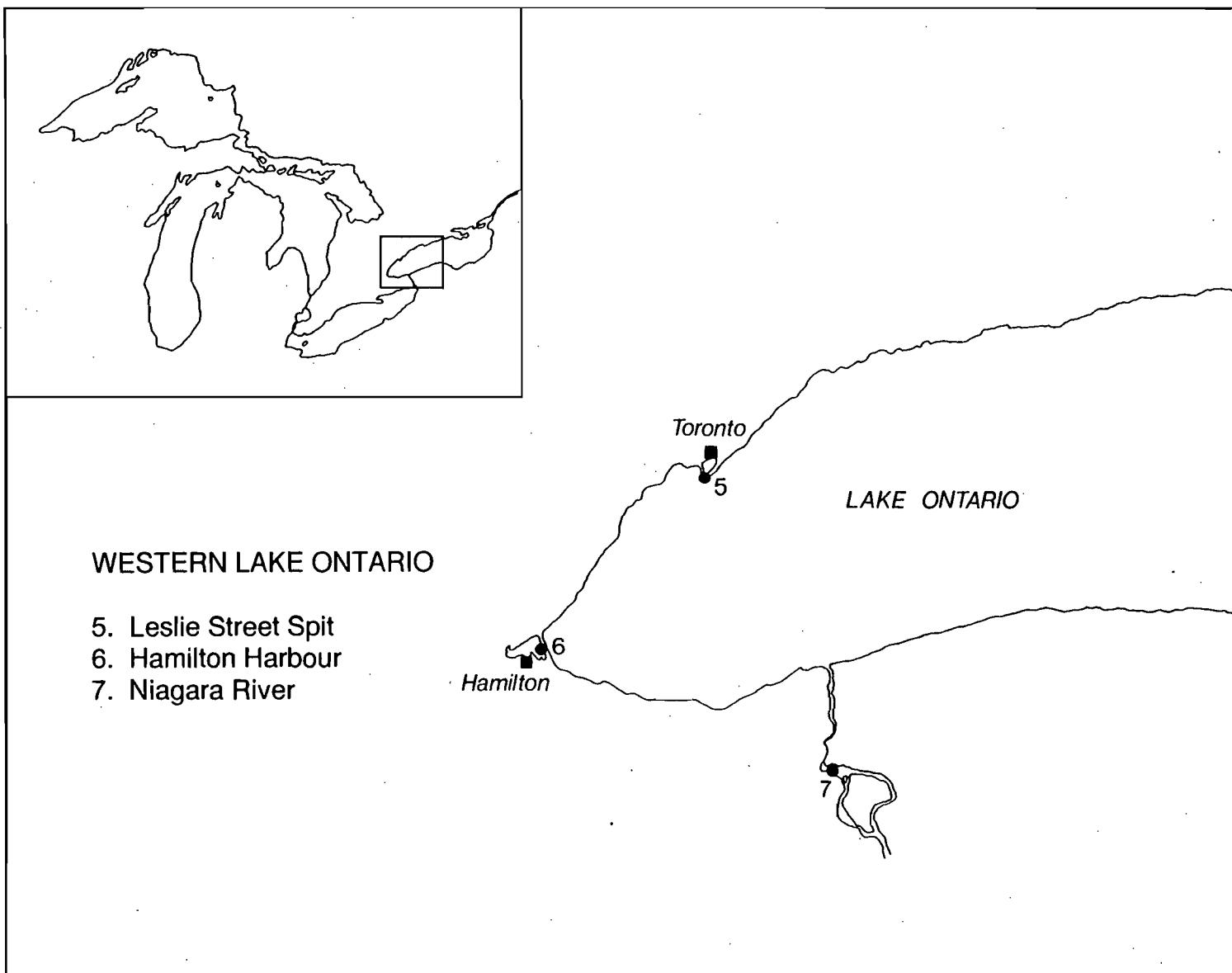


Figure 3. Western Lake Ontario and Niagara River colonies of fish-eating birds from which eggs were collected for contaminant analysis.

Table 3. The sample size of eggs analyzed in each year (1989-1992) from western Lake Ontario and the Niagara River arranged by collection site, species sampled and compound analyzed.

Col. No.	Spec.	Yr.	% Lip.	a- CHL	b- CHL	c- CHL	1234 CB	1235/ 1245 CB	PeCB	HCB	DDE DDD	DDT	DIET	FURAN	HEP EPX	a- HCH	b- HCH	g- HCH	MIR	P- NON	c- NON	t- NON	OCS	PCB 1260	PCB 1254	SUM PCB	COP 1260
5	HERO	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		91	14	14	14	14	14	14	14	14	14	14	14	14	1	14	14	14	14	14	14	14	14	14	14	0	
		92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	BCNH	89	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
	RBG	89	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
6	HERO	89	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
		91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
	DCCO	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
	CATE	89	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
		91	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
	COTE	89	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
		91	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
		92	2	2	2	2	2	2	2	2	2	2	2	0	0	2	2	2	2	2	2	2	2	2	2	0	
	BCNH	89	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
		92	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
7	HERG	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0		
		91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0		
		92	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1		
	BCNH	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0		

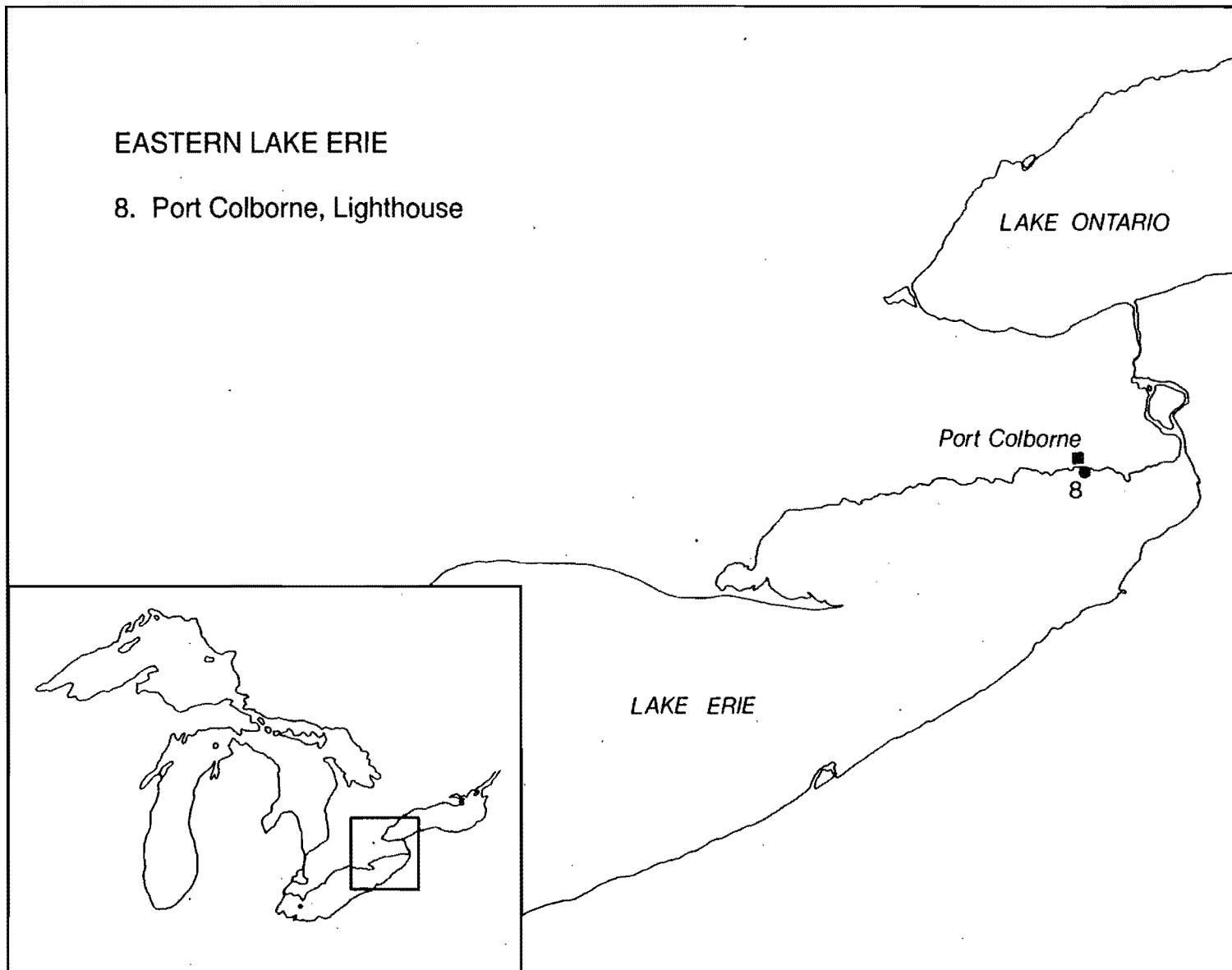


Figure 4. Eastern Lake Erie colonies of fish-eating birds from which eggs were collected for contaminant analysis.

Table 4. The sample size of eggs analyzed in each year (1989–1992) from eastern Lake Erie arranged by collection site, species sampled and compound analyzed.

Col No.	Spec	Yr.	%	a-Lip	g+CHL	o-CHL	1234CB	1235CB	PeCB	HCB	DDD	DDE	DDT	DIET	FURAN	HEP	a-HCH	b-HCH	g-HCH	P-MIR	c-MIR	t-MIR	OCS	PCB1260	PCB1254	SUMPCB	COPFCB
8 HERG	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
	90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
	91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
	92	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	1	

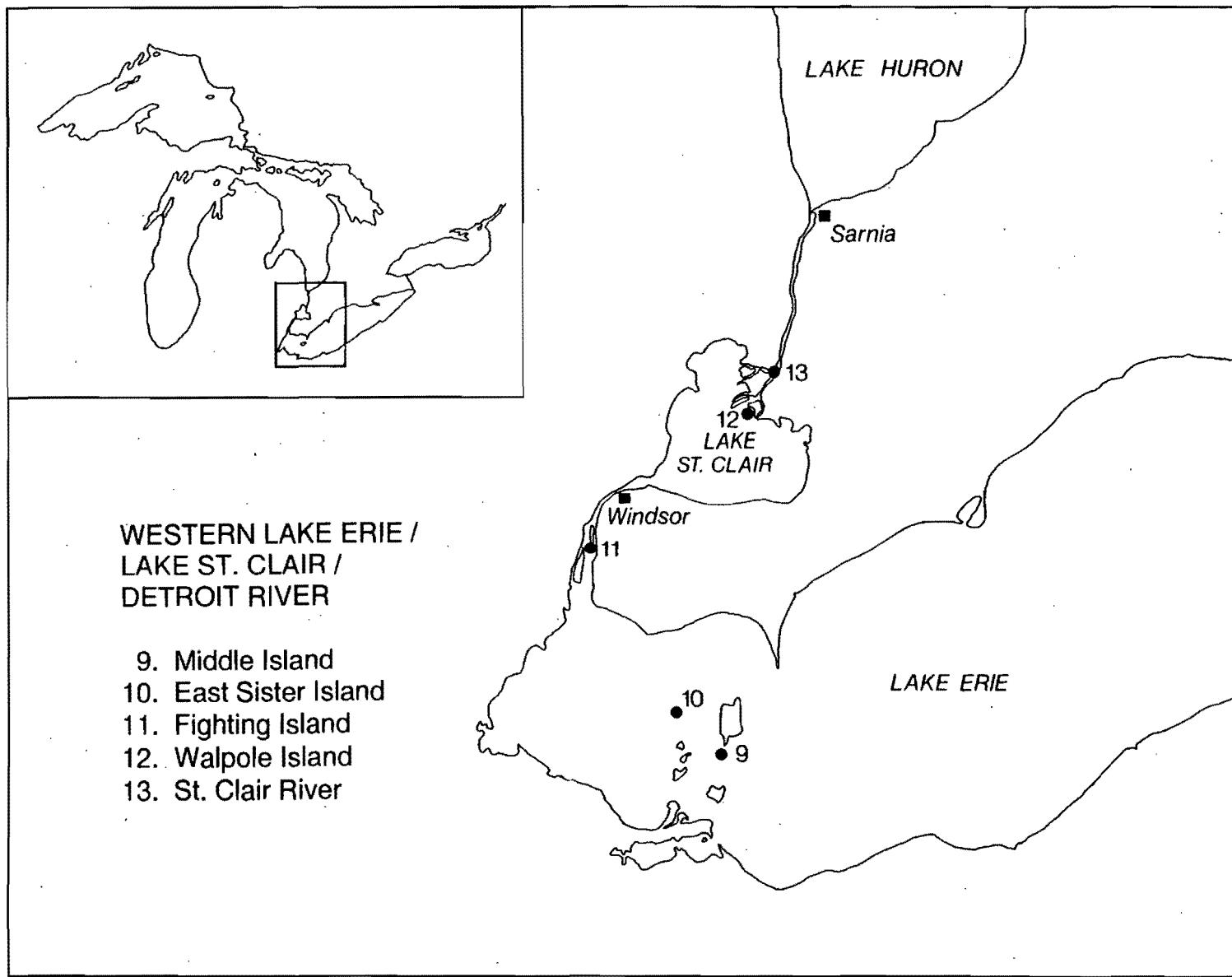


Figure 5. Western Lake Erie, Lake St. Clair and Detroit River colonies of fish-eating birds from which eggs were collected for contaminant analysis.

Table 5. The sample size of eggs analyzed in each year (1989-1992) from western Lake Erie, Lake St.Clair and the Detroit River arranged by collection site, species sampled, and compound analyzed.

Col No.	Spec	Yr.	%	a-Lip	g-CHL	o-CHL	1234 CB	1235' 1245 CB	PeCB HCB	DDD	DDE DDT	DIET DIOXIN	FURAN EPX	HEP HCH	a-HCH	b-HCH	g-HCH	MIR MIR	P-MIR	c-NON	t-NON	OCS 1260	PCB 1254	SUM PCB	COP PCB
9	HERO	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
		90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
		91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
		92	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	1
10	DCCO	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
	BCNH	89	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0
		92	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0
	GREG	92	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0
11	HERG	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
		90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
		91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
		92	14	14	14	14	14	14	14	14	14	14	14	14	1	1	14	14	14	14	14	14	14	14	1
	COTE	91	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0
12	BCNH	92	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0
	POTE	92	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0
13	HERG	91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0

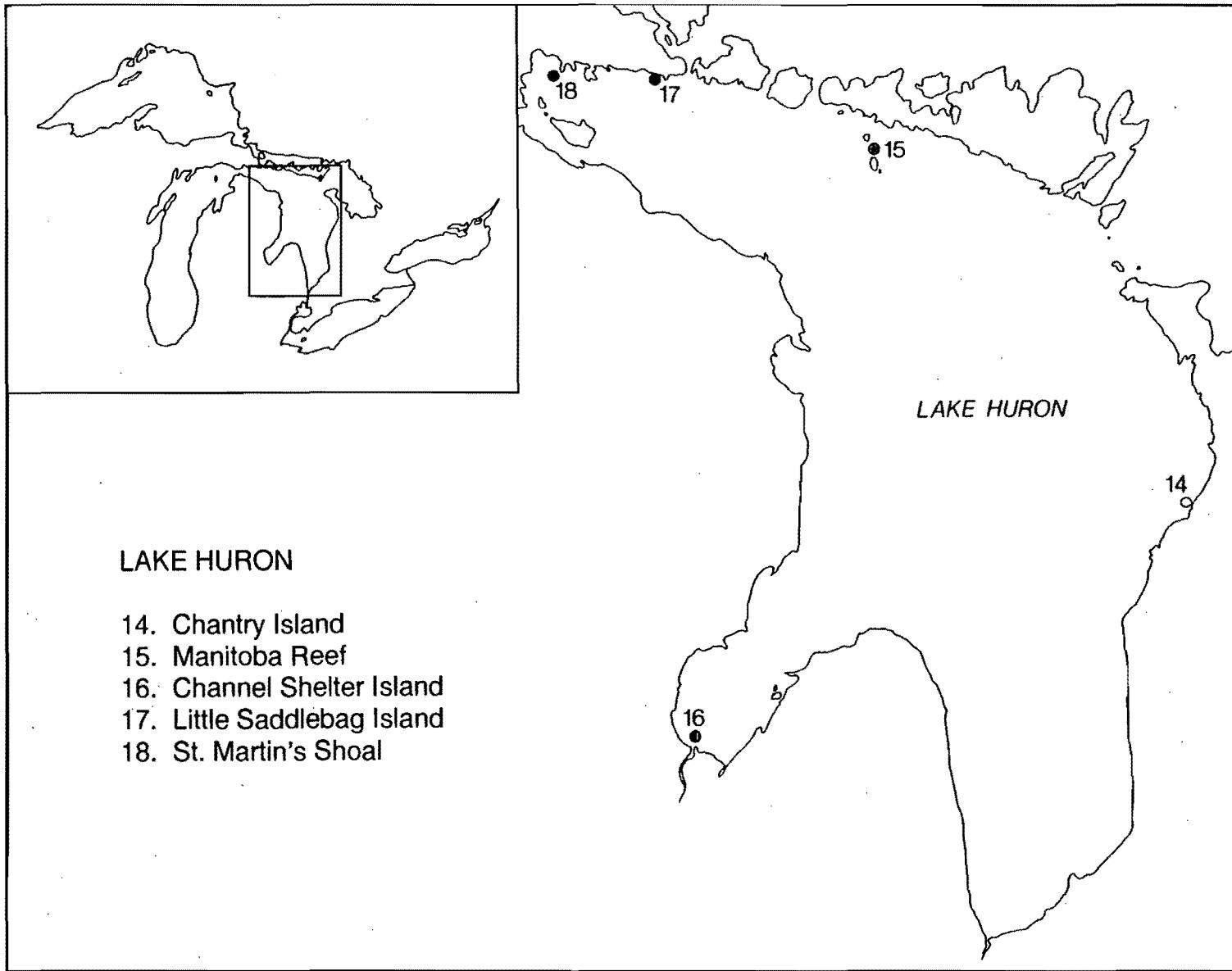


Figure 6. Lake Huron (main body) colonies of fish-eating birds from which eggs were collected for contaminant analysis.

**Table 6. The sample size of eggs analyzed in each year (1989–1992) from Lake Huron (main body) arranged by collection site, species sampled and compound analyzed.**

Col. No.	Spec.	Yr.	% Lip	a- CHL	b- CHL	c- CHL	1234 CB	1235 CB	PeCB 1245 CB	HCB	DDE DDD	DDT	DIET	FURAN	HEP EPX	a- HCH	b- HCH	c- HCH	MIR	P- MIR	e- NON	f- NON	OCS	PCB 1260	PCB 1254	SUM PCB	COP 1260
14	HERG	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	BCNH	89	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
15	HERG	91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
16	HERG	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		92	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	
	CATE	91	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
17	HERG	91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
18	HERG	92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	

## GEORGIAN BAY, LAKE HURON

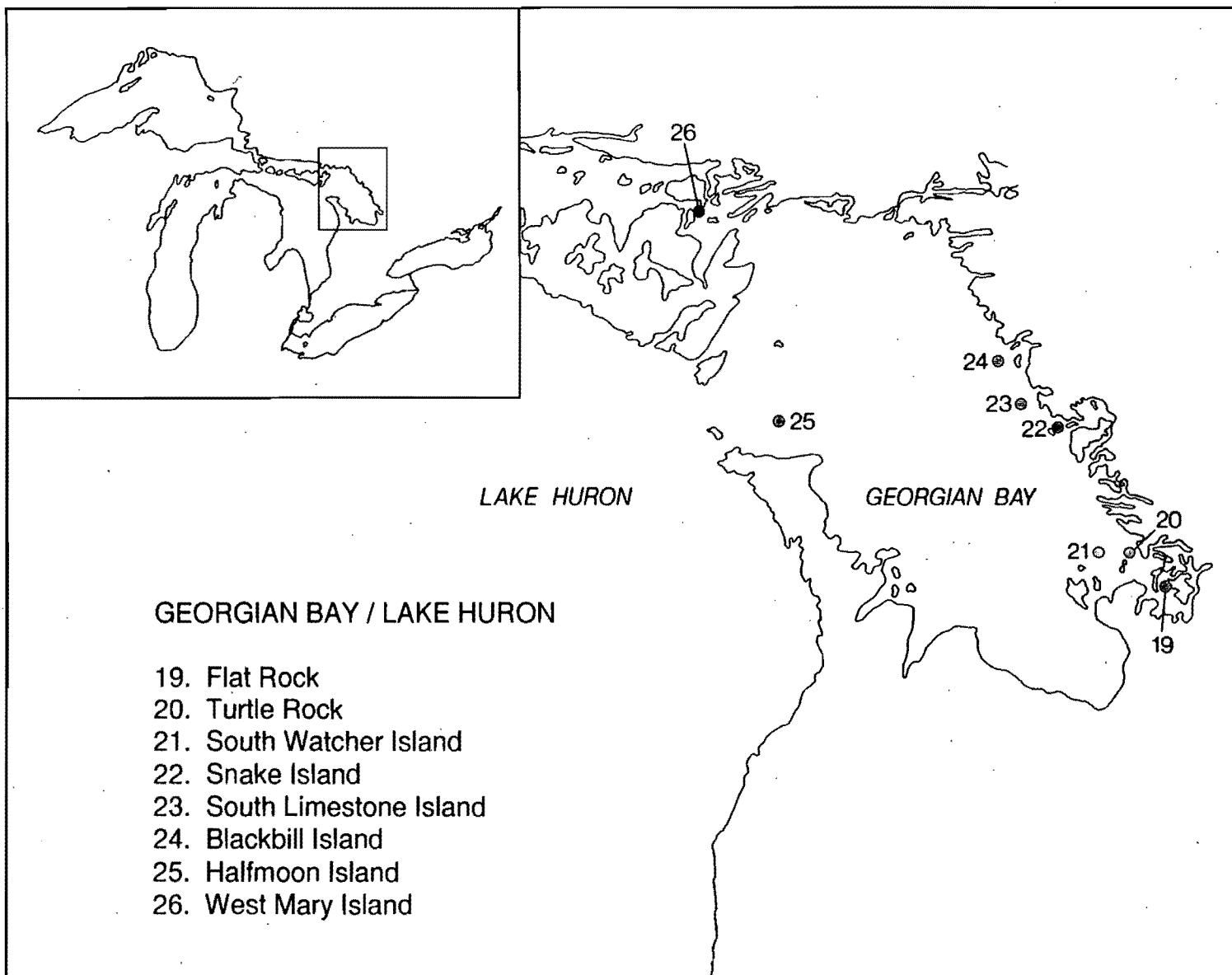


Figure 7. Georgian Bay (Lake Huron) colonies of fish-eating birds from which eggs were collected for contaminant analysis.

Table 7. The sample size of eggs analyzed in each year (1989–1992) from Georgian Bay (Lake Huron) arranged by collection site, species sampled and compound analyzed.

Cd No.	Spec	Yr.	%	a- Lip	b- CHL	c- CHL	o- CB	1234	1235	PeCB	HCB	DDD	DDE	DDT	DIETL	FURAN	HEP	a- EPX	b- HCH	g- HCH	P- MIR	c- NON	t- NON	OCS	PCB 1260	PCB 1254	SUM	COP 1260	
19	COTE	91	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0
20	HERG	91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
21	CATE	91	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
22	HERG	90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
23	CATE	91	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
	COTE	91	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
24	DCCO	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
25	CATE	91	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
26	HERG	90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	

NORTH CHANNEL, LAKE HURON

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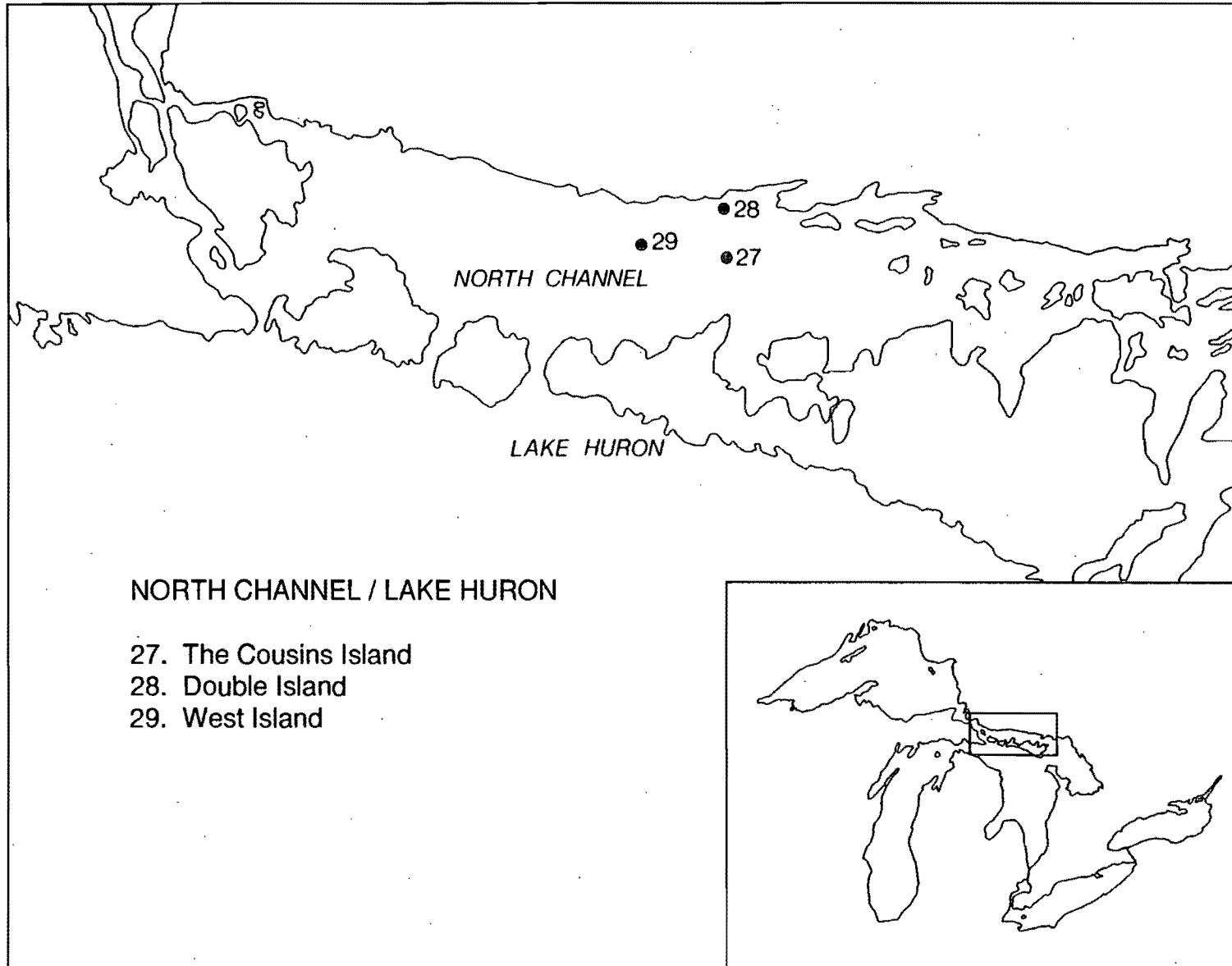


Figure 8. North Channel (Lake Huron) colonies of fish-eating birds from which eggs were collected for contaminant analysis.

Table 8. The sample size of eggs analyzed in each year (1989-1992) from North Channel (Lake Huron) arranged by collection site, species sampled and compound analyzed.

Col No.	Spec	Yr.	% Lip	a- CHL	g- CHL	o- CHL	1234 CB	1235 CB	PcCB	HCB CB	DDD	DDE	DDT	DIET	FURAN	HEP	a- HCH	b- HCH	g- HCH	MIR	P- MIR	c- NON	t- NON	OCS	PCB 1260	PCB 1254 1260	SUM	COP PCB
27	CATE	91	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0
28	HERG	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
		90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
		91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
		92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29	DCCO	89	3	3	3	3	3	3	3	3	3	3	3	3	1	1	3	3	3	3	3	3	3	3	3	3	3	0

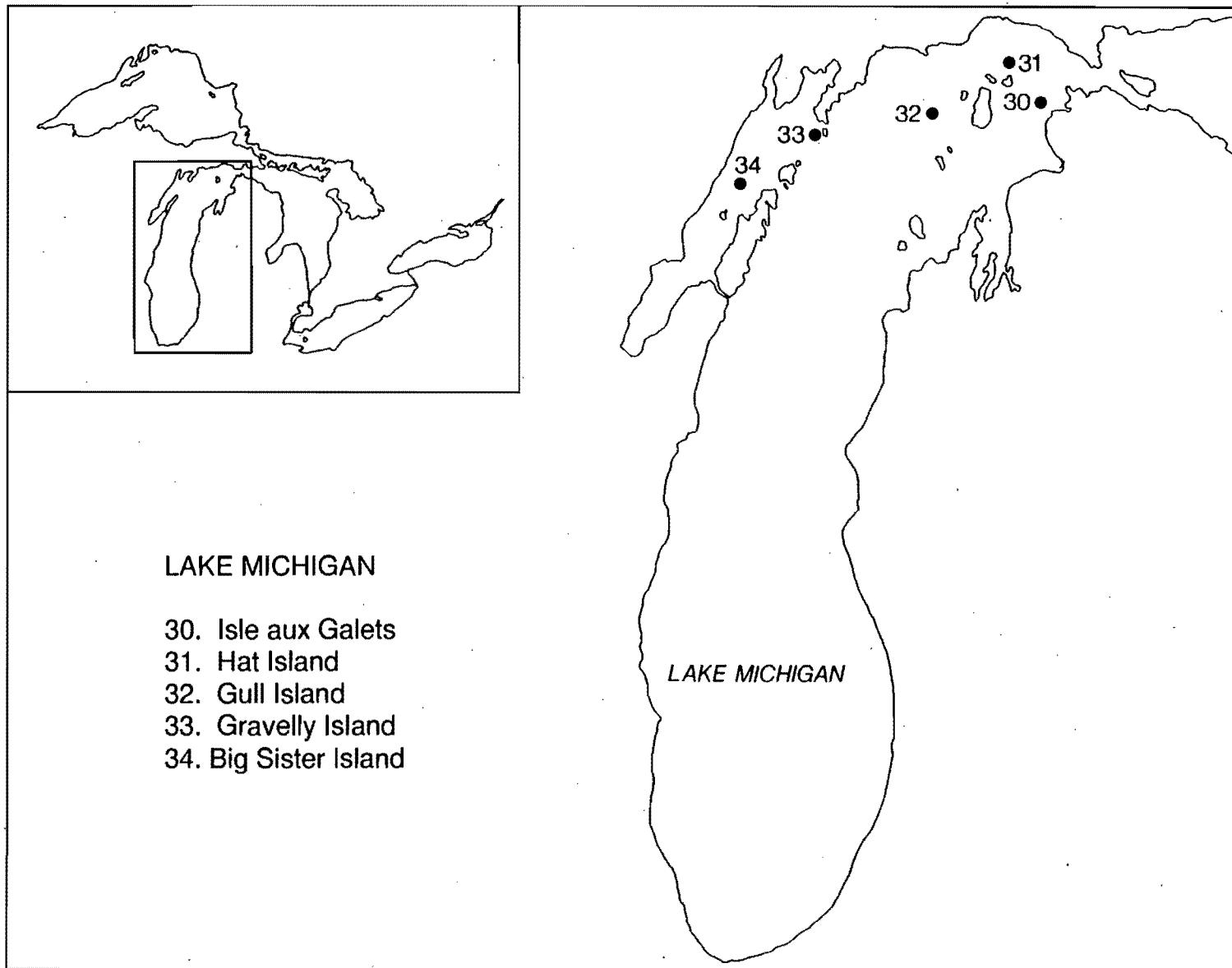


Figure 9. Lake Michigan colonies of fish-eating birds from which eggs were collected for contaminant analysis.

Table 9. The sample size of eggs analyzed in each year (1989-1992) from Lake Michigan arranged by collection site, species sampled, and compound analyzed.

Col No.	Spec	Yr.	%	a-Lip	g-CHL	o-CHL	1234 CB	1235 CB	PeCB 1245 CB	HCB	DDE DDD	DIEL DDT	FURAN DIOXIN	HEP EPX	a-HCH	b-HCH	g-HCH	MIR	P-MIR	c-NON	t-NON	OCS 1260	PCB 1254	PCB 1260	SUM PCB	COP PCB
30	CATE	91	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
31	CATE	91	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
32	HERG	89	14	14	14	14	14	14	14	14	14	14	1	1	14	14	14	14	14	14	14	14	14	14	0	
		90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
33	CATE	91	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	
34	HERG	89	14	14	14	14	14	14	14	14	14	14	1	1	14	14	14	14	14	14	14	14	14	14	0	
		90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

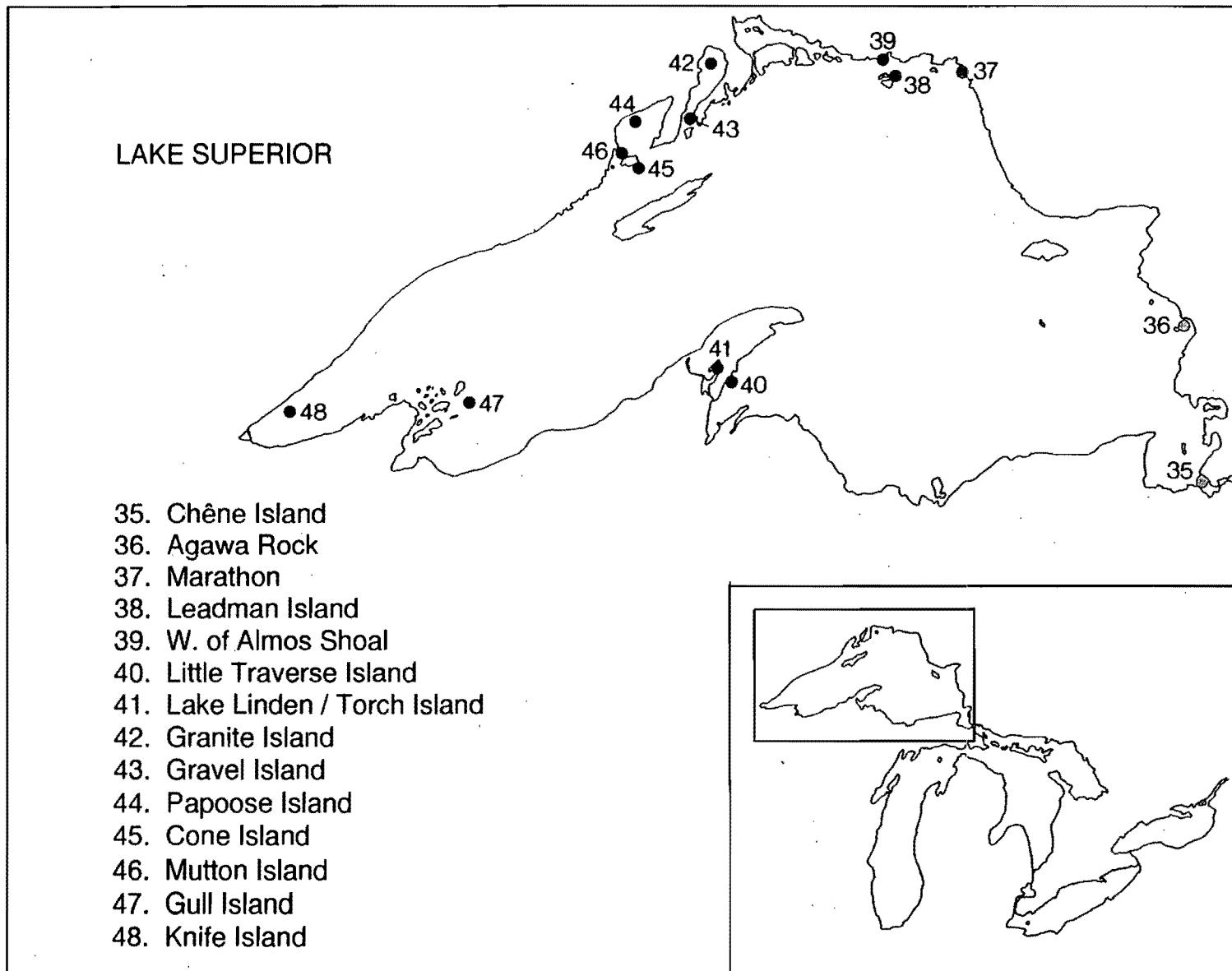


Figure 10. Lake Superior colonies of fish-eating birds from which eggs were collected for contaminant analysis.

Table 10. The sample size of eggs in each year (1989-1992) from Lake Superior arranged by collection site, species sampled and compound analyzed.

