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QUANTITATIVE ASSESSMENT OF SURFACE WATER AT RISK DUE TO ACIDIFICATION IN EASTERN CANADA



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This study used state-of-the-art digital image analysis and geographic information systems. In combination, these technologies made this study possible.

The cover illustration shows a portion of Landsat TM scene 15-28 (see Appendix A) showing the large number of lakes and other surface water bodies on the Precambrian Canadian Shield north of the Ottawa River (in blue). The remotely sensed view is joined to a GIS version of the area. The numbered areas correspond to the ecological framework (ecodistricts) used for the sensitivity assessment. The point coverage is a subset for drainage basin 2LC extracted from the surface water data base also developed for this study. Each point corresponds to an individual surface water body. Collectively, the points outline part of the drainage basin. The island of Montréal is in the southeast corner of the illustration.

Quantitative Assessment of Surface Water at Risk Due to Acidification in Eastern Canada

R.G. Hélie,* G.M. Wickware,[†] and M. Sioh*

*Economics and Conservation Branch
Ecosystem Sciences and Evaluation Directorate
Environment Canada
Ottawa, Ontario

[†]Geomatics International
3370 South Service Road
Burlington, Ontario

Ottawa, Canada
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Contents

PREFACE	v
ACKNOWLEDGMENTS	vi
INTRODUCTION	1
Study objectives	1
Study area	2
Pilot study	2
Regional study	2
Existing planimetric statistics	3
METHODOLOGY	4
Data sources	4
Analytical software	5
Image processing procedures	5
Image-to-map tie-down	8
Classification of water	8
Classification of wetlands	10
Comparison of TM-derived and manually digitized planimetric data	12
Geographical framework integration	13
Point/polygon overlay	15
Counts and measures	15
Final adjustments to methodology	15
Additional software development	15
Image processing procedures and efficiency routines	15
Streamlining production	19
Effectiveness of TM data for surface water planimetry	19
Regional application	20
Data base structure	20
Data base screening	21
Definition of surface water	22
Data base transformations	22
SURFACE WATER	22
Drainage basin statistics	22
Provincial statistics	23
SURFACE WATER AT RISK	24
Introduction	24
Provincial statistics	25
Ontario	25
Quebec	26
Newfoundland	26
Nova Scotia	27
New Brunswick	27
Prince Edward Island	27

Contents (Cont'd)

REFERENCES	27
APPENDIX A Landsat TM scenes	29
APPENDIX B Drainage basin counts and measures statistics	35
APPENDIX C Surface water counts and measures statistics	83
APPENDIX D Surface water at risk statistics	89

Tables

1. Pilot study Landsat TM scenes	2
2. Radiometric configuration of Landsat TM	5
3. Subset of acceptable processed polygons	6
4. Image data summary for Trois-Rivières scene	8
5. Distribution of water bodies for the Lake Saint-Jean (south) TM scene	10
6. Comparison of TM-derived and manually digitized data for drainage basins 2OB and 2RG	12
7. Data base structure	21
8. Size classes	23
9. Summary statistics for surface water	24
10. Summary statistics for surface water at risk	26
11. Summary statistics for small water bodies (<5 ha) at risk	26

Illustrations

Figure 1. Study area	3
Figure 2. Image processing procedures for the classification of Landsat TM data ..	7
Figure 3. Bitmap of band 4 classification showing water polygon with intensity values 1-23	9
Figure 4. Image classification results for key areas of the study	11
Figure 5. Comparison of TM and manually digitized area and perimeter values ..	13
Figure 6. Downloading and conversion of TM-generated counts and measures data into GIS environment	14
Figure 7. Conversion of point files to a data base format and generation of counts and measures statistics for geographic areas	16
Figure 8. Simplified flow chart showing the generation of planimetric information from satellite data using a GIS	17
Figure 9. Revised image processing procedures	18

Preface

Our study was prompted by the inability to answer three basic questions about surface water in eastern Canada. First, what is its extent? Although there were a number of inventories of water and wetlands in specific areas, no accurate and comprehensive inventory had ever been carried out for the entire region. Furthermore, most of these inventories were not available in a digital format, thus limiting their versatility. Second, how many of the water bodies in eastern Canada are smaller than one hectare? Small water bodies are more susceptible to acidification than large water bodies and provide important habitat for a variety of fish, wildlife, and other components of the food chain. Third, how much of the surface water is at risk due to anthropogenically induced acidification? The potential losses because of this form of acidification are enormous and have direct relevance to the flora, fauna, economy, and human health of the area.

This report presents the results of our attempts to answer these questions. First we describe the methodology we developed to derive meaningful planimetric information from raw data. Next we describe the regional application of this methodology and present the data base thus derived within drainage basin and provincial frameworks. Finally we show how, using the ecodistrict framework developed by the Canadian Committee on Ecological Land Classification (CCELC), we rated the potential of soils and bedrock to reduce acidity and derived provincial planimetric statistics based on potential aquatic sensitivity to acidic precipitation.

Selected results of this quantitative assessment of surface water in eastern Canada are presented in a format designed to make the information easily accessible to the reader.

Acknowledgments

The procurement, processing, and analysis of 129 digital Landsat Thematic Mapper scenes was a formidable undertaking that required the cooperation of many people from several agencies. We wish to acknowledge the following for their contribution to this effort.