Col No.	Spec.	Yr.	%	<i>a</i> -Lip	<i>g</i> -CHL	<i>o</i> -CHL	1234 CB	1235 CB	PeCB 1245 CB	HCB	DDD	DDE	DDT	DIET	FURAN DIOXIN	HEP EPX	<i>a</i> -HCH	<i>b</i> -HCH	<i>g</i> -HCH	P-MIR	<i>c</i> -NON	<i>t</i> -NON	OCS	PCB 1260	PCB 1254	SUM PCB	COP 1260
35	HERG	92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
36	HERG	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		90	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	0	
		91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
37	HERG	92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
38	HERG	92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
39	HERG	91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
40	HERG	92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
41	HERG	92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
42	HERG	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		90	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	0	
		91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
		92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
43	DCCO	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
44	HERG	92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
45	DCCO	89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
46	HERG	92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
47	HERG	92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
48	HERG	92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	



**SECTION 2 - DATA SUMMARIZED BY LOCATION**

**Index to Contaminant Data, Summarized by Location**

**Table 11. Contaminant Data, Summarized by Location**

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

ST. LAWRENCE RIVER, STRACHAN ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PERCENT FAT OF EGG	N MEAN STD	1 9.1 -	1 8.5 -	1 8.6 -	1 8.9 -
PERCENT WATER OF EGG	N MEAN STD	1 76.0 -	1 76.4 -	1 76.3 -	1 77.4 -
CIS/ALPHA-CHLORDANE	N MEAN STD	1 0.0033 -	1 0.0027 -	1 ND -	1 0.0035 -
TRANS/GAMMA-CHLORDANE	N MEAN STD	1 ND -	1 ND -	1 ND -	1 ND -
OXYCHLORDANE	N MEAN STD	1 0.0971 -	1 0.0819 -	1 0.0735 -	1 0.0945 -
1234-CHLOROBENZENE	N MEAN STD	1 ND -	1 ND -	1 ND -	1 ND -
1235/1245-CHLOROBENZENE	N MEAN STD	1 ND -	1 ND -	1 ND -	1 ND -
PENTACHLOROBENZENE	N MEAN STD	1 ND -	1 0.0029 -	1 ND -	1 0.0100 -
HEXACHLOROBENZENE	N MEAN STD	1 0.0458 -	1 0.0358 -	1 0.0244 -	1 0.0861 -
DDD	N MEAN STD	1 0.0040 -	1 0.0045 -	1 ND -	1 ND -
DDE	N MEAN STD	1 4.3770 -	1 3.7740 -	1 2.6393 -	1 5.0227 -
DDT	N MEAN STD	1 0.0195 -	1 0.0263 -	1 0.0100 -	1 0.0239 -
DIELDRIN	N MEAN STD	1 0.1959 -	1 0.1038 -	1 0.0737 -	1 0.1153 -
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0563 -	1 0.0544 -	1 0.0352 -	1 0.0359 -
ALPHA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND -	1 ND -	1 ND -	1 ND -

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 37

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

ST. LAWRENCE RIVER, STRACHAN ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0050 ND	1 0.0060 ND	1 ND ND	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	1 ND
MIREX	N MEAN STD	1 0.9299 ND	1 0.7513 ND	1 0.5096 ND	1 0.8301 ND
PHOTOMIREX	N MEAN STD	1 0.3279 ND	1 0.2795 ND	1 0.1904 ND	1 0.3269 ND
CIS-NONACHLOR	N MEAN STD	1 0.0367 ND	1 0.0344 ND	1 0.0216 ND	1 0.0428 ND
TRANS-NONACHLOR	N MEAN STD	1 0.0776 ND	1 0.0741 ND	1 0.0527 ND	1 0.0938 ND
OCTACHLOROSTYRENE	N MEAN STD	1 0.0264 ND	1 0.0189 ND	1 0.0120 ND	1 0.0345 ND
PCB:1260	N MEAN STD	1 21.4800 ND	1 15.3700 ND	1 9.0804 ND	1 16.6040 ND
PCB:1254-1260	N MEAN STD	1 42.4200 ND	1 29.2100 ND	1 17.9642 ND	1 32.8280 ND
TOTAL PCB CONGENERS	N MEAN STD	1 22.1738 ND	1 15.0817 ND	1 9.5343 ND	1 18.8554 ND
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 ND	0 0 ND	1 <0.0001 ND
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 ND	0 0 ND	1 0.0010 ND
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 ND	0 0 ND	1 0.0048 ND
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 ND	0 0 ND	1 0.0004 ND
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 43 ND	1 46 ND	1 24 ND	1 45.8 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

ST. LAWRENCE RIVER, STRACHAN ISLAND

HERRING GULL	YEAR			
	89	90	91	92
12378-	N	1	1	1
PENTACHLORODIBENZO-	MEAN	7	9	5
p-DIOXIN	STD			9.9
123478-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	ND	ND	ND
p-DIOXIN	STD			ND
123678-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	10	10	5
p-DIOXIN	STD			7.7
123789-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	ND	(2)	ND
p-DIOXIN	STD			ND
1234678-	N	1	1	1
HEPTACHLORODIBENZO-	MEAN	(4)	(3)	(5)
p-DIOXIN	STD			1.3
OCTACHLORODIBENZO-	N	1	1	1
p-DIOXIN	MEAN	(5)	(5)	(5)
	STD			(0.4)
2378-	N	1	1	1
TETRACHLORODIBENZO-	MEAN	(1)	(1)	ND
FURAN	STD			ND
12378/12348-	N	0	0	1
PENTACHLORODIBENZO-	MEAN			ND
FURAN	STD			ND
12489/23467-	N	0	0	1
PENTACHLORODIBENZO-	MEAN			ND
FURAN	STD			0
23478-	N	1	1	1
PENTACHLORODIBENZO-	MEAN	7	7	5
FURAN	STD			7.2
123469/123689-	N	0	0	1
HEXACHLORODIBENZO-	MEAN			ND
FURAN	STD			0
123478-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	4	ND
FURAN	STD			2.2
123678-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	(3)	ND
FURAN	STD			2.2
123789-	N	0	0	0
HEXACHLORODIBENZO-	MEAN			1
FURAN	STD			(0.1)
124689-	N	0	0	1
HEXACHLORODIBENZO-	MEAN			0
FURAN	STD			ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

ST. LAWRENCE RIVER, STRACHAN ISLAND

HERRING GULL	YEAR			
	89	90	91	92
234678-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	(1)	(3)	ND
FURAN	STD			ND
1234678-	N	0	0	0
HEPTACHLORODIBENZO-	MEAN			1
FURAN	STD			ND
1234789-	N	0	0	0
HEPTACHLORODIBENZO-	MEAN			1
FURAN	STD			ND
OCTACHLORODIBENZO-	N	0	0	0
FURAN	MEAN			1
	STD			ND

LAKE ONTARIO, SNAKE ISLAND

HERRING GULL	YEAR			
	89	90	91	92
PERCENT FAT OF EGG	N	1	1	14
	MEAN	8.6	8.1	8.5
	STD			9.2
PERCENT WATER OF	N	1	1	14
EGG	MEAN	76.9	76.1	76.4
	STD			76.6
CIS/ALPHA-	N	1	1	14
CHLORDANE	MEAN	0.0041	0.0022	0.0025
	STD			0.0038
TRANS/GAMMA-	N	1	1	14
CHLORDANE	MEAN	ND	ND	0.0008
	STD			ND
OXYCHLORDANE	N	1	1	14
	MEAN	0.1134	0.0951	0.1015
	STD			0.1285
1234-CHLOROBENZENE	N	1	1	14
	MEAN	ND	ND	0.0031
	STD			ND
1235/1245-	N	1	1	14
CHLOROBENZENE	MEAN	ND	ND	ND
	STD			ND
PENTACHLOROBENZENE	N	1	1	14
	MEAN	ND	0.0043	0.0015
	STD			0.0079

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, SNAKE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
HEXACHLOROBENZENE	N MEAN STD	1 0.0703 0.0211	1 0.0391 0.0022	14 0.0389 0.0052	1 0.0563
DDD	N MEAN STD	1 0.0048 0.0000	1 0.0030 0.0022	14 0.0022 0.0052	1 0.0000
DDE	N MEAN STD	1 5.2030 2.2289	1 3.3680 3.4286	14 3.4286 5.0203	1 2.2289
DDT	N MEAN STD	1 0.0274 0.0182	1 0.0171 0.0191	14 0.0191 0.0269	1 0.0182
DIELDRIN	N MEAN STD	1 0.1361 0.0336	1 0.1040 0.1023	14 0.1023 0.1215	1 0.0336
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0597 0.0200	1 0.0621 0.0507	14 0.0507 0.0956	1 0.0200
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND ND	14 ND ND	1 ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0068 0.0057	1 0.0057 0.2335	14 ND 0.2335	1 0.0065
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND ND	14 ND ND	1 ND
MIREX	N MEAN STD	1 1.0970 0.2335	1 0.5990 0.5397	14 0.5397 0.7464	1 0.2335
PHOTOMIREX	N MEAN STD	1 0.4303 0.1059	1 0.2420 0.2277	14 0.2277 0.3122	1 0.1059
CIS-NONACHLOR	N MEAN STD	1 0.0642 0.0206	1 0.0458 0.0414	14 0.0414 0.0640	1 0.0206
TRANS-NONACHLOR	N MEAN STD	1 0.0779 0.0244	1 0.0484 0.0526	14 0.0526 0.0747	1 0.0244
OCTACHLOROSTYRENE	N MEAN STD	1 0.0290 0.0105	1 0.0151 0.0176	14 0.0176 0.0292	1 0.0105
PCB:1260	N MEAN STD	1 15.1400 3.0699	1 9.1200 8.0354	14 8.0354 9.1277	1 3.0699

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 41

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, SNAKE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB:1254-1260	N MEAN STD	1 31.2400 6.7563	1 18.1500 16.0457	14 20.5839	1
TOTAL PCB CONGENERS	N MEAN STD	1 14.1928 3.2929	1 7.9733 7.6815	14 10.1265	1
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 0	0 0 1	0.0005
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0 1	0.0036
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0 1	0.0003
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 ND	0 0 1	0.0003
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 91 66	1 51 51	1 70.9	1
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 11 10	1 8 8	1 12.1i	1
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 ND ND	1 ND ND	1 ND	ND
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 13 12	1 10 10	1 7.5	1
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (1) ND	1 ND ND	1 ND	ND
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (4) (2)	1 (2) (6)	1 ND ND	1 ND
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 11 ND	1 (8) (8)	1 25.1	1
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	1 1 ND	1 (1) (1)	1 ND	ND
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0 0 0	0 1 ND	1 ND	ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, SNAKE ISLAND

HERRING GULL		YEAR			
		89	90	91	92
12489/23467-	N	0	0	1	0
PENTACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
23478-	N	1	1	1	1
PENTACHLORODIBENZO-	MEAN	9	7	7	ND
FURAN	STD				
123469/123689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
123478-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	4	5	6	1.1
FURAN	STD				
123678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	5	5	6	1.9
FURAN	STD				
123789-	N	0	0	0	1
HEXACHLORODIBENZO-	MEAN				ND
FURAN	STD				
124689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
234678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(1)	(2)	(2)	ND
FURAN	STD				
1234678-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				(0.1)
FURAN	STD				
1234789-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				ND
FURAN	STD				
OCTACHLORODIBENZO-	N	0	0	0	1
FURAN	MEAN				ND
	STD				

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 43

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, SNAKE ISLAND

BLACK-CROWNED NIGHT-HERON	YEAR	
		89
PERCENT FAT OF EGG	N	1
	MEAN	6.26
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	80.64
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0031
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0163
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0038
	STD	
DDD	N	1
	MEAN	0.0096
	STD	
DDE	N	1
	MEAN	0.7851
	STD	
DDT	N	1
	MEAN	0.0088
	STD	
DIELDRIN	N	1
	MEAN	0.0159
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0066
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, SNAKE ISLAND

BLACK-CROWNED NIGHT-HERON	YEAR	
	89	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.2671
PHOTOMIREX	N MEAN STD	1 0.0958
CIS-NONACHLOR	N MEAN STD	1 0.0145
TRANS-NONACHLOR	N MEAN STD	1 0.0335
OCTACHLOROSTYRENE	N MEAN STD	1 ND
PCB:1260	N MEAN STD	1 4.0950
PCB:1254-1260	N MEAN STD	1 7.9760
TOTAL PCB CONGENERS	N MEAN STD	1 3.6130
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, SNAKE ISLAND

BLACK-CROWNED NIGHT-HERON	YEAR	
		89
12378-	N	0
PENTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	0
p-DIOXIN	MEAN	
2378-	STD	
TETRACHLORODIBENZO-	N	0
FURAN	MEAN	
12378/12348-	STD	
PENTACHLORODIBENZO-	N	0
FURAN	MEAN	
12489/23467-	STD	
PENTACHLORODIBENZO-	N	0
FURAN	MEAN	
23478-	STD	
PENTACHLORODIBENZO-	N	0
FURAN	MEAN	
123469/123689-	STD	
HEXAChLORODIBENZO-	N	0
FURAN	MEAN	
123478-	STD	
HEXAChLORODIBENZO-	N	0
FURAN	MEAN	
123678-	STD	
HEXAChLORODIBENZO-	N	0
FURAN	MEAN	
123789-	STD	
HEXAChLORODIBENZO-	N	0
FURAN	MEAN	
124689-	STD	
HEXAChLORODIBENZO-	N	0
FURAN	MEAN	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, SNAKE ISLAND

BLACK-CROWNED NIGHT-HERON	YEAR	
	89	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE ONTARIO, PIGEON ISLAND

DOUBLE-CRESTED CORMORANT	YEAR		
	89	90	91
PERCENT FAT OF EGG	N	4	3
	MEAN	5.2	4.4
	STD	0.6534	0.1155
PERCENT WATER OF	N	4	3
EGG	MEAN	82.9	82.5
	STD	0.9096	0.4041
CIS/ALPHA-	N	4	3
CHLORDANE	MEAN	0.0029	0.0036
	STD	0.0000	0.0000
TRANS/GAMMA-	N	4	3
CHLORDANE	MEAN	ND	ND
	STD		
OXYCHLORDANE	N	4	3
	MEAN	0.0294	0.0500
	STD	0.0109	0.0130
1234-CHLOROBENZENE	N	4	3
	MEAN	ND	ND
	STD		
1235/1245-	N	4	3
CHLOROBENZENE	MEAN	ND	0.0158
	STD		0.0202
PENTACHLOROBENZENE	N	4	3
	MEAN	0.0013	ND
	STD	0.0000	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, PIGEON ISLAND

DOUBLE-CRESTED CORMORANT	YEAR			
	89	90	91	
HEXACHLOROBENZENE	N MEAN STD	4 0.0256 0.0116	3 0.0259 0.0074	0
DDD	N MEAN STD	4 0.0043 0.0000	3 0.0114 0.0000	0
DDE	N MEAN STD	4 2.9405 1.4461	3 4.3011 1.7639	0
DDT	N MEAN STD	4 0.0218 0.0103	3 0.0217 0.0088	0
DIELDRIN	N MEAN STD	4 0.1291 0.0644	3 0.1217 0.0311	0
HEPTACHLOR EPOXIDE	N MEAN STD	4 0.0345 0.0159	3 0.0640 0.0171	0
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	4 0.0033 0.0000	3 0.0033 0.0000	0
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	4 0.0041 0.0000	3 0.0065 0.0000	0
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	4 0.0011 0.0000	3 ND	0
MIREX	N MEAN STD	4 0.4038 0.1204	3 0.6509 0.2010	0
PHOTOMIREX	N MEAN STD	4 0.1413 0.0426	3 0.2370 0.0585	0
CIS-NONACHLOR	N MEAN STD	4 0.0206 0.0097	3 0.0250 0.0000	0
TRANS-NONACHLOR	N MEAN STD	4 0.0088 0.0000	3 0.0125 0.0000	0
OCTACHLOROSTYRENE	N MEAN STD	4 0.0136 0.0000	3 0.0194 0.0000	0
PCB:1260	N MEAN STD	4 6.5043 2.6103	3 11.3838 3.2335	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, PIGEON ISLAND

DOUBLE-CRESTED CORMORANT	YEAR			
	89	90	91	
PCB:1254-1260	N MEAN STD	4 13.7385 5.3067	3 22.2755 7.0433	0
TOTAL PCB CONGENERS	N MEAN STD	4 6.5412 2.5914	3 11.1116 3.4017	0
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD		0 5	ND
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0	0 0.0003 0.0001	5
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0	0 0.0036 0.0008	5
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0	0 0.0004 0.0002	5
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	0	1 18 35.6	5
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0	1 17 32.0	5.4314
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0	1 (2) 5.8	5
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0	1 11 36.8	5
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0	1 (3) 12.4	5
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0	1 8 6.0663	5
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0	1 13 16.8612	5
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	0	1 (1) 0.7	5
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0	0 0.2739 0	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 49

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, PIGEON ISLAND

DOUBLE-CRESTED CORMORANT	YEAR		
	89	90	91
12489/23467-	N	0	0
PENTACHLORODIBENZO-	MEAN		
FURAN	STD		
23478-	N	0	1
PENTACHLORODIBENZO-	MEAN	14	29.2
FURAN	STD		8.8148
123469/123689-	N	0	0
HEXACHLORODIBENZO-	MEAN		
FURAN	STD		
123478-	N	0	1
HEXACHLORODIBENZO-	MEAN	5	10.4
FURAN	STD		3.3615
123678-	N	0	1
HEXACHLORODIBENZO-	MEAN	(2)	4.0
FURAN	STD		1.2247
123789-	N	0	0
HEXACHLORODIBENZO-	MEAN		5
FURAN	STD		ND
124689-	N	0	0
HEXACHLORODIBENZO-	MEAN		0
FURAN	STD		
234678-	N	0	1
HEXACHLORODIBENZO-	MEAN	(1)	2.6
FURAN	STD		0.8944
1234678-	N	0	0
HEPTACHLORODIBENZO-	MEAN		
FURAN	STD		
1234789-	N	0	0
HEPTACHLORODIBENZO-	MEAN		0
FURAN	STD		
OCTACHLORODIBENZO-	N	0	0
FURAN	MEAN		
	STD		

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, PIGEON ISLAND

CASPIAN TERN	YEAR	
		91
PERCENT FAT OF EGG	N	1
	MEAN	9.3
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	75.3
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0092
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0428
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0193
	STD	
DDD	N	1
	MEAN	0.0139
	STD	
DDE	N	1
	MEAN	3.3422
	STD	
DDT	N	1
	MEAN	0.0166
	STD	
DIELDRIN	N	1
	MEAN	0.0606
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0289
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 51

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, PIGEON ISLAND

CASPIAN TERN	YEAR	
		91
BETA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
GAMMA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
MIREX	N	1
	MEAN	0.7672
	STD	
PHOTOMIREX	N	1
	MEAN	0.2962
	STD	
CIS-NONACHLOR	N	1
	MEAN	0.0197
	STD	
TRANS-NONACHLOR	N	1
	MEAN	0.0833
	STD	
OCTACHLOROSTYRENE	N	1
	MEAN	0.0143
	STD	
PCB:1260	N	1
	MEAN	9.8598
	STD	
PCB:1254-1260	N	1
	MEAN	17.4998
	STD	
TOTAL PCB CONGENERS	N	1
	MEAN	8.9674
	STD	
PCB37 3,4,4'-TRICHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N	0
	MEAN	
	STD	
2378-TETRACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, PIGEON ISLAND

CASPIAN TERN	YEAR	
		91
12378-	N	0
PENTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	0
p-DIOXIN	MEAN	
	STD	
2378-	N	0
TETRACHLORODIBENZO-	MEAN	
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, PIGEON ISLAND

CASPIAN TERN	YEAR	
		91
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE ONTARIO, LITTLE GALLOO ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
		90
PERCENT FAT OF EGG	N	3
	MEAN	4.5
	STD	0.3215
PERCENT WATER OF	N	3
EGG	MEAN	82.1
	STD	1.1590
CIS/ALPHA-	N	3
CHLORDANE	MEAN	0.0046
	STD	0.0000
TRANS/GAMMA-	N	3
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	3
	MEAN	0.0359
	STD	0.0076
1234-CHLOROBENZENE	N	3
	MEAN	ND
	STD	
1235/1245-	N	3
CHLOROBENZENE	MEAN	0.0340
	STD	0.0000
PENTACHLOROBENZENE	N	3
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, LITTLE GALLOO ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
	90	
HEXACHLOROBENZENE	N	3
	MEAN	0.0280
	STD	0.0088
DDD	N	3
	MEAN	0.0108
	STD	0.0000
DDE	N	3
	MEAN	2.9510
	STD	0.7088
DDT	N	3
	MEAN	0.0273
	STD	0.0074
DIELDRIN	N	3
	MEAN	0.1243
	STD	0.0597
HEPTACHLOR EPOXIDE	N	3
	MEAN	0.0544
	STD	0.0175
ALPHA- HEXACHLOROCYCLOHEXANE	N	3
	MEAN	0.0040
	STD	0.0000
BETA- HEXACHLOROCYCLOHEXANE	N	3
	MEAN	0.0052
	STD	0.0000
GAMMA- HEXACHLOROCYCLOHEXANE	N	3
	MEAN	ND
	STD	
MIREX	N	3
	MEAN	0.4873
	STD	0.1173
PHOTOMIREX	N	3
	MEAN	0.1935
	STD	0.0687
CIS-NONACHLOR	N	3
	MEAN	0.0224
	STD	0.0000
TRANS-NONACHLOR	N	3
	MEAN	0.0090
	STD	0.0000
OCTACHLOROSTYRENE	N	3
	MEAN	0.0168
	STD	0.0000
PCB:1260	N	3
	MEAN	7.5930
	STD	1.5266

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 55

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, LITTLE GALLOO ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
		90
PCB:1254-1260	N	3
	MEAN	15.0916
	STD	2.4755
TOTAL PCB CONGENERS	N	3
	MEAN	7.6044
	STD	1.4564
PCB37 3,4,4'-TRICHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N	0
	MEAN	
	STD	
2378-TETRACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
12378-PENTACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
123478-HEXACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
123678-HEXACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
123789-HEXACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
1234678-HEPTACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
OCTACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
2378-TETRACHLORODIBENZO-FURAN	N	0
	MEAN	
	STD	
12378/12348-PENTACHLORODIBENZO-FURAN	N	0
	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, LITTLE GALLOO ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
		90
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 57

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, LESLIE STREET SPIT

HERRING GULL	YEAR			
	89	90	91	92
PERCENT FAT OF EGG	N MEAN STD	1 7.9 0.6335	1 8.6 8.2	14 14 8.9
PERCENT WATER OF EGG	N MEAN STD	1 76.5 0.7938	1 76.3 76.7	1 14 75.2
CIS/ALPHA-CHLORDANE	N MEAN STD	1 0.0165 0.0091	1 0.0069 0.0056	1 14 0.0072
TRANS/GAMMA-CHLORDANE	N MEAN STD	1 ND 0.0000	1 ND 0.0008	1 ND ND
OXYCHLORDANE	N MEAN STD	1 0.1794 0.0788	1 0.1172 0.1069	1 14 0.1150
1234-CHLOROBENZENE	N MEAN STD	1 ND 0.0072	1 ND 0.0033	1 14 ND
1235/1245-CHLOROBENZENE	N MEAN STD	1 ND 0.0072	1 ND ND	1 14 ND
PENTACHLOROBENZENE	N MEAN STD	1 0.0068 0.0000	1 0.0040 0.0016	1 14 ND
HEXACHLOROBENZENE	N MEAN STD	1 0.0598 0.0125	1 0.0296 0.0282	1 14 0.0440
DDD	N MEAN STD	1 0.0182 0.0524	1 0.0091 0.0172	1 14 0.0096
DDE	N MEAN STD	1 5.3490 1.4882	1 3.3450 3.6252	1 14 4.9910
DDT	N MEAN STD	1 0.0506 0.0221	1 0.0285 0.0248	1 14 0.0313
DIELDRIN	N MEAN STD	1 0.2954 0.3126	1 0.0990 0.1740	1 14 0.1296
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0907 0.0256	1 0.0421 0.0349	1 14 0.0396
ALPHA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND ND	1 14 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, LESLIE STREET SPIT

HERRING GULL	YEAR				
	89	90	91	92	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0082 ND	1 0.0044 ND	14 ND 14	1 ND 1
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND ND	14 ND ND	1 ND 1
MIREX	N MEAN STD	1 1.1940 ND	1 0.6831 0.2751	14 0.6169 0.2586	1 0.7976 0.3270
PHOTOMIREX	N MEAN STD	1 0.4403 ND	1 0.2751 0.0777	14 0.1675 0.0777	1 1 1
CIS-NONACHLOR	N MEAN STD	1 0.0790 ND	1 0.0469 0.0494	14 0.0320 0.0552	1 0.0516 0.0843
TRANS-NONACHLOR	N MEAN STD	1 0.1260 ND	1 0.0494 0.0122	14 0.0144 0.0104	1 0.0343 0.0221
OCTACHLOROSTYRENE	N MEAN STD	1 0.0277 ND	1 0.0122 0.0000	14 0.0000	1 1
PCB:1260	N MEAN STD	1 18.8100 ND	1 9.7600 2.5461	14 9.6509 11.2025	1 1
PCB:1254-1260	N MEAN STD	1 33.6500 ND	1 18.7300 5.5048	14 18.0716 21.7742	1 1
TOTAL PCB CONGENERS	N MEAN STD	1 15.8187 ND	1 8.4391 2.5108	14 8.4610 10.4471	1 1
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 0	0 0 0	1 ND 1
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 0	0 0 0	1 0.0003 1
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 0	0 0 0	1 0.0035 1
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 0	0 0 0	1 0.0003 1
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 55 ND	1 44 26	1 1 51.2	1 1 59

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, LESLIE STREET SPIT

HERRING GULL		YEAR			
		89	90	91	92
12378-	N	1	1	0	1
PENTACHLORODIBENZO-	MEAN	8	7		7.2i
p-DIOXIN	STD				
123478-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	ND	ND	ND	2.2i
p-DIOXIN	STD				
123678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	13	10	10	4.4
p-DIOXIN	STD				
123789-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(1)	(1)	ND	(0.1)
p-DIOXIN	STD				
1234678-	N	1	1	1	1
HEPTACHLORODIBENZO-	MEAN	(5)	(3)	(6)	(0.2)
p-DIOXIN	STD				
OCTACHLORODIBENZO-	N	1	1	1	1
p-DIOXIN	MEAN	8	(6)	(8)	5.2
	STD				
2378-	N	1	1	1	1
TETRACHLORODIBENZO-	MEAN	1	(1)	ND	ND
FURAN	STD				
12378/12348-	N	0	0	1	1
PENTACHLORODIBENZO-	MEAN			ND	ND
FURAN	STD				
12489/23467-	N	0	0	1	0
PENTACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
23478-	N	1	1	0	1
PENTACHLORODIBENZO-	MEAN	6	5		3.4
FURAN	STD				
123469/123689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
123478-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	4	(3)	4	(0.1)
FURAN	STD				
123678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	4	(3)	(3)	(0.1)
FURAN	STD				
123789-	N	0	0	0	1
HEXACHLORODIBENZO-	MEAN				(0.1)
FURAN	STD				
124689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, LESLIE STREET SPIT

HERRING GULL	YEAR				
	89	90	91	92	
234678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	3	(1)	(2)	ND
FURAN	STD				
1234678-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				(0.1)
FURAN	STD				
1234789-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				ND
FURAN	STD				
OCTACHLORODIBENZO-	N	0	0	0	1
FURAN	MEAN				ND
	STD				

LAKE ONTARIO, LESLIE STREET SPIT

BLACK-CROWNED NIGHT-HERON	YEAR			
	89			
PERCENT FAT OF EGG	N	1		
	MEAN	5.34		
	STD			
PERCENT WATER OF EGG	N	1		
	MEAN	81.53		
	STD			
CIS/ALPHA-CHLORDANE	N	1		
	MEAN	0.0134		
	STD			
TRANS/GAMMA-CHLORDANE	N	1		ND
	MEAN			
	STD			
OXYCHLORDANE	N	1		
	MEAN	0.0491		
	STD			
1234-CHLOROBENZENE	N	1		
	MEAN	ND		
	STD			
1235/1245-CHLOROBENZENE	N	1		
	MEAN	ND		
	STD			
PENTACHLOROBENZENE	N	1		
	MEAN	0.0019		
	STD			

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, LESLIE STREET SPIT

BLACK-CROWNED NIGHT-HERON		YEAR
		89
HEXACHLOROBENZENE	N MEAN STD	1 0.0156 ND
DDD	N MEAN STD	1 0.0754 ND
DDE	N MEAN STD	1 6.8060 ND
DDT	N MEAN STD	1 0.0821 ND
DIELDRIN	N MEAN STD	1 0.1185 ND
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0301 ND
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0019 ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
MIREX	N MEAN STD	1 0.5190 ND
PHOTOMIREX	N MEAN STD	1 0.1704 ND
CIS-NONACHLOR	N MEAN STD	1 0.0526 ND
TRANS-NONACHLOR	N MEAN STD	1 0.1350 ND
OCTACHLOROSTYRENE	N MEAN STD	1 0.0160 ND
PCB:1260	N MEAN STD	1 6.1000 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, LESLIE STREET SPIT

BLACK-CROWNED NIGHT-HERON	YEAR	
		89
PCB:1254-1260	N	1
	MEAN	16.1100
	STD	
TOTAL PCB CONGENERS	N	1
	MEAN	7.4740
	STD	
PCB37 3,4,4'-TRICHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N	0
	MEAN	
	STD	
2378-TETRACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
12378-PENTACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
123478-HEXACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
123678-HEXACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
123789-HEXACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
1234678-HEPTACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
OCTACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
2378-TETRACHLORODIBENZO-FURAN	N	0
	MEAN	
	STD	
12378/12348-PENTACHLORODIBENZO-FURAN	N	0
	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, LESLIE STREET SPIT

BLACK-CROWNED NIGHT-HERON	YEAR	
		89
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, LESLIE STREET SPIT

RING-BILLED GULL	YEAR	
		89
PERCENT FAT OF EGG	N	1
	MEAN	9.64
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	73.17
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0288
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	0.0016
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0704
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	0.0064
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0475
	STD	
DDD	N	1
	MEAN	0.0021
	STD	
DDE	N	1
	MEAN	2.5090
	STD	
DDT	N	1
	MEAN	0.0228
	STD	
DIELDRIN	N	1
	MEAN	0.3623
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0616
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 65

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, LESLIE STREET SPIT

RING-BILLED GULL	YEAR	
		89
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0047
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.4744
PHOTOMIREX	N MEAN STD	1 0.2029
CIS-NONACHLOR	N MEAN STD	1 0.0464
TRANS-NONACHLOR	N MEAN STD	1 0.2108
OCTACHLOROSTYRENE	N MEAN STD	1 0.0234
PCB:1260	N MEAN STD	1 7.3460
PCB:1254-1260	N MEAN STD	1 14.8300
TOTAL PCB CONGENERS	N MEAN STD	1 6.8850
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, LESLIE STREET SPIT

RING-BILLED GULL	YEAR	
		89
12378-	N	0
PENTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	0
p-DIOXIN	MEAN	
	STD	
2378-	N	0
TETRACHLORODIBENZO-	MEAN	
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 67

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, LESLIE STREET SPIT

RING-BILLED GULL	YEAR	
	89	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE ONTARIO, HAMILTON HARBOUR

HERRING GULL	YEAR		
	89	91	92
PERCENT FAT OF EGG	N MEAN STD	1 9.08 ND	1 9.5 ND
PERCENT WATER OF EGG	N MEAN STD	1 75.04 ND	1 75.7 76.0
CIS/ALPHA-CHLORDANE	N MEAN STD	1 0.0116 ND	1 0.0141 ND
TRANS/GAMMA-CHLORDANE	N MEAN STD	1 ND ND	1 ND ND
OXYCHLORDANE	N MEAN STD	1 0.0992 ND	1 0.0857 ND
1234-CHLOROBENZENE	N MEAN STD	1 ND ND	1 ND ND
1235/1245-CHLOROBENZENE	N MEAN STD	1 ND ND	1 0.0154 0.0128
PENTACHLOROBENZENE	N MEAN STD	1 0.0071 ND	1 ND 0.0105

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

HERRING GULL	YEAR			
	89	91	92	
HEXACHLOROBENZENE	N MEAN STD	1 0.0473 ND	1 0.0185 ND	1 0.0446 0.0188
DDD	N MEAN STD	1 0.0125 ND	1 ND 1	1 0.0188 1
DDE	N MEAN STD	1 5.0977 ND	1 2.9642 5.2091	1 1 1
DDT	N MEAN STD	1 0.0266 ND	1 0.0134 ND	1 0.0145 ND
DIELDRIN	N MEAN STD	1 0.1136 ND	1 0.0697 ND	1 0.0730 ND
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0453 ND	1 0.0291 ND	1 0.0393 ND
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND ND	1 ND ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0055 ND	1 ND ND	1 ND ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND ND	1 ND ND
MIREX	N MEAN STD	1 0.7983 ND	1 0.5009 ND	1 0.5965 ND
PHOTOMIREX	N MEAN STD	1 0.3257 ND	1 0.2081 ND	1 0.2442 ND
CIS-NONACHLOR	N MEAN STD	1 0.0564 ND	1 0.0183 ND	1 0.0478 ND
TRANS-NONACHLOR	N MEAN STD	1 0.0763 ND	1 0.0269 ND	1 0.0804 ND
OCTACHLOROSTYRENE	N MEAN STD	1 0.0214 ND	1 0.0086 ND	1 0.0242 ND
PCB:1260	N MEAN STD	1 16.7000 ND	1 9.7111 ND	1 14.5688 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

HERRING GULL	YEAR			
	89	91	92	
PCB:1254-1260	N MEAN STD	1 33.6400 1	1 17.2540 28.1595	1
TOTAL PCB CONGENERS	N MEAN STD	1 15.5100 1	1 8.0799 14.1842	1
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 0	0 <0.0001 1	1
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0.0005 1	1
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0.0032 1	1
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0.0002 1	1
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 1 16	1 29.3	1
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 1 (3)	1 8.4i	1
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 1 ND	1 (0.1)	1
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 1 7	1 11.2	1
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 1 ND	1 (0.2)	1
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 1 (7)	1 ND	1
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 1 (7)	1 (0.1)	1
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	0 2 0	1 1.0 0	1
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0 0 0	0 ND 1	1

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

HERRING GULL	YEAR		
	89	91	92
12489/23467-	N	0	0
PENTACHLORODIBENZO-	MEAN		
FURAN	STD		
23478-	N	0	1
PENTACHLORODIBENZO-	MEAN		10.9
FURAN	STD	3	
123469/123689-	N	0	0
HEXACHLORODIBENZO-	MEAN		
FURAN	STD		
123478-	N	0	1
HEXACHLORODIBENZO-	MEAN		1.1
FURAN	STD	ND	
123678-	N	0	1
HEXACHLORODIBENZO-	MEAN		0.7
FURAN	STD	ND	
123789-	N	0	0
HEXACHLORODIBENZO-	MEAN		0.7
FURAN	STD		
124689-	N	0	0
HEXACHLORODIBENZO-	MEAN		
FURAN	STD		
234678-	N	0	1
HEXACHLORODIBENZO-	MEAN		ND
FURAN	STD		
1234678-	N	0	0
HEPTACHLORODIBENZO-	MEAN		(0.1)
FURAN	STD		
1234789-	N	0	0
HEPTACHLORODIBENZO-	MEAN		ND
FURAN	STD		
OCTACHLORODIBENZO-	N	0	0
FURAN	MEAN		1
	STD		(0.1)

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 71

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

DOUBLE-CRESTED CORMORANT	YEAR	
		89
PERCENT FAT OF EGG	N	1
	MEAN	4.60
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	82.88
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0063
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0397
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	0.0029
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0229
	STD	
DDD	N	1
	MEAN	0.0095
	STD	
DDE	N	1
	MEAN	3.8610
	STD	
DDT	N	1
	MEAN	0.0272
	STD	
DIELDRIN	N	1
	MEAN	0.1569
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0406
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	0.0036
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

DOUBLE-CRESTED CORMORANT	YEAR	
	89	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0054
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0049
MIREX	N MEAN STD	1 0.4309
PHOTOMIREX	N MEAN STD	1 0.1659
CIS-NONACHLOR	N MEAN STD	1 0.0323
TRANS-NONACHLOR	N MEAN STD	1 0.0253
OCTACHLOROSTYRENE	N MEAN STD	1 0.0169
PCB:1260	N MEAN STD	1 9.9220
PCB:1254-1260	N MEAN STD	1 20.1000
TOTAL PCB CONGENERS	N MEAN STD	1 9.3540
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 18

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

DOUBLE-CRESTED CORMORANT	YEAR	
		89
12378-	N	1
PENTACHLORODIBENZO-	MEAN	21
p-DIOXIN	STD	
123478-	N	1
HEXAChLORODIBENZO-	MEAN	(2)
p-DIOXIN	STD	
123678-	N	1
HEXAChLORODIBENZO-	MEAN	19
p-DIOXIN	STD	
123789-	N	1
HEXAChLORODIBENZO-	MEAN	6
p-DIOXIN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	11
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	1
p-DIOXIN	MEAN	12
	STD	
2378-	N	1
TETRACHLORODIBENZO-	MEAN	(1)
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	21
FURAN	STD	
123469/123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXAChLORODIBENZO-	MEAN	7
FURAN	STD	
123678-	N	1
HEXAChLORODIBENZO-	MEAN	4
FURAN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

DOUBLE-CRESTED CORMORANT	YEAR	
	89	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	4
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE ONTARIO, HAMILTON HARBOUR

CASPIAN TERN	YEAR		
	89	91	92
PERCENT FAT OF EGG	N	1	1
	MEAN	8.59	8.6
	STD		8.4
PERCENT WATER OF EGG	N	1	1
	MEAN	77.06	76.1
	STD		76.1
CIS/ALPHA-CHLORDANE	N	1	1
	MEAN	0.0112	0.0202
	STD		0.0327
TRANS/GAMMA-CHLORDANE	N	1	1
	MEAN	ND	ND
	STD		0.0009
OXYCHLORDANE	N	1	1
	MEAN	0.0349	0.0633
	STD		0.0468
1234-CHLOROBENZENE	N	1	1
	MEAN	ND	ND
	STD		ND
1235/1245-CHLOROBENZENE	N	1	1
	MEAN	ND	ND
	STD		ND
PENTACHLOROBENZENE	N	1	1
	MEAN	0.0027	ND
	STD		0.0040

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

CASPIAN TERN	YEAR			
	89	91	92	
HEXACHLOROBENZENE	N MEAN STD	1 0.0187 1	1 0.0197 0.0257	1
DDD	N MEAN STD	1 0.0098 1	1 0.0204 0.0452	1
DDE	N MEAN STD	1 3.7900 1	1 3.8191 3.7762	1
DDT	N MEAN STD	1 0.0250 1	1 0.0201 0.0508	1
DIELDRIN	N MEAN STD	1 0.0632 1	1 0.0798 0.0732	1
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0585 1	1 0.0256 0.0198	1
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND 1	1 ND ND	1 ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0014 1	1 ND 0.0029	1 1
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND 1	1 ND ND	1 1
MIREX	N MEAN STD	1 0.7703 1	1 0.7187 0.5948	1 1
PHOTOMIREX	N MEAN STD	1 0.2569 1	1 0.2545 0.2341	1 1
CIS-NONACHLOR	N MEAN STD	1 0.0326 1	1 0.0327 0.0515	1 1
TRANS-NONACHLOR	N MEAN STD	1 0.1095 1	1 0.1071 0.1287	1 1
OCTACHLOROSTYRENE	N MEAN STD	1 0.0131 1	1 0.0163 0.0170	1 1
PCB:1260	N MEAN STD	1 11.9500 1	1 9.8826 8.0435	1 1

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

CASPIAN TERN	YEAR			
	89	91	92	
PCB:1254-1260	N MEAN STD	1 20.5400 1	1 16.3020 15.3081	1
TOTAL PCB CONGENERS	N MEAN STD	1 10.1100 1	8.5430 8.3595	1
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0	0 0 0	0
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0	0 0 0	0
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0	0 0 0	0
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0	0 0 0	0
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0	0 0 0	0
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0	0 0 0	0
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0	0 0 0	0
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	0 0 0	0 0 0	0
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0 0 0	0 0 0	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 77

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

CASPIAN TERN	YEAR		
	89	91	92
12489/23467-	N	0	0
PENTACHLORODIBENZO-	MEAN		
FURAN	STD		
23478-	N	0	0
PENTACHLORODIBENZO-	MEAN		
FURAN	STD		
123469/123689-	N	0	0
HEXACHLORODIBENZO-	MEAN		
FURAN	STD		
123478-	N	0	0
HEXACHLORODIBENZO-	MEAN		
FURAN	STD		
123678-	N	0	0
HEXACHLORODIBENZO-	MEAN		
FURAN	STD		
123789-	N	0	0
HEXACHLORODIBENZO-	MEAN		
FURAN	STD		
124689-	N	0	0
HEXACHLORODIBENZO-	MEAN		
FURAN	STD		
234678-	N	0	0
HEXACHLORODIBENZO-	MEAN		
FURAN	STD		
1234678-	N	0	0
HEPTACHLORODIBENZO-	MEAN		
FURAN	STD		
1234789-	N	0	0
HEPTACHLORODIBENZO-	MEAN		
FURAN	STD		
OCTACHLORODIBENZO-	N	0	0
FURAN	MEAN		
	STD		

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

COMMON TERN	YEAR			
	89	91	92	
PERCENT FAT OF EGG	N MEAN STD	1 9.33 1	1 8.7 1	1 10.4 1
PERCENT WATER OF EGG	N MEAN STD	1 76.25 1	1 76.2 73.4	1 1 1
CIS/ALPHA-CHLORDANE	N MEAN STD	1 0.0036 1	1 0.0061 1	1 0.0037 1
TRANS/GAMMA-CHLORDANE	N MEAN STD	1 ND 1	1 ND ND	1 ND 1
OXYCHLORDANE	N MEAN STD	1 0.0408 1	1 0.0617 1	1 0.0317 1
1234-CHLOROBENZENE	N MEAN STD	1 ND 1	1 ND 1	1 ND 1
1235/1245-CHLOROBENZENE	N MEAN STD	1 ND 1	1 ND 1	1 ND 1
PENTACHLOROBENZENE	N MEAN STD	1 0.0028 1	1 ND 1	1 0.0038 1
HEXACHLOROBENZENE	N MEAN STD	1 0.0263 1	1 0.0260 1	1 0.0325 1
DDD	N MEAN STD	1 0.0245 1	1 0.0136 1	1 0.0091 1
DDE	N MEAN STD	1 1.8060 1	1 1.9314 1	1 2.9087 1
DDT	N MEAN STD	1 0.0280 1	1 0.0212 1	1 0.0342 1
DIELDRIN	N MEAN STD	1 0.0692 1	1 0.0811 1	1 0.1333 1
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0642 1	1 0.0215 1	1 0.0247 1
ALPHA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0010 1	1 ND 1	1 ND 1

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 79

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

COMMON TERM	YEAR		
	89	91	92
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0026 ND	1 ND ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0011 ND	1 ND
MIREX	N MEAN STD	1 0.4849 0.3809	1 0.4878
PHOTOMIREX	N MEAN STD	1 0.1541 0.1385	1 0.1844
CIS-NONACHLOR	N MEAN STD	1 0.0250 0.0286	1 0.0181
TRANS-NONACHLOR	N MEAN STD	1 0.0401 0.0626	1 0.0719
OCTACHLOROSTYRENE	N MEAN STD	1 0.0124 0.0229	1 0.0278
PCB:1260	N MEAN STD	1 5.7990 4.6346	1 6.4003
PCB:1254-1260	N MEAN STD	1 10.8900 9.3478	1 12.8504
TOTAL PCB CONGENERS	N MEAN STD	1 5.2870 5.1395	1 6.6418
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0	0 0 0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

COMMON TERN		YEAR		
		89	91	92
12378-	N	0	0	0
PENTACHLORODIBENZO-	MEAN			
p-DIOXIN	STD			
123478-	N	0	0	0
HEXACHLORODIBENZO-	MEAN			
p-DIOXIN	STD			
123678-	N	0	0	0
HEXACHLORODIBENZO-	MEAN			
p-DIOXIN	STD			
123789-	N	0	0	0
HEXACHLORODIBENZO-	MEAN			
p-DIOXIN	STD			
1234678-	N	0	0	0
HEPTACHLORODIBENZO-	MEAN			
p-DIOXIN	STD			
OCTACHLORODIBENZO-	N	0	0	0
p-DIOXIN	MEAN			
	STD			
2378-	N	0	0	0
TETRACHLORODIBENZO-	MEAN			
FURAN	STD			
12378/12348-	N	0	0	0
PENTACHLORODIBENZO-	MEAN			
FURAN	STD			
12489/23467-	N	0	0	0
PENTACHLORODIBENZO-	MEAN			
FURAN	STD			
23478-	N	0	0	0
PENTACHLORODIBENZO-	MEAN			
FURAN	STD			
123469/123689-	N	0	0	0
HEXACHLORODIBENZO-	MEAN			
FURAN	STD			
123478-	N	0	0	0
HEXACHLORODIBENZO-	MEAN			
FURAN	STD			
123678-	N	0	0	0
HEXACHLORODIBENZO-	MEAN			
FURAN	STD			
123789-	N	0	0	0
HEXACHLORODIBENZO-	MEAN			
FURAN	STD			
124689-	N	0	0	0
HEXACHLORODIBENZO-	MEAN			
FURAN	STD			

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

COMMON TERN	YEAR		
	89	91	92
234678-	N	0	0
HEXACHLORODIBENZO-	MEAN		
FURAN	STD		
1234678-	N	0	0
HEPTACHLORODIBENZO-	MEAN		
FURAN	STD		
1234789-	N	0	0
HEPTACHLORODIBENZO-	MEAN		
FURAN	STD		
OCTACHLORODIBENZO-	N	0	0
FURAN	MEAN		
	STD		

LAKE ONTARIO, HAMILTON HARBOUR

BLACK-CROWNED NIGHT-HERON	YEAR	
	89	92
PERCENT FAT OF EGG	N	1
	MEAN	5.60
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	81.51
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0085
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0463
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

BLACK-CROWNED NIGHT-HERON	YEAR	
	89	92
HEXACHLOROBENZENE	N MEAN STD	1 0.0132 0.0140
DDD	N MEAN STD	1 0.0266 0.0525
DDE	N MEAN STD	1 2.5850 6.7800
DDT	N MEAN STD	1 0.0409 0.0480
DIELDRIN	N MEAN STD	1 0.0495 0.0847
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0136 0.0252
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0020 ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
MIREX	N MEAN STD	1 0.4026 0.4200
PHOTOMIREX	N MEAN STD	1 0.1601 0.1806
CIS-NONACHLOR	N MEAN STD	1 0.0385 0.0536
TRANS-NONACHLOR	N MEAN STD	1 0.1271 0.1224
OCTACHLOROSTYRENE	N MEAN STD	1 0.0105 0.0150
PCB:1260	N MEAN STD	1 14.7200 7.8280

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

BLACK-CROWNED NIGHT-HERON	YEAR	
	89	92
PCB:1254-1260	N MEAN STD	1 25.1900 15.2562
TOTAL PCB CONGENERS	N MEAN STD	1 12.2200 7.9754
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	0 0 0
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0 0 0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ONTARIO, HAMILTON HARBOUR

BLACK-CROWNED NIGHT-HERON	YEAR	
	89	92
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	0
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	0
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	0
FURAN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	0
FURAN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	0
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	0
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	0
FURAN	STD	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	0
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	0
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	0
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 85

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

NIAGARA RIVER

HERRING GULL	YEAR				
	89	90	91	92	
PERCENT FAT OF EGG	N MEAN STD	1 8.4 -	1 9.5 -	1 8.2 -	1 8.3 -
PERCENT WATER OF EGG	N MEAN STD	1 76.4 -	1 75.6 -	1 76.8 -	1 76.5 -
CIS/ALPHA-CHLORDANE	N MEAN STD	1 0.0069 -	1 0.0069 -	1 0.0069 -	1 0.0074 -
TRANS/GAMMA-CHLORDANE	N MEAN STD	1 ND -	1 ND -	1 ND -	1 ND -
OXYCHLORDANE	N MEAN STD	1 0.0617 -	1 0.0634 -	1 0.0780 -	1 0.0709 -
1234-CHLOROBENZENE	N MEAN STD	1 ND -	1 ND -	1 ND -	1 0.0381 -
1235/1245-CHLOROBENZENE	N MEAN STD	1 ND -	1 ND -	1 ND -	1 ND -
PENTACHLOROBENZENE	N MEAN STD	1 ND -	1 0.0036 -	1 ND -	1 0.0078 -
HEXACHLOROBENZENE	N MEAN STD	1 0.0357 -	1 0.0230 -	1 0.0213 -	1 0.0325 -
DDD	N MEAN STD	1 0.0078 -	1 0.0074 -	1 ND -	1 0.0062 -
DDE	N MEAN STD	1 2.0760 -	1 2.0150 -	1 1.7258 -	1 1.7817 -
DDT	N MEAN STD	1 0.0097 -	1 0.0140 -	1 ND -	1 0.0017 -
DIELDRIN	N MEAN STD	1 0.1341 -	1 0.0768 -	1 0.0857 -	1 0.1059 -
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0490 -	1 0.0389 -	1 0.0386 -	1 0.0412 -
ALPHA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND -	1 0.0004 -	1 ND -	1 ND -

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

NIAGARA RIVER

HERRING GULL	YEAR				
	89	90	91	92	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0032 ND	1 0.0026 ND	1 ND 1	1 ND 1
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	1 ND 1
MIREX	N MEAN STD	1 0.2378 ND	1 0.2807 0.2313	1 0.1927	1 0.1927
PHOTOMIREX	N MEAN STD	1 0.1014 ND	1 0.1130 0.0936	1 0.0936	1 0.0763
CIS-NONACHLOR	N MEAN STD	1 0.0286 ND	1 0.0249 0.0311	1 0.0311	1 0.0354
TRANS-NONACHLOR	N MEAN STD	1 0.0479 ND	1 0.0334 0.0353	1 0.0353	1 0.0488
OCTACHLOROSTYRENE	N MEAN STD	1 0.0104 ND	1 0.0061 0.0074	1 0.0074	1 0.0127
PCB:1260	N MEAN STD	1 9.6150 ND	1 8.9070 7.0688	1 7.0688	1 7.7635
PCB:1254-1260	N MEAN STD	1 19.1500 ND	1 15.7200 13.4911	1 13.4911	1 15.2039
TOTAL PCB CONGENERS	N MEAN STD	1 8.6891 ND	1 7.1117 6.6310	1 6.6310	1 7.4522
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 ND	0 0 <0.0001	1 1 1
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 ND	0 0 0.0008	1 1 1
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 ND	0 0 0.0019	1 1 1
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 ND	0 0 0.0002	1 1 1
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 18 ND	1 18 ND	1 17 13.5	1 1 1

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 87

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

NIAGARA RIVER

HERRING GULL	YEAR			
	89	90	91	92
12378-	N	1	1	1
PENTACHLORODIBENZO-	MEAN	5	5	4
p-DIOXIN	STD			17.5i
123478-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	ND	ND	ND
p-DIOXIN	STD			(0.1)
123678-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	7	7	7
p-DIOXIN	STD			(0.7)
123789-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	(1)	(1)
p-DIOXIN	STD			ND
1234678-	N	1	1	1
HEPTACHLORODIBENZO-	MEAN	(4)	(2)	(5)
p-DIOXIN	STD			ND
OCTACHLORODIBENZO-	N	1	1	1
p-DIOXIN	MEAN	(7)	ND	(6)
	STD			ND
2378-	N	1	1	1
TETRACHLORODIBENZO-	MEAN	1	(1)	(1)
FURAN	STD			ND
12378/12348-	N	0	0	1
PENTACHLORODIBENZO-	MEAN			ND
FURAN	STD			ND
12489/23467-	N	0	0	1
PENTACHLORODIBENZO-	MEAN			ND
FURAN	STD			
23478-	N	1	1	1
PENTACHLORODIBENZO-	MEAN	6	4	5
FURAN	STD			ND
123469/123689-	N	0	0	1
HEXACHLORODIBENZO-	MEAN			ND
FURAN	STD			
123478-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	3	(2)	(2)
FURAN	STD			(0.1)
123678-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	(2)	(2)
FURAN	STD			ND
123789-	N	0	0	0
HEXACHLORODIBENZO-	MEAN			ND
FURAN	STD			
124689-	N	0	0	1
HEXACHLORODIBENZO-	MEAN			ND
FURAN	STD			

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

## NIAGARA RIVER

HERRING GULL	YEAR				
	89	90	91	92	
234678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	ND	ND	ND
FURAN	STD				
1234678-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				ND
FURAN	STD				
1234789-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				ND
FURAN	STD				
OCTACHLORODIBENZO-	N	0	0	0	1
FURAN	MEAN				ND
	STD				

## NIAGARA RIVER

BLACK-CROWNED NIGHT-HERON	YEAR	
	89	
PERCENT FAT OF EGG	N	1
	MEAN	5.73
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	81.04
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0109
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0829
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	0.0028
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 89

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

NIAGARA RIVER

BLACK-CROWNED NIGHT-HERON	YEAR	
	89	
HEXACHLOROBENZENE	N MEAN STD	1 0.0200 0.0516
DDD	N MEAN STD	1 0.0516 0.0637
DDE	N MEAN STD	1 5.2700 0.0505
DDT	N MEAN STD	1 0.0637 0.0226
DIELDRIN	N MEAN STD	1 0.0505 0.0009
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0226 0.0495
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0009 ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0495 0.5475
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND 0.2234
MIREX	N MEAN STD	1 0.5475 0.0856
PHOTOMIREX	N MEAN STD	1 0.2234 0.1825
CIS-NONACHLOR	N MEAN STD	1 0.0856 0.0156
TRANS-NONACHLOR	N MEAN STD	1 0.1825 8.4400
OCTACHLOROSTYRENE	N MEAN STD	1 0.0156 8.4400
PCB:1260	N MEAN STD	1 8.4400

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

NIAGARA RIVER

BLACK-CROWNED NIGHT-HERON		YEAR
		89
PCB:1254-1260	N MEAN STD	1 19.0300
TOTAL PCB CONGENERS	N MEAN STD	1 9.0400
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378- TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
12378- PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
123478- HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
123678- HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
123789- HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
1234678- HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
2378- TETRACHLORODIBENZO-FURAN	N MEAN STD	0
12378/12348- PENTACHLORODIBENZO-FURAN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 91

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

NIAGARA RIVER

BLACK-CROWNED NIGHT-HERON	YEAR	
		89
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, PORT COLBORNE, LIGHTHOUSE

HERRING GULL	YEAR			
	89	90	91	92
PERCENT FAT OF EGG	N MEAN STD	1 10.4 7.8	1 8.1 9.1	1 0.8622
PERCENT WATER OF EGG	N MEAN STD	1 77.6 76.0	1 74.7 76.8	1 0.7592
CIS/ALPHA-CHLORDANE	N MEAN STD	1 0.0133 0.0057	1 ND ND	1 0.0059 0.0000
TRANS/GAMMA-CHLORDANE	N MEAN STD	1 ND ND	1 ND ND	1 ND
OXYCHLORDANE	N MEAN STD	1 0.1054 0.0595	1 0.0435	1 0.0505 0.0251
1234-CHLOROBENZENE	N MEAN STD	1 ND ND	1 ND ND	1 0.0036 0.0000
1235/1245-CHLOROBENZENE	N MEAN STD	1 ND ND	1 ND ND	1 0.0047 0.0076
PENTACHLOROBENZENE	N MEAN STD	1 0.0074 0.0026	1 ND	1 0.0103 0.0108
HEXACHLOROBENZENE	N MEAN STD	1 0.0523 0.0206	1 0.0163	1 0.0304 0.0219
DDD	N MEAN STD	1 0.0126 0.0058	1 ND	1 0.0068 0.0091
DDE	N MEAN STD	1 3.1450 1.5550	1 1.5471	1 1.2034 0.5526
DDT	N MEAN STD	1 0.0162 0.0184	1 ND	1 0.0009 0.0000
DIELDRIN	N MEAN STD	1 0.2340 0.1060	1 0.0564	1 0.1276 0.0366
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0952 0.0437	1 0.0316	1 0.0448 0.0125
ALPHA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND	1 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 93

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, PORT COLBORNE, LIGHTHOUSE

HERRING GULL	YEAR				
	89	90	91	92	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0047 ND	1 0.0021 ND	1 ND 1	14 ND 14
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	14 ND 14
MIREX	N MEAN STD	1 0.3280 ND	1 0.1215 0.0477	1 0.1038 0.0401	14 0.0750 0.0846
PHOTOMIREX	N MEAN STD	1 0.1323 ND	1 0.0477 0.0401	1 0.0276 0.0351	14 0.0276 0.0351
CIS-NONACHLOR	N MEAN STD	1 0.0602 ND	1 0.0355 0.0180	1 0.0180 0.0293	14 0.0293 0.0086
TRANS-NONACHLOR	N MEAN STD	1 0.0674 ND	1 0.0382 0.0295	1 0.0295 0.0454	14 0.0097
OCTACHLOROSTYRENE	N MEAN STD	1 0.0170 ND	1 0.0073 ND	1 ND 14	14 0.0091 0.0000
PCB:1260	N MEAN STD	1 18.6200 ND	1 10.1900 8.8117	1 7.9065 2.7249	14 14
PCB:1254-1260	N MEAN STD	1 33.1800 ND	1 17.3100 14.9915	1 13.8537 4.4187	14 14
TOTAL PCB CONGENERS	N MEAN STD	1 15.4240 ND	1 8.0706 7.3044	1 6.9127 2.0019	14 14
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 ND	0 0 <0.0001	1 1 1
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 ND	0 0 0.0009	1 1 1
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 ND	0 0 0.0016	1 1 1
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 0 ND	0 0 0.0001	1 1 1
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 19 ND	1 8 ND	1 11 6.3	1 1 1

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, PORT COLBORNE, LIGHTHOUSE

HERRING GULL	YEAR				
	89	90	91	92	
12378-	N	1	1	1	1
PENTACHLORODIBENZO-	MEAN	7	7	4	13.7i
p-DIOXIN	STD				
123478-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	ND	ND	ND	ND
p-DIOXIN	STD				
123678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	8	8	9	3.3
p-DIOXIN	STD				
123789-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	3	ND	(2)	(0.2)
p-DIOXIN	STD				
1234678-	N	1	1	1	1
HEPTACHLORODIBENZO-	MEAN	(4)	(3)	(7)	(0.1)
p-DIOXIN	STD				
OCTACHLORODIBENZO-	N	1	1	1	1
p-DIOXIN	MEAN	8	(4)	(11)	12.1
	STD				
2378-	N	1	1	1	1
TETRACHLORODIBENZO-	MEAN	1	ND	ND	0.9
FURAN	STD				
12378/12348-	N	0	0	1	1
PENTACHLORODIBENZO-	MEAN			ND	ND
FURAN	STD				
12489/23467-	N	0	0	1	0
PENTACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
23478-	N	1	1	1	1
PENTACHLORODIBENZO-	MEAN	7	4	5	7.4
FURAN	STD				
123469/123689-	N	0	0	1	
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
123478-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	ND	(2)	(0.1)
FURAN	STD				
123678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	(1)	(2)	(0.1)
FURAN	STD				
123789-	N	0	0	0	1
HEXACHLORODIBENZO-	MEAN				(0.1)
FURAN	STD				
124689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 95

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, PORT COLBORNE, LIGHTHOUSE

HERRING GULL	YEAR				
	89	90	91	92	
234678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	ND	(2)	ND
FURAN	STD				
1234678-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				(0.1)
FURAN	STD				
1234789-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				ND
FURAN	STD				
OCTACHLORODIBENZO-	N	0	0	0	1
FURAN	MEAN				ND
	STD				

LAKE ERIE, MIDDLE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PERCENT FAT OF EGG	N	1	1	1	14
	MEAN	8.8	8.7	8.2	8.4
	STD				0.8816
PERCENT WATER OF EGG	N	1	1	1	14
	MEAN	76.3	76.5	76.7	76.6
	STD				1.3479
CIS/ALPHA-CHLORDANE	N	1	1	1	14
	MEAN	0.0141	0.0101	0.0091	0.0114
	STD				0.0000
TRANS/GAMMA-CHLORDANE	N	1	1	1	14
	MEAN	ND	ND	ND	ND
	STD				
OXYCHLORDANE	N	1	1	1	14
	MEAN	0.1251	0.0763	0.0768	0.0941
	STD				0.0320
1234-CHLOROBENZENE	N	1	1	1	14
	MEAN	ND	0.0035	ND	0.0053
	STD				0.0106
1235/1245-CHLOROBENZENE	N	1	1	1	14
	MEAN	ND	ND	ND	ND
	STD				ND
PENTACHLOROBENZENE	N	1	1	1	14
	MEAN	ND	0.0040	ND	0.0029
	STD				0.0000

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, MIDDLE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
HEXACHLOROBENZENE	N MEAN STD	1 0.0459 0.0093	1 0.0323 0.0115	1 0.0301 0.0115	14 0.0396 0.0169
DDD	N MEAN STD	1 0.0115 0.0124	1 0.0128 0.0115	1 0.0115 0.0169	14 0.0124
DDE	N MEAN STD	1 2.2420 0.8020	1 2.4740 2.6969	1 2.1618 0.0100	14 0.8020
DDT	N MEAN STD	1 0.0086 0.0007	1 0.0142 0.0100	1 0.0100 0.0007	14 0.0000
DIELDRIN	N MEAN STD	1 0.1056 0.0380	1 0.0848 0.1100	1 0.1100 0.1251	14 0.1251
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0484 0.0107	1 0.0612 0.0611	1 0.0611 0.0415	14 0.0415
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND 0.0005	1 ND ND	1 ND ND	14 ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0028 0.0029	1 0.0029 ND	1 ND ND	14 ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	14 ND
MIREX	N MEAN STD	1 0.0323 0.0339	1 0.0970 0.0211	1 0.0422 0.0154	14 0.0339
PHOTOMIREX	N MEAN STD	1 ND ND	1 0.0399 0.0154	1 1 ND	14 ND
CIS-NONACHLOR	N MEAN STD	1 0.0386 0.0422	1 0.0372 0.0291	1 1 0.0103	14 0.0422
TRANS-NONACHLOR	N MEAN STD	1 0.0600 0.0688	1 0.0644 0.0695	1 1 0.0215	14 0.0688
OCTACHLOROSTYRENE	N MEAN STD	1 0.0363 0.0164	1 0.0228 0.0278	1 1 0.0379	14 0.0164
PCB:1260	N MEAN STD	1 25.3200 7.0116	1 28.9600 22.3818	1 1 19.5309	14 7.0116

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 97

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, MIDDLE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB:1254-1260	N MEAN STD	1 45.2400 12.1410	1 42.8700 1	1 38.1131 1	14 35.0266 14
TOTAL PCB CONGENERS	N MEAN STD	1 20.5088 5.8015	1 20.4007 1	1 18.6226 <0.0001	1 17.3743 14
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0 0	1 1 1
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0 0	1 1 <0.0001
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0 0	1 1 0.0050
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0 0	1 1 0.0004
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 16 16	1 21 21	1 16 16	1 19.3 1
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 12 12	1 13 13	1 13 13	1 21.1 1
123478-HEXAChLORODIBENZO-p-DIOXIN	N MEAN STD	1 (1) (1)	1 ND ND	1 (1) (1)	1 1.2 1
123678-HEXAChLORODIBENZO-p-DIOXIN	N MEAN STD	1 26 26	1 19 19	1 21 21	1 26.1 1
123789-HEXAChLORODIBENZO-p-DIOXIN	N MEAN STD	1 (2) (2)	1 (2) (2)	1 (1) (1)	1 1.7 1
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (5) (5)	1 (2) (2)	1 (5) (5)	1 2.0 1
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 17 17	1 (7) (7)	1 12 12	1 4.1 1
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	1 2 2	1 (1) (1)	1 (1) (1)	1 4.2 1
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0 0 0	0 0 0	1 ND ND	1 1.3 1

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, MIDDLE ISLAND

HERRING GULL	YEAR			
	89	90	91	92
12489/23467-	N	0	0	1
PENTACHLORODIBENZO-	MEAN			ND
FURAN	STD			0
23478-	N	1	1	1
PENTACHLORODIBENZO-	MEAN	8	8	16.1
FURAN	STD			
123469/123689-	N	0	0	1
HEXACHLORODIBENZO-	MEAN			ND
FURAN	STD			0
123478-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	ND	ND	(1)
FURAN	STD			0.8
123678-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	(1)	(2)
FURAN	STD			2.3
123789-	N	0	0	0
HEXACHLORODIBENZO-	MEAN			1
FURAN	STD			0.5
124689-	N	0	0	1
HEXACHLORODIBENZO-	MEAN			ND
FURAN	STD			0
234678-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	(1)	ND	(1)
FURAN	STD			0
1234678-	N	0	0	0
HEPTACHLORODIBENZO-	MEAN			1
FURAN	STD			(0.1)
1234789-	N	0	0	0
HEPTACHLORODIBENZO-	MEAN			0
FURAN	STD			
OCTACHLORODIBENZO-	N	0	0	1
FURAN	MEAN			(0.1)
	STD			

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, EAST SISTER ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
		89
PERCENT FAT OF EGG	N	1
	MEAN	4.53
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	84.06
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0037
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0356
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	0.0022
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0219
	STD	
DDD	N	1
	MEAN	0.0398
	STD	
DDE	N	1
	MEAN	3.3570
	STD	
DDT	N	1
	MEAN	0.0311
	STD	
DIELDRIN	N	1
	MEAN	0.0624
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0237
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	0.0033
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*  
LAKE ERIE, EAST SISTER ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
	89	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0048
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0013
MIREX	N MEAN STD	1 0.0727
PHOTOMIREX	N MEAN STD	1 0.0263
CIS-NONACHLOR	N MEAN STD	1 0.0282
TRANS-NONACHLOR	N MEAN STD	1 0.0208
OCTACHLOROSTYRENE	N MEAN STD	1 0.0152
PCB:1260	N MEAN STD	1 13.3800
PCB:1254-1260	N MEAN STD	1 22.9300
TOTAL PCB CONGENERS	N MEAN STD	1 11.0100
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 20

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 101

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, EAST SISTER ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
		89
12378-	N	1
PENTACHLORODIBENZO-	MEAN	22
p-DIOXIN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	(2)
p-DIOXIN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	25
p-DIOXIN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	5
p-DIOXIN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	8
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	1
p-DIOXIN	MEAN	11
	STD	
2378-	N	1
TETRACHLORODIBENZO-	MEAN	ND
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	14
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	(2)
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	(1)
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 102 detected with incorrect ion ratio. See page 7 for methodology.

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TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, EAST SISTER ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
	89	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	(1)
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE ERIE, EAST SISTER ISLAND

BLACK-CROWNED NIGHT-HERON	YEAR	
	89	92
PERCENT FAT OF EGG	N	1
	MEAN	6.25
	STD	6.3
PERCENT WATER OF	N	1
EGG	MEAN	80.98
	STD	79.9
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0064
	STD	0.0097
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	ND
OXYCHLORDANE	N	1
	MEAN	0.0152
	STD	0.0195
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	ND
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	ND
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 103

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, EAST SISTER ISLAND

BLACK-CROWNED NIGHT-HERON	YEAR	
	89	92
HEXACHLOROBENZENE	N MEAN STD	1 0.0049 0.0044
DDD	N MEAN STD	1 0.0162 0.0218
DDE	N MEAN STD	1 3.5030 2.4997
DDT	N MEAN STD	1 0.0090 0.0052
DIELDRIN	N MEAN STD	1 0.0231 0.0384
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0058 0.0086
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0009 ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
MIREX	N MEAN STD	1 0.0067 0.0076
PHOTOMIREX	N MEAN STD	1 ND ND
CIS-NONACHLOR	N MEAN STD	1 0.0131 0.0187
TRANS-NONACHLOR	N MEAN STD	1 0.0367 0.0396
OCTACHLOROSTYRENE	N MEAN STD	1 0.0061 0.0048
PCB:1260	N MEAN STD	1 5.4800 3.5123

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 104 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, EAST SISTER ISLAND

BLACK-CROWNED NIGHT-HERON	YEAR	
	89	92
PCB:1254-1260	N MEAN STD	1 7.5230 5.8409
TOTAL PCB CONGENERS	N MEAN STD	1 3.9920 2.9795
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 0
PCB169	N MEAN STD	0 0 0
3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 0 0
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	0 0 0
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0 0 0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 105

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, EAST SISTER ISLAND

BLACK-CROWNED NIGHT-HERON	YEAR	
	89	92
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	0
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	0
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	0
FURAN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	0
FURAN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	0
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	0
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	0
FURAN	STD	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	0
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	0
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	0
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	0
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, EAST SISTER ISLAND

GREAT EGRET	YEAR	
	92	
PERCENT FAT OF EGG	N MEAN STD	1 5.6 ND
PERCENT WATER OF EGG	N MEAN STD	1 81.6 ND
CIS/ALPHA-CHLORDANE	N MEAN STD	1 0.0101 ND
TRANS/GAMMA-CHLORDANE	N MEAN STD	1 ND ND
OXYCHLORDANE	N MEAN STD	1 0.0281 ND
1234-CHLOROBENZENE	N MEAN STD	1 ND ND
1235/1245-CHLOROBENZENE	N MEAN STD	1 ND ND
PENTACHLOROBENZENE	N MEAN STD	1 ND ND
HEXACHLOROBENZENE	N MEAN STD	1 0.0074 ND
DDD	N MEAN STD	1 0.0288 ND
DDE	N MEAN STD	1 3.3991 ND
DDT	N MEAN STD	1 0.0077 ND
DIELDRIN	N MEAN STD	1 0.0679 ND
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0059 ND
ALPHA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 107

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, EAST SISTER ISLAND

GREAT EGRET	YEAR	
		92
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.0249
PHOTOMIREX	N MEAN STD	1 ND
CIS-NONACHLOR	N MEAN STD	1 0.0188
TRANS-NONACHLOR	N MEAN STD	1 0.0670
OCTACHLOROSTYRENE	N MEAN STD	1 0.0064
PCB:1260	N MEAN STD	1 3.2475
PCB:1254-1260	N MEAN STD	1 5.6663
TOTAL PCB CONGENERS	N MEAN STD	1 2.9654
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, EAST SISTER ISLAND

GREAT EGRET	YEAR	
		92
12378-	N	0
PENTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	0
p-DIOXIN	MEAN	
	STD	
2378-	N	0
TETRACHLORODIBENZO-	MEAN	
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 109

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE ERIE, EAST SISTER ISLAND

GREAT EGRET	YEAR	
	92	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

DETROIT RIVER, FIGHTING ISLAND

HERRING GULL	YEAR			
	89	90	91	92
PERCENT FAT OF EGG	N	1	1	1
	MEAN	7.5	8.9	8.3
	STD			0.8758
PERCENT WATER OF EGG	N	1	1	1
	MEAN	77.2	76.0	76.7
	STD			0.8024
CIS/ALPHA-CHLORDANE	N	1	1	1
	MEAN	0.0055	0.0064	ND
	STD			0.0085
TRANS/GAMMA-CHLORDANE	N	1	1	1
	MEAN	ND	ND	ND
	STD			ND
OXYCHLORDANE	N	1	1	1
	MEAN	0.0627	0.0622	0.0435
	STD			0.0611
1234-CHLOROBENZENE	N	1	1	1
	MEAN	ND	ND	ND
	STD			ND
1235/1245-CHLOROBENZENE	N	1	1	1
	MEAN	ND	ND	ND
	STD			ND
PENTACHLOROBENZENE	N	1	1	1
	MEAN	ND	0.0038	ND
	STD			0.0042
				0.0000

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant 110 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

DETROIT RIVER, FIGHTING ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
HEXACHLOROBENZENE	N MEAN STD	1 0.0503 0.0089	1 0.0334 0.0168	1 0.0413 0.0130	14 0.0089 0.0108
DDD	N MEAN STD	1 0.0120 0.0096	1 ND	1 ND	14 0.0130 0.0108
DDE	N MEAN STD	1 2.2440 1.9920	1 1.1421	1 2.2923	14 0.8891
DDT	N MEAN STD	1 0.0059 0.0159	1 ND	1 ND	14 0.0019 0.0000
DIELDRIN	N MEAN STD	1 0.0619 0.0606	1 0.0500	1 0.0773	14 0.0216
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0219 0.0370	1 0.0217	1 0.0360	14 0.0139
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	14 ND ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND 0.0013	1 ND	1 ND	14 ND ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND	1 ND	14 ND ND
MIREX	N MEAN STD	1 0.0383 0.0293	1 0.0249	1 0.0532	14 0.0687
PHOTOMIREX	N MEAN STD	1 ND ND	1 ND	1 ND	14 0.0122 0.0278
CIS-NONACHLOR	N MEAN STD	1 0.0180 0.0265	1 0.0094	1 0.0272	14 0.0000
TRANS-NONACHLOR	N MEAN STD	1 0.0488 0.0517	1 0.0303	1 0.0583	14 0.0150
OCTACHLOROSTYRENE	N MEAN STD	1 0.0406 0.0294	1 0.0145	1 0.0351	14 0.0075
PCB:1260	N MEAN STD	1 39.1000 52.0700	1 15.1883	1 18.7751	14 4.2431

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 111

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

DETROIT RIVER, FIGHTING ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB:1254-1260	N MEAN STD	1 56.6300 26.7446	1 39.4800 21.8717	1 22.1696 11.2658	14 30.8029 6.3607 1 15.6841 2.9927 1 <0.0001
TOTAL PCB CONGENERS	N MEAN STD	1 26.7446	1 21.8717	1 11.2658	14 15.6841 2.9927
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0	0 0	0 0	1 <0.0001
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0	0 0	0 0	1 0.0005
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0	0 0	0 0	1 0.0032
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0	0 0	0 0	1 0.0003
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 13	1 14	1 10	1 16.7
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 6	1 6	1 (3)	1 2.5i
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 ND	1 ND	1 ND	1 (0.2)
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 21	1 16	1 9	1 13.9
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 3	1 (2)	1 ND	1 (0.2)
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 6	1 (4)	1 (6)	1 2.3
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 13	1 (7)	1 (10)	1 15.3i
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	1 1	1 (1)	1 (1)	1 1.6
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0 0	0 0	1 ND	1 (0.1)

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

DETROIT RIVER, FIGHTING ISLAND

HERRING GULL		YEAR			
		89	90	91	92
12489/23467-	N	0	0	1	0
PENTACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
23478-	N	1	1	1	1
PENTACHLORODIBENZO-	MEAN	4	4	4	4.6
FURAN	STD				
123469/123689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
123478-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	ND	(1)	1.1
FURAN	STD				
123678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	(2)	(2)	1.5
FURAN	STD				
123789-	N	0	0	0	1
HEXACHLORODIBENZO-	MEAN				1.0
FURAN	STD				
124689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
234678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	ND	ND	ND
FURAN	STD				
1234678-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				ND
FURAN	STD				
1234789-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				ND
FURAN	STD				
OCTACHLORODIBENZO-	N	0	0	0	1
FURAN	MEAN				ND
	STD				

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 113

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

DETROIT RIVER, FIGHTING ISLAND

COMMON TERM	YEAR	
	91	
PERCENT FAT OF EGG	N	1
	MEAN	8.5
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	76.0
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0038
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0315
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0070
	STD	
DDD	N	1
	MEAN	0.0166
	STD	
DDE	N	1
	MEAN	0.5745
	STD	
DDT	N	1
	MEAN	ND
	STD	
DIELDRIN	N	1
	MEAN	0.0442
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0132
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

DETROIT RIVER, FIGHTING ISLAND

COMMON TERN	YEAR	
		91
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.0136
PHOTOMIREX	N MEAN STD	1 ND
CIS-NONACHLOR	N MEAN STD	1 0.0083
TRANS-NONACHLOR	N MEAN STD	1 0.0220
OCTACHLOROSTYRENE	N MEAN STD	1 0.0168
PCB:1260	N MEAN STD	1 4.9488
PCB:1254-1260	N MEAN STD	1 7.9854
TOTAL PCB CONGENERS	N MEAN STD	1 4.4125
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 115

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

DETROIT RIVER, FIGHTING ISLAND

COMMON TERN	YEAR	
		91
12378-	N	0
PENTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	0
p-DIOXIN	MEAN	
	STD	
2378-	N	0
TETRACHLORODIBENZO-	MEAN	
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

DETROIT RIVER, FIGHTING ISLAND

COMMON TERN	YEAR	
		91
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

ST. CLAIR RIVER, WALPOLE ISLAND

BLACK-CROWNED NIGHT-HERON	YEAR	
		92
PERCENT FAT OF EGG	N	1
	MEAN	6.3
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	80.8
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0041
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0254
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 117

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

ST. CLAIR RIVER, WALPOLE ISLAND

BLACK-CROWNED NIGHT-HERON		YEAR
		92
HEXACHLOROBENZENE	N	1
	MEAN	0.0074
	STD	
DDD	N	1
	MEAN	0.0322
	STD	
DDE	N	1
	MEAN	2.7528
	STD	
DDT	N	1
	MEAN	0.0034
	STD	
DIELDRIN	N	1
	MEAN	0.0408
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0059
	STD	
ALPHA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
BETA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
GAMMA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
MIREX	N	1
	MEAN	0.0143
	STD	
PHOTOMIREX	N	1
	MEAN	0.0046
	STD	
CIS-NONACHLOR	N	1
	MEAN	0.0149
	STD	
TRANS-NONACHLOR	N	1
	MEAN	0.0307
	STD	
OCTACHLOROSTYRENE	N	1
	MEAN	0.1170
	STD	
PCB:1260	N	1
	MEAN	1.1960
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 118 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

ST. CLAIR RIVER, WALPOLE ISLAND

BLACK-CROWNED NIGHT-HERON	YEAR	
		92
PCB:1254-1260	N	1
	MEAN	2.4039
	STD	
TOTAL PCB CONGENERS	N	1
	MEAN	1.2194
	STD	
PCB37 3,4,4'-TRICHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N	0
	MEAN	
	STD	
2378-TETRACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	
12378-PENTACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	
123478-HEXACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	
123678-HEXACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	
123789-HEXACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	
OCTACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	
2378-TETRACHLORODIBENZO-FURAN	N	0
	MEAN	
	STD	
12378/12348-PENTACHLORODIBENZO-FURAN	N	0
	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 119

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

ST. CLAIR RIVER, WALPOLE ISLAND

BLACK-CROWNED NIGHT-HERON		YEAR
		92
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 120 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

ST. CLAIR RIVER, WALPOLE ISLAND

FORSTERS TERN	YEAR	
	92	
PERCENT FAT OF EGG	N MEAN STD	1 9.9
PERCENT WATER OF EGG	N MEAN STD	1 73.1
CIS/ALPHA-CHLORDANE	N MEAN STD	1 0.0102
TRANS/GAMMA-CHLORDANE	N MEAN STD	1 ND
OXYCHLORDANE	N MEAN STD	1 0.0285
1234-CHLOROBENZENE	N MEAN STD	1 ND
1235/1245-CHLOROBENZENE	N MEAN STD	1 ND
PENTACHLOROBENZENE	N MEAN STD	1 ND
HEXACHLOROBENZENE	N MEAN STD	1 0.0206
DDD	N MEAN STD	1 0.0044
DDE	N MEAN STD	1 1.0672
DDT	N MEAN STD	1 ND
DIELDRIN	N MEAN STD	1 0.0639
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0198
ALPHA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 121

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

ST. CLAIR RIVER, WALPOLE ISLAND

FORSTERS TERN	YEAR	
	92	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
MIREX	N MEAN STD	1 0.0225 ND
PHOTOMIREX	N MEAN STD	1 0.0071 ND
CIS-NONACHLOR	N MEAN STD	1 0.0504 ND
TRANS-NONACHLOR	N MEAN STD	1 0.1094 ND
OCTACHLOROSTYRENE	N MEAN STD	1 0.0457 ND
PCB:1260	N MEAN STD	1 4.2889 ND
PCB:1254-1260	N MEAN STD	1 8.3057 ND
TOTAL PCB CONGENERS	N MEAN STD	1 4.5310 ND
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 ND ND
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 ND ND
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 ND ND
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 ND ND
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	0 ND ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 122 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

ST. CLAIR RIVER, WALPOLE ISLAND

FORSTERS TERN	YEAR	
		92
12378-	N	0
PENTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	0
p-DIOXIN	MEAN	
	STD	
2378-	N	0
TETRACHLORODIBENZO-	MEAN	
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 123

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

ST. CLAIR RIVER, WALPOLE ISLAND

FORSTERS TERN	YEAR	
		92
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

ST. CLAIR RIVER

HERRING GULL	YEAR	
		91
PERCENT FAT OF EGG	N	1
	MEAN	9.1
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	75.2
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0202
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.1553
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 124 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

ST. CLAIR RIVER

HERRING GULL	YEAR	
		91
HEXACHLOROBENZENE	N	1
	MEAN	0.0557
	STD	
DDD	N	1
	MEAN	0.0150
	STD	
DDE	N	1
	MEAN	5.1898
	STD	
DDT	N	1
	MEAN	0.0122
	STD	
DIELDRIN	N	1
	MEAN	0.1173
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0671
	STD	
ALPHA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
BETA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
GAMMA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
MIREX	N	1
	MEAN	0.0545
	STD	
PHOTOMIREX	N	1
	MEAN	0.0238
	STD	
CIS-NONACHLOR	N	1
	MEAN	0.0585
	STD	
TRANS-NONACHLOR	N	1
	MEAN	0.1127
	STD	
OCTACHLOROSTYRENE	N	1
	MEAN	0.1094
	STD	
PCB:1260	N	1
	MEAN	18.7369
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 125

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

ST. CLAIR RIVER

HERRING GULL	YEAR	
		91
PCB:1254-1260	N	1
	MEAN	36.3751
	STD	
TOTAL PCB CONGENERS	N	1
	MEAN	18.2003
	STD	
PCB37 3,4,4'-TRICHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N	0
	MEAN	
	STD	
2378-TETRACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	18
	STD	
12378-PENTACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	(3)
	STD	
123478-HEXACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	ND
	STD	
123678-HEXACHLORODIBENZO-p-DIOXIN	N	7
	MEAN	
	STD	
123789-HEXACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	(1)
	STD	
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	(6)
	STD	
OCTACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	(7)
	STD	
2378-TETRACHLORODIBENZO-FURAN	N	1
	MEAN	ND
	STD	
12378/12348-PENTACHLORODIBENZO-FURAN	N	0
	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant 126 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

ST. CLAIR RIVER

HERRING GULL	YEAR	
		91
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	3
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	(2)
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	(2)
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	ND
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, CHANTRY ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PERCENT FAT OF EGG	N MEAN STD	1 8.7 -	1 8.8 -	1 8.2 -	1 9.5 -
PERCENT WATER OF EGG	N MEAN STD	1 76.3 -	1 75.8 -	1 76.6 -	1 76.0 -
CIS/ALPHA-CHLORDANE	N MEAN STD	1 0.0102 -	1 0.0065 -	1 0.0103 -	1 0.0154 -
TRANS/GAMMA-CHLORDANE	N MEAN STD	1 ND -	1 ND -	1 ND -	1 ND -
OXYCHLORDANE	N MEAN STD	1 0.0569 -	1 0.0846 -	1 0.1361 -	1 0.0918 -
1234-CHLOROBENZENE	N MEAN STD	1 ND -	1 ND -	1 ND -	1 0.0319 -
1235/1245-CHLOROBENZENE	N MEAN STD	1 ND -	1 ND -	1 0.0201 -	1 ND -
PENTACHLOROBENZENE	N MEAN STD	1 ND -	1 0.0019 -	1 ND -	1 0.0064 -
HEXACHLOROBENZENE	N MEAN STD	1 0.0255 -	1 0.0271 -	1 0.0280 -	1 0.0344 -
DDD	N MEAN STD	1 0.0055 -	1 0.0042 -	1 ND -	1 ND -
DDE	N MEAN STD	1 0.7731 -	1 1.6050 -	1 1.8695 -	1 2.0601 -
DDT	N MEAN STD	1 0.0417 -	1 0.0424 -	1 0.0151 -	1 0.0084 -
DIELDRIN	N MEAN STD	1 0.1537 -	1 0.1419 -	1 0.1710 -	1 0.1184 -
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0701 -	1 0.0793 -	1 0.0852 -	1 0.0789 -
ALPHA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND -	1 ND -	1 ND -	1 ND -

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 128 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, CHANTRY ISLAND

HERRING GULL	YEAR			
	89	90	91	92
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND 0.0019	1 ND 1	1 ND 1
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND 1	1 ND 1
MIREX	N MEAN STD	1 0.0455 0.0953	1 0.1200 0.1200	1 0.0309 0.0309
PHOTOMIREX	N MEAN STD	1 0.0181 0.0406	1 0.0521 0.0521	1 0.0145 0.0145
CIS-NONACHLOR	N MEAN STD	1 0.0328 0.0397	1 0.0376 0.0376	1 0.0531 0.0531
TRANS-NONACHLOR	N MEAN STD	1 0.0319 0.0518	1 0.0538 0.0538	1 0.0815 0.0815
OCTACHLOROSTYRENE	N MEAN STD	1 0.0101 0.0107	1 0.0141 0.0141	1 0.0134 0.0134
PCB:1260	N MEAN STD	1 2.8570 5.7430	1 4.7291 4.7291	1 4.6539 4.6539
PCB:1254-1260	N MEAN STD	1 6.2470 11.2100	1 10.1489 10.1489	1 10.1905 10.1905
TOTAL PCB CONGENERS	N MEAN STD	1 3.0617 5.2041	1 5.2569 5.2569	1 5.5230 5.5230
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 <0.0001i	1 1 1
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	1 1 0.0010
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	1 1 0.0021
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	1 1 0.0003
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 12 17	1 20 20	1 13.6 13.6

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 129

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, CHANTRY ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
12378-	N	1	1	1	1
PENTACHLORODIBENZO-	MEAN	6	12	10	10.5i
p-DIOXIN	STD				
123478-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	ND	ND	ND	(0.1)
p-DIOXIN	STD				
123678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	7	12	10	2.6
p-DIOXIN	STD				
123789-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(1)	(2)	(1)	(0.1)
p-DIOXIN	STD				
1234678-	N	1	1	1	1
HEPTACHLORODIBENZO-	MEAN	(3)	(3)	(3)	ND
p-DIOXIN	STD				
OCTACHLORODIBENZO-	N	1	1	1	1
p-DIOXIN	MEAN	(5)	ND	ND	ND
STD					
2378-	N	1	1	1	1
TETRACHLORODIBENZO-	MEAN	1	(1)	(1)	ND
FURAN	STD				
12378/12348-	N	0	0	1	1
PENTACHLORODIBENZO-	MEAN			ND	ND
FURAN	STD				
12489/23467-	N	0	0	1	0
PENTACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
23478-	N	1	1	1	1
PENTACHLORODIBENZO-	MEAN	8	10	6	ND
FURAN	STD				
123469/123689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
123478-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(1)	(2)	(1)	ND
FURAN	STD				
123678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	(2)	(2)	ND
FURAN	STD				
123789-	N	0	0	0	1
HEXACHLORODIBENZO-	MEAN				ND
FURAN	STD				
124689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, CHANTRY ISLAND

HERRING GULL	YEAR			
	89	90	91	92
234678-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	(1)	(1)	ND
FURAN	STD			ND
1234678-	N	0	0	0
HEPTACHLORODIBENZO-	MEAN			(0.1)
FURAN	STD			
1234789-	N	0	0	0
HEPTACHLORODIBENZO-	MEAN			1
FURAN	STD			ND
OCTACHLORODIBENZO-	N	0	0	0
FURAN	MEAN			1
	STD			(0.1)

LAKE HURON, CHANTRY ISLAND

BLACK-CROWNED NIGHT-HERON	YEAR	
	89	
PERCENT FAT OF EGG	N	1
	MEAN	5.43
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	81.83
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0041
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0480
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, CHANTRY ISLAND

BLACK-CROWNED NIGHT-HERON		YEAR
		89
HEXACHLOROBENZENE	N MEAN STD	1 0.0076
DDD	N MEAN STD	1 0.0056
DDE	N MEAN STD	1 3.0420
DDT	N MEAN STD	1 0.0220
DIELDRIN	N MEAN STD	1 0.0292
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0136
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0009
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.0524
PHOTOMIREX	N MEAN STD	1 0.0175
CIS-NONACHLOR	N MEAN STD	1 0.0240
TRANS-NONACHLOR	N MEAN STD	1 0.0627
OCTACHLOROSTYRENE	N MEAN STD	1 0.0072
PCB:1260	N MEAN STD	1 2.9080

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 132 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, CHANTRY ISLAND

BLACK-CROWNED NIGHT-HERON	YEAR	
	89	
PCB:1254-1260	N MEAN STD	1 6.0090
TOTAL PCB CONGENERS	N MEAN STD	1 2.8270
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	0
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 133

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, CHANTRY ISLAND

BLACK-CROWNED NIGHT-HERON	YEAR	
		89
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 134 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, MANITOBA REEF

HERRING GULL	YEAR	
	91	
PERCENT FAT OF EGG	N MEAN STD	1 9.5
PERCENT WATER OF EGG	N MEAN STD	1 75.1
CIS/ALPHA-CHLORDANE	N MEAN STD	1 0.0176
TRANS/GAMMA-CHLORDANE	N MEAN STD	1 ND
OXYCHLORDANE	N MEAN STD	1 0.3068
1234-CHLOROBENZENE	N MEAN STD	1 ND
1235/1245-CHLOROBENZENE	N MEAN STD	1 ND
PENTACHLOROBENZENE	N MEAN STD	1 ND
HEXACHLOROBENZENE	N MEAN STD	1 0.0412
DDD	N MEAN STD	1 ND
DDE	N MEAN STD	1 5.0682
DDT	N MEAN STD	1 0.0245
DIELDRIN	N MEAN STD	1 0.2255
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.1678
ALPHA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 135

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, MANITOBA REEF

HERRING GULL	YEAR	
	91	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.0645
PHOTOMIREX	N MEAN STD	1 0.0376
CIS-NONACHLOR	N MEAN STD	1 0.0892
TRANS-NONACHLOR	N MEAN STD	1 0.0951
OCTACHLOROSTYRENE	N MEAN STD	1 0.0111
PCB:1260	N MEAN STD	1 6.6543
PCB:1254-1260	N MEAN STD	1 15.5515
TOTAL PCB CONGENERS	N MEAN STD	1 7.6208
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 27

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 136 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, MANITOBA REEF

HERRING GULL	YEAR	
		91
12378-	N	1
PENTACHLORODIBENZO-	MEAN	21
p-DIOXIN	STD	
123478-	N	1
HEXAChLORODIBENZO-	MEAN	(1)
p-DIOXIN	STD	
123678-	N	1
HEXAChLORODIBENZO-	MEAN	17
p-DIOXIN	STD	
123789-	N	1
HEXAChLORODIBENZO-	MEAN	(2)
p-DIOXIN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	(3)
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	1
p-DIOXIN	MEAN	(5)
	STD	
2378-	N	1
TETRACHLORODIBENZO-	MEAN	3
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	15
FURAN	STD	
123469/123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXAChLORODIBENZO-	MEAN	(3)
FURAN	STD	
123678-	N	1
HEXAChLORODIBENZO-	MEAN	5
FURAN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 137

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, MANITOBA REEF

HERRING GULL	YEAR	
		91
234678-	N	1
HEXACHLORODIBENZO-	MEAN	(3)
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE HURON, LITTLE SADDLEBAG ISLAND

HERRING GULL	YEAR	
		91
PERCENT FAT OF EGG	N	1
	MEAN	8.8
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	76.1
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0202
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.3746
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 138 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, LITTLE SADDLEBAG ISLAND

HERRING GULL	YEAR	
	91	
HEXACHLOROBENZENE	N	1
	MEAN	0.0722
	STD	
DDD	N	1
	MEAN	0.0156
	STD	
DDE	N	1
	MEAN	9.7948
	STD	
DDT	N	1
	MEAN	0.0480
	STD	
DIELDRIN	N	1
	MEAN	0.4017
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.2937
	STD	
ALPHA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
BETA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
GAMMA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
MIREX	N	1
	MEAN	0.1497
	STD	
PHOTOMIREX	N	1
	MEAN	0.0808
	STD	
CIS-NONACHLOR	N	1
	MEAN	0.1343
	STD	
TRANS-NONACHLOR	N	1
	MEAN	0.1478
	STD	
OCTACHLOROSTYRENE	N	1
	MEAN	0.0169
	STD	
PCB:1260	N	1
	MEAN	13.3968
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 139

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, LITTLE SADDLEBAG ISLAND

HERRING GULL	YEAR	
		91
PCB:1254-1260	N MEAN STD	1 29.9747
TOTAL PCB CONGENERS	N MEAN STD	1 13.8632
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 27
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 21
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 ND
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 20
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (2)
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (3)
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (6)
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	1 (1)
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, LITTLE SADDLEBAG ISLAND

HERRING GULL	YEAR	
		91
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	12
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	(3)
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	6
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	(2)
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 141

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, ST. MARTIN SHOAL

HERRING GULL	YEAR	
	92	
PERCENT FAT OF EGG	N	1
	MEAN	10.3
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	74.3
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0235
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.2917
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	0.0045
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0722
	STD	
DDD	N	1
	MEAN	ND
	STD	
DDE	N	1
	MEAN	8.5024
	STD	
DDT	N	1
	MEAN	0.0226
	STD	
DIELDRIN	N	1
	MEAN	0.5556
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.2671
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 142 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, ST. MARTIN SHOAL

HERRING GULL	YEAR	
	92	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND 1
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	ND 1 ND
MIREX	N MEAN STD	1 0.0696 1
PHOTOMIREX	N MEAN STD	1 0.0358 1
CIS-NONACHLOR	N MEAN STD	1 0.1082 1
TRANS-NONACHLOR	N MEAN STD	1 0.1763 1
OCTACHLOROSTYRENE	N MEAN STD	1 0.0175 1
PCB:1260	N MEAN STD	1 9.8293 1
PCB:1254-1260	N MEAN STD	1 24.4690 1
TOTAL PCB CONGENERS	N MEAN STD	1 11.8842 1
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 <0.0001 1
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0015 1
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0064 1
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0007 1
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 21.8 1

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 143

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, ST. MARTIN SHOAL

HERRING GULL	YEAR	
		92
12378-	N	1
PENTACHLORODIBENZO-	MEAN	32.7i
p-DIOXIN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	(0.1)
p-DIOXIN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	20.3
p-DIOXIN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	(0.2)
p-DIOXIN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	ND
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	1
p-DIOXIN	MEAN	(0.1)
	STD	
2378-	N	1
TETRACHLORODIBENZO-	MEAN	0.9
FURAN	STD	
12378/12348-	N	1
PENTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	25.5
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	0.8
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	1.9
FURAN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	0.8
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, ST. MARTIN SHOAL

HERRING GULL	YEAR	
	92	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	ND
FURAN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
1234789-	N	1
HEPTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
OCTACHLORODIBENZO-	N	1
FURAN	MEAN	ND
	STD	

LAKE HURON, CHANNEL SHELTER ISLAND

HERRING GULL	YEAR			
	89	90	91	92
PERCENT FAT OF EGG	N	1	1	1
	MEAN	8.2	9.2	8.1
	STD			8.7
PERCENT WATER OF	N	1	1	1
EGG	MEAN	76.5	75.7	76.7
	STD			76.1
CIS/ALPHA-	N	1	1	1
CHLORDANE	MEAN	0.0130	0.0185	0.0148
	STD			0.0170
TRANS/GAMMA-	N	1	1	1
CHLORDANE	MEAN	ND	ND	ND
	STD			0.0028
OXYCHLORDANE	N	1	1	1
	MEAN	0.0824	0.1256	0.1403
	STD			0.1281
1234-CHLOROBENZENE	N	1	1	1
	MEAN	0.0738	0.0406	0.0153
	STD			0.0275
1235/1245-	N	1	1	1
CHLOROBENZENE	MEAN	0.0326	0.0208	ND
	STD			ND
PENTACHLOROBENZENE	N	1	1	1
	MEAN	0.0262	0.0127	ND
	STD			0.0155

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, CHANNEL SHELTER ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
HEXACHLOROBENZENE	N MEAN STD	1 0.0778 0.0592	1 0.0497 0.0481	1 0.0481 0.0592	1 0.0592
DDD	N MEAN STD	1 0.0335 0.0512	1 0.0448 0.0331	1 0.0331 0.0512	1 0.0512
DDE	N MEAN STD	1 7.0220 7.4212	1 5.8890 8.0417	1 8.0417 7.4212	1 7.4212
DDT	N MEAN STD	1 0.0298 0.0075	1 0.0578 0.0036	1 0.0036 0.0075	1 0.0075
DIELDRIN	N MEAN STD	1 0.1472 0.1066	1 0.1645 0.1260	1 0.1260 0.1066	1 0.1066
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0801 0.0555	1 0.0835 0.0688	1 0.0688 0.0555	1 0.0555
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 0.0005 ND	1 ND ND	1 ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0038 ND	1 0.0023 ND	1 ND ND	1 ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	1 ND
MIREX	N MEAN STD	1 0.0911 0.0450	1 0.1387 0.0622	1 0.0622 0.0450	1 0.0450
PHOTOMIREX	N MEAN STD	1 0.0383 0.0202	1 0.0564 0.0250	1 0.0250 0.0202	1 0.0202
CIS-NONACHLOR	N MEAN STD	1 0.0369 0.0577	1 0.0421 0.0431	1 0.0431 0.0577	1 0.0577
TRANS-NONACHLOR	N MEAN STD	1 0.1262 0.1664	1 0.1346 0.1494	1 0.1494 0.1664	1 0.1664
OCTACHLOROSTYRENE	N MEAN STD	1 0.0738 0.0655	1 0.0537 0.0494	1 0.0494 0.0655	1 0.0655
PCB:1260	N MEAN STD	1 20.3400 18.8607	1 19.6500 20.1715	1 20.1715 18.8607	1 18.8607

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, CHANNEL SHELTER ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB:1254-1260	N MEAN STD	1 51.9400	1 47.1000	1 48.0701	1 45.1752
TOTAL PCB CONGENERS	N MEAN STD	1 27.5921	1 24.8080	1 27.4901	1 27.6861
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0	0	0	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0	0	0	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0	0	0	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0	0	0	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 78	1 85	1 53	0
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 18	1 27	1 14	0
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (1)	1 (1)	1 (1)	0
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 33	1 32	1 29	0
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (2)	1 (3)	1 (2)	0
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 8	1 (3)	1 8	0
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 42	1 (8)	1 19	0
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	1 4	1 5	1 4	0
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0	0	1 (1)	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 147

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, CHANNEL SHELTER ISLAND

HERRING GULL		YEAR			
		89	90	91	92
12489/23467-	N	0	0	1	0
PENTACHLORODIBENZO-	MEAN			4	
FURAN	STD				
23478-	N	1	1	1	0
PENTACHLORODIBENZO-	MEAN	22	28	16	
FURAN	STD				
123469/123689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			(3)	
FURAN	STD				
123478-	N	1	1	1	0
HEXACHLORODIBENZO-	MEAN	7	6	5	
FURAN	STD				
123678-	N	1	1	1	0
HEXACHLORODIBENZO-	MEAN	9	8	8	
FURAN	STD				
123789-	N	0	0	0	0
HEXACHLORODIBENZO-	MEAN				
FURAN	STD				
124689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			(3)	
FURAN	STD				
234678-	N	1	1	1	0
HEXACHLORODIBENZO-	MEAN	3	4	(3)	
FURAN	STD				
1234678-	N	0	0	0	0
HEPTACHLORODIBENZO-	MEAN				
FURAN	STD				
1234789-	N	0	0	0	0
HEPTACHLORODIBENZO-	MEAN				
FURAN	STD				
OCTACHLORODIBENZO-	N	0	0	0	0
FURAN	MEAN				
	STD				

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 148 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, CHANNEL SHELTER ISLAND

CASPIAN TERN	YEAR	
	91	
PERCENT FAT OF EGG	N	1
	MEAN	8.4
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	77.1
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0081
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	0.0038
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0532
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0109
	STD	
DDD	N	1
	MEAN	0.0130
	STD	
DDE	N	1
	MEAN	2.9709
	STD	
DDT	N	1
	MEAN	0.0107
	STD	
DIELDRIN	N	1
	MEAN	0.0415
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0308
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 149

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, CHANNEL SHELTER ISLAND

CASPIAN TERN	YEAR	
	91	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.0333
PHOTOMIREX	N MEAN STD	1 0.0132
CIS-NONACHLOR	N MEAN STD	1 0.0198
TRANS-NONACHLOR	N MEAN STD	1 0.0888
OCTACHLOROSTYRENE	N MEAN STD	1 0.0136
PCB:1260	N MEAN STD	1 8.0757
PCB:1254-1260	N MEAN STD	1 16.5560
TOTAL PCB CONGENERS	N MEAN STD	1 9.3932
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 150 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, CHANNEL SHELTER ISLAND

CASPIAN TERN	YEAR	
		91
12378-	N	0
PENTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	0
p-DIOXIN	MEAN	
	STD	
2378-	N	0
TETRACHLORODIBENZO-	MEAN	
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 151

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, CHANNEL SHELTER ISLAND

CASPIAN TERN	YEAR	
		91
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE HURON, FLAT ROCK, SEVERN SOUND

COMMON TERN	YEAR	
		91
PERCENT FAT OF EGG	N	1
	MEAN	9.3
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	77.0
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0048
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0284
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 152 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*  
LAKE HURON, FLAT ROCK, SEVERN SOUND

COMMON TERN	YEAR	
		91
HEXACHLOROBENZENE	N	1
	MEAN	0.0148
	STD	
DDD	N	1
	MEAN	ND
	STD	
DDE	N	1
	MEAN	0.8257
	STD	
DDT	N	1
	MEAN	0.0319
	STD	
DIELDRIN	N	1
	MEAN	0.0653
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0205
	STD	
ALPHA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
BETA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
GAMMA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
MIREX	N	1
	MEAN	0.0491
	STD	
PHOTOMIREX	N	1
	MEAN	0.0197
	STD	
CIS-NONACHLOR	N	1
	MEAN	0.0157
	STD	
TRANS-NONACHLOR	N	1
	MEAN	0.0341
	STD	
OCTACHLOROSTYRENE	N	1
	MEAN	ND
	STD	
PCB:1260	N	1
	MEAN	2.0933
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 153

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, FLAT ROCK, SEVERN SOUND

COMMON TERM	YEAR	
	91	
PCB:1254-1260	N MEAN STD	1 4.2061
TOTAL PCB CONGENERS	N MEAN STD	1 2.1243
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	0
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant 154 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, FLAT ROCK, SEVERN SOUND

COMMON TERN	YEAR	
		91
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 155

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, TURTLE ROCK

HERRING GULL	YEAR	
		91
PERCENT FAT OF EGG	N	1
	MEAN	9.2
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	76.3
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	ND
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0748
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0215
	STD	
DDD	N	1
	MEAN	ND
	STD	
DDE	N	1
	MEAN	2.4413
	STD	
DDT	N	1
	MEAN	ND
	STD	
DIELDRIN	N	1
	MEAN	0.0710
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0397
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, TURTLE ROCK

HERRING GULL	YEAR	
		91
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.1743
PHOTOMIREX	N MEAN STD	1 0.0745
CIS-NONACHLOR	N MEAN STD	1 0.0242
TRANS-NONACHLOR	N MEAN STD	1 0.0380
OCTACHLOROSTYRENE	N MEAN STD	1 0.0085
PCB:1260	N MEAN STD	1 5.0365
PCB:1254-1260	N MEAN STD	1 10.0157
TOTAL PCB CONGENERS	N MEAN STD	1 4.7672
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 21

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 157

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, TURTLE ROCK

HERRING GULL	YEAR	
	91	
12378-	N	1
PENTACHLORODIBENZO-	MEAN	10
p-DIOXIN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	ND
p-DIOXIN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	8
p-DIOXIN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	ND
p-DIOXIN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	(4)
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	1
p-DIOXIN	MEAN	(12)
	STD	
2378-	N	1
TETRACHLORODIBENZO-	MEAN	ND
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	7
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	(1)
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	(1)
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 158 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, TURTLE ROCK

HERRING GULL		YEAR
		91
234678-	N	1
HEXACHLORODIBENZO-	MEAN	(1)
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE HURON, SOUTH WATCHER ISLAND

CASPIAN TERN		YEAR
		91
PERCENT FAT OF EGG	N	1
	MEAN	9.1
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	76.5
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0122
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0522
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 159

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, SOUTH WATCHER ISLAND

CASPIAN TERN	YEAR	
		91
HEXACHLOROBENZENE	N	1
	MEAN	0.0138
	STD	
DDD	N	1
	MEAN	ND
	STD	
DDE	N	1
	MEAN	3.1177
	STD	
DDT	N	1
	MEAN	0.0022
	STD	
DIELDRIN	N	1
	MEAN	0.0767
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0375
	STD	
ALPHA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
BETA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
GAMMA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
MIREX	N	1
	MEAN	0.1670
	STD	
PHOTOMIREX	N	1
	MEAN	0.0612
	STD	
CIS-NONACHLOR	N	1
	MEAN	0.0228
	STD	
TRANS-NONACHLOR	N	1
	MEAN	0.0953
	STD	
OCTACHLOROSTYRENE	N	1
	MEAN	0.0080
	STD	
PCB:1260	N	1
	MEAN	5.3517
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, SOUTH WATCHER ISLAND

CASPIAN TERN	YEAR	
	91	
PCB:1254-1260	N MEAN STD	1 10.2062
TOTAL PCB CONGENERS	N MEAN STD	1 5.4522
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	0
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	0
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 161

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, SOUTH WATCHER ISLAND

CASPIAN TERN	YEAR	
		91
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant 162 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, SNAKE ISLAND

HERRING GULL	YEAR	
		90
PERCENT FAT OF EGG	N	1
	MEAN	8.0
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	74.5
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0052
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.1081
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	0.0039
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0373
	STD	
DDD	N	1
	MEAN	0.0052
	STD	
DDE	N	1
	MEAN	3.536
	STD	
DDT	N	1
	MEAN	0.0235
	STD	
DIELDRIN	N	1
	MEAN	0.0899
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0684
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 163

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, SNAKE ISLAND

HERRING GULL	YEAR	
		90
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0046
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.3677
PHOTOMIREX	N MEAN STD	1 0.1657
CIS-NONACHLOR	N MEAN STD	1 0.0466
TRANS-NONACHLOR	N MEAN STD	1 0.0522
OCTACHLOROSTYRENE	N MEAN STD	1 0.0102
PCB:1260	N MEAN STD	1 8.080
PCB:1254-1260	N MEAN STD	1 16.09
TOTAL PCB CONGENERS	N MEAN STD	1 7.386
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 47

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 164 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, SNAKE ISLAND

HERRING GULL	YEAR	
		90
12378-	N	1
PENTACHLORODIBENZO-	MEAN	13
p-DIOXIN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	ND
p-DIOXIN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	13
p-DIOXIN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	(1)
p-DIOXIN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	(3)
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	1
p-DIOXIN	MEAN	(6)
	STD	
2378-	N	1
TETRACHLORODIBENZO-	MEAN	ND
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	6
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	(2)
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	(3)
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 165

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, SNAKE ISLAND

HERRING GULL	YEAR	
		90
234678-	N	1
HEXACHLORODIBENZO-	MEAN	(1)
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE HURON, SOUTH LIMESTONE ISLAND

CASPIAN TERN	YEAR	
		91
PERCENT FAT OF EGG	N	1
	MEAN	9.2
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	76.5
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0110
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0425
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, SOUTH LIMESTONE ISLAND

CASPIAN TERN	YEAR	
		91
HEXACHLOROBENZENE	N	1
	MEAN	0.0129
	STD	
DDD	N	1
	MEAN	ND
	STD	
DDE	N	1
	MEAN	1.4713
	STD	
DDT	N	1
	MEAN	0.0095
	STD	
DIELDRIN	N	1
	MEAN	0.0764
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0298
	STD	
ALPHA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
BETA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
GAMMA- HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
MIREX	N	1
	MEAN	0.1180
	STD	
PHOTOMIREX	N	1
	MEAN	0.0429
	STD	
CIS-NONACHLOR	N	1
	MEAN	0.0262
	STD	
TRANS-NONACHLOR	N	1
	MEAN	0.0816
	STD	
OCTACHLOROSTYRENE	N	1
	MEAN	ND
	STD	
PCB:1260	N	1
	MEAN	4.1242
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 167

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, SOUTH LIMESTONE ISLAND

CASPIAN TERN	YEAR	
		91
PCB:1254-1260	N	1
	MEAN	7.4834
	STD	
TOTAL PCB CONGENERS	N	1
	MEAN	4.2891
	STD	
PCB37 3,4,4'-TRICHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N	0
	MEAN	
	STD	
2378-TETRACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	
12378-PENTACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	
123478-HEXACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	
123678-HEXACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	
123789-TETRACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	
OCTACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	
2378-TETRACHLORODIBENZO-FURAN	N	0
	MEAN	
	STD	
12378/12348-PENTACHLORODIBENZO-FURAN	N	0
	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 168 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, SOUTH LIMESTONE ISLAND

CASPIAN TERN	YEAR	
		91
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 169

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, SOUTH LIMESTONE ISLAND

COMMON TERM	YEAR	
		91
PERCENT FAT OF EGG	N	1
	MEAN	9.9
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	75.4
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0062
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0455
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0197
	STD	
DDD	N	1
	MEAN	0.0088
	STD	
DDE	N	1
	MEAN	1.5377
	STD	
DDT	N	1
	MEAN	0.0187
	STD	
DIELDRIN	N	1
	MEAN	0.0880
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0230
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, SOUTH LIMESTONE ISLAND

COMMON TERM	YEAR	
		91
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.0710
PHOTOMIREX	N MEAN STD	1 0.0348
CIS-NONACHLOR	N MEAN STD	1 0.0268
TRANS-NONACHLOR	N MEAN STD	1 0.0577
OCTACHLOROSTYRENE	N MEAN STD	1 0.0090
PCB:1260	N MEAN STD	1 3.6948
PCB:1254-1260	N MEAN STD	1 6.8538
TOTAL PCB CONGENERS	N MEAN STD	1 3.5596
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 171

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, SOUTH LIMESTONE ISLAND

COMMON TERM	YEAR	
		91
12378-	N	0
PENTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	0
p-DIOXIN	MEAN	
	STD	
2378-	N	0
TETRACHLORODIBENZO-	MEAN	
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, SOUTH LIMESTONE ISLAND

COMMON TERN	YEAR	
	91	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE HURON, BLACKBILL ISLANDS

DOUBLE-CRESTED CORMORANT	YEAR	
	89	
PERCENT FAT OF EGG	N	1
	MEAN	4.55
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	82.66
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0035
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0328
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 173

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, BLACKBILL ISLANDS

DOUBLE-CRESTED CORMORANT		YEAR
		89
HEXACHLOROBENZENE	N MEAN STD	1 0.0127
DDD	N MEAN STD	1 0.0048
DDE	N MEAN STD	1 2.0320
DDT	N MEAN STD	1 0.0227
DIELDRIN	N MEAN STD	1 0.0420
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0170
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0027
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0016
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0015
MIREX	N MEAN STD	1 0.0369
PHOTOMIREX	N MEAN STD	1 0.0121
CIS-NONACHLOR	N MEAN STD	1 0.0248
TRANS-NONACHLOR	N MEAN STD	1 0.0106
OCTACHLOROSTYRENE	N MEAN STD	1 0.0060
PCB:1260	N MEAN STD	1 5.2150

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, BLACKBILL ISLANDS

DOUBLE-CRESTED CORMORANT	YEAR	
	89	
PCB:1254-1260	N MEAN STD	1 9.8180
TOTAL PCB CONGENERS	N MEAN STD	1 4.8000
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 18
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 27
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (3)
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 21
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 4
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 8
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (4)
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	1 ND
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 175

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, BLACKBILL ISLANDS

DOUBLE-CRESTED CORMORANT	YEAR	
		89
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	20
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	(3)
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	(2)
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	(2)
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, HALFMON ISLAND

CASPIAN TERN	YEAR	
		91
PERCENT FAT OF EGG	N	1
	MEAN	8.9
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	76.3
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0127
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0492
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0117
	STD	
DDD	N	1
	MEAN	ND
	STD	
DDE	N	1
	MEAN	1.7708
	STD	
DDT	N	1
	MEAN	ND
	STD	
DIELDRIN	N	1
	MEAN	0.0930
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0342
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, HALFMONK ISLAND

CASPIAN TERN	YEAR	
		91
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.0529
PHOTOMIREX	N MEAN STD	1 0.0318
CIS-NONACHLOR	N MEAN STD	1 0.0242
TRANS-NONACHLOR	N MEAN STD	1 0.0832
OCTACHLOROSTYRENE	N MEAN STD	1 ND
PCB:1260	N MEAN STD	1 4.4157
PCB:1254-1260	N MEAN STD	1 8.5625
TOTAL PCB CONGENERS	N MEAN STD	1 4.5960
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, HALFMON ISLAND

CASPIAN TERN	YEAR	
		91
12378-	N	0
PENTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	0
p-DIOXIN	MEAN	
	STD	
2378-	N	0
TETRACHLORODIBENZO-	MEAN	
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 179

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, HALFMON ISLAND

CASPIAN TERN	YEAR	
		91
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE HURON, WEST MARY ISLAND

HERRING GULL	YEAR	
		90
PERCENT FAT OF EGG	N	1
	MEAN	8.8
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	73.3
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0083
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.1619
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	0.0035
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 180 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, WEST MARY ISLAND

HERRING GULL		YEAR
		90
HEXACHLOROBENZENE	N MEAN STD	1 0.0386
DDD	N MEAN STD	1 0.0028
DDE	N MEAN STD	1 3.146
DDT	N MEAN STD	1 0.0449
DIELDRIN	N MEAN STD	1 0.1897
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.1351
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0034
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.1059
PHOTOMIREX	N MEAN STD	1 0.0492
CIS-NONACHLOR	N MEAN STD	1 0.0674
TRANS-NONACHLOR	N MEAN STD	1 0.0582
OCTACHLOROSTYRENE	N MEAN STD	1 0.0109
PCB:1260	N MEAN STD	1 6.320

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, WEST MARY ISLAND

HERRING GULL	YEAR	
	90	
PCB:1254-1260	N MEAN STD	1 13.97
TOTAL PCB CONGENERS	N MEAN STD	1 6.373
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 43
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 22
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 ND
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 16
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (1)
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (2)
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (2)
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	1 (1)
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 182 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, WEST MARY ISLAND

HERRING GULL		YEAR
		90
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	11
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	(2)
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	4
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	4
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 183

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, THE COUSINS ISLAND

CASPIAN TERN	YEAR	
	91	
PERCENT FAT OF EGG	N	1
	MEAN	8.8
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	76.6
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0148
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0708
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0190
	STD	
DDD	N	1
	MEAN	ND
	STD	
DDE	N	1
	MEAN	3.4104
	STD	
DDT	N	1
	MEAN	0.0396
	STD	
DIELDRIN	N	1
	MEAN	0.0758
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0431
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 184 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, THE COUSINS ISLAND

CASPIAN TERN	YEAR	
	91	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.0743
PHOTOMIREX	N MEAN STD	1 0.0368
CIS-NONACHLOR	N MEAN STD	1 0.0401
TRANS-NONACHLOR	N MEAN STD	1 0.1305
OCTACHLOROSTYRENE	N MEAN STD	1 ND
PCB:1260	N MEAN STD	1 7.6333
PCB:1254-1260	N MEAN STD	1 14.5517
TOTAL PCB CONGENERS	N MEAN STD	1 7.6809
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 185

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, THE COUSINS ISLAND

CASPIAN TERN	YEAR	
		91
12378-	N	0
PENTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	0
p-DIOXIN	MEAN	
	STD	
2378-	N	0
TETRACHLORODIBENZO-	MEAN	
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant 186 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, THE COUSINS ISLAND

CASPIAN TERN	YEAR	
	91	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE HURON, DOUBLE ISLAND

HERRING GULL	YEAR			
	89	90	91	92
PERCENT FAT OF EGG	N	1	1	1
	MEAN	8.8	9.3	8.9
	STD			10.1
PERCENT WATER OF EGG	N	1	1	1
	MEAN	75.9	75.7	76.0
	STD			75.0
CIS/ALPHA-CHLORDANE	N	1	1	1
	MEAN	0.0072	0.0054	ND
	STD			0.0141
TRANS/GAMMA-CHLORDANE	N	1	1	1
	MEAN	ND	0.0012	ND
	STD			ND
OXYCHLORDANE	N	1	1	1
	MEAN	0.1180	0.1018	0.1149
	STD			0.1402
1234-CHLOROBENZENE	N	1	1	1
	MEAN	ND	ND	ND
	STD			0.0158
1235/1245-CHLOROBENZENE	N	1	1	1
	MEAN	ND	ND	ND
	STD			ND
PENTACHLOROBENZENE	N	1	1	1
	MEAN	ND	0.0050	ND
	STD			0.0081

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 187

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, DOUBLE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
HEXACHLOROBENZENE	N MEAN STD	1 0.0378 0.0043	1 0.0289 0.0043	1 0.0277 ND	1 0.0588 ND
DDD	N MEAN STD	1 0.0043 0.0043	1 ND	1 ND	1 ND
DDE	N MEAN STD	1 2.3690 0.0621	1 2.1050 0.0505	1 2.0711 0.0079	1 2.6627 0.0063
DDT	N MEAN STD	1 0.2472 0.1098	1 0.1379 0.0777	1 0.1567 0.0735	1 0.2022 0.0868
HEPTACHLOR EPOXIDE	N MEAN STD	1 ND	1 ND	1 ND	1 ND
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND 0.0029	1 ND 0.0019	1 ND 0.0938	1 ND 0.0598
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0029 ND	1 0.0019 ND	1 ND 0.0400	1 ND 0.0267
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND 0.0548	1 ND 0.0482	1 ND 0.0499	1 ND 0.0730
MIREX	N MEAN STD	1 0.1377 0.0768	1 0.1166 0.0430	1 0.0938 0.0400	1 0.0598 0.0267
PHOTOMIREX	N MEAN STD	1 0.0548 0.0673	1 0.0482 0.0477	1 0.0499 0.0619	1 0.0730 0.0753
CIS-NONACHLOR	N MEAN STD	1 0.0116	1 0.0080	1 0.0088	1 0.0102
TRANS-NONACHLOR	N MEAN STD	1 6.7100	1 5.8710	1 4.4067	1 4.4617
OCTACHLOROSTYRENE	N MEAN STD	1 ND	1 ND	1 ND	1 ND
PCB:1260	N MEAN STD	1 ND	1 ND	1 ND	1 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 188 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, DOUBLE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB:1254-1260	N MEAN STD	1 14.1300 1	1 11.4700 1	1 9.8689 1	1 10.2124 1
TOTAL PCB CONGENERS	N MEAN STD	1 6.9751 1	1 5.3610 1	1 4.9374 1	1 5.0955 1
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0 0	<0.0001 1 0.0004
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0 0	1 1 0.0004
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0 0	1 1 0.0029
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0 0	1 1 0.0004
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 18 1	1 27 1	1 19 1	1 23.2 1
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 8 1	1 16 1	1 9 1	1 7.7 1
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	1 (0.5) 1
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 10 1	1 15 1	1 10 1	1 14.7 1
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (1) 1	1 (2) 1	1 (1) 1	1 (0.6) 1
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (2) 1	1 (4) 1	1 (4) 1	1 3.3i 1
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (2) 1	1 (4) 1	1 (6) 1	1 9.7 1
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	1 1 1	1 (1) (1)	1 2 2	1 ND ND
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0 0 0	0 0 0	1 ND ND	1 ND ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 189

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, DOUBLE ISLAND

HERRING GULL		YEAR			
		89	90	91	92
12489/23467-	N	0	0	1	0
PENTACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
23478-	N	1	1	1	1
PENTACHLORODIBENZO-	MEAN	7	10	6	15.2
FURAN	STD				
123469/123689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
123478-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	(2)	(2)	1.6
FURAN	STD				
123678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	3	(3)	(3)	2.5
FURAN	STD				
123789-	N	0	0	0	0
HEXACHLORODIBENZO-	MEAN				
FURAN	STD				
124689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
234678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(1)	(3)	(2)	ND
FURAN	STD				
1234678-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				1.6
FURAN	STD				
1234789-	N	0	0	0	0
HEPTACHLORODIBENZO-	MEAN				
FURAN	STD				
OCTACHLORODIBENZO-	N	0	0	0	1
FURAN	MEAN				
	STD				(0.1)

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 190 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, WEST ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
		89
PERCENT FAT OF EGG	N	3
	MEAN	4.6
	STD	0.2219
PERCENT WATER OF EGG	N	3
	MEAN	83.2
	STD	0.6909
CIS/ALPHA-CHLORDANE	N	3
	MEAN	0.0043
	STD	0.0000
TRANS/GAMMA-CHLORDANE	N	3
	MEAN	ND
	STD	
OXYCHLORDANE	N	3
	MEAN	0.0385
	STD	0.0254
1234-CHLOROBENZENE	N	3
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	3
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	3
	MEAN	0.0024
	STD	0.0000
HEXACHLOROBENZENE	N	3
	MEAN	0.0255
	STD	0.0090
DDD	N	3
	MEAN	0.0111
	STD	0.0076
DDE	N	3
	MEAN	2.9877
	STD	1.8521
DDT	N	3
	MEAN	0.0277
	STD	0.0119
DIELDRIN	N	3
	MEAN	0.1544
	STD	0.1018
HEPTACHLOR EPOXIDE	N	3
	MEAN	0.0566
	STD	0.0433
ALPHA-HEXACHLOROCYCLOHEXANE	N	3
	MEAN	0.0037
	STD	0.0000

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 191

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, WEST ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
	89	
BETA-HEXACHLOROCYCLOHEXANE	N	3
	MEAN	0.0030
	STD	0.0000
GAMMA-HEXACHLOROCYCLOHEXANE	N	3
	MEAN	0.0011
	STD	0.0000
MIREX	N	3
	MEAN	0.0374
	STD	0.0439
PHOTOMIREX	N	3
	MEAN	0.0159
	STD	0.0225
CIS-NONACHLOR	N	3
	MEAN	0.0250
	STD	0.0089
TRANS-NONACHLOR	N	3
	MEAN	0.0142
	STD	0.0000
OCTACHLOROSTYRENE	N	3
	MEAN	0.0107
	STD	0.0000
PCB:1260	N	3
	MEAN	4.8933
	STD	4.4442
PCB:1254-1260	N	3
	MEAN	11.1020
	STD	9.7771
TOTAL PCB CONGENERS	N	3
	MEAN	5.0720
	STD	4.4359
PCB37 3,4,4'-TRICHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N	0
	MEAN	
	STD	
2378-TETRACHLORODIBENZO-P-DIOXIN	N	1
	MEAN	14
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, WEST ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
	89	
12378-	N	1
PENTACHLORODIBENZO-	MEAN	21
p-DIOXIN	STD	
123478-	N	1
HEXAChLORODIBENZO-	MEAN	(2)
p-DIOXIN	STD	
123678-	N	1
HEXAChLORODIBENZO-	MEAN	17
p-DIOXIN	STD	
123789-	N	1
HEXAChLORODIBENZO-	MEAN	4
p-DIOXIN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	13
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	1
p-DIOXIN	MEAN	16
	STD	
2378-	N	1
TETRACHLORODIBENZO-	MEAN	2
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	12
FURAN	STD	
123469/123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXAChLORODIBENZO-	MEAN	(2)
FURAN	STD	
123678-	N	1
HEXAChLORODIBENZO-	MEAN	(2)
FURAN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 193

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE HURON, WEST ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
		89
234678-	N	1
HEXACHLORODIBENZO-	MEAN	(2)
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE MICHIGAN, ISLE AUX GALETS

CASPIAN TERN	YEAR	
		91
PERCENT FAT OF EGG	N	1
	MEAN	6.9000
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	77.4000
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0112
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0574
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, ISLE AUX GALETS

CASPIAN TERN	YEAR	
		91
HEXACHLOROBENZENE	N MEAN STD	1 0.0094 ND
DDD	N MEAN STD	1 ND ND
DDE	N MEAN STD	1 2.4511 ND
DDT	N MEAN STD	1 0.0249 ND
DIELDRIN	N MEAN STD	1 0.0933 ND
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0429 ND
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
MIREX	N MEAN STD	1 0.0365 ND
PHOTOMIREX	N MEAN STD	1 0.0158 ND
CIS-NONACHLOR	N MEAN STD	1 0.0222 ND
TRANS-NONACHLOR	N MEAN STD	1 0.0855 ND
OCTACHLOROSTYRENE	N MEAN STD	1 ND ND
PCB:1260	N MEAN STD	1 5.6672 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 195

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, ISLE AUX GALETS

CASPIAN TERN	YEAR	
		91
PCB:1254-1260	N	1
	MEAN	11.3576
	STD	
TOTAL PCB CONGENERS	N	1
	MEAN	5.9999
	STD	
PCB37 3,4,4'-TRICHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N	0
	MEAN	
	STD	
2378-TETRACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
12378-PENTACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
123478-HEXACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
123678-HEXACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
123789-HEPTACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
1234678-OCTACHLORODIBENZO-P-DIOXIN	N	0
	MEAN	
	STD	
2378-TETRACHLORODIBENZO-FURAN	N	0
	MEAN	
	STD	
12378/12348-PENTACHLORODIBENZO-FURAN	N	0
	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, ISLE AUX GALETS

CASPIAN TERN	YEAR	
		91
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 197

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, HAT ISLAND

CASPIAN TERN	YEAR	
	91	
PERCENT FAT OF EGG	N MEAN STD	1 7.8000
PERCENT WATER OF EGG	N MEAN STD	1 77.2000
CIS/ALPHA-CHLORDANE	N MEAN STD	1 0.0123
TRANS/GAMMA-CHLORDANE	N MEAN STD	1 ND
OXYCHLORDANE	N MEAN STD	1 0.0628
1234-CHLOROBENZENE	N MEAN STD	1 ND
1235/1245-CHLOROBENZENE	N MEAN STD	1 ND
PENTACHLOROBENZENE	N MEAN STD	1 ND
HEXACHLOROBENZENE	N MEAN STD	1 0.0094
DDD	N MEAN STD	1 ND
DDE	N MEAN STD	1 2.0563
DDT	N MEAN STD	1 0.0279
DIELDRIN	N MEAN STD	1 0.0928
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0429
ALPHA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, HAT ISLAND

CASPIAN TERN	YEAR	
	91	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.0244
PHOTOMIREX	N MEAN STD	1 0.0120
CIS-NONACHLOR	N MEAN STD	1 0.0241
TRANS-NONACHLOR	N MEAN STD	1 0.0803
OCTACHLOROSTYRENE	N MEAN STD	1 ND
PCB:1260	N MEAN STD	1 4.7893
PCB:1254-1260	N MEAN STD	1 10.2978
TOTAL PCB CONGENERS	N MEAN STD	1 5.2014
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	0 0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 199

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, HAT ISLAND

CASPIAN TERN	YEAR	
		91
12378-	N	0
PENTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	0
p-DIOXIN	MEAN	
	STD	
2378-	N	0
TETRACHLORODIBENZO-	MEAN	
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 200 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, HAT ISLAND

CASPIAN TERN	YEAR	
	91	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE MICHIGAN, GULL ISLAND

HERRING GULL	YEAR			
	89	90	91	92
PERCENT FAT OF EGG	N	14	1	1
	MEAN	8.3	8.5	8.4
	STD	0.8518		
PERCENT WATER OF	N	14	1	1
EGG	MEAN	76.4	74.8	75.7
	STD	0.7594		
CIS/ALPHA-	N	14	1	1
CHLORDANE	MEAN	0.0217	0.0385	0.0337
	STD	0.0000		
TRANS/GAMMA-	N	14	1	1
CHLORDANE	MEAN	0.0005	0.0050	0.0159
	STD	0.0000		
OXYCHLORDANE	N	14	1	1
	MEAN	0.2121	0.3398	0.4196
	STD	0.0777		
1234-CHLOROBENZENE	N	14	1	1
	MEAN	ND	ND	ND
	STD			
1235/1245-	N	14	1	1
CHLOROBENZENE	MEAN	ND	ND	0.0073
	STD			
PENTACHLOROBENZENE	N	14	1	1
	MEAN	0.0030	0.0034	ND
	STD	0.0000		

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 201

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, GULL ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
HEXACHLOROBENZENE	N MEAN STD	14 0.0479 0.0132	1 0.0594	1 0.0707	1 0.0522
DDD	N MEAN STD	14 0.0109 0.0000	1 0.0344	1 0.0168	1 0.0114
DDE	N MEAN STD	14 5.0279 2.8079	1 8.2170	1 12.4401	1 8.4897
DDT	N MEAN STD	14 0.0735 0.0271	1 0.1883	1 0.0527	1 0.0117
DIELDRIN	N MEAN STD	14 0.4950 0.2666	1 0.7650	1 0.6229	1 0.5157
HEPTACHLOR EPOXIDE	N MEAN STD	14 0.2015 0.0613	1 0.4158	1 0.3636	1 0.2357
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	14 ND 0.0005	1 ND	1 ND	1 ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	14 0.0015 0.0000	1 0.0034	1 ND	1 ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	14 ND 0.0005	1 ND	1 ND	1 ND
MIREX	N MEAN STD	14 0.0430 0.0326	1 0.0820	1 0.1832	1 0.0442
PHOTOMIREX	N MEAN STD	14 0.0235 0.0142	1 0.0424	1 0.0888	1 0.0236
CIS-NONACHLOR	N MEAN STD	14 0.0646 0.0244	1 0.1371	1 0.1278	1 0.0953
TRANS-NONACHLOR	N MEAN STD	14 0.1010 0.0409	1 0.1768	1 0.1955	1 0.1291
OCTACHLOROSTYRENE	N MEAN STD	14 0.0071 0.0074	1 0.0109	1 0.0153	1 0.0121
PCB:1260	N MEAN STD	14 7.5825 3.4139	1 11.7200	1 14.8788	1 8.7322

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 202 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, GULL ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB:1254-1260	N MEAN STD	14 20.7907 9.3034	1 31.7300	1 37.6856	1 23.2726
TOTAL PCB CONGENERS	N MEAN STD	14 9.0638 4.0951	1 13.9358	1 17.3537	1 10.8070
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0 <0.0001	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0 0.0023	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0 0.0074	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0 0.0007	
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 11 1	1 14 1	1 21 1	
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 15 1	1 20 1	1 19 32.1i	
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (1) 1	1 ND 1	1 ND (0.6)	
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 14 1	1 18 1	1 21 20.3	
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 3 1	1 (1) 1	1 ND (0.4)	
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (4) 1	1 (1) 1	1 (2) (0.1)	
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 9 1	1 (8) 1	1 ND 1	
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	1 2 3	1 3 3	1 3 4.4	
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0 0 0	0 1 ND	1 1 0.3	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 203

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, GULL ISLAND

HERRING GULL	YEAR			
	89	90	91	92
12489/23467-	N	0	0	1
PENTACHLORODIBENZO-	MEAN			ND
FURAN	STD			
23478-	N	1	1	1
PENTACHLORODIBENZO-	MEAN	13	15	14
FURAN	STD			28.4
123469/123689-	N	0	0	1
HEXACHLORODIBENZO-	MEAN			ND
FURAN	STD			
123478-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	3	(1)	(3)
FURAN	STD			(0.4)
123678-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	4	(3)	5
FURAN	STD			5.6
123789-	N	0	0	0
HEXACHLORODIBENZO-	MEAN			1
FURAN	STD			1.9
124689-	N	0	0	1
HEXACHLORODIBENZO-	MEAN			ND
FURAN	STD			
234678-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	3	(1)	(3)
FURAN	STD			
1234678-	N	0	0	0
HEPTACHLORODIBENZO-	MEAN			1
FURAN	STD			(0.1)
1234789-	N	0	0	0
HEPTACHLORODIBENZO-	MEAN			
FURAN	STD			
OCTACHLORODIBENZO-	N	0	0	0
FURAN	MEAN			1
	STD			(0.1)

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, GRAVELLY ISLAND

CASPIAN TERN	YEAR	
		91
PERCENT FAT OF EGG	N	1
	MEAN	8.2
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	77.0
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0134
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	0.0073
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0737
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0103
	STD	
DDD	N	1
	MEAN	0.0050
	STD	
DDE	N	1
	MEAN	4.2281
	STD	
DDT	N	1
	MEAN	ND
	STD	
DIELDRIN	N	1
	MEAN	0.0874
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0567
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 205

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, GRAVELLY ISLAND

CASPIAN TERN	YEAR	
		91
BETA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
GAMMA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
MIREX	N	1
	MEAN	0.0324
	STD	
PHOTOMIREX	N	1
	MEAN	0.0159
	STD	
CIS-NONACHLOR	N	1
	MEAN	0.0245
	STD	
TRANS-NONACHLOR	N	1
	MEAN	0.1055
	STD	
OCTACHLOROSTYRENE	N	1
	MEAN	0.0086
	STD	
PCB:1260	N	1
	MEAN	7.1028
	STD	
PCB:1254-1260	N	1
	MEAN	15.8198
	STD	
TOTAL PCB CONGENERS	N	1
	MEAN	9.1647
	STD	
PCB37 3,4,4'-TRICHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N	0
	MEAN	
	STD	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N	0
	MEAN	
	STD	
2378-TETRACHLORODIBENZO-p-DIOXIN	N	0
	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 206 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, GRAVELLY ISLAND

CASPIAN TERN	YEAR	
		91
12378-	N	0
PENTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
p-DIOXIN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	0
p-DIOXIN	MEAN	
	STD	
2378-	N	0
TETRACHLORODIBENZO-	MEAN	
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
123469/123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123678-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 207

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, GRAVELLY ISLAND

CASPIAN TERN	YEAR	
	91	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE MICHIGAN, GREEN BAY, BIG SISTER ISLAND

HERRING GULL	YEAR			
	89	90	91	92
PERCENT FAT OF EGG	N	14	1	1
	MEAN	8.3	9.5	9.3
	STD	0.8472		
PERCENT WATER OF	N	14	1	1
EGG	MEAN	75.9	76.4	76.1
	STD	0.7192		
CIS/ALPHA-	N	14	1	1
CHLORDANE	MEAN	0.0146	0.0080	0.0117
	STD	0.0000		
TRANS/GAMMA-	N	14	1	1
CHLORDANE	MEAN	0.0006	ND	ND
	STD	0.0000		
OXYCHLORDANE	N	14	1	1
	MEAN	0.2105	0.2634	0.2818
	STD	0.0811		
1234-CHLOROBENZENE	N	14	1	1
	MEAN	ND	ND	ND
	STD			
1235/1245-	N	14	1	1
CHLOROBENZENE	MEAN	ND	ND	ND
	STD			
PENTACHLOROBENZENE	N	14	1	1
	MEAN	0.0030	0.0023	ND
	STD	0.0000		

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, GREEN BAY, BIG SISTER ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
HEXACHLOROBENZENE	N MEAN STD	14 0.0351 0.0000	1 0.0376 ND	1 0.0366 ND	1 0.0344 ND
DDD	N MEAN STD	14 0.0080 0.0000	1 0.0150 ND	1 ND ND	1 ND ND
DDE	N MEAN STD	14 4.4609 0.9784	1 8.0290 ND	1 8.0020 ND	1 4.9180 ND
DDT	N MEAN STD	14 0.0608 0.0163	1 0.0802 ND	1 0.0607 ND	1 0.0173 ND
DIELDRIN	N MEAN STD	14 0.5947 0.4322	1 0.3154 ND	1 0.0617 ND	1 0.3001 ND
HEPTACHLOR EPOXIDE	N MEAN STD	14 0.2079 0.0444	1 0.2543 ND	1 0.0463 ND	1 0.1519 ND
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	14 0.0006 0.0000	1 ND ND	1 ND ND	1 ND ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	14 0.0017 0.0000	1 0.0024 ND	1 ND ND	1 ND ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	14 ND ND	1 ND ND	1 ND ND	1 ND ND
MIREX	N MEAN STD	14 0.0322 0.0279	1 0.0338 ND	1 0.0481 ND	1 0.0484 ND
PHOTOMIREX	N MEAN STD	14 0.0157 0.0133	1 0.0204 ND	1 0.0272 ND	1 0.0245 ND
CIS-NONACHLOR	N MEAN STD	14 0.0531 0.0000	1 0.0717 ND	1 0.0677 ND	1 0.0667 ND
TRANS-NONACHLOR	N MEAN STD	14 0.0948 0.0131	1 0.0916 ND	1 0.1137 ND	1 0.0953 ND
OCTACHLOROSTYRENE	N MEAN STD	14 0.0065 0.0000	1 0.0098 ND	1 ND ND	1 0.0132 ND
PCB:1260	N MEAN STD	14 7.3963 1.5523	1 12.2000 ND	1 8.9308 ND	1 6.0129 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 209

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, GREEN BAY, BIG SISTER ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB:1254-1260	N MEAN STD	14 21.1993 3.8514	1 32.6500	1 24.8638	1 17.2301
TOTAL PCB CONGENERS	N MEAN STD	14 9.6992 1.7935	1 15.1839	1 12.8251	1 8.8241
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0	0	0	1 <0.0001
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0	0	0	1 0.0033
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0	0	0	1 0.0049
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0	0	0	1 0.0004
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 10	1 12	1 12	1 12.4
12378-PENTACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 9	1 17	1 16	1 14.5i
123478-HEXACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 ND	1 ND	1 ND	1 (0.1)
123678-HEXACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 8	1 18	1 15	1 13.7
123789-HEXACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 (1)	1 (1)	1 (1)	1 (0.2)
1234678-HEPTACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 4	1 (2)	1 (3)	1 (0.2)
OCTACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 8	1 13	1 (9)	1 21.9
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	1 2	1 2	1 2	1 2.5
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0 0	0 ND	1 ND	1 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE MICHIGAN, GREEN BAY, BIG SISTER ISLAND

HERRING GULL		YEAR			
		89	90	91	92
12489/23467-	N	0	0	1	0
PENTACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
23478-	N	1	1	1	1
PENTACHLORODIBENZO-	MEAN	10	9	11	15.9
FURAN	STD				
123469/123689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
123478-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	(2)	(2)	0.6
FURAN	STD				
123678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	(3)	(3)	2.1
FURAN	STD				
123789-	N	0	0	0	1
HEXACHLORODIBENZO-	MEAN				0.5
FURAN	STD				
124689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
234678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(1)	(2)	(1)	ND
FURAN	STD				
1234678-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				(0.1)
FURAN	STD				
1234789-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				ND
FURAN	STD				
OCTACHLORODIBENZO-	N	0	0	0	1
FURAN	MEAN				ND
	STD				

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 211

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, GULL ISLAND

HERRING GULL	YEAR	
	92	
PERCENT FAT OF EGG	N	1
	MEAN	9.1
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	74.4
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0154
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.2817
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	0.0043
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0562
	STD	
DDD	N	1
	MEAN	ND
	STD	
DDE	N	1
	MEAN	5.6918
	STD	
DDT	N	1
	MEAN	0.0065
	STD	
DIELDRIN	N	1
	MEAN	0.3295
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.1705
	STD	
ALPHA-HEXAHCLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, GULL ISLAND

HERRING GULL	YEAR	
		92
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.0947
PHOTOMIREX	N MEAN STD	1 0.0379
CIS-NONACHLOR	N MEAN STD	1 0.0992
TRANS-NONACHLOR	N MEAN STD	1 0.1364
OCTACHLOROSTYRENE	N MEAN STD	1 0.0154
PCB:1260	N MEAN STD	1 8.7704
PCB:1254-1260	N MEAN STD	1 20.0444
TOTAL PCB CONGENERS	N MEAN STD	1 9.6398
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 <0.0001
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0006
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0053
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0006
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 16.9

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 213

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, GULL ISLAND

HERRING GULL	YEAR	
	92	
12378-	N	1
PENTACHLORODIBENZO-	MEAN	12.0i
p-DIOXIN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	(0.5)
p-DIOXIN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	23.6
p-DIOXIN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	(0.9)
p-DIOXIN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	10.5
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	1
p-DIOXIN	MEAN	11.7
	STD	
2378-	N	1
TETRACHLORODIBENZO-	MEAN	0.8
FURAN	STD	
12378/12348-	N	1
PENTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	16.7
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	2.8
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	5.0
FURAN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	1.5
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, GULL ISLAND

HERRING GULL	YEAR	
	92	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	0.6
FURAN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	1.2
FURAN	STD	
1234789-	N	1
HEPTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
OCTACHLORODIBENZO-	N	1
FURAN	MEAN	ND
	STD	

LAKE SUPERIOR, CHENE ISLAND

HERRING GULL	YEAR	
	92	
PERCENT FAT OF EGG	N	1
	MEAN	8.5
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	75.6
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0123
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.1386
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 215

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, CHENE ISLAND

HERRING GULL		YEAR
		92
HEXACHLOROBENZENE	N MEAN STD	1 0.0428
DDD	N MEAN STD	1 ND
DDE	N MEAN STD	1 3.0115
DDT	N MEAN STD	1 0.0107
DIELDRIN	N MEAN STD	1 0.2692
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.1313
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.1040
PHOTOMIREX	N MEAN STD	1 0.0470
CIS-NONACHLOR	N MEAN STD	1 0.0733
TRANS-NONACHLOR	N MEAN STD	1 0.1001
OCTACHLOROSTYRENE	N MEAN STD	1 0.0125
PCB:1260	N MEAN STD	1 4.7562

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, CHENE ISLAND

HERRING GULL	YEAR	
	92	
PCB:1254-1260	N	1
	MEAN	10.8222
	STD	
TOTAL PCB CONGENERS	N	1
	MEAN	5.4900
	STD	
PCB37 3,4,4'-TRICHLOROBIPHENYL	N	1
	MEAN	<0.0001
	STD	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N	1
	MEAN	0.0011
	STD	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N	1
	MEAN	0.0029
	STD	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N	1
	MEAN	0.0003
	STD	
2378-TETRACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	25.4
	STD	
12378-PENTACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	8.6i
	STD	
123478-HEXACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	(0.1)
	STD	
123678-HEXACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	4.4
	STD	
123789-HEXACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	(0.1)
	STD	
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	(0.1)
	STD	
OCTACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	3.0
	STD	
2378-TETRACHLORODIBENZO-FURAN	N	1
	MEAN	0.7
	STD	
12378/12348-PENTACHLORODIBENZO-FURAN	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 217

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, CHENE ISLAND

HERRING GULL	YEAR	
		92
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	8.5
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	0.5
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	0.6
FURAN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	0.5
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	ND
FURAN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
1234789-	N	1
HEPTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
OCTACHLORODIBENZO-	N	1
FURAN	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, AGAWA ROCK

HERRING GULL	YEAR			
	89	90	91	92
PERCENT FAT OF EGG	N MEAN STD	1 7.5 1.1068	14 8.7 9.8	1 10.6
PERCENT WATER OF EGG	N MEAN STD	1 76.2 0.6203	14 76.6 75.2	1 74.5
CIS/ALPHA-CHLORDANE	N MEAN STD	1 0.0118 0.0000	14 0.0060 ND	1 0.0158
TRANS/GAMMA-CHLORDANE	N MEAN STD	1 ND 0.0000	14 0.0012 ND	1 ND
OXYCHLORDANE	N MEAN STD	1 0.1406 0.0787	14 0.1698 0.1699	1 0.1807
1234-CHLOROBENZENE	N MEAN STD	1 ND 0.0000	14 0.0039 ND	1 0.0133
1235/1245-CHLOROBENZENE	N MEAN STD	1 ND 0.0000	14 0.0044 ND	1 ND
PENTACHLOROBENZENE	N MEAN STD	1 ND 0.0000	14 0.0032 ND	1 0.0052
HEXACHLOROBENZENE	N MEAN STD	1 0.0417 0.0000	14 0.0326 0.0340	1 0.0431
DDD	N MEAN STD	1 0.0067 0.0000	14 0.0036 ND	1 ND
DDE	N MEAN STD	1 2.5910 1.4058	14 2.5292 2.9383	1 3.6061
DDT	N MEAN STD	1 0.0651 0.0216	14 0.0523 0.0160	1 0.0100
DIELDRIN	N MEAN STD	1 0.3315 0.0987	14 0.2268 0.2215	1 0.3364
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.1418 0.0505	14 0.1413 0.1229	1 0.1104
ALPHA-HEXAHCLOROCYCLOHEXANE	N MEAN STD	1 ND 0.0505	14 ND ND	1 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 219

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, AGAWA ROCK

HERRING GULL	YEAR				
	89	90	91	92	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0028 0.0000	14 0.0025 ND	1 ND ND	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND	14 ND ND	1 ND ND	1 ND
MIREX	N MEAN STD	1 0.0941 0.0599	14 0.0519 0.0643	1 0.0731	1
PHOTOMIREX	N MEAN STD	1 0.0413 0.0246	14 0.0260 0.0268	1 0.0285	1
CIS-NONACHLOR	N MEAN STD	1 0.0495 0.0218	14 0.0568 0.0504	1 0.0622	1
TRANS-NONACHLOR	N MEAN STD	1 0.0781 0.0166	14 0.0547 0.0648	1 0.0924	1
OCTACHLOROSTYRENE	N MEAN STD	1 0.0129 0.0000	14 0.0083 0.0102	1 0.0158	1
PCB:1260	N MEAN STD	1 6.3990 1.8703	14 4.6157 5.4364	1 5.5155	1
PCB:1254-1260	N MEAN STD	1 15.0200 4.1630	14 11.4996 12.6750	1 13.2008	1
TOTAL PCB CONGENERS	N MEAN STD	1 6.7062 1.7299	14 5.1678 6.1566	1 6.7843	1
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	<0.0001 0.0020	1
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0.0031	1
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0.0031	1
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0.0003	1
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 19 13	1 19 15.8	1 13 15.8	1

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, AGAWA ROCK

HERRING GULL		YEAR			
		89	90	91	92
12378-	N	1	1	1	1
PENTACHLORODIBENZO-	MEAN	14	16	12	19.6i
p-DIOXIN	STD				
123478-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(1)	ND	ND	ND
p-DIOXIN	STD				
123678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	11	17	12	16.4
p-DIOXIN	STD				
123789-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(1)	(2)	(1)	ND
p-DIOXIN	STD				
1234678-	N	1	1	1	1
HEPTACHLORODIBENZO-	MEAN	(4)	(3)	(5)	ND
p-DIOXIN	STD				
OCTACHLORODIBENZO-	N	1	1	1	1
p-DIOXIN	MEAN	(5)	(7)	(7)	ND
STD					
2378-	N	1	1	1	1
TETRACHLORODIBENZO-	MEAN	2	(1)	(1)	0.9
FURAN	STD				
12378/12348-	N	0	0	1	1
PENTACHLORODIBENZO-	MEAN			ND	ND
FURAN	STD				
12489/23467-	N	0	0	1	0
PENTACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
23478-	N	1	1	1	1
PENTACHLORODIBENZO-	MEAN	13	10	10	19.3
FURAN	STD				
123469/123689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
123478-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	3	(2)	(3)	0.7
FURAN	STD				
123678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	4	(3)	(3)	1.5
FURAN	STD				
123789-	N	0	0	0	1
HEXACHLORODIBENZO-	MEAN				0.7
FURAN	STD				
124689-	N	0	0	1	0
HEXACHLORODIBENZO-	MEAN			ND	
FURAN	STD				

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 221

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, AGAWA ROCK

HERRING GULL	YEAR				
	89	90	91	92	
234678-	N	1	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	(1)	(2)	ND
FURAN	STD				
1234678-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				ND
FURAN	STD				
1234789-	N	0	0	0	1
HEPTACHLORODIBENZO-	MEAN				(0.1)
FURAN	STD				
OCTACHLORODIBENZO-	N	0	0	0	1
FURAN	MEAN				ND
	STD				

LAKE SUPERIOR, MARATHON

HERRING GULL	YEAR	
	92	
PERCENT FAT OF EGG	N	1
	MEAN	9.0
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	75.9
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	ND
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.1208
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	0.0153
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	0.0047
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, MARATHON

HERRING GULL	YEAR	
	92	
HEXACHLOROBENZENE	N MEAN STD	1 0.0279 ND
DDD	N MEAN STD	1 ND ND
DDE	N MEAN STD	1 1.9979 ND
DDT	N MEAN STD	1 0.0060 ND
DIELDRIN	N MEAN STD	1 0.0976 ND
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0805 ND
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
MIREX	N MEAN STD	1 0.0434 ND
PHOTOMIREX	N MEAN STD	1 0.0215 ND
CIS-NONACHLOR	N MEAN STD	1 0.0424 ND
TRANS-NONACHLOR	N MEAN STD	1 0.0474 ND
OCTACHLOROSTYRENE	N MEAN STD	1 0.0075 ND
PCB:1260	N MEAN STD	1 4.1359 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 223

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, MARATHON

HERRING GULL	YEAR	
	92	
PCB:1254-1260	N	1
	MEAN	9.5144
	STD	
TOTAL PCB CONGENERS	N	1
	MEAN	4.5786
	STD	
PCB37 3,4,4'-TRICHLOROBIPHENYL	N	1
	MEAN	<0.0001
	STD	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N	1
	MEAN	0.0002
	STD	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N	1
	MEAN	0.0022
	STD	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N	1
	MEAN	0.0003
	STD	
2378-TETRACHLORODIBENZO-p-DIOXIN	N	11.2
	MEAN	
	STD	
12378-PENTACHLORODIBENZO-p-DIOXIN	N	10.2
	MEAN	
	STD	
123478-HEXACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	(0.2)
	STD	
123678-HEXACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	11.1
	STD	
123789-HEXACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	(0.4)
	STD	
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	7.0
	STD	
OCTACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	4.8
	STD	
2378-TETRACHLORODIBENZO-FURAN	N	1
	MEAN	ND
	STD	
12378/12348-PENTACHLORODIBENZO-FURAN	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant 224 detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, MARATHON

HERRING GULL	YEAR	
		92
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	8.8
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	1.6
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	2.4
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	ND
FURAN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	3.9
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	1
FURAN	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 225

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, LEADMAN ISLANDS

HERRING GULL	YEAR	
		92
PERCENT FAT OF EGG	N	1
	MEAN	10.8
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	73.7
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0146
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.1447
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	0.0139
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0367
	STD	
DDD	N	1
	MEAN	ND
	STD	
DDE	N	1
	MEAN	2.3253
	STD	
DDT	N	1
	MEAN	0.0077
	STD	
DIELDRIN	N	1
	MEAN	0.2583
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.1032
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, LEADMAN ISLANDS

HERRING GULL	YEAR	
	92	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.0777
PHOTOMIREX	N MEAN STD	1 0.0239
CIS-NONACHLOR	N MEAN STD	1 0.0625
TRANS-NONACHLOR	N MEAN STD	1 0.0943
OCTACHLOROSTYRENE	N MEAN STD	1 0.0110
PCB:1260	N MEAN STD	1 4.0099
PCB:1254-1260	N MEAN STD	1 9.5199
TOTAL PCB CONGENERS	N MEAN STD	1 4.5785
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 ND
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 <0.0001
PCB126 3,3',4,4',5- PENTACHLOROBIPHENYL	N MEAN STD	1 <0.0001
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 ND
2378- TETRACHLORODIBENZO- P-DIOXIN	N MEAN STD	1 13.4

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 227

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, LEADMAN ISLANDS

HERRING GULL	YEAR	
	92	
12378-	N	1
PENTACHLORODIBENZO-	MEAN	5.3i
p-DIOXIN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	(0.1)
p-DIOXIN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	8.2
p-DIOXIN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	(0.1)
p-DIOXIN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	(0.1)
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	1
p-DIOXIN	MEAN	2.9
	STD	
2378-	N	1
TETRACHLORODIBENZO-	MEAN	1.6
FURAN	STD	
12378/12348-	N	1
PENTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	ND
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	ND
FURAN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	ND
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, LEADMAN ISLANDS

HERRING GULL		YEAR
		92
234678-	N	1
HEXACHLORODIBENZO-	MEAN	ND
FURAN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	18.1
FURAN	STD	
1234789-	N	1
HEPTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
OCTACHLORODIBENZO-	N	1
FURAN	MEAN	ND
	STD	

LAKE SUPERIOR, WEST OF ALMOS SHOAL

HERRING GULL		YEAR
		91
PERCENT FAT OF EGG	N	1
	MEAN	8.7
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	75.6
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	ND
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.1282
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 229

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, WEST OF ALMOS SHOAL

HERRING GULL		YEAR
		91
HEXACHLOROBENZENE	N MEAN STD	1 0.0230
DDD	N MEAN STD	1 ND
DDE	N MEAN STD	1 2.2631
DDT	N MEAN STD	1 0.0111
DIELDRIN	N MEAN STD	1 0.1273
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0862
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.0495
PHOTOMIREX	N MEAN STD	1 0.0229
CIS-NONACHLOR	N MEAN STD	1 0.0357
TRANS-NONACHLOR	N MEAN STD	1 0.0435
OCTACHLOROSTYRENE	N MEAN STD	1 ND
PCB:1260	N MEAN STD	1 3.8186

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, WEST OF ALMOS SHOAL

HERRING GULL	YEAR	
	91	
PCB:1254-1260	N MEAN STD	1 9.2863
TOTAL PCB CONGENERS	N MEAN STD	1 4.3630
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 11
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 7
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 ND
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 8
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (1)
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (7)
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (9)
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	1 (1)
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, WEST OF ALMOS SHOAL

HERRING GULL	YEAR	
		91
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	3
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	(3)
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	(3)
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	(2)
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, LITTLE TRAVERSE ISLAND

HERRING GULL	YEAR	
	92	
PERCENT FAT OF EGG	N	1
	MEAN	8.6
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	74.3
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0099
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.2154
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0484
	STD	
DDD	N	1
	MEAN	ND
	STD	
DDE	N	1
	MEAN	4.4145
	STD	
DDT	N	1
	MEAN	0.0115
	STD	
DIELDRIN	N	1
	MEAN	0.2676
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.1226
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 233

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, LITTLE TRAVERSE ISLAND

HERRING GULL	YEAR	
	92	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.1823
PHOTOMIREX	N MEAN STD	1 0.0691
CIS-NONACHLOR	N MEAN STD	1 0.0765
TRANS-NONACHLOR	N MEAN STD	1 0.1171
OCTACHLOROSTYRENE	N MEAN STD	1 0.0136
PCB:1260	N MEAN STD	1 6.4974
PCB:1254-1260	N MEAN STD	1 15.8233
TOTAL PCB CONGENERS	N MEAN STD	1 8.2208
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 ND
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0004
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0038
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0004
2378-TETRACHLORODIBENZO-P-DIOXIN	N MEAN STD	1 26.2

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, LITTLE TRAVERSE ISLAND

HERRING GULL	YEAR	
		92
12378-	N	1
PENTACHLORODIBENZO-	MEAN	16.2
p-DIOXIN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	(0.2)
p-DIOXIN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	13.6
p-DIOXIN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	(0.7)
p-DIOXIN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	4.5i
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	1
p-DIOXIN	MEAN	9.9
	STD	
2378-	N	1
TETRACHLORODIBENZO-	MEAN	ND
FURAN	STD	
12378/12348-	N	1
PENTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	11.9
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	3.1
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	1.7
FURAN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	2.3
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, LITTLE TRAVERSE ISLAND

HERRING GULL	YEAR	
	92	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	ND
FURAN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	1.0
FURAN	STD	
1234789-	N	1
HEPTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE SUPERIOR, LAKE LINDEN/TORCH ISLAND

HERRING GULL	YEAR	
	92	
PERCENT FAT OF EGG	N	1
	MEAN	9.5
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	74.4
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0177
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.2847
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, LAKE LINDEN/TORCH ISLAND

HERRING GULL	YEAR	
	92	
HEXACHLOROBENZENE	N MEAN STD	1 0.0723
DDD	N MEAN STD	1 ND
DDE	N MEAN STD	1 5.8951
DDT	N MEAN STD	1 0.0090
DIELDRIN	N MEAN STD	1 0.5857
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.1987
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND
MIREX	N MEAN STD	1 0.0836
PHOTOMIREX	N MEAN STD	1 0.0436
CIS-NONACHLOR	N MEAN STD	1 0.0811
TRANS-NONACHLOR	N MEAN STD	1 0.2013
OCTACHLOROSTYRENE	N MEAN STD	1 0.0157
PCB:1260	N MEAN STD	1 11.3689

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 237

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, LAKE LINDEN/TORCH ISLAND

HERRING GULL	YEAR	
	92	
PCB:1254-1260	N	1
	MEAN	22.6682
	STD	
TOTAL PCB CONGENERS	N	1
	MEAN	11.5667
	STD	
PCB37 3,4,4'-TRICHLOROBIPHENYL	N	1
	MEAN	ND
	STD	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N	1
	MEAN	0.0009
	STD	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N	1
	MEAN	0.0040
	STD	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N	1
	MEAN	0.0006
	STD	
2378-TETRACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	15.4
	STD	
12378-PENTACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	30.4i
	STD	
123478-HEXACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	ND
	STD	
123678-HEXACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	11.8
	STD	
123789-HEXACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	ND
	STD	
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	ND
	STD	
OCTACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	ND
	STD	
2378-TETRACHLORODIBENZO-FURAN	N	1
	MEAN	ND
	STD	
12378/12348-PENTACHLORODIBENZO-FURAN	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, LAKE LINDEN/TORCH ISLAND

HERRING GULL	YEAR	
	92	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	ND
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	ND
FURAN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	ND
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	ND
FURAN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	46.0
FURAN	STD	
1234789-	N	1
HEPTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
OCTACHLORODIBENZO-	N	1
FURAN	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 239

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, GRANITE ISLAND

HERRING GULL	YEAR			
	89	90	91	92
PERCENT FAT OF EGG				
N	1	14	1	1
MEAN	7.6	8.7	8.2	9.0
STD	1.2606			
PERCENT WATER OF EGG				
N	1	14	1	1
MEAN	75.8	76.5	76.6	74.8
STD	0.9486			
CIS/ALPHA-CHLORDANE				
N	1	14	1	1
MEAN	0.0135	0.0095	0.0096	0.0203
STD	0.0000			
TRANS/GAMMA-CHLORDANE				
N	1	14	1	1
MEAN	ND	0.0015	ND	ND
STD	0.0000			
OXYCHLORDANE				
N	1	14	1	1
MEAN	0.1174	0.1551	0.2171	0.2139
STD	0.0737			
1234-CHLOROBENZENE				
N	1	14	1	1
MEAN	ND	ND	ND	ND
STD				
1235/1245-CHLOROBENZENE				
N	1	14	1	1
MEAN	ND	0.0026	ND	ND
STD	0.0000			
PENTACHLOROBENZENE				
N	1	14	1	1
MEAN	ND	0.0024	ND	ND
STD	0.0000			
HEXACHLOROBENZENE				
N	1	14	1	1
MEAN	0.0559	0.0345	0.0410	0.0477
STD	0.0149			
DDD				
N	1	14	1	1
MEAN	0.0074	0.0074	ND	ND
STD	0.0000			
DDE				
N	1	14	1	1
MEAN	2.4040	2.7551	4.2523	3.7600
STD	1.2340			
DDT				
N	1	14	1	1
MEAN	0.0633	0.0717	0.0576	0.0213
STD	0.0359			
DIELDRIN				
N	1	14	1	1
MEAN	0.3385	0.3650	0.3094	0.4623
STD	0.3250			
HEPTACHLOR EPOXIDE				
N	1	14	1	1
MEAN	0.1277	0.1562	0.1576	0.1358
STD	0.0604			
ALPHA-HEXACHLOROCYCLOHEXANE				
N	1	14	1	1
MEAN	ND	ND	ND	ND
STD				

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, GRANITE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0027 0.0000	14 0.0028 ND	1 ND ND	1 ND
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND 0.0000	14 ND ND	1 ND ND	1 ND
MIREX	N MEAN STD	1 0.0454 0.0806	14 0.0635 0.0698	1 0.0654	1
PHOTOMIREX	N MEAN STD	1 0.0247 0.0420	14 0.0344 0.0340	1 0.0366	1
CIS-NONACHLOR	N MEAN STD	1 0.0584 0.0330	14 0.0668 0.0788	1 0.0919	1
TRANS-NONACHLOR	N MEAN STD	1 0.1003 0.0363	14 0.0797 0.1109	1 0.1408	1
OCTACHLOROSTYRENE	N MEAN STD	1 0.0137 0.0000	14 0.0075 0.0088	1 0.0132	1
PCB:1260	N MEAN STD	1 6.3420 1.8837	14 4.6396 6.7588	1 6.0421	1
PCB:1254-1260	N MEAN STD	1 15.1500 4.2708	14 11.7349 15.4968	1 14.7210	1
TOTAL PCB CONGENERS	N MEAN STD	1 6.9901 1.8866	14 5.4149 7.6433	1 7.5538	1
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 <0.0001 1	1
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0.0017 1	1
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0.0035 1	1
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0 0	0 0.0004 1	1
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 16 16	1 16 14	1 15.6	1

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in µg/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 241

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, GRANITE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
12378-	N	1	1	1	1
PENTACHLORODIBENZO-	MEAN	16	15	12	17.6
p-DIOXIN	STD				
123478-	N	1	1	1	1
HEXAChLORODIBENZO-	MEAN	(1)	(1)	(1)	(0.6)
p-DIOXIN	STD				
123678-	N	1	1	1	1
HEXAChLORODIBENZO-	MEAN	17	16	15	16.5
p-DIOXIN	STD				
123789-	N	1	1	1	1
HEXAChLORODIBENZO-	MEAN	(2)	(2)	(1)	1.4
p-DIOXIN	STD				
1234678-	N	1	1	1	1
HEPTACHLORODIBENZO-	MEAN	(3)	(3)	(5)	(0.4)
p-DIOXIN	STD				
OCTACHLORODIBENZO-	N	1	1	1	1
p-DIOXIN	MEAN	(4)	(6)	(6)	(0.1)
	STD				
2378-	N	1	1	1	1
TETRACHLORODIBENZO-	MEAN	2	2	(1)	3.6
FURAN	STD				
12378/12348-	N	0	0	1	1
PENTACHLORODIBENZO-	MEAN			ND	(0.2)
FURAN	STD				
12489/23467-	N	0	0	1	0
PENTACHLORODIBENZO-	MEAN			ND	
FURAN	STD				
23478-	N	1	1	1	1
PENTACHLORODIBENZO-	MEAN	14	10	9	20.5
FURAN	STD				
123469/123689-	N	0	0	1	0
HEXAChLORODIBENZO-	MEAN			ND	
FURAN	STD				
123478-	N	1	1	1	1
HEXAChLORODIBENZO-	MEAN	3	(2)	(1)	2.2
FURAN	STD				
123678-	N	1	1	1	1
HEXAChLORODIBENZO-	MEAN	4	(3)	(3)	3.4
FURAN	STD				
123789-	N	0	0	0	1
HEXAChLORODIBENZO-	MEAN				3.1
FURAN	STD				
124689-	N	0	0	1	0
HEXAChLORODIBENZO-	MEAN			ND	
FURAN	STD				

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, GRANITE ISLAND

HERRING GULL	YEAR			
	89	90	91	92
234678-	N	1	1	1
HEXACHLORODIBENZO-	MEAN	(2)	(1)	(1)
FURAN	STD			
1234678-	N	0	0	0
HEPTACHLORODIBENZO-	MEAN			
FURAN	STD			
1234789-	N	0	0	0
HEPTACHLORODIBENZO-	MEAN			
FURAN	STD			
OCTACHLORODIBENZO-	N	0	0	0
FURAN	MEAN			
	STD			(0.1)

LAKE SUPERIOR, GRAVEL ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
	89	
PERCENT FAT OF EGG	N	1
	MEAN	4.35
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	83.88
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0023
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.1209
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	0.0019
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 243

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, GRAVEL ISLAND

DOUBLE-CRESTED CORMORANT		YEAR
		89
HEXACHLOROBENZENE	N MEAN STD	1 0.0177
DDD	N MEAN STD	1 0.0038
DDE	N MEAN STD	1 4.0650
DDT	N MEAN STD	1 0.0328
DIELDRIN	N MEAN STD	1 0.1348
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0449
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0054
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0039
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0018
MIREX	N MEAN STD	1 0.0458
PHOTOMIREX	N MEAN STD	1 0.0283
CIS-NONACHLOR	N MEAN STD	1 0.0537
TRANS-NONACHLOR	N MEAN STD	1 0.0206
OCTACHLOROSTYRENE	N MEAN STD	1 0.0083
PCB:1260	N MEAN STD	1 6.2640

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, GRAVEL ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
	89	
PCB:1254-1260	N MEAN STD	1 12.5800
TOTAL PCB CONGENERS	N MEAN STD	1 5.8490
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 9
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 14
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (1)
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 18
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 5
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 8
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 10
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	1 (1)
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	0

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 245

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, GRAVEL ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
		89
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	11
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	5
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	(3)
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	(2)
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, PAPOOSE ISLAND

HERRING GULL	YEAR	
	92	
PERCENT FAT OF EGG	N	1
	MEAN	8.1
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	76.0
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0047
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.1917
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0344
	STD	
DDD	N	1
	MEAN	0.0061
	STD	
DDE	N	1
	MEAN	3.3799
	STD	
DDT	N	1
	MEAN	0.0124
	STD	
DIELDRIN	N	1
	MEAN	0.2980
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0814
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 247

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, PAPOOSE ISLAND

HERRING GULL	YEAR	
	92	
BETA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
GAMMA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	ND
	STD	
MIREX	N	1
	MEAN	0.0320
	STD	
PHOTOMIREX	N	1
	MEAN	0.0187
	STD	
CIS-NONACHLOR	N	1
	MEAN	0.0671
	STD	
TRANS-NONACHLOR	N	1
	MEAN	0.0746
	STD	
OCTACHLOROSTYRENE	N	1
	MEAN	ND
	STD	
PCB:1260	N	1
	MEAN	5.5232
	STD	
PCB:1254-1260	N	1
	MEAN	12.4619
	STD	
TOTAL PCB CONGENERS	N	1
	MEAN	6.3381
	STD	
PCB37 3,4,4'-TRICHLOROBIPHENYL	N	1
	MEAN	<0.0001
	STD	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N	1
	MEAN	0.0003
	STD	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N	1
	MEAN	0.0029
	STD	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N	1
	MEAN	0.0003
	STD	
2378-TETRACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	6.8
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, PAPOOSE ISLAND

HERRING GULL	YEAR	
		92
12378-	N	1
PENTACHLORODIBENZO-	MEAN	12.1
P-DIOXIN	STD	
123478-	N	1
HEXAChLORODIBENZO-	MEAN	0.5
P-DIOXIN	STD	
123678-	N	1
HEXAChLORODIBENZO-	MEAN	13.8
P-DIOXIN	STD	
123789-	N	1
HEXAChLORODIBENZO-	MEAN	1.3
P-DIOXIN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	5.5
P-DIOXIN	STD	
OCTACHLORODIBENZO-	N	1
P-DIOXIN	MEAN	12.7
	STD	
2378-	N	1
TETRACHLORODIBENZO-	MEAN	2.1
FURAN	STD	
12378/12348-	N	1
PENTACHLORODIBENZO-	MEAN	ND
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	9.6
FURAN	STD	
123469/123689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXAChLORODIBENZO-	MEAN	1.2
FURAN	STD	
123678-	N	1
HEXAChLORODIBENZO-	MEAN	2.3
FURAN	STD	
123789-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXAChLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 249

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, PAPOOSE ISLAND

HERRING GULL	YEAR	
	92	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	1.3
FURAN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	(0.1)
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	1
FURAN	MEAN	(0.1)
	STD	

LAKE SUPERIOR, MUTTON ISLAND

HERRING GULL	YEAR	
	92	
PERCENT FAT OF EGG	N	1
	MEAN	8.6
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	74.8
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0063
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.1886
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, MUTTON ISLAND

HERRING GULL		YEAR
		92
HEXACHLOROBENZENE	N MEAN STD	1 0.0395 ND
DDD	N MEAN STD	1 ND ND
DDE	N MEAN STD	1 3.8147 ND
DDT	N MEAN STD	1 0.0503 ND
DIELDRIN	N MEAN STD	1 0.1574 ND
HEPTACHLOR EPOXIDE	N MEAN STD	1 0.0749 ND
ALPHA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
BETA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
GAMMA- HEXACHLOROCYCLOHEXANE	N MEAN STD	1 ND ND
MIREX	N MEAN STD	1 0.0394 ND
PHOTOMIREX	N MEAN STD	1 0.0199 ND
CIS-NONACHLOR	N MEAN STD	1 0.0569 ND
TRANS-NONACHLOR	N MEAN STD	1 0.0718 ND
OCTACHLOROSTYRENE	N MEAN STD	1 ND ND
PCB:1260	N MEAN STD	1 5.5688 ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 251

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, MUTTON ISLAND

HERRING GULL	YEAR	
	92	
PCB:1254-1260	N	1
	MEAN	14.3796
	STD	
TOTAL PCB CONGENERS	N	1
	MEAN	7.3336
	STD	
PCB37 3,4,4'-TRICHLOROBIPHENYL	N	1
	MEAN	<0.0001
	STD	
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N	1
	MEAN	0.0002
	STD	
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N	1
	MEAN	0.0031
	STD	
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N	1
	MEAN	0.0003
	STD	
2378-TETRACHLORODIBENZO-p-DIOXIN	N	8.2
	MEAN	
	STD	
12378-PENTACHLORODIBENZO-p-DIOXIN	N	12.4
	MEAN	
	STD	
123478-HEXACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	(0.4)
	STD	
123678-HEXACHLORODIBENZO-p-DIOXIN	N	14.6
	MEAN	
	STD	
123789-HEXACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	(0.6)
	STD	
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N	6.4
	MEAN	
	STD	
OCTACHLORODIBENZO-p-DIOXIN	N	1
	MEAN	18.3
	STD	
2378-TETRACHLORODIBENZO-FURAN	N	1
	MEAN	2.5
	STD	
12378/12348-PENTACHLORODIBENZO-FURAN	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

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## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, MUTTON ISLAND

HERRING GULL	YEAR	
		92
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	7.0
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	0.7
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	1.7
FURAN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	0.7
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	7.8
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	1
FURAN	MEAN	(0.1)
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 253

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, CONE ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
		89
PERCENT FAT OF EGG	N	1
	MEAN	4.69
	STD	
PERCENT WATER OF EGG	N	1
	MEAN	82.82
	STD	
CIS/ALPHA-CHLORDANE	N	1
	MEAN	0.0067
	STD	
TRANS/GAMMA-CHLORDANE	N	1
	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.0781
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	
HEXACHLOROBENZENE	N	1
	MEAN	0.0128
	STD	
DDD	N	1
	MEAN	0.0116
	STD	
DDE	N	1
	MEAN	3.5310
	STD	
DDT	N	1
	MEAN	0.0301
	STD	
DIELDRIN	N	1
	MEAN	0.1431
	STD	
HEPTACHLOR EPOXIDE	N	1
	MEAN	0.0432
	STD	
ALPHA-HEXACHLOROCYCLOHEXANE	N	1
	MEAN	0.0043
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, CONE ISLAND

DOUBLE-CRESTED CORMORANT		YEAR
		89
BETA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0052
GAMMA-HEXACHLOROCYCLOHEXANE	N MEAN STD	1 0.0016
MIREX	N MEAN STD	1 0.0264
PHOTOMIREX	N MEAN STD	1 0.0148
CIS-NONACHLOR	N MEAN STD	1 0.0513
TRANS-NONACHLOR	N MEAN STD	1 0.0216
OCTACHLOROSTYRENE	N MEAN STD	1 0.0042
PCB:1260	N MEAN STD	1 3.9290
PCB:1254-1260	N MEAN STD	1 8.9530
TOTAL PCB CONGENERS	N MEAN STD	1 4.0430
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	0
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	0
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	0
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	0
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 12

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, CONE ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
		89
12378-	N	1
PENTACHLORODIBENZO-	MEAN	21
p-DIOXIN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	(3)
p-DIOXIN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	25
p-DIOXIN	STD	
123789-	N	1
HEXACHLORODIBENZO-	MEAN	8
p-DIOXIN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	21
p-DIOXIN	STD	
OCTACHLORODIBENZO-	N	1
p-DIOXIN	MEAN	22
	STD	
2378-	N	1
TETRACHLORODIBENZO-	MEAN	(2)
FURAN	STD	
12378/12348-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	8
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	4
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	(3)
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ . N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, CONE ISLAND

DOUBLE-CRESTED CORMORANT	YEAR	
	89	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	(2)
FURAN	STD	
1234678-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	0
FURAN	MEAN	
	STD	

LAKE SUPERIOR, KNIFE ISLAND

HERRING GULL	YEAR	
	92	
PERCENT FAT OF EGG	N	1
	MEAN	9.7
	STD	
PERCENT WATER OF	N	1
EGG	MEAN	75.3
	STD	
CIS/ALPHA-	N	1
CHLORDANE	MEAN	0.0046
	STD	
TRANS/GAMMA-	N	1
CHLORDANE	MEAN	ND
	STD	
OXYCHLORDANE	N	1
	MEAN	0.1475
	STD	
1234-CHLOROBENZENE	N	1
	MEAN	ND
	STD	
1235/1245-	N	1
CHLOROBENZENE	MEAN	ND
	STD	
PENTACHLOROBENZENE	N	1
	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; ( ), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 257

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, KNIFE ISLAND

HERRING GULL		YEAR	
		92	
HEXACHLOROBENZENE	N	1	
	MEAN	0.0382	
	STD		
DDD	N	1	
	MEAN	0.0147	
	STD		
DDE	N	1	
	MEAN	3.5766	
	STD		
DDT	N	1	
	MEAN	0.0055	
	STD		
DIELDRIN	N	1	
	MEAN	0.1578	
	STD		
HEPTACHLOR EPOXIDE	N	1	
	MEAN	0.0604	
	STD		
ALPHA- HEXACHLOROCYCLOHEXANE	N	1	
	MEAN	ND	
	STD		
BETA- HEXACHLOROCYCLOHEXANE	N	1	
	MEAN	ND	
	STD		
GAMMA- HEXACHLOROCYCLOHEXANE	N	1	
	MEAN	ND	
	STD		
MIREX	N	1	
	MEAN	0.0888	
	STD		
PHOTOMIREX	N	1	
	MEAN	0.0363	
	STD		
CIS-NONACHLOR	N	1	
	MEAN	0.0529	
	STD		
TRANS-NONACHLOR	N	1	
	MEAN	0.0939	
	STD		
OCTACHLOROSTYRENE	N	1	
	MEAN	0.0082	
	STD		
PCB:1260	N	1	
	MEAN	6.6840	
	STD		

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, KNIFE ISLAND

HERRING GULL	YEAR	
	92	
PCB:1254-1260	N MEAN STD	1 13.9049 ND
TOTAL PCB CONGENERS	N MEAN STD	1 6.7565 ND
PCB37 3,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 ND ND
PCB77 3,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0001 ND
PCB126 3,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0029 ND
PCB169 3,3',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0003 ND
2378-TETRACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 11.0 ND
12378-PENTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 ND ND
123478-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (0.4) ND
123678-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 12.5 ND
123789-HEXACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 (0.6) ND
1234678-HEPTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 5.3 ND
OCTACHLORODIBENZO-p-DIOXIN	N MEAN STD	1 9.8 ND
2378-TETRACHLORODIBENZO-FURAN	N MEAN STD	1 ND ND
12378/12348-PENTACHLORODIBENZO-FURAN	N MEAN STD	1 ND ND

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology. 259

## SECTION 2

TABLE 11. CONTAMINANT DATA, SUMMARIZED BY LOCATION\*

LAKE SUPERIOR, KNIFE ISLAND

HERRING GULL		YEAR
		92
12489/23467-	N	0
PENTACHLORODIBENZO-	MEAN	
FURAN	STD	
23478-	N	1
PENTACHLORODIBENZO-	MEAN	6.8
FURAN	STD	
123469/123689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
123478-	N	1
HEXACHLORODIBENZO-	MEAN	0.9
FURAN	STD	
123678-	N	1
HEXACHLORODIBENZO-	MEAN	1.8
FURAN	STD	
123789-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
124689-	N	0
HEXACHLORODIBENZO-	MEAN	
FURAN	STD	
234678-	N	1
HEXACHLORODIBENZO-	MEAN	ND
FURAN	STD	
1234678-	N	1
HEPTACHLORODIBENZO-	MEAN	3.6
FURAN	STD	
1234789-	N	0
HEPTACHLORODIBENZO-	MEAN	
FURAN	STD	
OCTACHLORODIBENZO-	N	1
FURAN	MEAN	ND
	STD	

\* All units measured on wet weight basis. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g. N=1 indicates pooled data; ND, not detected; (), trace amount - below detection limit for sample; i, contaminant detected with incorrect ion ratio. See page 7 for methodology.

### SECTION 3 - NON-COPLANAR PCB CONGENERS

Introduction to Non-coplanar PCB Congeners in Herring Gull Eggs  
from Annual Monitoring Colonies

Figures 11-24. Percent Contribution of Individual PCB Congeners  
to Total PCBs in Pooled Samples from Annual Monitoring Colonies

Index to Non-coplanar PCB Congeners in Herring Gull Eggs from  
Annual Monitoring Colonies

Table 12. Non-coplanar PCB Congeners in Herring Gull Eggs from  
Annual Monitoring Colonies, Summarized by Location

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### INTRODUCTION TO NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES

Non-coplanar PCB congeners tested in 1989-90 were: 28, 31, 42, 44, 49, 52, 60, 64, 66, 70, 87, 97, 99, 101, 105, 110, 118, 128, 129, 137, 138, 141, 146, 151, 153, 158, 170, 171, 172, 174, 180, 182, 183, 185, 194, 195, 200, 201, 203, 206.

Congeners 74 and 149 were added to the analysis in 1991-2.

The percent contributions of individual PCB congeners to the sum were calculated for each pooled sample. The mean and standard deviation across the four years ( $N=4$ ) were calculated for each congener at each of 14 annual monitoring colonies. The results are presented graphically in the following pages (Figures 11-24). A brief interpretation precedes the figures.

The levels of individual PCB congeners in Herring Gull eggs, summarized by location samples are reported in Table 13.

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#### PCB CONGENER PATTERNS

Figures 11-24 present the mean congener pattern in Herring Gull eggs normalized to the sum of congeners for 14 colonies sampled between 1989 and 1992. The ratio of PCB congener concentrations in female whole body lipid and eggs on a lipid weight basis is relatively constant at  $0.47 \pm 0.19$  and independent of degree of chlorination or susceptibility to metabolism (Braune and Norstrom, 1989). Eggs are, therefore, a good reflection of the PCB pattern in females. However, these patterns bear little resemblance to those in their forage fish diet, or in other compartments of the Great Lakes ecosystem.

The pattern of PCB congeners found in birds, including Herring Gulls, is strongly influenced by ease of metabolism during bioaccumulation from the diet.

PCBs with no chlorines substituted at one of the adjacent meta-para (3,4 or 4,5) positions on one ring are readily metabolized by birds and have the lowest biomagnification factors (Norstrom, 1988; Braune and Norstrom, 1989). Examples in this class are CB-52, CB-101, CB-149 and CB-174, which have whole-body biomagnification factors of 17-30 from forage fish to female Herring Gulls (Braune and Norstrom, 1989).

PCBs with no chlorines in adjacent ortho-meta (2,3 or 5,6) positions on one ring, such as CB-74, CB-118 and CB-177, are less readily metabolized, and have biomagnification factors of 60-100.

Congeners with no adjacent positions unsubstituted by chlorine usually have six or more chlorines. Congeners in this class, such as CB-153, CB-138 and CB-180, have biomagnification factors of 100-200. They are probably not metabolized to any extent; however, they are likely excreted slowly into the gut as unchanged compounds by analogy to mirex, which has a similar biomagnification factor and is not known to be metabolized in vertebrates (Clark et al., 1987). For females, excretion into the eggs may be a quantitatively important mechanism for some of the more highly chlorinated PCB congeners which are not metabolized.

PCB sources and vectors vary in the Great Lakes. Atmospheric input was probably always dominant in Lake Superior and possibly Lake Huron (Eisenreich et al., 1981), but substantial direct input of Aroclors from industrial and municipal discharges undoubtedly contributed historically in the other lakes (Mackay, 1989; Swackhamer and Armstrong, 1986).

Atmospheric exchange and sedimentation are important components of the flux into and out of the Great Lakes, e.g. Lake

### SECTION 3

Ontario (Mackay, 1989). The integrity of Aroclor patterns is, therefore, not expected to be preserved over time because differences in physio-chemical properties will result in differential "weathering". Nevertheless, current point source contamination by Aroclor may result in differing congener patterns accumulating in the food web in different lakes. Historical contamination differences may exert influence via exchange between sediment and water or input from upstream.

In spite of metabolic alterations, PCB patterns in gull eggs can be used to deduce differences in Aroclor contamination among the Great Lakes by considering only those congeners which are characteristic of specific congeners. CB-118 is a good surrogate for Aroclor 1254 since it constitutes in the order of 7% of the sum of congeners in this Aroclor but less than 1% in the other common commercial mixtures: Aroclor 1242 and Aroclor 1260 (Manchester-Neesvig and Andren, 1989; Schultz et al., 1989). Similarly, CB-180 is a good surrogate for Aroclor 1260, and CB-28, for Aroclor 1242. Because CB-28 does not bioaccumulate significantly in Herring Gulls, CB-66 is the best indicator of Aroclor 1242.

Considering these surrogate congeners, the most dramatic differences among colonies are in the proportion of Aroclor 1260-related congeners. In the upper Great Lakes, CB-180 is approximately 10% of the total in both Lake Superior colonies, at Gull Island in Lake Michigan, and at the three Lake Huron colonies. The proportion is significantly reduced to about 6% in Big Sister Island, Lake Michigan. CB-180 makes a significant jump to 18% of the total in the Fighting Island, Detroit River colony, and decreases gradually downstream to about the same percentage as the upper lakes in the Strachan Island, St. Lawrence River colony. This suggests that there is (or was) a specific source of Aroclor 1260 in the Detroit River and is consistent with findings in sediment from this area (Oliver and Bourbonniere, 1985). Further evidence for this can be seen in the triplet, CB-182/183/128. CB-128 is more significant in Aroclor 1254 than Aroclor 1260; the other two come mainly from Aroclor 1260. It is clear from Figures 11-24 that CB-128 decreases significantly relative to the other two congeners downstream from Fighting Island. Furthermore, the ratio of CB-149 to CB-118 is significantly higher in Fighting Island and the two Lake Erie colonies. CB-149 is important in both Aroclor 1254 and Aroclor 1260, but CB-118 is contributed almost entirely by Aroclor 1254. These anomalies would not have occurred if only environmental chemistry factors were at work because all three congeners have similar physical-chemical properties. Therefore, differences in Aroclor 1260 contribution to PCB contamination among the lakes are evident in the Herring Gull data.

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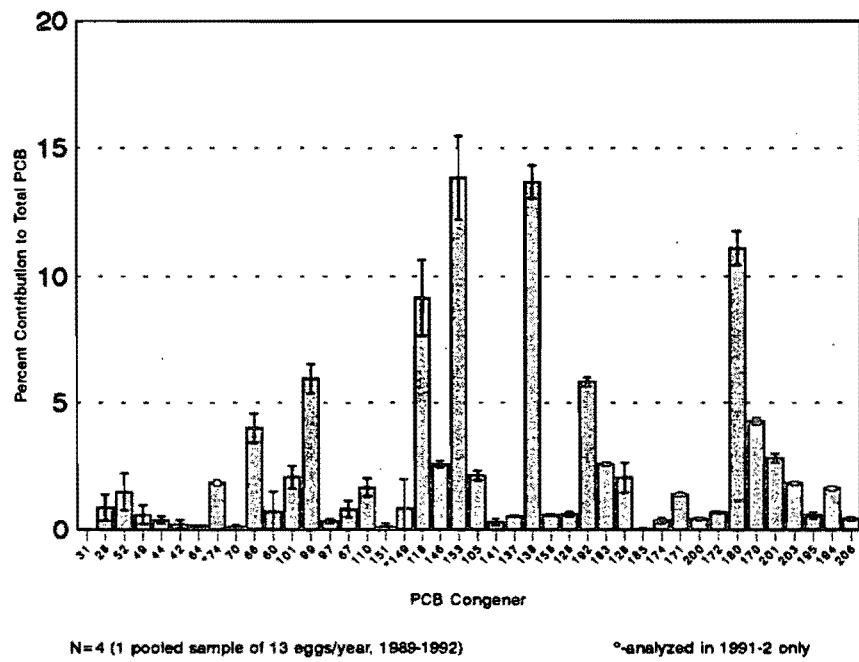
There appears to be a less dramatic shift in the composition of other Aroclor surrogate congeners among colonies although the ratio of CB-66 to CB-118 is generally higher in the upper lakes than in the lower lakes. This motif is probably a result of the higher relative importance of the less chlorinated congeners in the upper than in the lower lakes due to the influence of atmospheric input. Manchester-Neesvig and Andren (1989) found that the pattern of PCB congeners in the atmosphere was similar to that of Aroclor 1242, that is, mainly dichloro to pentachloro congeners.

The Strachan Island colony bears a greater resemblance to the upper lakes than to Lake Ontario. This may be due to the influence of local sources of less chlorinated PCBs in the St. Lawrence River, or to overwintering of birds from this colony in areas outside of the Great Lakes.

SECTION 3

St. Lawrence River

Figure 11. Percent Contribution of Individual PCB Congeners to Total PCB Concentration in Herring Gull Eggs from Strachan Island, St. Lawrence River (1989-1992)



N=4 (1 pooled sample of 13 eggs/year, 1989-1992)

\*analyzed in 1991-2 only

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#### Lake Ontario

Figure 12. Percent Contribution of Individual PCB Congeners to Total PCB Concentration in Herring Gull Eggs from Snake Island, Lake Ontario (1989-1992)

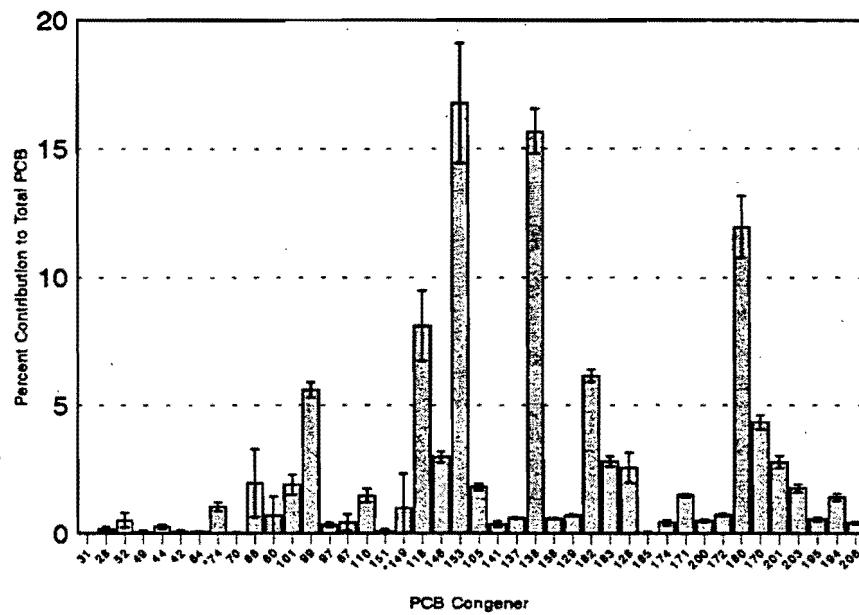
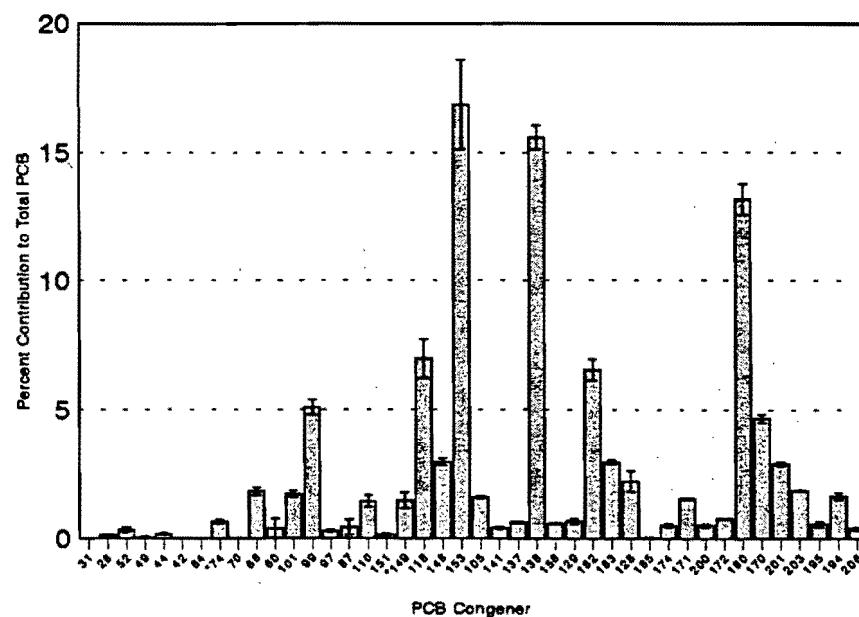
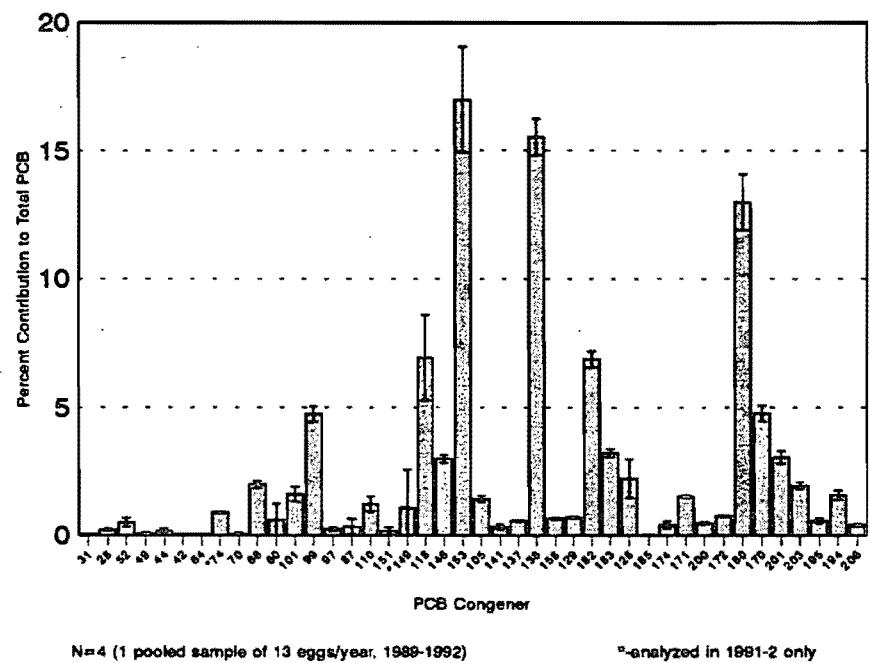


Figure 13. Percent Contribution of Individual PCB Congeners to Total PCB Concentration in Herring Gull Eggs from Leslie Street Spit, Lake Ontario (1989-1992)



## Niagara River

Figure 14. Percent Contribution of Individual PCB Congeners to Total PCB Concentration in Herring Gull Eggs from Niagara River (1989-1992)



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Lake Erie

Figure 15. Percent Contribution of Individual PCB Congeners to Total PCB Concentration in Herring Gull Eggs from Port Colborne, Lake Erie (1989-1992)

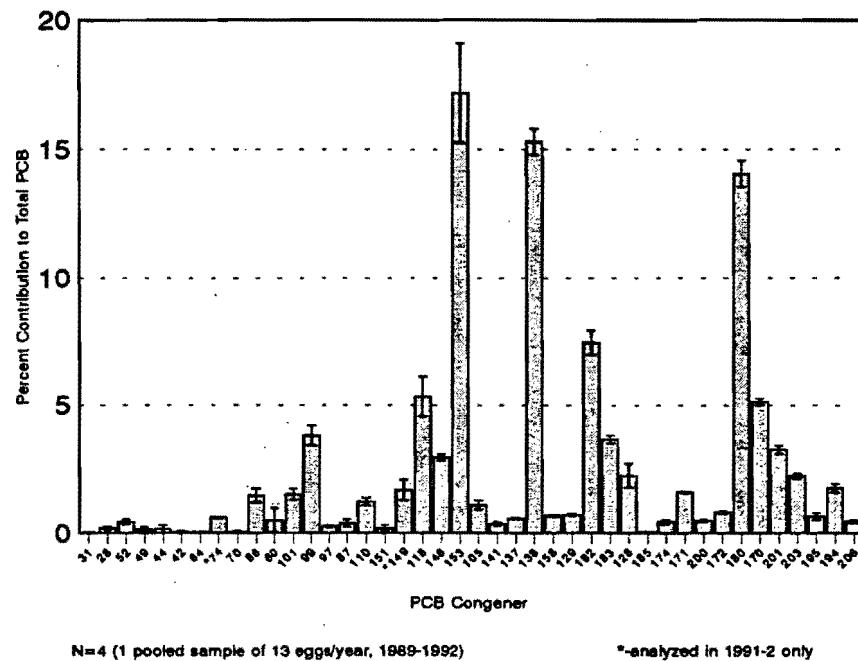
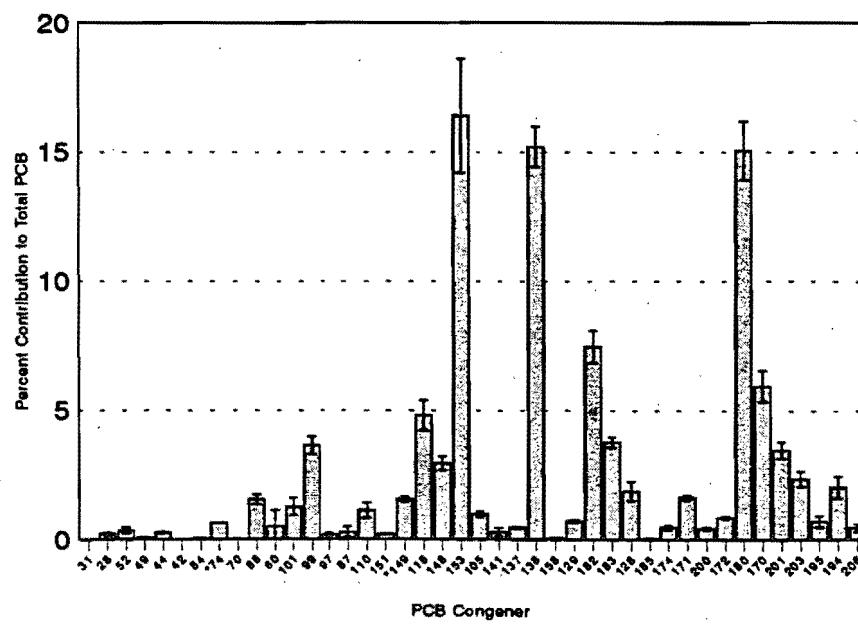
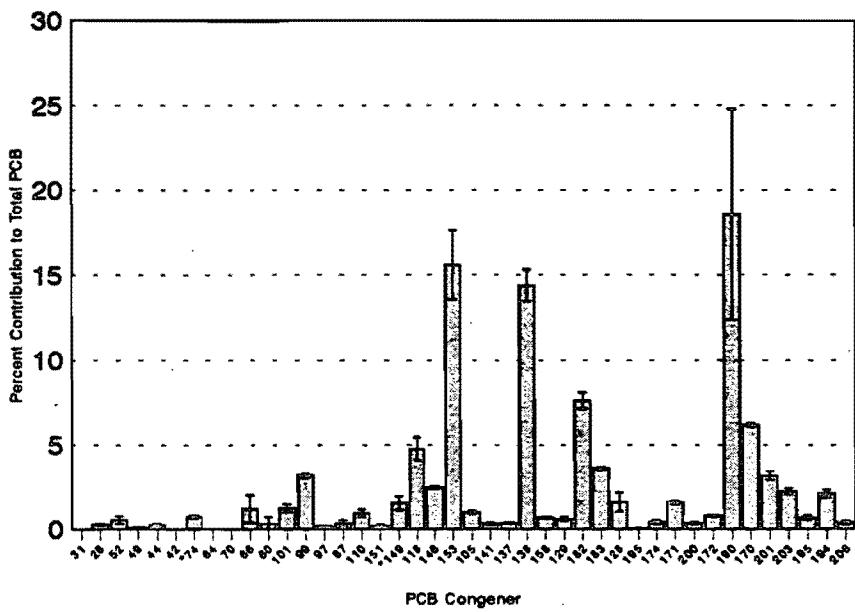


Figure 16. Percent Contribution of Individual PCB Congeners to Total PCB Concentration in Herring Gull Eggs from Middle Island, Lake Erie (1989-1992)



Detroit River

Figure 17. Percent Contribution of Individual PCB Congeners to Total PCB Concentration in Herring Gull Eggs from Fighting Island, Detroit River (1989-1992)



SECTION 3

Lake Huron

Figure 18. Percent Contribution of Individual PCB Congeners to Total PCB Concentration in Herring Gull Eggs from Chantry Island, Lake Huron (1989-1992)

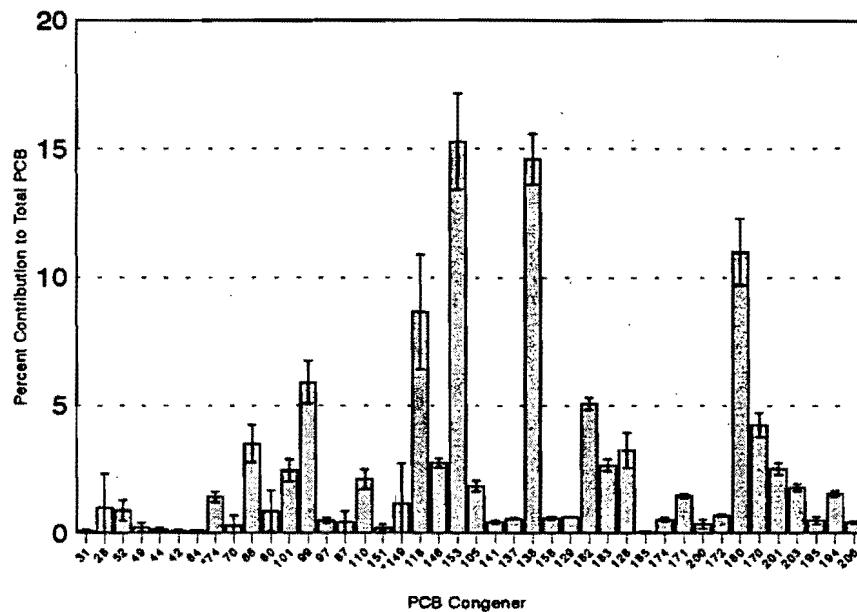
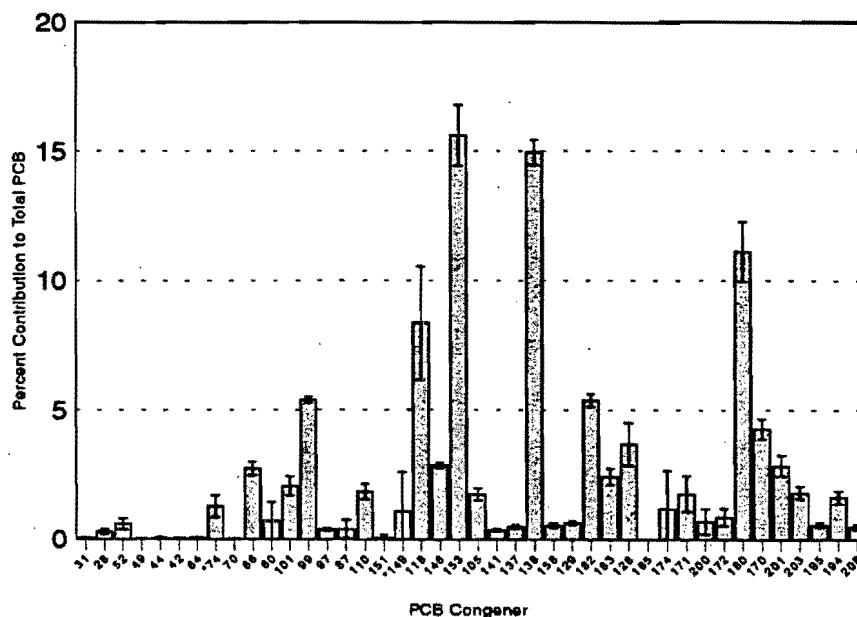
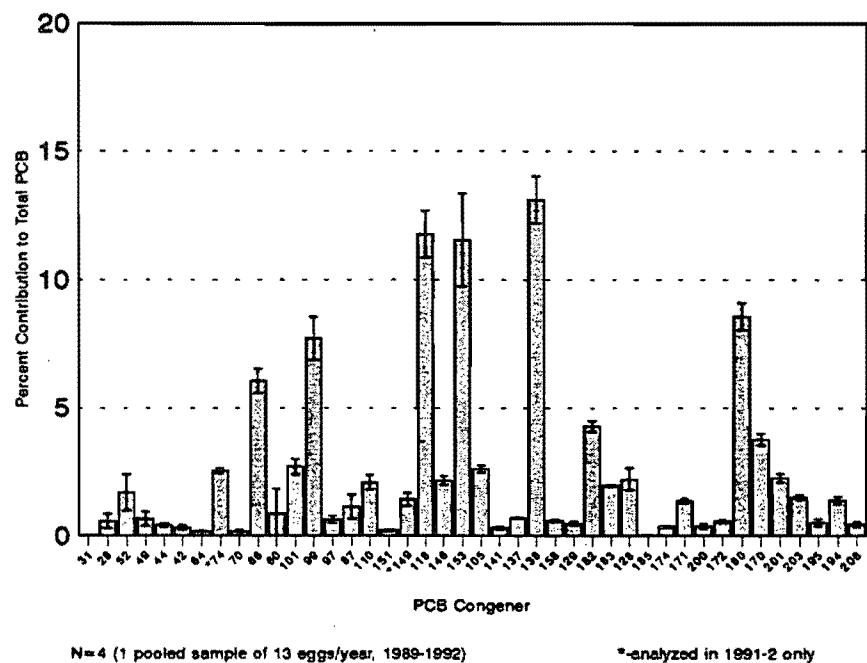


Figure 19. Percent Contribution of Individual PCB Congeners to Total PCB Concentration in Herring Gull Eggs from Double Island, Lake Huron (1989-1992)



N=4 (1 pooled sample of 13 eggs/year, 1989-1992) \*-analyzed in 1991-2 only

Figure 20. Percent Contribution of Individual PCB Congeners to Total PCB Concentration in Herring Gull Eggs from Channel Shelter Island, Lake Huron (1989-1992)



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Lake Michigan

Figure 21. Percent Contribution of Individual PCB Congeners to Total PCB Concentration in Herring Gull Eggs from Gull Island, Lake Michigan (1989-1992)

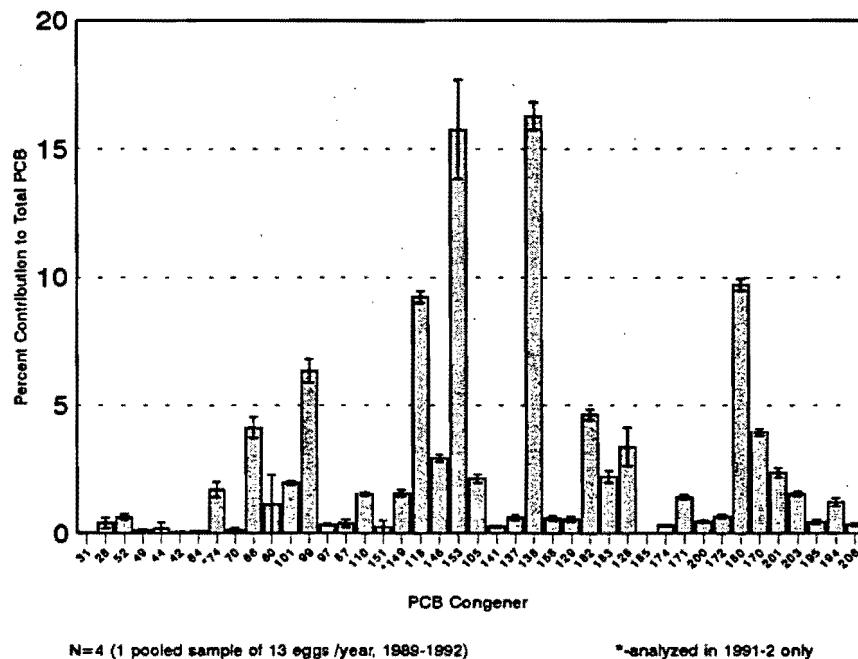
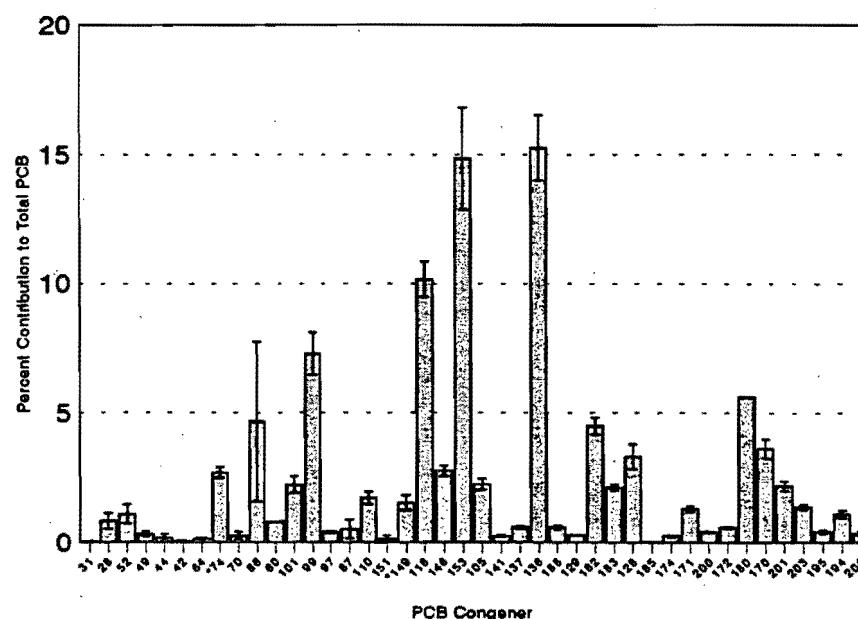


Figure 22. Percent Contribution of Individual PCB Congeners to Total PCB Concentration in Herring Gull Eggs from Big Sister Island, Lake Michigan (1989-1992)



## Lake Superior

Figure 23. Percent Contribution of Individual PCB Congeners to Total PCB Concentration in Herring Gull Eggs from Agawa Rock, Lake Superior (1989-1992)

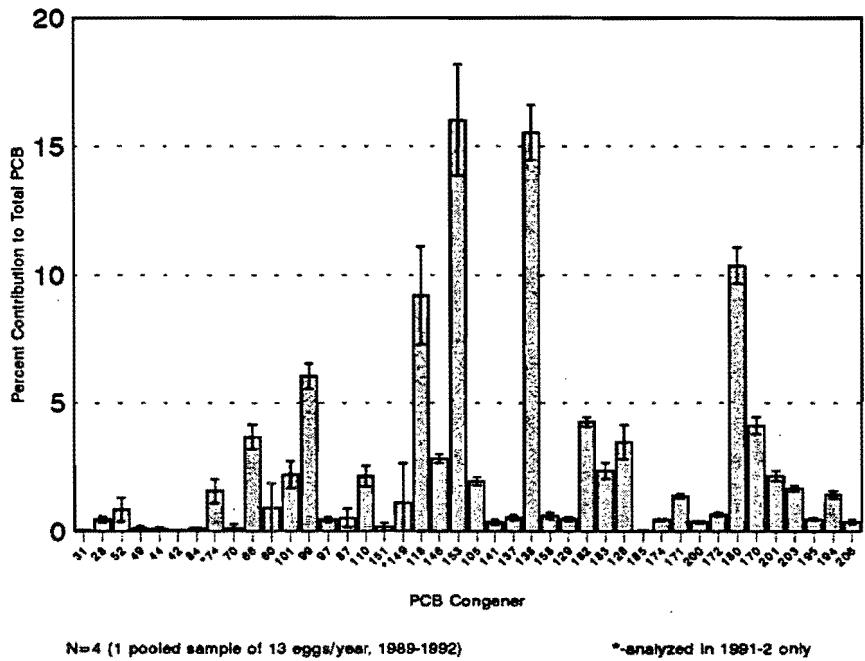
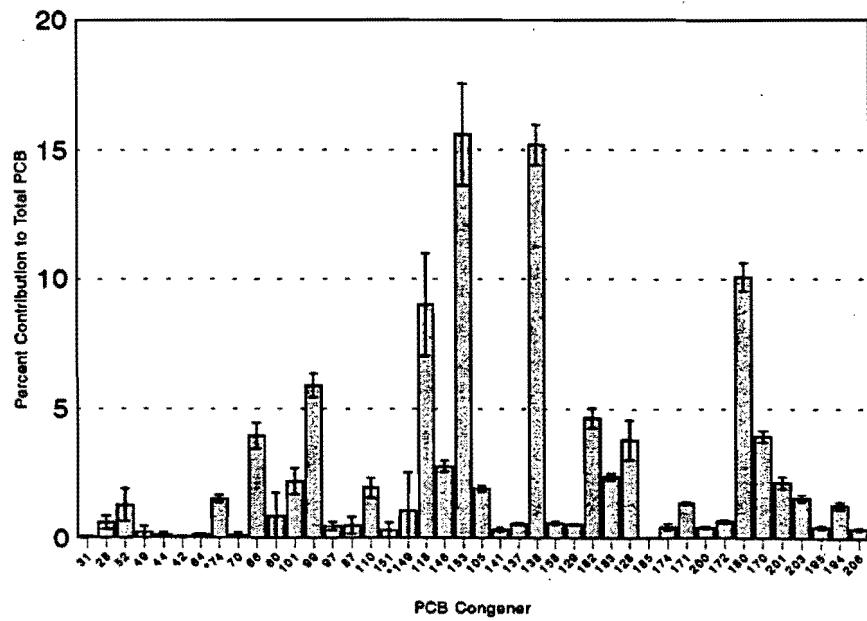


Figure 24. Percent Contribution of Individual PCB Congeners to Total PCB Concentration in Herring Gull Eggs from Granite Island, Lake Superior (1989-1992)



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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES

ST. LAWRENCE RIVER, STRACHAN ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB28 2,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 0.3345	1 0.1438	1 0.0298	1 0.1304
PCB31 2,4',5'-TRICHLOROBIPHENYL	N MEAN STD	1 ND	1 ND	1 ND	1 ND
PCB42 2,2',3,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0689	1 0.0214	1 ND	1 0.0735
PCB44 2,2',3,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0969	1 0.0441	1 0.0221	1 0.1039
PCB49 2,2',4,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.1431	1 0.0577	1 0.0244	1 0.2022
PCB52 2,2',5,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.3139	1 0.2122	1 0.0650	1 0.4599
PCB60 2,3,4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0087	1 ND	1 0.1505	1 0.2197
PCB64 2,3,4',6-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0372	1 0.0230	1 0.0076	1 0.0343
PCB66 2,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 1.0260	1 0.6542	1 0.3257	1 0.6804
PCB70 2,3',4',5-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0416	1 0.0104	1 ND	1 0.0253
PCB74 2,4,4',5-TETRACHLOROBIPHENYL	N MEAN STD	0 0	0 0	1 0.1685	1 0.3600
PCB87 2,2',3,4,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1862	1 0.0826	1 0.0558	1 0.2347
PCB97 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0777	1 0.0504	1 0.0202	1 0.0816
PCB99 2,2',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 1.3880	1 0.9729	1 0.5655	1 0.9664
PCB101 2,2',4,5,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.4538	1 0.2838	1 0.1556	1 0.5064

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

ST. LAWRENCE RIVER, STRACHAN ISLAND

HERRING GULL	YEAR			
	89	90	91	92
PCB105 2,3,3',4,4'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.5046 0.3506	1 0.1866 0.3690	1 0.3690
PCB110 2,3,3',4',6-PENTACHLOROBIPHENYL	N MEAN STD	1 0.3631 0.2383	1 0.1212 0.3986	1 0.3986
PCB118 2,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 1.9900 1.3310	1 1.0670 1.4287	1 1.4287
PCB128 2,2',3,3',4,4'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.3531 0.2376	1 0.2704 0.4080	1 0.4080
PCB129 2,2',3,3',4,5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.1273 0.0878	1 0.0526 0.1385	1 0.1385
PCB137 2,2',3,4,4',5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.1116 0.0785	1 0.0528 0.1001	1 0.1001
PCB138 2,2',3,4,4',5'-HEXACHLOROBIPHENYL	N MEAN STD	1 3.1060 2.1380	1 1.3153 2.4035	1 2.4035
PCB141 2,2',3,4,5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0601 0.0419	1 0.0152 0.0910	1 0.0910
PCB146 2,2',3,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.5687 0.4074	1 0.2517 0.4514	1 0.4514
PCB149 2,2',3,4',5',6-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0	1 ND 0.3089	1 0.3089
PCB151 2,2',3,5,5',6-HEXACHLOROBIPHENYL	N MEAN STD	1 ND 0.0253	1 ND 0.0496	1 0.0496
PCB153 2,2',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 3.3340 2.2650	1 1.3110 2.1796	1 2.1796
PCB158 2,3,3',4,4',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.1293 0.0892	1 0.0542 0.1010	1 0.1010
PCB170 2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.9166 0.6692	1 0.4031 0.8086	1 0.8086
PCB171 2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.2847 0.2183	1 0.1330 0.2612	1 0.2612

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

ST. LAWRENCE RIVER, STRACHAN ISLAND

HERRING GULL		YEAR			
		89	90	91	92
PCB172	N	1	1	1	1
2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL	MEAN	0.1365	0.1020	0.0665	0.1297
	STD				
PCB174	N	1	1	1	1
2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL	MEAN	0.0713	0.0478	0.0259	0.0940
	STD				
PCB180	N	1	1	1	1
2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	MEAN	2.4990	1.7870	1.0561	1.9311
	STD				
PCB182	N	1	1	1	1
2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	MEAN	1.2780	0.8743	0.5411	1.1482
	STD				
PCB183	N	1	1	1	1
2,2',3,4,4',5',6'-HEPTACHLOROBIPHENYL	MEAN	0.5613	0.4068	0.2434	0.4819
	STD				
PCB185	N	1	1	1	1
2,2',3,4,5,5',6'-HEPTACHLOROBIPHENYL	MEAN	ND	0.0060	ND	0.0133
	STD				
PCB194	N	1	1	1	1
2,2',3,3',4,4',5,-5'-OCTACHLOROBIPHENYL	MEAN	0.3417	0.2394	0.1621	0.3161
	STD				
PCB195	N	1	1	1	1
2,2',3,3',4,4',5,6-OCTACHLOROBIPHENYL	MEAN	0.1074	0.0739	0.0536	0.1379
	STD				
PCB200	N	1	1	1	1
2,2',3,3',4,5',6,6'-OCTACHLOROBIPHENYL	MEAN	0.0844	0.0617	0.0440	0.0894
	STD				
PCB201	N	1	1	1	1
2,2',3,3',4,5,5',6'-OCTACHLOROBIPHENYL	MEAN	0.6076	0.4198	0.2910	0.4982
	STD				
PCB203	N	1	1	1	1
2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL	MEAN	0.3854	0.2717	0.1804	0.3475
	STD				
PCB206	N	1	1	1	1
2,2',3,3',4,4',5,5',6-NONACHLOROBIPHENYL	MEAN	0.0866	0.0577	0.0462	0.0924
	STD				

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE ONTARIO, SNAKE ISLAND

HERRING GULL		YEAR			
		89	90	91	92
PCB28 2,4,4'-TRICHLOROBIPHENYL	N	1	1	14	1
	MEAN	0.0282	0.0172	0.0057	0.0173
	STD			0.0000	
PCB31 2,4',5'-TRICHLOROBIPHENYL	N	1	1	14	1
	MEAN	ND	ND	ND	ND
	STD				
PCB42 2,2',3,4'-TETRACHLOROBIPHENYL	N	1	1	14	1
	MEAN	ND	ND	ND	0.0161
	STD				
PCB44 2,2',3,5'-TETRACHLOROBIPHENYL	N	1	1	14	1
	MEAN	0.0254	0.0177	0.0156	0.0402
	STD			0.0129	
PCB49 2,2',4,5'-TETRACHLOROBIPHENYL	N	1	1	14	1
	MEAN	ND	ND	0.0025	0.0186
	STD			0.0000	
PCB52 2,2',5,5'-TETRACHLOROBIPHENYL	N	1	1	14	1
	MEAN	0.0521	0.0280	0.0283	0.0960
	STD			0.0273	
PCB60 2,3,4,4'-TETRACHLOROBIPHENYL	N	1	1	14	1
	MEAN	ND	ND	0.0938	0.1307
	STD			0.0507	
PCB64 2,3,4',6-TETRACHLOROBIPHENYL	N	1	1	14	1
	MEAN	0.0073	0.0034	0.0029	0.0086
	STD			0.0000	
PCB66 2,3',4,4'-TETRACHLOROBIPHENYL	N	1	1	14	1
	MEAN	0.3327	ND	0.1879	0.3120
	STD			0.0996	
PCB70 2,3',4',5-TETRACHLOROBIPHENYL	N	1	1	14	1
	MEAN	ND	ND	0.0012	0.0074
	STD			0.0000	
PCB74 2,4,4',5-TETRACHLOROBIPHENYL	N	0	0	14	1
	MEAN			0.0899	0.1168
	STD			0.0730	
PCB87 2,2',3',4,5-PENTACHLOROBIPHENYL	N	1	1	14	1
	MEAN	0.0610	ND	0.0353	0.0802
	STD			0.0279	
PCB97 2,2',3',4,5-PENTACHLOROBIPHENYL	N	1	1	14	1
	MEAN	0.0492	0.0237	0.0159	0.0454
	STD			0.0162	
PCB99 2,2',4,4',5-PENTACHLOROBIPHENYL	N	1	1	14	1
	MEAN	0.7907	0.4810	0.4006	0.5488
	STD			0.1804	
PCB101 2,2',4,5,5'-PENTACHLOROBIPHENYL	N	1	1	14	1
	MEAN	0.2435	0.1269	0.1300	0.2518
	STD			0.1066	

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE ONTARIO, SNAKE ISLAND

HERRING GULL	YEAR			
	89	90	91	92
PCB105 2,3,3',4,4'-PENTACHLOROBIPHENYL	N 1 MEAN 0.2639 STD 0.0639	1 0.1435 0.1258 0.1967	1 0.1037 0.14 0.1895	14 0.7512 0.7583
PCB110 2,3,3',4',6-PENTACHLOROBIPHENYL	N 1 MEAN 0.2077 STD 0.0581	1 0.0993 0.1474 0.2711	14 0.1037 0.14 0.1895	1 0.0581
PCB118 2,3',4,4',5-PENTACHLOROBIPHENYL	N 1 MEAN 1.0160 STD 0.3798	1 0.6090 0.7512 0.7583	14 0.7512 0.7583	1 0.3798
PCB128 2,2',3,3',4,4'-HEXACHLOROBIPHENYL	N 1 MEAN 0.3686 STD 0.0600	1 0.1417 0.1474 0.2711	14 0.1474 0.14 0.2711	1 0.0600
PCB129 2,2',3,3',4,5-HEXACHLOROBIPHENYL	N 1 MEAN 0.0961 STD 0.0311	1 0.0524 0.0538 0.0775	14 0.0538 0.05 0.0775	1 0.0311
PCB137 2,2',3,4,4',5-HEXACHLOROBIPHENYL	N 1 MEAN 0.0836 STD 0.0204	1 0.0490 0.0470 0.0579	14 0.0470 0.04 0.0579	1 0.0204
PCB138 2,2',3,4,4',5'-HEXACHLOROBIPHENYL	N 1 MEAN 2.2870 STD 0.4947	1 1.3290 1.1748 1.5071	14 1.1748 1.17 1.5071	1 0.4947
PCB141 2,2',3,4,5,5'-HEXACHLOROBIPHENYL	N 1 MEAN 0.0529 STD 0.0254	1 0.0244 0.0209 0.0515	14 0.0209 0.02 0.0515	1 0.0254
PCB146 2,2',3,4',5,5'-HEXACHLOROBIPHENYL	N 1 MEAN 0.4399 STD 0.0899	1 0.2546 0.2144 0.2749	14 0.2144 0.21 0.2749	1 0.0899
PCB149 2,2',3,4',5',6-HEXACHLOROBIPHENYL	N 0 MEAN 0.0363 STD 0.0622	0 0 0.0363 0.1963	14 0.0363 0.03 0.1963	1 0.0622
PCB151 2,2',3,5,5',6-HEXACHLOROBIPHENYL	N 1 MEAN ND 0.0072 STD 0.0137	1 0.0072 0.0062 0.0206	14 0.0062 0.00 0.0206	1 0.0137
PCB153 2,2',4,4',5,5'-HEXACHLOROBIPHENYL	N 1 MEAN 2.6400 STD 0.4607	1 1.4970 1.2065 1.4105	14 1.2065 1.20 1.4105	1 0.4607
PCB158 2,3,3',4,4',6-HEXACHLOROBIPHENYL	N 1 MEAN 0.0828 STD 0.0165	1 0.0483 0.0412 0.0555	14 0.0412 0.04 0.0555	1 0.0165
PCB170 2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL	N 1 MEAN 0.6051 STD 0.1417	1 0.3781 0.3473 0.4139	14 0.3473 0.34 0.4139	1 0.1417
PCB171 2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL	N 1 MEAN 0.2083 STD 0.0509	1 0.1254 0.1173 0.1496	14 0.1173 0.11 0.1496	1 0.0509

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in 280 pg/g; all others in µg/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE ONTARIO, SNAKE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB172	N	1	1	14	1
2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL	MEAN	0.1024	0.0623	0.0579	0.0685
	STD			0.0245	
PCB174	N	1	1	14	1
2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL	MEAN	0.0631	0.0289	0.0244	0.0588
	STD			0.0184	
PCB180	N	1	1	14	1
2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	MEAN	1.7600	1.0600	0.9345	1.0616
	STD			0.3570	
PCB182	N	1	1	14	1
2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	MEAN	0.8880	0.5016	0.4458	0.6382
	STD			0.1732	
PCB183	N	1	1	14	1
2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	MEAN	0.4096	0.2427	0.2133	0.2623
	STD			0.0813	
PCB185	N	1	1	14	1
2,2',3,4,5,5',6'-HEPTACHLOROBIPHENYL	MEAN	ND	ND	ND	0.0105
	STD				
PCB194	N	1	1	14	1
2,2',3,3',4,4',5,5'-OCTACHLOROBIPHENYL	MEAN	0.1851	0.1233	0.1243	0.1296
	STD			0.0467	
PCB195	N	1	1	14	1
2,2',3,3',4,4',5,6'-OCTACHLOROBIPHENYL	MEAN	0.0682	0.0419	0.0429	0.0686
	STD			0.0174	
PCB200	N	1	1	14	1
2,2',3,3',4,5,6,6'-OCTACHLOROBIPHENYL	MEAN	0.0664	0.0384	0.0399	0.0586
	STD			0.0198	
PCB201	N	1	1	14	1
2,2',3,3',4,5,5',6'-OCTACHLOROBIPHENYL	MEAN	0.4048	0.2327	0.2257	0.2455
	STD			0.0891	
PCB203	N	1	1	14	1
2,2',3,4,4',5,5',6'-OCTACHLOROBIPHENYL	MEAN	0.2502	0.1515	0.1425	0.1584
	STD			0.0535	
PCB206	N	1	1	14	1
2,2',3,3',4,4',5,5',6'-NONACHLOROBIPHENYL	MEAN	0.0498	0.0315	0.0336	0.0463
	STD			0.0136	

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE ONTARIO, LESLIE STREET SPIT

HERRING GULL	YEAR				
	89	90	91	92	
PCB28 2,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 0.0259 0.0000	1 0.0161 0.0055	14 ND ND	1 0.0099 ND
PCB31 2,4',5'-TRICHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	14 ND ND	1 ND ND
PCB42 2,2',3,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	14 ND ND	1 ND ND
PCB44 2,2',3,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0274 0.0093	1 0.0141 0.0119	14 ND ND	1 0.0240 ND
PCB49 2,2',4,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0176 0.0110	1 0.0041 0.0048	14 ND ND	1 ND ND
PCB52 2,2',5,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0582 0.0183	1 0.0237 0.0174	14 ND ND	1 0.0490 ND
PCB60 2,3,4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0190 0.0253	1 ND 0.0636	14 ND 0.0784	1 ND 0.0784
PCB64 2,3,4',6-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0086 0.0000	1 0.0035 0.0025	14 ND ND	1 0.0050 ND
PCB66 2,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.2755 0.0512	1 0.1688 0.1423	14 ND 0.2009	1 ND 0.2009
PCB70 2,3',4',5-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	14 ND ND	1 ND ND
PCB74 2,4,4',5-TETRACHLOROBIPHENYL	N MEAN STD	0 0.0525 0.0195	0 0.0525 0.0195	14 ND ND	1 0.0759 ND
PCB87 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0694 0.0320	1 ND 0.0456	14 ND 0.0726	1 ND 0.0726
PCB97 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0589 0.0182	1 0.0255 0.0191	14 ND 0.0318	1 ND 0.0318
PCB99 2,2',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.7987 0.1316	1 0.4653 0.4009	14 ND 0.5127	1 ND 0.5127
PCB101 2,2',4,5,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.2806 0.1000	1 0.1325 0.1432	14 ND 0.1953	1 ND 0.1953

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE ONTARIO, LESLIE STREET SPIT

HERRING GULL	YEAR				
	89	90	91	92	
PCB105 2,3,3',4,4'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.2481 0.0415	1 0.1359 0.1012	14 0.1268 0.1570	1 0.1766 0.0565
PCB110 2,3,3',4',6-PENTACHLOROBIPHENYL	N MEAN STD	1 0.2784 0.0565	1 0.1085 0.14	14 0.1012 0.1570	1 0.1570 0.0565
PCB118 2,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.9811 0.2324	1 0.5722 0.7379	14 0.7379 0.7177	1 0.7177 0.2324
PCB128 2,2',3,3',4,4'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.3611 0.0550	1 0.1399 0.1592	14 0.1592 0.2642	1 0.2642 0.0550
PCB129 2,2',3,3',4,5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.1047 0.0237	1 0.0487 0.0582	14 0.0582 0.0850	1 0.0850 0.0237
PCB137 2,2',3,4,4',5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0939 0.0155	1 0.0513 0.0507	14 0.0507 0.0701	1 0.0701 0.0155
PCB138 2,2',3,4,4',5'-HEXACHLOROBIPHENYL	N MEAN STD	1 2.4640 0.4030	1 1.3710 1.3231	14 1.3231 1.5942	1 1.5942 0.4030
PCB141 2,2',3,4,5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0727 0.0350	1 0.0319 0.0363	14 0.0363 0.0435	1 0.0435 0.0350
PCB146 2,2',3,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.4558 0.0687	1 0.2674 0.2410	14 0.2410 0.3034	1 0.3034 0.0687
PCB149 2,2',3,4',5',6-HEXACHLOROBIPHENYL	N MEAN STD	0 0.0656 0.0818	0 0.0656 0.1781	14 0.1781 0.0818	1 0.1781 0.0818
PCB151 2,2',3,5,5',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0321 0.0442	1 0.0111 0.0132	14 0.0132 0.0193	1 0.0193 0.0442
PCB153 2,2',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 2.8800 0.3574	1 1.5540 1.3547	14 1.3547 1.5655	1 1.5655 0.3574
PCB158 2,3,3',4,4',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0975 0.0161	1 0.0496 0.0503	14 0.0503 0.0605	1 0.0605 0.0161
PCB170 2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.7730 0.1324	1 0.3899 0.4104	14 0.4104 0.4732	1 0.4732 0.1324
PCB171 2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.2486 0.0405	1 0.1295 0.1366	14 0.1366 0.1600	1 0.1600 0.0405

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE ONTARIO, LESLIE STREET SPIT

HERRING GULL	YEAR			
	89	90	91	92
PCB172	N	1	1	14
2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL	MEAN	0.1223	0.0664	0.0679
	STD			0.0200
PCB174	N	1	1	14
2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL	MEAN	0.0834	0.0378	0.0392
	STD			0.0346
PCB180	N	1	1	14
2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	MEAN	2.1880	1.1350	1.1224
	STD			1.3029
PCB182	N	1	1	14
2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	MEAN	0.9715	0.5637	0.5204
	STD			0.7351
PCB183	N	1	1	14
2,2',3,4,4',5',6-HEPTACHLOROBIPHENYL	MEAN	0.4643	0.2619	0.2469
	STD			0.3076
PCB185	N	1	1	14
2,2',3,4,5,5',6-HEPTACHLOROBIPHENYL	MEAN	ND	0.0043	0.0020
	STD			ND
PCB194	N	1	1	14
2,2',3,3',4,4',5,5'-OCTACHLOROBIPHENYL	MEAN	0.2898	0.1307	0.1472
	STD			0.1638
PCB195	N	1	1	14
2,2',3,3',4,4',5,6-OCTACHLOROBIPHENYL	MEAN	0.0825	0.0423	0.0462
	STD			0.0757
PCB200	N	1	1	14
2,2',3,3',4,5',6,6'-OCTACHLOROBIPHENYL	MEAN	0.0716	0.0434	0.0456
	STD			0.0587
PCB201	N	1	1	14
2,2',3,3',4,5,5',6'-OCTACHLOROBIPHENYL	MEAN	0.4548	0.2481	0.2565
	STD			0.2954
PCB203	N	1	1	14
2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL	MEAN	0.3005	0.1579	0.1622
	STD			0.1995
PCB206	N	1	1	14
2,2',3,3',4,4',5,5',6-NONACHLOROBIPHENYL	MEAN	0.0561	0.0309	0.0362
	STD			0.0485
				0.0094

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

NIAGARA RIVER

HERRING GULL	YEAR				
	89	90	91	92	
PCB28 2,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 0.0226 ND	1 0.0160 ND	1 0.0160 ND	1 0.0119 ND
PCB31 2,4',5'-TRICHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	1 ND ND
PCB42 2,2',3,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	1 ND ND
PCB44 2,2',3,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0168 ND	1 0.0123 ND	1 ND ND	1 0.0186 0.0094
PCB49 2,2',4,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	1 0.0538 0.0773
PCB52 2,2',5,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0383 ND	1 0.0236 ND	1 0.0362 0.0840	1 0.0043 0.1601
PCB60 2,3,4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	1 0.0034 0.0125	1 0.0094 0.0532
PCB64 2,3,4',6-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0039 ND	1 0.0021 ND	1 0.0034 0.1355	1 0.0043 0.1370
PCB66 2,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.1628 ND	1 0.1355 ND	1 0.1370 ND	1 0.1601 0.0094
PCB70 2,3',4',5-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	1 0.0616 0.0652
PCB74 2,4,4',5-TETRACHLOROBIPHENYL	N MEAN STD	0 ND ND	0 ND ND	1 0.0125 0.0156	1 0.0652 0.0264
PCB87 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0416 ND	1 ND ND	1 0.0125 0.3123	1 0.0532 0.3223
PCB97 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0187 ND	1 0.0135 ND	1 0.0156 0.1086	1 0.0264 0.1469
PCB99 2,2',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.4369 ND	1 0.3457 ND	1 0.3123 0.1086	1 0.3223 0.1469
PCB101 2,2',4,5,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1400 ND	1 0.0901 ND	1 0.1086 0.1086	1 0.1469 0.1469

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

NIAGARA RIVER

HERRING GULL	YEAR			
	89	90	91	92
PCB105 2,3,3',4,4'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1332 0.0897	1 0.0965 0.1121	1 0.1160
PCB110 2,3,3',4',6-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1217 0.0616	1 0.0734 0.1160	1 0.1160
PCB118 2,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.5531 0.4250	1 0.6229 0.4446	1 0.4446
PCB128 2,2',3,3',4,4'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.1552 0.1038	1 0.2056 0.1970	1 0.1970
PCB129 2,2',3,3',4,5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0644 0.0463	1 0.0483 0.0529	1 0.0529
PCB137 2,2',3,4,4',5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0535 0.0409	1 0.0377 0.0422	1 0.0422
PCB138 2,2',3,4,4',5'-HEXACHLOROBIPHENYL	N MEAN STD	1 1.4020 1.1500	1 0.9878 1.1132	1 1.1132
PCB141 2,2',3,4,5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0360 0.0151	1 0.0175 0.0335	1 0.0335
PCB146 2,2',3,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.2741 0.2187	1 0.1945 0.2098	1 0.2098
PCB149 2,2',3,4',5',6-HEXACHLOROBIPHENYL	N MEAN STD	0 0 ND	1 ND 0.1594	1 0.1594
PCB151 2,2',3,5,5',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0117 0.0108	1 ND 0.0264	1 0.0264
PCB153 2,2',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 1.6440 1.3150	1 1.0479 1.0969	1 1.0969
PCB158 2,3,3',4,4',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0622 0.0464	1 0.0433 0.0466	1 0.0466
PCB170 2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.4009 0.3701	1 0.2991 0.3533	1 0.3533
PCB171 2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.1341 0.1133	1 0.0998 0.1133	1 0.1133

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

NIAGARA RIVER

HERRING GULL		YEAR			
		89	90	91	92
PCB172	N	1	1	1	1
2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL	MEAN	0.0654	0.0573	0.0506	0.0556
PCB174	STD				
2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL	N	1	1	1	1
PCB174	MEAN	0.0384	0.0201	0.0214	0.0445
PCB180	STD				
2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	N	1	1	1	1
PCB180	MEAN	1.1180	1.0350	0.8221	0.9029
PCB182	STD				
2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	N	1	1	1	1
PCB182	MEAN	0.5997	0.4829	0.4310	0.5423
PCB183	STD				
2,2',3,4,4',5',6-HEPTACHLOROBIPHENYL	N	1	1	1	1
PCB183	MEAN	0.2879	0.2425	0.2031	0.2369
PCB185	STD				
2,2',3,4,5,5',6-HEPTACHLOROBIPHENYL	N	1	1	1	1
PCB185	MEAN	ND	ND	ND	0.0044
PCB194	STD				
2,2',3,3',4,4',5,-OCTACHLOROBIPHENYL	N	1	1	1	1
PCB194	MEAN	0.1209	0.1292	0.1056	0.1161
PCB195	STD				
2,2',3,3',4,4',5,6-OCTACHLOROBIPHENYL	N	1	1	1	1
PCB195	MEAN	0.0413	0.0410	0.0363	0.0528
PCB200	STD				
2,2',3,3',4,5',6,-OCTACHLOROBIPHENYL	N	1	1	1	1
PCB200	MEAN	0.0406	0.0332	0.0319	0.0410
PCB201	STD				
2,2',3,3',4,5,5',-OCTACHLOROBIPHENYL	N	1	1	1	1
PCB201	MEAN	0.2579	0.2380	0.2102	0.2065
PCB203	STD				
2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL	N	1	1	1	1
PCB203	MEAN	0.1619	0.1511	0.1305	0.1409
PCB206	STD				
2,2',3,3',4,4',5,-NONACHLOROBIPHENYL	N	1	1	1	1
PCB206	MEAN	0.0271	0.0323	0.0276	0.0329
NONACHLOROBIPHENYL	STD				

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE ERIE, PORT COLBORNE, LIGHTHOUSE

HERRING GULL	YEAR				
	89	90	91	92	
PCB28 2,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 0.0432 0.0000	1 0.0169 ND	1 0.0156 ND	14 0.0088 ND
PCB31 2,4',5'-TRICHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	14 ND
PCB42 2,2',3,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND 0.0000	1 ND ND	1 ND ND	14 0.0034 0.0000
PCB44 2,2',3,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0202 0.0000	1 0.0121 ND	1 ND ND	14 0.0193 0.0000
PCB49 2,2',4,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0427 0.0000	1 0.0055 ND	1 ND ND	14 0.0160 0.0204
PCB52 2,2',5,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0628 0.0154	1 0.0351 0.0264	1 0.0264 0.0420	14 0.0154
PCB60 2,3,4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND 0.0172	1 0.0087 0.0720	1 0.0720 0.0595	14 0.0595
PCB64 2,3,4',6-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0064 0.0000	1 0.0031 ND	1 ND ND	14 0.0031
PCB66 2,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.2837 0.0281	1 0.0958 0.1028	1 0.1028 0.1035	14 0.0281
PCB70 2,3',4',5-TETRACHLOROBIPHENYL	N MEAN STD	1 ND 0.0000	1 ND ND	1 ND ND	14 0.0086
PCB74 2,4,4',5-TETRACHLOROBIPHENYL	N MEAN STD	0 0.0461 0.0143	0 0.0461 0.0428	1 0.0461 0.0428	14 0.0428
PCB87 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0519 0.0160	1 0.0178 0.0297	1 0.0297 0.0393	14 0.0393
PCB97 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0421 0.0089	1 0.0202 0.0148	1 0.0148 0.0244	14 0.0244
PCB99 2,2',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.6639 0.0736	1 0.3064 0.2725	1 0.2725 0.2384	14 0.2384
PCB101 2,2',4,5,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.2170 0.0515	1 0.1082 0.1106	1 0.1106 0.1295	14 0.1295

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE ERIE, PORT COLBORNE, LIGHTHOUSE

HERRING GULL	YEAR			
	89	90	91	92
PCB105 2,3,3',4,4'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.2084 0.0739	1 0.0760 0.0790	1 0.0231 0.0231
PCB110 2,3,3',4',6-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1857 0.0947	1 0.0817 0.1066	1 0.0266 0.0266
PCB118 2,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.8951 0.3787	1 0.4523 0.3272	1 0.1045 0.1045
PCB128 2,2',3,3',4,4'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.2422 0.1986	1 0.1694 0.1824	1 0.0577 0.0577
PCB129 2,2',3,3',4,5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.1100 0.0622	1 0.0523 0.0455	1 0.0134 0.0134
PCB137 2,2',3,4,4',5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0891 0.0470	1 0.0402 0.0368	1 0.0133 0.0133
PCB138 2,2',3,4,4',5'-HEXACHLOROBIPHENYL	N MEAN STD	1 2.4290 1.2670	1 1.0976 1.0143	1 0.3235 0.3235
PCB141 2,2',3,4,5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0495 0.0286	1 0.0241 0.0328	1 0.0181 0.0181
PCB146 2,2',3,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.4604 0.2506	1 0.2161 0.1931	1 0.0598 0.0598
PCB149 2,2',3,4',5',6-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0	1 0.1023 0.1371	1 0.0284 0.0284
PCB151 2,2',3,5,5',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0298 0.0155	1 ND 0.0221	1 0.0071 0.0071
PCB153 2,2',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 2.8950 1.5160	1 1.1892 1.0305	1 0.3077 0.3077
PCB158 2,3,3',4,4',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.1054 0.0560	1 0.0526 0.0432	1 0.0149 0.0149
PCB170 2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.7716 0.4075	1 0.3810 0.3606	1 0.1317 0.1317
PCB171 2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.2458 0.1307	1 0.1188 0.1091	1 0.0348 0.0348

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE ERIE, PORT COLBORNE, LIGHTHOUSE

HERRING GULL	YEAR			
	89	90	91	92
PCB172	N	1	1	1
2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL	MEAN	0.1182	0.0659	0.0627
	STD			0.0552
				0.0191
PCB174	N	1	1	1
2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL	MEAN	0.0648	0.0321	0.0278
	STD			0.0433
				0.0136
PCB180	N	1	1	1
2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	MEAN	2.1660	1.1850	1.0248
	STD			0.9196
				0.3169
PCB182	N	1	1	1
2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	MEAN	1.1040	0.6061	0.5151
	STD			0.5480
				0.1655
PCB183	N	1	1	1
2,2',3,4,4',5',6-HEPTACHLOROBIPHENYL	MEAN	0.5486	0.3122	0.2593
	STD			0.2509
				0.0828
PCB185	N	1	1	1
2,2',3,4,5,5',6-HEPTACHLOROBIPHENYL	MEAN	ND	ND	ND
	STD			0.0037
				0.0000
PCB194	N	1	1	1
2,2',3,3',4,4',5,-OCTACHLOROBIPHENYL	MEAN	0.2455	0.1341	0.1405
	STD			0.1300
				0.0481
PCB195	N	1	1	1
2,2',3,3',4,4',5,6-OCTACHLOROBIPHENYL	MEAN	0.0826	0.0500	0.0441
	STD			0.0579
				0.0205
PCB200	N	1	1	1
2,2',3,3',4,5',6,-OCTACHLOROBIPHENYL	MEAN	0.0762	0.0342	0.0360
	STD			0.0373
				0.0130
PCB201	N	1	1	1
2,2',3,3',4,5,5',-OCTACHLOROBIPHENYL	MEAN	0.4833	0.2744	0.2481
	STD			0.2159
				0.0669
PCB203	N	1	1	1
2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL	MEAN	0.3238	0.1819	0.1685
	STD			0.1589
				0.0569
PCB206	N	1	1	1
2,2',3,3',4,4',5,-NONACHLOROBIPHENYL	MEAN	0.0619	0.0347	0.0344
	STD			0.0357
				0.0128

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ .

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE ERIE, MIDDLE ISLAND

HERRING GULL		YEAR			
		89	90	91	92
PCB28 2,4,4'-TRICHLOROBIPHENYL	N	1	1	1	14
	MEAN	0.0648	0.0434	0.0292	0.0292
	STD				0.0095
PCB31 2,4',5'-TRICHLOROBIPHENYL	N	1	1	1	14
	MEAN	ND	ND	ND	0.0034
	STD				0.0077
PCB42 2,2',3,4'-TETRACHLOROBIPHENYL	N	1	1	1	14
	MEAN	ND	ND	ND	ND
	STD				
PCB44 2,2',3,5'-TETRACHLOROBIPHENYL	N	1	1	1	14
	MEAN	0.0575	0.0502	0.0467	0.0673
	STD				0.0272
PCB49 2,2',4,5'-TETRACHLOROBIPHENYL	N	1	1	1	14
	MEAN	0.0249	0.0120	0.0157	0.0180
	STD				0.0188
PCB52 2,2',5,5'-TETRACHLOROBIPHENYL	N	1	1	1	14
	MEAN	0.1065	0.0702	0.0644	0.1266
	STD				0.0530
PCB60 2,3,4,4'-TETRACHLOROBIPHENYL	N	1	1	1	14
	MEAN	ND	ND	0.1280	0.1587
	STD				0.0742
PCB64 2,3,4',6'-TETRACHLOROBIPHENYL	N	1	1	1	14
	MEAN	0.0112	0.0056	0.0078	0.0107
	STD				0.0000
PCB66 2,3',4,4'-TETRACHLOROBIPHENYL	N	1	1	1	14
	MEAN	0.3589	0.2808	0.2675	0.3086
	STD				0.0975
PCB70 2,3',4',5'-TETRACHLOROBIPHENYL	N	1	1	1	14
	MEAN	ND	0.0053	ND	0.0055
	STD				0.0075
PCB74 2,4,4',5'-TETRACHLOROBIPHENYL	N	0	0	1	14
	MEAN			0.1238	0.1259
	STD				0.0434
PCB87 2,2',3',4,5'-PENTACHLOROBIPHENYL	N	1	1	1	14
	MEAN	0.0782	ND	0.0892	0.1003
	STD				0.0461
PCB97 2,2',3',4,5'-PENTACHLOROBIPHENYL	N	1	1	1	14
	MEAN	0.0534	0.0391	0.0442	0.0615
	STD				0.0254
PCB99 2,2',4,4',5'-PENTACHLOROBIPHENYL	N	1	1	1	14
	MEAN	0.8292	0.7326	0.6909	0.6249
	STD				0.2097
PCB101 2,2',4,5,5'-PENTACHLOROBIPHENYL	N	1	1	1	14
	MEAN	0.2945	0.2451	0.3003	0.3108
	STD				0.1729

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE ERIE, MIDDLE ISLAND

HERRING GULL	YEAR			
	89	90	91	92
PCB105 2,3,3',4,4'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.2303 0.1717	1 0.1759 0.1961	1 0.0661 0.14
PCB110 2,3,3',4',6-PENTACHLOROBIPHENYL	N MEAN STD	1 0.2997 0.1925	1 0.2380 0.3103	1 0.1261 0.14
PCB118 2,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.9714 0.8854	1 1.0511 0.7114	1 0.2655 0.14
PCB128 2,2',3,3',4,4'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.3425 0.2939	1 0.4122 0.4673	1 0.1699 0.14
PCB129 2,2',3,3',4,5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.1335 0.1408	1 0.1474 0.1383	1 0.0544 0.14
PCB137 2,2',3,4,4',5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.1007 0.1019	1 0.0913 0.0863	1 0.0316 0.14
PCB138 2,2',3,4,4',5'-HEXACHLOROBIPHENYL	N MEAN STD	1 3.3120 3.1380	1 2.7905 2.5645	1 0.8889 0.14
PCB141 2,2',3,4,5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0818 0.0649	1 0.0799 0.1114	1 0.0712 0.14
PCB146 2,2',3,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.6460 0.6295	1 0.5537 0.4749	1 0.1630 0.14
PCB149 2,2',3,4',5',6-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0	1 0.3053 0.5092	1 0.3391 0.14
PCB151 2,2',3,5,5',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0480 0.0305	1 0.0372 0.0570	1 0.0209 0.14
PCB153 2,2',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 3.9120 3.5160	1 2.8197 2.4128	1 0.7974 0.14
PCB158 2,3,3',4,4',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.1450 0.1498	1 0.1352 0.1210	1 0.0460 0.14
PCB170 2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL	N MEAN STD	1 1.0680 1.2940	1 1.0617 0.9933	1 0.3873 0.14
PCB171 2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.3089 0.3431	1 0.3034 0.2814	1 0.1018 0.14

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE ERIE, MIDDLE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB172	N	1	1	1	14
2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL	MEAN	0.1639	0.1797	0.1661	0.1272
	STD				0.0566
PCB174	N	1	1	1	14
2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL	MEAN	0.1058	0.0746	0.0929	0.1376
	STD				0.0610
PCB180	N	1	1	1	14
2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	MEAN	2.9450	3.3680	2.6030	2.2715
	STD				0.8155
PCB182	N	1	1	1	14
2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	MEAN	1.5040	1.5130	1.2656	1.3014
	STD				0.4227
PCB183	N	1	1	1	14
2,2',3,4,4',5',6-HEPTACHLOROBIPHENYL	MEAN	0.7446	0.8274	0.6721	0.6281
	STD				0.2304
PCB185	N	1	1	1	14
2,2',3,4,5,5',6-HEPTACHLOROBIPHENYL	MEAN	0.0082	0.0083	0.0130	0.0140
	STD				0.0093
PCB194	N	1	1	1	14
2,2',3,3',4,4',5,-OCTACHLOROBIPHENYL	MEAN	0.3064	0.4216	0.3796	0.2709
	STD				0.1549
PCB195	N	1	1	1	14
2,2',3,3',4,4',5,6-OCTACHLOROBIPHENYL	MEAN	0.1020	0.1331	0.1246	0.1478
	STD				0.0551
PCB200	N	1	1	1	14
2,2',3,3',4,5',6,-OCTACHLOROBIPHENYL	MEAN	0.0840	0.0841	0.0915	0.0911
	STD				0.0322
PCB201	N	1	1	1	14
2,2',3,3',4,5,5',-OCTACHLOROBIPHENYL	MEAN	0.6139	0.7512	0.6653	0.5464
	STD				0.1914
PCB203	N	1	1	1	14
2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL	MEAN	0.3955	0.5025	0.4432	0.3839
	STD				0.1424
PCB206	N	1	1	1	14
2,2',3,3',4,4',5,-NONACHLOROBIPHENYL	MEAN	0.0583	0.0967	0.0962	0.0712
	STD				0.0366

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

DETROIT RIVER, FIGHTING ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB28 2,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 0.0920 ND	1 0.0678 ND	1 0.0282 ND	14 0.0449 0.0091
PCB31 2,4',5'-TRICHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	14 ND
PCB42 2,2',3,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	14 0.0032 0.0000
PCB44 2,2',3,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0653 ND	1 0.0381 ND	1 0.0250 ND	14 0.0574 0.0167
PCB49 2,2',4,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0276 ND	1 0.0123 ND	1 0.0145 ND	14 0.0207 0.0164
PCB52 2,2',5,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.1334 ND	1 0.0863 ND	1 0.0566 ND	14 0.1358 0.0496
PCB60 2,3,4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 0.0893 ND	1 0.1272 ND	14 0.0746
PCB64 2,3,4',6-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0124 ND	1 0.0078 ND	1 0.0056 ND	14 0.0094 0.0000
PCB66 2,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.4181 ND	1 0.0012 ND	1 0.1656 ND	14 0.2967 0.0610
PCB70 2,3',4',5-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	14 0.0033 0.0000
PCB74 2,4,4',5-TETRACHLOROBIPHENYL	N MEAN STD	0 ND ND	0 ND ND	1 0.0755 ND	14 0.1306 0.0275
PCB87 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0534 ND	1 0.0421 ND	1 0.0473 ND	14 0.0621 0.0355
PCB97 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0378 ND	1 0.0339 ND	1 0.0175 ND	14 0.0379 0.0141
PCB99 2,2',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.8766 ND	1 0.6566 ND	1 0.3608 ND	14 0.5297 0.1039
PCB101 2,2',4,5,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.3047 ND	1 0.2277 ND	1 0.1469 ND	14 0.2493 0.0793

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

DETROIT RIVER, FIGHTING ISLAND

HERRING GULL	YEAR			
	89	90	91	92
PCB105 2,3,3',4,4'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.2881 0.1932	1 0.1107 0.1811	1 0.0332 0.14
PCB110 2,3,3',4',6-PENTACHLOROBIPHENYL	N MEAN STD	1 0.2410 0.1724	1 0.1067 0.2003	1 0.0487 0.14
PCB118 2,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 1.2110 0.8611	1 0.6194 0.7829	1 0.1617 0.14
PCB128 2,2',3,3',4,4'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.3474 0.2211	1 0.2175 0.3720	1 0.0861 0.14
PCB129 2,2',3,3',4,5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.1589 0.1021	1 0.0679 0.1189	1 0.0260 0.14
PCB137 2,2',3,4,4',5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0987 0.0767	1 0.0429 0.0689	1 0.0151 0.14
PCB138 2,2',3,4,4',5'-HEXACHLOROBIPHENYL	N MEAN STD	1 4.1460 2.8900	1 1.6232 2.2553	1 0.4657 0.14
PCB141 2,2',3,4,5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0855 0.0623	1 0.0342 0.0681	1 0.0302 0.14
PCB146 2,2',3,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.6898 0.5185	1 0.2890 0.3875	1 0.0760 0.14
PCB149 2,2',3,4',5',6-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0	1 0.1431 0.2912	1 0.0510 0.14
PCB151 2,2',3,5,5',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0577 0.0228	1 0.0175 0.0486	1 0.0140 0.14
PCB153 2,2',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 4.9460 3.2760	1 1.7037 2.1650	1 0.4208 0.14
PCB158 2,3,3',4,4',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.1869 0.1397	1 0.0847 0.1075	1 0.0238 0.14
PCB170 2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL	N MEAN STD	1 1.6460 1.3420	1 0.7213 0.9591	1 0.2349 0.14
PCB171 2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.4203 0.3305	1 0.1888 0.2574	1 0.0562 0.14

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

DETROIT RIVER, FIGHTING ISLAND

HERRING GULL	YEAR			
	89	90	91	92
PCB172	N	1	1	1
2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL	MEAN	0.2032	0.1671	0.0976
	STD			0.1248
				0.0274
PCB174	N	1	1	1
2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL	MEAN	0.1010	0.0759	0.0468
	STD			0.0933
				0.0204
PCB180	N	1	1	1
2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	MEAN	4.5470	6.0560	1.7664
	STD			2.1836
				0.4935
PCB182	N	1	1	1
2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	MEAN	2.1780	1.5680	0.8184
	STD			1.2403
				0.2754
PCB183	N	1	1	1
2,2',3,4,4',5',6-HEPTACHLOROBIPHENYL	MEAN	0.9993	0.7676	0.4121
	STD			0.5614
				0.1304
PCB185	N	1	1	1
2,2',3,4,5,5',6-HEPTACHLOROBIPHENYL	MEAN	0.0090	0.0073	ND
	STD			0.0097
				0.0000
PCB194	N	1	1	1
2,2',3,3',4,4',5,-OCTACHLOROBIPHENYL	MEAN	0.4952	0.4432	0.2690
	STD			0.3416
				0.0881
PCB195	N	1	1	1
2,2',3,3',4,4',5,6-OCTACHLOROBIPHENYL	MEAN	0.1497	0.1263	0.0779
	STD			0.1422
				0.0354
PCB200	N	1	1	1
2,2',3,3',4,5',6,-OCTACHLOROBIPHENYL	MEAN	0.0865	0.0730	0.0445
	STD			0.0743
				0.0151
PCB201	N	1	1	1
2,2',3,3',4,5,5',-OCTACHLOROBIPHENYL	MEAN	0.7907	0.6650	0.3998
	STD			0.4997
				0.1238
PCB203	N	1	1	1
2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL	MEAN	0.5627	0.4651	0.2793
	STD			0.3616
				0.0888
PCB206	N	1	1	1
2,2',3,3',4,4',5,-NONACHLOROBIPHENYL	MEAN	0.0770	0.0733	0.0515
	STD			0.0831
				0.0190

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE HURON, CHANTRY ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB28 2,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 0.0910	1 0.0150	1 0.0127	1 0.0253
PCB31 2,4',5'-TRICHLOROBIPHENYL	N MEAN STD	1 ND	1 ND	1 ND	1 ND
PCB42 2,2',3,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND	1 ND	1 ND	1 ND
PCB44 2,2',3,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND	1 0.0090	1 ND	1 0.0108
PCB49 2,2',4,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND	1 0.0229	1 ND	1 0.0133
PCB52 2,2',5,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0262	1 0.0330	1 0.0288	1 0.0801
PCB60 2,3,4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND	1 ND	1 0.0764	1 0.0901
PCB64 2,3,4',6-TETRACHLOROBIPHENYL	N MEAN STD	1 ND	1 0.0032	1 0.0046	1 0.0073
PCB66 2,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.1310	1 0.1456	1 0.1543	1 0.2204
PCB70 2,3',4',5-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0260	1 ND	1 ND	1 0.0131
PCB74 2,4,4',5-TETRACHLOROBIPHENYL	N MEAN STD	0 ND	0 ND	1 0.0663	1 0.0854
PCB87 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 ND	1 ND	1 0.0321	1 0.0514
PCB97 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0168	1 0.0197	1 0.0211	1 0.0327
PCB99 2,2',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.2180	1 0.2957	1 0.2956	1 0.2870
PCB101 2,2',4,5,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0823	1 0.1051	1 0.1118	1 0.1621

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ .

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE HURON, CHANTRY ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB105 2,3,3',4,4'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0598 0.0127	1 0.0809 0.0936	1 0.1127	1
PCB110 2,3,3',4',6-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0714 0.1383	1 0.0854 0.1023	1 0.1383	1
PCB118 2,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.2410 0.4117	1 0.3799 0.6298	1 0.4117	1
PCB128 2,2',3,3',4,4'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0865 0.2193	1 0.1301 0.1933	1 0.1933	1
PCB129 2,2',3,3',4,5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0192 0.0335	1 0.0321 0.0323	1 0.0323	1
PCB137 2,2',3,4,4',5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0175 0.0282	1 0.0299 0.0277	1 0.0277	1
PCB138 2,2',3,4,4',5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.4574 0.7461	1 0.8210 0.7431	1 0.7431	1
PCB141 2,2',3,4,5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0134 0.0280	1 0.0196 0.0175	1 0.0175	1
PCB146 2,2',3,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0886 0.1389	1 0.1504 0.1410	1 0.1410	1
PCB149 2,2',3,4',5',6-HEXACHLOROBIPHENYL	N MEAN STD	0 0.1247	0 ND	1 ND	1
PCB151 2,2',3,5,5',6-HEXACHLOROBIPHENYL	N MEAN STD	1 ND 0.0114	1 ND 0.0195	1 0.0195	1
PCB153 2,2',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.4978 0.7221	1 0.8983 0.7599	1 0.7599	1
PCB158 2,3,3',4,4',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0182 0.0290	1 0.0328 0.0271	1 0.0271	1
PCB170 2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.1284 0.2122	1 0.2557 0.2112	1 0.2112	1
PCB171 2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.0450 0.0762	1 0.0806 0.0720	1 0.0720	1

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE HURON, CHANTRY ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB172 2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.0203 1	1 0.0389 1	1 0.0364 1	1 0.0364 1
PCB174 2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.0172 1	1 0.0218 1	1 0.0256 1	1 0.0333 1
PCB180 2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.3322 1	1 0.6679 1	1 0.5500 1	1 0.5413 1
PCB182 2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.1464 1	1 0.2769 1	1 0.2621 1	1 0.2889 1
PCB183 2,2',3,4,4',5',6-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.0856 1	1 0.1513 1	1 0.1332 1	1 0.1310 1
PCB185 2,2',3,4,5,5',6-HEPTACHLOROBIPHENYL	N MEAN STD	1 ND 1	1 ND 1	1 ND 1	1 ND 1
PCB194 2,2',3,3',4,4',5,-OCTACHLOROBIPHENYL	N MEAN STD	1 0.0434 1	1 0.0860 1	1 0.0845 1	1 0.0809 1
PCB195 2,2',3,3',4,4',5,6-OCTACHLOROBIPHENYL	N MEAN STD	1 0.0090 1	1 0.0272 1	1 0.0260 1	1 0.0349 1
PCB200 2,2',3,3',4,5',6,-OCTACHLOROBIPHENYL	N MEAN STD	1 ND 1	1 0.0187 1	1 0.0199 1	1 0.0286 1
PCB201 2,2',3,3',4,5,5',-OCTACHLOROBIPHENYL	N MEAN STD	1 0.0772 1	1 0.1452 1	1 0.1327 1	1 0.1214 1
PCB203 2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL	N MEAN STD	1 0.0552 1	1 0.1016 1	1 0.0905 1	1 0.0904 1
PCB206 2,2',3,3',4,4',5,-NONACHLOROBIPHENYL	N MEAN STD	1 0.0110 1	1 0.0218 1	1 0.0228 1	1 0.0258 1

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE HURON, CHANNEL SHELTER ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB28 2,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 0.2569 ND	1 0.1537 0.0033	1 0.0760 1 ND	1 0.1218 1 ND
PCB31 2,4',5'-TRICHLOROBIPHENYL	N MEAN STD	1 ND 1	1 0.0818 0.0744	1 0.1164 1 0.1146	1 0.1394 1 0.1132
PCB42 2,2',3,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0593 1	1 0.0925 0.1442	1 0.2637 1 0.2603	1 0.7337 1 0.6058
PCB44 2,2',3,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.1025 1	1 0.1146 0.1132	1 0.2903 1 0.1394	1 0.1146 1 0.1132
PCB49 2,2',4,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.1554 1	1 0.1442 0.1442	1 0.2903 1 0.2903	1 0.2903 1 0.2903
PCB52 2,2',5,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.4588 1	1 0.3600 0.3600	1 0.2637 1 0.2637	1 0.7337 1 0.7337
PCB60 2,3,4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0334 1	1 0.0238 0.0412	1 0.6058 1 0.0334	1 0.2654 1 0.0544
PCB64 2,3,4',6-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0483 1	1 0.0412 0.0412	1 0.0334 1 0.0334	1 0.0544 1 0.0544
PCB66 2,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 1.8600 1	1 1.4290 1.4290	1 1.6471 1 1.6471	1 1.5869 1 1.5869
PCB70 2,3',4',5-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0480 1	1 0.0329 0.0329	1 0.0334 1 0.0334	1 0.0683 1 0.0683
PCB74 2,4,4',5-TETRACHLOROBIPHENYL	N MEAN STD	0 0 1	0 0 1	1 0.7124 1 0.7124	1 0.6792 1 0.6792
PCB87 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.2939 1	1 0.3048 0.3048	1 0.1451 1 0.1451	1 0.4639 1 0.4639
PCB97 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1651 1	1 0.1856 0.1856	1 0.1235 1 0.1235	1 0.1985 1 0.1985
PCB99 2,2',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 2.4220 1	1 1.9370 1.9370	1 2.0596 1 2.0596	1 1.8731 1 1.8731
PCB101 2,2',4,5,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.7000 1	1 0.7055 0.7055	1 0.6476 1 0.6476	1 0.8431 1 0.8431

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in 300 pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE HURON, CHANNEL SHELTER ISLAND

HERRING GULL		YEAR			
		89	90	91	92
PCB105 2,3,3',4,4'-PENTACHLOROBIPHENYL	N	1	1	1	1
	MEAN	0.7273	0.5997	0.7501	0.7261
	STD				
PCB110 2,3,3',4',6-PENTACHLOROBIPHENYL	N	1	1	1	1
	MEAN	0.5784	0.5485	0.4541	0.6453
	STD				
PCB118 2,3',4,4',5-PENTACHLOROBIPHENYL	N	1	1	1	1
	MEAN	3.3530	2.8590	3.5068	2.9365
	STD				
PCB128 2,2',3,3',4,4'-HEXACHLOROBIPHENYL	N	1	1	1	1
	MEAN	0.4683	0.6231	0.5442	0.7252
	STD				
PCB129 2,2',3,3',4,5-HEXACHLOROBIPHENYL	N	1	1	1	1
	MEAN	0.1078	0.1133	0.1219	0.1603
	STD				
PCB137 2,2',3,4,4',5-HEXACHLOROBIPHENYL	N	1	1	1	1
	MEAN	0.1919	0.1637	0.1975	0.1889
	STD				
PCB138 2,2',3,4,4',5'-HEXACHLOROBIPHENYL	N	1	1	1	1
	MEAN	3.8030	3.4490	3.5195	3.3075
	STD				
PCB141 2,2',3,4,5,5'-HEXACHLOROBIPHENYL	N	1	1	1	1
	MEAN	0.0730	0.0772	0.0694	0.1074
	STD				
PCB146 2,2',3,4',5,5'-HEXACHLOROBIPHENYL	N	1	1	1	1
	MEAN	0.6364	0.5699	0.5647	0.5485
	STD				
PCB149 2,2',3,4',5',6-HEXACHLOROBIPHENYL	N	0	0	1	1
	MEAN			0.3407	0.4409
	STD				
PCB151 2,2',3,5,5',6-HEXACHLOROBIPHENYL	N	1	1	1	1
	MEAN	0.0571	0.0452	0.0495	0.0676
	STD				
PCB153 2,2',4,4',5,5'-HEXACHLOROBIPHENYL	N	1	1	1	1
	MEAN	3.6560	3.1960	2.8869	2.6397
	STD				
PCB158 2,3,3',4,4',6-HEXACHLOROBIPHENYL	N	1	1	1	1
	MEAN	0.1748	0.1534	0.1629	0.1490
	STD				
PCB170 2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL	N	1	1	1	1
	MEAN	0.9478	0.9797	1.0748	1.0458
	STD				
PCB171 2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL	N	1	1	1	1
	MEAN	0.3434	0.3261	0.3994	0.3861
	STD				

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE HURON, CHANNEL SHELTER ISLAND

HERRING GULL	YEAR			
	89	90	91	92
PCB172	N	1	1	1
2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL	MEAN	0.1379	0.1307	0.1683
	STD			0.1544
PCB174	N	1	1	1
2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL	MEAN	0.0909	0.0841	0.0962
	STD			0.1126
PCB180	N	1	1	1
2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	MEAN	2.3660	2.2850	2.3460
	STD			2.1935
PCB182	N	1	1	1
2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	MEAN	1.1690	1.0520	1.1277
	STD			1.2724
PCB183	N	1	1	1
2,2',3,4,4',5',6'-HEPTACHLOROBIPHENYL	MEAN	0.5481	0.4956	0.5290
	STD			0.5323
PCB185	N	1	1	1
2,2',3,4,5,5',6'-HEPTACHLOROBIPHENYL	MEAN	ND	0.0068	ND
	STD			0.0163
PCB194	N	1	1	1
2,2',3,3',4,4',5,-OCTACHLOROBIPHENYL	MEAN	0.3248	0.3423	0.4093
	STD			0.4044
PCB195	N	1	1	1
2,2',3,3',4,4',5,6-OCTACHLOROBIPHENYL	MEAN	0.1067	0.1122	0.1409
	STD			0.1931
PCB200	N	1	1	1
2,2',3,3',4,5',6,-OCTACHLOROBIPHENYL	MEAN	0.0847	0.0677	0.1264
	STD			0.1232
PCB201	N	1	1	1
2,2',3,3',4,5,5',-OCTACHLOROBIPHENYL	MEAN	0.5721	0.5676	0.6758
	STD			0.6118
PCB203	N	1	1	1
2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL	MEAN	0.3802	0.3706	0.4459
	STD			0.4107
PCB206	N	1	1	1
2,2',3,3',4,4',5,-NONACHLOROBIPHENYL	MEAN	0.0911	0.0951	0.1336
	STD			0.1532

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE HURON, DOUBLE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB28 2,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 0.0244 ND	1 0.0207 ND	1 0.0127 ND	1 0.0105 ND
PCB31 2,4',5'-TRICHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	1 ND ND
PCB42 2,2',3,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	1 ND ND
PCB44 2,2',3,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 0.0059 ND	1 ND ND	1 ND ND
PCB49 2,2',4,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	1 ND ND
PCB52 2,2',5,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0252 ND	1 0.0291 ND	1 0.0295 ND	1 0.0446 ND
PCB60 2,3,4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND 0.0589	1 ND 0.0744	1 ND ND
PCB64 2,3,4',6-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0050 ND	1 0.0031 ND	1 0.0039 ND	1 0.0050 ND
PCB66 2,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.1702 ND	1 0.1529 ND	1 0.1276 ND	1 0.1544 ND
PCB70 2,3',4',5-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	1 ND ND
PCB74 2,4,4',5-TETRACHLOROBIPHENYL	N MEAN STD	0 MEAN STD	0 0.0484 ND	1 0.0484 ND	1 0.0803 ND
PCB87 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0142 ND	1 ND 0.0269	1 0.0269 ND	1 0.0424 ND
PCB97 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0230 ND	1 0.0183 ND	1 0.0193 ND	1 0.0233 ND
PCB99 2,2',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.3637 ND	1 0.2937 ND	1 0.2658 ND	1 0.2777 ND
PCB101 2,2',4,5,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1154 ND	1 0.0997 ND	1 0.1100 ND	1 0.1262 ND

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE HURON, DOUBLE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB105 2,3,3',4,4'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1137 0.1126	1 0.0844 0.0797	1 0.0837 0.0919	1 0.1069 0.1126
PCB110 2,3,3',4',6-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1263 0.1263	1 0.0797 0.0797	1 0.0919 0.0919	1 0.1126 0.1126
PCB118 2,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.4810 0.4810	1 0.3826 0.3826	1 0.5721 0.5721	1 0.3943 0.3943
PCB128 2,2',3,3',4,4'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.3010 0.3010	1 0.1358 0.1358	1 0.1798 0.1798	1 0.2168 0.2168
PCB129 2,2',3,3',4,5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0428 0.0428	1 0.0362 0.0362	1 0.0361 0.0361	1 0.0266 0.0266
PCB137 2,2',3,4,4',5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0387 0.0387	1 0.0303 0.0303	1 0.0239 0.0239	1 0.0205 0.0205
PCB138 2,2',3,4,4',5'-HEXACHLOROBIPHENYL	N MEAN STD	1 1.0350 1.0350	1 0.8404 0.8404	1 0.7226 0.7226	1 0.7477 0.7477
PCB141 2,2',3,4,5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0239 0.0239	1 0.0170 0.0170	1 0.0199 0.0199	1 0.0206 0.0206
PCB146 2,2',3,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.1887 0.1887	1 0.1562 0.1562	1 0.1403 0.1403	1 0.1505 0.1505
PCB149 2,2',3,4',5',6-HEXACHLOROBIPHENYL	N MEAN STD	0 0.0000 0.0000	0 0.0000 0.0000	1 ND ND	1 0.1098 0.1098
PCB151 2,2',3,5,5',6-HEXACHLOROBIPHENYL	N MEAN STD	1 ND ND	1 ND ND	1 ND ND	1 0.0119 0.0119
PCB153 2,2',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 1.1260 1.1260	1 0.9111 0.9111	1 0.7362 0.7362	1 0.7328 0.7328
PCB158 2,3,3',4,4',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0396 0.0396	1 0.0321 0.0321	1 0.0297 0.0297	1 0.0214 0.0214
PCB170 2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.3077 0.3077	1 0.2547 0.2547	1 0.1951 0.1951	1 0.2022 0.2022
PCB171 2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.1936 0.1936	1 0.0824 0.0824	1 0.0695 0.0695	1 0.0675 0.0675

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in 304 pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE HURON, DOUBLE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB172	N	1	1	1	1
2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL	MEAN	0.0946	0.0419	0.0346	0.0317
PCB174	STD				
2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL	N	1	1	1	1
PCB180	MEAN	0.2368	0.0201	0.0242	0.0244
2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	STD				
PCB182	N	1	1	1	1
2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	MEAN	0.3616	0.3060	0.2673	0.2650
PCB183	STD				
2,2',3,4,4',5',6'-HEPTACHLOROBIPHENYL	N	1	1	1	1
PCB185	MEAN	0.1782	0.1459	0.1182	0.1015
2,2',3,4,5,5',6'-HEPTACHLOROBIPHENYL	STD				
PCB194	N	1	1	1	1
2,2',3,3',4,4',5,-OCTACHLOROBIPHENYL	MEAN	0.1057	0.1069	0.0768	0.0747
PCB195	STD				
2,2',3,3',4,4',5,6-OCTACHLOROBIPHENYL	N	1	1	1	1
PCB200	MEAN	0.0335	0.0346	0.0245	0.0340
2,2',3,3',4,5',6,-OCTACHLOROBIPHENYL	STD				
PCB201	N	1	1	1	1
2,2',3,3',4,5,5',-OCTACHLOROBIPHENYL	MEAN	0.1816	0.1824	0.1419	0.1282
PCB203	STD				
2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL	N	1	1	1	1
PCB206	MEAN	0.1152	0.1173	0.0900	0.0855
2,2',3,3',4,4',5,-NONACHLOROBIPHENYL	STD				
	N	1	1	1	1
	MEAN	0.0263	0.0319	0.0219	0.0273
	STD				

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu\text{g}/\text{g}$ .

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE MICHIGAN, GULL ISLAND

HERRING GULL		YEAR			
		89	90	91	92
PCB28 2,4,4'-TRICHLOROBIPHENYL	N	14	1	1	1
	MEAN	0.0472	0.0873	0.0353	0.0276
	STD	0.0345			
PCB31 2,4',5'-TRICHLOROBIPHENYL	N	14	1	1	1
	MEAN	ND	0.0033	ND	ND
	STD				
PCB42 2,2',3,4'-TETRACHLOROBIPHENYL	N	14	1	1	1
	MEAN	ND	0.0035	ND	ND
	STD				
PCB44 2,2',3,5'-TETRACHLOROBIPHENYL	N	14	1	1	1
	MEAN	ND	0.0148	0.0936	ND
	STD				
PCB49 2,2',4,5'-TETRACHLOROBIPHENYL	N	14	1	1	1
	MEAN	0.0140	0.0250	0.0125	0.0111
	STD	0.0088			
PCB52 2,2',5,5'-TETRACHLOROBIPHENYL	N	14	1	1	1
	MEAN	0.0533	0.1084	0.0881	0.0662
	STD	0.0391			
PCB60 2,3,4,4'-TETRACHLOROBIPHENYL	N	14	1	1	1
	MEAN	0.0188	0.0183	0.3552	0.2382
	STD	0.0214			
PCB64 2,3,4',6-TETRACHLOROBIPHENYL	N	14	1	1	1
	MEAN	0.0073	0.0135	0.0111	0.0093
	STD	0.0000			
PCB66 2,3',4,4'-TETRACHLOROBIPHENYL	N	14	1	1	1
	MEAN	0.3720	0.6472	0.6313	0.4393
	STD	0.1947			
PCB70 2,3',4',5-TETRACHLOROBIPHENYL	N	14	1	1	1
	MEAN	0.0100	0.0219	0.0096	0.0254
	STD	0.0081			
PCB74 2,4,4',5-TETRACHLOROBIPHENYL	N	0	0	1	1
	MEAN			0.2566	0.2053
	STD				
PCB87 2,2',3',4,5-PENTACHLOROBIPHENYL	N	14	1	1	1
	MEAN	0.0331	0.0609	0.0432	0.0287
	STD	0.0260			
PCB97 2,2',3',4,5-PENTACHLOROBIPHENYL	N	14	1	1	1
	MEAN	0.0305	0.0550	0.0534	0.0333
	STD	0.0170			
PCB99 2,2',4,4',5-PENTACHLOROBIPHENYL	N	14	1	1	1
	MEAN	0.6100	0.9192	1.0041	0.6645
	STD	0.2739			
PCB101 2,2',4,5,5'-PENTACHLOROBIPHENYL	N	14	1	1	1
	MEAN	0.1794	0.2745	0.3228	0.2225
	STD	0.1056			

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE MICHIGAN, GULL ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB105 2,3,3',4,4'-PENTACHLOROBIPHENYL	N MEAN STD	14 0.1982 0.0981	1 0.2736	1 0.3562	1 0.2542
PCB110 2,3,3',4',6-PENTACHLOROBIPHENYL	N MEAN STD	14 0.1464 0.0684	1 0.2023	1 0.2588	1 0.1740
PCB118 2,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	14 0.8138 0.4130	1 1.2820	1 1.6559	1 0.9854
PCB128 2,2',3,3',4,4'-HEXACHLOROBIPHENYL	N MEAN STD	14 0.3143 0.1364	1 0.4342	1 0.4520	1 0.4751
PCB129 2,2',3,3',4,5-HEXACHLOROBIPHENYL	N MEAN STD	14 0.0532 0.0315	1 0.0874	1 0.1080	1 0.0437
PCB137 2,2',3,4,4',5-HEXACHLOROBIPHENYL	N MEAN STD	14 0.0566 0.0268	1 0.0880	1 0.1186	1 0.0499
PCB138 2,2',3,4,4',5'-HEXACHLOROBIPHENYL	N MEAN STD	14 1.5220 0.6812	1 2.3230	1 2.7592	1 1.7039
PCB141 2,2',3,4,5,5'-HEXACHLOROBIPHENYL	N MEAN STD	14 0.0273 0.0224	1 0.0351	1 0.0442	1 0.0256
PCB146 2,2',3,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	14 0.2782 0.1259	1 0.4103	1 0.4806	1 0.3132
PCB149 2,2',3,4',5',6-HEXACHLOROBIPHENYL	N MEAN STD	0 0 0	0 0.2560	1 0.1787	1 1
PCB151 2,2',3,5,5',6-HEXACHLOROBIPHENYL	N MEAN STD	14 ND ND	1 0.0652	1 0.0561	1 1
PCB153 2,2',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	14 1.6095 0.7039	1 2.3620	1 2.4819	1 1.5072
PCB158 2,3,3',4,4',6-HEXACHLOROBIPHENYL	N MEAN STD	14 0.0614 0.0281	1 0.0852	1 0.1044	1 0.0483
PCB170 2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL	N MEAN STD	14 0.3462 0.1467	1 0.5461	1 0.7135	1 0.4227
PCB171 2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL	N MEAN STD	14 0.1285 0.0562	1 0.1962	1 0.2622	1 0.1384

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE MICHIGAN, GULL ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB172	N MEAN STD	14 0.0586 0.0275	1 0.0928	1 0.1247	1 0.0609
2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL	N MEAN STD	14 0.0323 0.0138	1 0.0380	1 0.0562	1 0.0313
PCB174	N MEAN STD	14 0.8818 0.3970	1 1.3630	1 1.7304	1 1.0156
2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL	N MEAN STD	14 0.4333 0.1872	1 0.6539	1 0.8083	1 0.4693
PCB180	N MEAN STD	14 0.2152 0.0935	1 0.3116	1 0.4088	1 0.2013
2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	N MEAN STD	14 0.0952 0.0372	1 0.1707	1 0.2375	1 0.1361
PCB182	N MEAN STD	14 ND 0.0014	1 ND	1 ND	1 ND
2,2',3,4,5,5',6-HEPTACHLOROBIPHENYL	N MEAN STD	14 0.0337 0.0136	1 0.0587	1 0.0765	1 0.0608
PCB185	N MEAN STD	14 0.0389 0.0205	1 0.0557	1 0.0894	1 0.0476
2,2',3,3',4,4',5,-OCTACHLOROBIPHENYL	N MEAN STD	14 0.2038 0.0759	1 0.3527	1 0.4383	1 0.2330
PCB194	N MEAN STD	14 0.1321 0.0513	1 0.2185	1 0.2888	1 0.1625
PCB195	N MEAN STD	14 0.0228 0.0000	1 0.0505	1 0.0620	1 0.0416
2,2',3,3',4,5,5',-OCTACHLOROBIPHENYL	N MEAN STD	14 0.0228 0.0000	1 0.0505	1 0.0620	1 0.0416
PCB200	N MEAN STD	14 0.0389 0.0205	1 0.0557	1 0.0894	1 0.0476
PCB201	N MEAN STD	14 0.2038 0.0759	1 0.3527	1 0.4383	1 0.2330
PCB203	N MEAN STD	14 0.1321 0.0513	1 0.2185	1 0.2888	1 0.1625
2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL	N MEAN STD	14 0.0228 0.0000	1 0.0505	1 0.0620	1 0.0416
PCB206	N MEAN STD	14 0.0228 0.0000	1 0.0505	1 0.0620	1 0.0416
2,2',3,3',4,4',5,-NONACHLOROBIPHENYL	N MEAN STD	14 0.0228 0.0000	1 0.0505	1 0.0620	1 0.0416

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE MICHIGAN, BIG SISTER ISLAND, GREEN BAY

HERRING GULL	YEAR				
	89	90	91	92	
PCB28 2,4,4'-TRICHLOROBIPHENYL	N MEAN STD	14 0.0955 0.0328	1 0.1759	1 0.0595	1 0.0629
PCB31 2,4',5'-TRICHLOROBIPHENYL	N MEAN STD	14 ND	1 ND	1 ND	1 ND
PCB42 2,2',3,4'-TETRACHLOROBIPHENYL	N MEAN STD	14 ND	1 0.0107	1 ND	1 ND
PCB44 2,2',3,5'-TETRACHLOROBIPHENYL	N MEAN STD	14 0.0108 0.0094	1 0.0108	1 0.0151	1 0.0334
PCB49 2,2',4,5'-TETRACHLOROBIPHENYL	N MEAN STD	14 0.0233 0.0154	1 0.0338	1 0.0557	1 0.0323
PCB52 2,2',5,5'-TETRACHLOROBIPHENYL	N MEAN STD	14 0.0746 0.0341	1 0.1220	1 0.1639	1 0.1340
PCB60 2,3,4,4'-TETRACHLOROBIPHENYL	N MEAN STD	14 0.0113 0.0000	1 ND	1 0.3919	1 0.0021
PCB64 2,3,4',6-TETRACHLOROBIPHENYL	N MEAN STD	14 0.0123 0.0000	1 0.0198	1 0.0189	1 0.0146
PCB66 2,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	14 0.4265 0.3165	1 0.9498	1 0.7963	1 0.5398
PCB70 2,3',4',5-TETRACHLOROBIPHENYL	N MEAN STD	14 0.0333 0.0160	1 0.0160	1 0.0192	1 0.0351
PCB74 2,4,4',5-TETRACHLOROBIPHENYL	N MEAN STD	0 0	0 0	1 0.3637	1 0.2246
PCB87 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	14 0.0352 0.0159	1 0.0763	1 0.0391	1 0.0928
PCB97 2,2',3',4,5-PENTACHLOROBIPHENYL	N MEAN STD	14 0.0371 0.0155	1 0.0557	1 0.0477	1 0.0409
PCB99 2,2',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	14 0.7788 0.1506	1 1.1130	1 0.8642	1 0.5824
PCB101 2,2',4,5,5'-PENTACHLOROBIPHENYL	N MEAN STD	14 0.1885 0.0707	1 0.3039	1 0.2863	1 0.2350

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE MICHIGAN, BIG SISTER ISLAND, GREEN BAY

HERRING GULL	YEAR				
	89	90	91	92	
PCB105 2,3,3',4,4'-PENTACHLOROBIPHENYL	N MEAN STD	14 0.2277 0.0519	1 0.3080	1 0.2998	1 0.1886
PCB110 2,3,3',4',6-PENTACHLOROBIPHENYL	N MEAN STD	14 0.1704 0.0549	1 0.2225	1 0.1990	1 0.1773
PCB118 2,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	14 0.9915 0.2143	1 1.6160	1 1.2691	1 0.8216
PCB128 2,2',3,3',4,4'-HEXACHLOROBIPHENYL	N MEAN STD	14 0.2837 0.0537	1 0.4511	1 0.4038	1 0.3542
PCB129 2,2',3,3',4,5-HEXACHLOROBIPHENYL	N MEAN STD	14 0.0540 0.0180	1 0.0539	1 0.0340	1 0.0440
PCB137 2,2',3,4,4',5-HEXACHLOROBIPHENYL	N MEAN STD	14 0.0615 0.0109	1 0.0922	1 0.0701	1 0.0477
PCB138 2,2',3,4,4',5'-HEXACHLOROBIPHENYL	N MEAN STD	14 1.5518 0.2822	1 2.3900	1 1.8204	1 1.2615
PCB141 2,2',3,4,5,5'-HEXACHLOROBIPHENYL	N MEAN STD	14 0.0218 0.0138	1 0.0349	1 0.0299	1 0.0263
PCB146 2,2',3,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	14 0.2772 0.0513	1 0.4491	1 0.3292	1 0.2293
PCB149 2,2',3,4',5',6-HEXACHLOROBIPHENYL	N MEAN STD	0 0.0000 0.0000	0 0	1 0.1705	1 0.1534
PCB151 2,2',3,5,5',6-HEXACHLOROBIPHENYL	N MEAN STD	14 ND ND	1 ND	1 0.0333	1 0.0214
PCB153 2,2',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	14 1.5854 0.2921	1 2.4030	1 1.7177	1 1.1508
PCB158 2,3,3',4,4',6-HEXACHLOROBIPHENYL	N MEAN STD	14 0.0645 0.0092	1 0.0914	1 0.0631	1 0.0477
PCB170 2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL	N MEAN STD	14 0.3775 0.0776	1 0.5692	1 0.4252	1 0.2959
PCB171 2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL	N MEAN STD	14 0.1373 0.0349	1 0.2002	1 0.1618	1 0.1058

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE MICHIGAN, BIG SISTER ISLAND, GREEN BAY

HERRING GULL	YEAR			
	89	90	91	92
PCB172	N	14	1	1
2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL	MEAN	0.0615	0.0920	0.0745
	STD	0.0120		0.0488
PCB174	N	14	1	1
2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL	MEAN	0.0375	0.0373	0.0304
	STD	0.0473		0.0270
PCB180	N	14	1	1
2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	MEAN	0.8601	1.4190	0.5190
	STD	0.1804		0.6993
PCB182	N	14	1	1
2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	MEAN	0.4248	0.6487	0.5310
	STD	0.0895		0.4302
PCB183	N	14	1	1
2,2',3,4,4',5',6-HEPTACHLOROBIPHENYL	MEAN	0.2055	0.3336	0.2590
	STD	0.0406		0.1786
PCB185	N	14	1	1
2,2',3,4,5,5',6-HEPTACHLOROBIPHENYL	MEAN	ND	ND	ND
	STD			
PCB194	N	14	1	1
2,2',3,3',4,4',5,-OCTACHLOROBIPHENYL	MEAN	0.1164	0.1597	0.1329
	STD	0.0271		0.0887
PCB195	N	14	1	1
2,2',3,3',4,4',5,6-OCTACHLOROBIPHENYL	MEAN	0.0352	0.0616	0.0447
	STD	0.0123		0.0434
PCB200	N	14	1	1
2,2',3,3',4,5',6,-OCTACHLOROBIPHENYL	MEAN	0.0402	0.0553	0.0563
	STD	0.0115		0.0386
PCB201	N	14	1	1
2,2',3,3',4,5,5',-OCTACHLOROBIPHENYL	MEAN	0.2198	0.3466	0.2723
	STD	0.0592		0.1730
PCB203	N	14	1	1
2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL	MEAN	0.1398	0.2162	0.1670
	STD	0.0346		0.1139
PCB206	N	14	1	1
2,2',3,3',4,4',5,-NONACHLOROBIPHENYL	MEAN	0.0411	0.0493	0.0364
	STD	0.0352		0.0301

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE SUPERIOR, AGAWA ROCK

HERRING GULL	YEAR				
	89	90	91	92	
PCB28 2,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 0.0375 0.0145	14 0.0296 ND	1 0.0181 ND	1 0.0328 ND
PCB31 2,4',5'-TRICHLOROBIPHENYL	N MEAN STD	1 ND ND	14 ND ND	1 ND ND	1 ND ND
PCB42 2,2',3,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	14 ND ND	1 ND ND	1 ND ND
PCB44 2,2',3,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	14 0.0052 0.0000	1 ND ND	1 0.0121 0.0167
PCB49 2,2',4,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	14 0.0071 0.0000	1 ND ND	1 0.1039 0.1210
PCB52 2,2',5,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0391 0.0220	14 0.0405 ND	1 0.0322 0.1043	1 0.2780 0.0241
PCB60 2,3,4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	14 ND ND	1 0.0049 0.1868	1 0.0097 0.2780
PCB64 2,3,4',6'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0067 0.0000	14 0.0051 0.2084	1 0.0049 0.1868	1 0.0097 0.2780
PCB66 2,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.2404 0.0647	14 0.2084 0.1868	1 0.1868 0.0241	1 0.2780 0.0241
PCB70 2,3',4',5'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND ND	14 0.0031 0.0000	1 ND ND	1 0.0241 0.1288
PCB74 2,4,4',5'-TETRACHLOROBIPHENYL	N MEAN STD	0 ND ND	0 0.0763 0.0763	1 0.1288 0.1288	1 0.1288 0.1288
PCB87 2,2',3',4,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0130 0.0319	14 0.0312 0.0295	1 0.0295 0.0694	1 0.0694 0.0694
PCB97 2,2',3',4,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0302 0.0180	14 0.0280 0.0204	1 0.0204 0.0387	1 0.0387 0.0387
PCB99 2,2',4,4',5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.4259 0.1039	14 0.3440 0.3378	1 0.3378 0.3922	1 0.3922 0.3922
PCB101 2,2',4,5,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1172 0.0527	14 0.1141 0.1196	1 0.1196 0.2011	1 0.2011 0.2011

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE SUPERIOR, AGAWA ROCK

HERRING GULL	YEAR			
	89	90	91	92
PCB105 2,3,3',4,4'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1321 0.0325	14 0.0977 0.1107	1 0.1461
PCB110 2,3,3',4',6-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1488 0.0348	14 0.1020 0.1101	1 0.1818
PCB118 2,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.5666 0.1327	14 0.4229 0.7417	1 0.5436
PCB128 2,2',3,3',4,4'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.2161 0.0562	14 0.1385 0.2454	1 0.2726
PCB129 2,2',3,3',4,5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0284 0.0116	14 0.0314 0.0335	1 0.0275
PCB137 2,2',3,4,4',5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0437 0.0097	14 0.0273 0.0318	1 0.0272
PCB138 2,2',3,4,4',5'-HEXACHLOROBIPHENYL	N MEAN STD	1 1.1000 0.3047	14 0.8420 0.9280	1 0.9665
PCB141 2,2',3,4,5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0177 0.0123	14 0.0181 0.0196	1 0.0330
PCB146 2,2',3,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.1917 0.0608	14 0.1564 0.1686	1 0.1799
PCB149 2,2',3,4',5',6-HEXACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 1 ND	1 0.1486
PCB151 2,2',3,5,5',6-HEXACHLOROBIPHENYL	N MEAN STD	1 ND 0.0000	14 0.0017 0.0194	1 0.0179
PCB153 2,2',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 1.1890 0.3369	14 0.9222 0.9115	1 0.9219
PCB158 2,3,3',4,4',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0432 0.0123	14 0.0317 0.0445	1 0.0284
PCB170 2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.3075 0.0763	14 0.2011 0.2484	1 0.2574
PCB171 2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.0987 0.0266	14 0.0739 0.0854	1 0.0839

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE SUPERIOR, AGAWA ROCK

HERRING GULL	YEAR				
	89	90	91	92	
PCB172	N	1	14	1	1
2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL	MEAN	0.0456	0.0354	0.0417	0.0362
	STD		0.0130		
PCB174	N	1	14	1	1
2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL	MEAN	0.0300	0.0221	0.0263	0.0338
	STD		0.0101		
PCB180	N	1	14	1	1
2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	MEAN	0.7442	0.5368	0.6323	0.6415
	STD		0.2175		
PCB182	N	1	14	1	1
2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	MEAN	0.2820	0.2386	0.2641	0.2734
	STD		0.0871		
PCB183	N	1	14	1	1
2,2',3,4,4',5',6-HEPTACHLOROBIPHENYL	MEAN	0.1678	0.1350	0.1440	0.1309
	STD		0.0536		
PCB185	N	1	14	1	1
2,2',3,4,5,5',6-HEPTACHLOROBIPHENYL	MEAN	ND	0.0011	ND	ND
	STD		0.0000		
PCB194	N	1	14	1	1
2,2',3,3',4,4',5,-OCTACHLOROBIPHENYL	MEAN	0.1026	0.0663	0.0948	0.0842
	STD		0.0242		
PCB195	N	1	14	1	1
2,2',3,3',4,4',5,6-OCTACHLOROBIPHENYL	MEAN	0.0303	0.0208	0.0286	0.0371
	STD		0.0079		
PCB200	N	1	14	1	1
2,2',3,3',4,5',6,-OCTACHLOROBIPHENYL	MEAN	0.0212	0.0210	0.0242	0.0260
	STD		0.0000		
PCB201	N	1	14	1	1
2,2',3,3',4,5,5',-OCTACHLOROBIPHENYL	MEAN	0.1492	0.1121	0.1415	0.1257
	STD		0.0430		
PCB203	N	1	14	1	1
2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL	MEAN	0.1130	0.0868	0.1057	0.1019
	STD		0.0330		
PCB206	N	1	14	1	1
2,2',3,3',4,4',5,-NONACHLOROBIPHENYL	MEAN	0.0244	0.0106	0.0260	0.0297
	STD		0.0000		

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE SUPERIOR, GRANITE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB28 2,4,4'-TRICHLOROBIPHENYL	N MEAN STD	1 0.0510 0.0297	14 0.0500 0.0267	1 0.0332	1
PCB31 2,4',5'-TRICHLOROBIPHENYL	N MEAN STD	1 ND 0.0000	14 0.0018 ND	1 ND	1
PCB42 2,2',3,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND 0.0074 0.0183	14 ND ND	1 ND	1
PCB44 2,2',3,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND 0.0075 0.0134	14 ND ND	1 0.0200	1
PCB49 2,2',4,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND 0.0204 0.0358	14 ND ND	1 0.0195	1
PCB52 2,2',5,5'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0824 0.0644	14 0.0622 0.0322	1 0.1260	1
PCB60 2,3,4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND 0.0000	14 ND 0.1477	1 0.0982	1
PCB64 2,3,4',6'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.0090 0.0000	14 0.0076 0.0061	1 0.0110	1
PCB66 2,3',4,4'-TETRACHLOROBIPHENYL	N MEAN STD	1 0.2899 0.0925	14 0.2521 0.2556	1 0.2913	1
PCB70 2,3',4',5'-TETRACHLOROBIPHENYL	N MEAN STD	1 ND 0.0000	14 0.0049 ND	1 0.0193	1
PCB74 2,4,4',5'-TETRACHLOROBIPHENYL	N MEAN STD	0 0.1100 0.0000	0 1 0.1100	1 0.1231	1
PCB87 2,2',3',4,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 ND 0.0237	14 0.0171 0.0329	1 0.0666	1
PCB97 2,2',3',4,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.0353 0.0203	14 0.0273 0.0192	1 0.0476	1
PCB99 2,2',4,4',5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.4320 0.1204	14 0.3547 0.4153	1 0.4226	1
PCB101 2,2',4,5,5'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1529 0.0750	14 0.1186 0.1279	1 0.2176	1

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE SUPERIOR, GRANITE ISLAND

HERRING GULL	YEAR			
	89	90	91	92
PCB105 2,3,3',4,4'-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1467 0.0323	14 0.1007 0.1409	1 0.1431
PCB110 2,3,3',4',6-PENTACHLOROBIPHENYL	N MEAN STD	1 0.1566 0.0533	14 0.1000 0.1131	1 0.1745
PCB118 2,3',4,4',5-PENTACHLOROBIPHENYL	N MEAN STD	1 0.5767 0.1500	14 0.4517 0.9108	1 0.5654
PCB128 2,2',3,3',4,4'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.2363 0.0737	14 0.1702 0.3359	1 0.3421
PCB129 2,2',3,3',4,5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0377 0.0118	14 0.0256 0.0435	1 0.0412
PCB137 2,2',3,4,4',5-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0434 0.0111	14 0.0307 0.0411	1 0.0398
PCB138 2,2',3,4,4',5'-HEXACHLOROBIPHENYL	N MEAN STD	1 1.1090 0.3126	14 0.8593 1.1346	1 1.0778
PCB141 2,2',3,4,5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0267 0.0145	14 0.0172 0.0183	1 0.0320
PCB146 2,2',3,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 0.2104 0.0604	14 0.1597 0.2118	1 0.1896
PCB149 2,2',3,4',5',6-HEXACHLOROBIPHENYL	N MEAN STD	0 0 ND	0 1 0.1602	1
PCB151 2,2',3,5,5',6-HEXACHLOROBIPHENYL	N MEAN STD	1 ND 0.0000	14 0.0028 0.0313	1 0.0520
PCB153 2,2',4,4',5,5'-HEXACHLOROBIPHENYL	N MEAN STD	1 1.2140 0.3474	14 0.9372 1.0981	1 1.0178
PCB158 2,3,3',4,4',6-HEXACHLOROBIPHENYL	N MEAN STD	1 0.0447 0.0109	14 0.0312 0.0512	1 0.0388
PCB170 2,2',3,3',4,4',5-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.2867 0.0744	14 0.2039 0.3158	1 0.2765
PCB171 2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL	N MEAN STD	1 0.0994 0.0274	14 0.0749 0.1072	1 0.0994

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in 316 pg/g; all others in  $\mu$ g/g.

## SECTION 3

TABLE 12. NON-COPLANAR PCB CONGENERS IN HERRING GULL EGGS FROM ANNUAL MONITORING COLONIES\*

LAKE SUPERIOR, GRANITE ISLAND

HERRING GULL	YEAR				
	89	90	91	92	
PCB172	N	1	14	1	1
2,2',3,3',4,5,5'-HEPTACHLOROBIPHENYL	MEAN	0.0408	0.0354	0.0542	0.0488
	STD		0.0139		
PCB174	N	1	14	1	1
2,2',3,3',4,5,6'-HEPTACHLOROBIPHENYL	MEAN	0.0337	0.0555	0.0260	0.0457
	STD		0.0642		
PCB180	N	1	14	1	1
2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL	MEAN	0.7375	0.5395	0.7861	0.7027
	STD		0.2189		
PCB182	N	1	14	1	1
2,2',3,4,4',5,6'-HEPTACHLOROBIPHENYL	MEAN	0.3225	0.2356	0.3413	0.3915
	STD		0.0871		
PCB183	N	1	14	1	1
2,2',3,4,4',5',6-HEPTACHLOROBIPHENYL	MEAN	0.1797	0.1334	0.1744	0.1783
	STD		0.0526		
PCB185	N	1	14	1	1
2,2',3,4,5,5',6-HEPTACHLOROBIPHENYL	MEAN	ND	0.0083	ND	ND
	STD		0.0194		
PCB194	N	1	14	1	1
2,2',3,3',4,4',5,-OCTACHLOROBIPHENYL	MEAN	0.0848	0.0636	0.1147	0.0915
	STD		0.0227		
PCB195	N	1	14	1	1
2,2',3,3',4,4',5,6-OCTACHLOROBIPHENYL	MEAN	0.0286	0.0205	0.0351	0.0392
	STD		0.0000		
PCB200	N	1	14	1	1
2,2',3,3',4,5',6,-OCTACHLOROBIPHENYL	MEAN	0.0261	0.0226	0.0349	0.0321
	STD		0.0082		
PCB201	N	1	14	1	1
2,2',3,3',4,5,5',-OCTACHLOROBIPHENYL	MEAN	0.1555	0.1116	0.1862	0.1424
	STD		0.0350		
PCB203	N	1	14	1	1
2,2',3,4,4',5,5',6-OCTACHLOROBIPHENYL	MEAN	0.1134	0.0823	0.1308	0.1070
	STD		0.0282		
PCB206	N	1	14	1	1
2,2',3,3',4,4',5,-NONACHLOROBIPHENYL	MEAN	0.0245	0.0170	0.0331	0.0294
	STD		0.0000		

\* All units measured on wet weight basis. N=1 indicates pooled data; ND, not detected; see page 7 for methodology. Dioxins and furans measured in pg/g; all others in  $\mu$ g/g.

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