The Canada Centre for Remote Sensing (Energy, Mines and Resources Canada) made this project feasible by providing the necessary Landsat Thematic Mapper scenes and by assisting in the scene selection process. Andrew Dyk (Geomatics International) generated the digital point files at PCI Inc., which provided support. Ian Marshall (then of the Habitat Division, Canadian Wildlife Service, Environment Canada), the Atlantic Region of the Ecosystem Sciences and Evaluation Directorate (Environment Canada), and Claire Gosson of the National Atlas of Canada (Energy, Mines and Resources Canada) provided financial support. The Environmental Studies and Assessment Department of Ontario Hydro, especially Kurt Johansen and Larry Onisto, helped with the completion of the data base for the western portion of Ontario. The Environmental Information Systems Division (State of the Environment Reporting, Environment Canada) provided support, particularly Nicole Chartrand and Linda Conlin, who carried out the mainframe GIS manipulations. The Drafting Section of Conservation and Protection (Environment Canada) produced the line drawings and maps. Dean Jeffries (National Water Research Institute, Environment Canada), Tom Clair (Ecosystem Sciences and Evaluation Directorate-Atlantic Region, Environment Canada), and Madeleine Papineau (St. Lawrence Centre, Quebec Region, Environment Canada) provided very constructive comments on the original manuscript.

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INTRODUCTION

Studies that quantify and classify surface water provide information on such physical parameters as perimeter, area, depth, and the number of distinct water bodies within a drainage basin. Such surface water frequency distribution and planimetric information is referred to as "counts and measures" data.

Counts and measures data are an integral part of ongoing modelling efforts to describe and predict the effects of anthropogenically induced acidification on surface water. At the same time, these data are used directly to assist in the quantitative assessment of surface water at risk in a particular drainage basin or in a specific sensitivity zone. This is particularly important in drainage basins where the terrestrial ecosystem is found to have a low potential to reduce acidity (Environment Canada 1987; Energy, Mines and Resources Canada 1991).

In addition to basic surface water planimetry, other information is often required when selecting a model appropriate for the drainage basin being examined. Wetland information, for example, is often required to make effective and unbiased use of several models where natural sources of organic acids are important (Hélie and Fraser 1987). At present, most regional acidification models do not account for the relative contribution of organic acids. While there is considerable information on wetland type and distribution, the information is not generally available in a digital format and therefore not suitable for integration into the modelling process.

Remote sensing was examined as a means of generating a digital counts and measures data base for surface water and wetlands in a pilot study in three areas of eastern Canada. The results were

evaluated against other methods currently in use in terms of processing time, accuracy, and cost efficiency. Following the pilot study, the image processing methodology was adjusted and remote sensing was used to develop a quantitative data base of water bodies in eastern Canada, where acidification stresses are the highest in the country. Selected results of this quantitative assessment are presented in this report.

Study Objectives

The purpose of the pilot study was to develop an automated technique for obtaining counts and measures data for water and wetlands through digital image analysis procedures using full-scene Landsat Thematic Mapper (TM) digital data. Four objectives were established:

1. define, through digital image classification, the spectral range associated with each water and wetland class identified;
2. develop and integrate software routines that utilize the spectral values determined for each class (water and wetland) and automatically calculate counts and measures data (i.e., water and wetland identification number, UTM and/or latitude and longitude geographic coordinates, area [hectares], and perimeter [metres]);
3. compare the accuracy of the TM counts and measures methodology to results obtained through the use of traditional methods based on topographic maps;
4. estimate the counts and measures data for wetlands in the Kejimkujik National Park area and compare the results with those obtained by Wickware and Kessel-Taylor (1987).

Remote sensing, in the form of digital Landsat TM data, offered a potential alternative data source for counts and measures data involving water and wetlands. The availability of the TM data, high spatial resolution, and the potential to use automated techniques to analyze and process the information, together with the potential for quick and cost-effective generation of a data base, made this a very attractive option for the study.

When the objectives of the pilot study had been met, a full-scale study was undertaken to obtain surface water counts and measures data for eastern Canada. Specifically, a comprehensive and highly detailed assessment of the area, perimeter, and distribution of water bodies east of the Ontario/Manitoba border and south of the 52nd parallel had to be generated to provide a sound basis for resource-at-risk assessment and modelling. All this was to be provided in a versatile digital format suitable for a multitude of applications, within a reasonable time frame, and at a reasonable cost.

Study Area

Pilot Study

Four Landsat TM scenes, three from Quebec and one from Nova Scotia, were used for the pilot study (Wickware et al. 1991) (Table 1). Three areas from these scenes were selected for detailed counts and measures calibration and analysis: drainage basins 2OB, north of Montréal, and 2RG, south of Lake Saint-Jean (Fisheries and Environment Canada 1977), and Kejimkujik National Park in southwestern Nova Scotia. The areas in Quebec were selected because planimetric information was already available from Ministère de l'environnement du Québec data (Hélie 1989). The Kejimkujik area was selected because its numerous wetlands had been the subject of investigations pertaining to the long-range transport of airborne pollutants, for which counts and measures and classification data were available (Wickware and Kessel-Taylor 1987).

Table 1. Pilot Study Landsat TM Scenes

Location	Track	Scene	Date
Montréal/Trois Rivières	14	28	27 Sep 86
Lake Saint-Jean (south)	14	27	26 Aug 86
Lake Saint-Jean (north)	14	26	26 Aug 86
Annapolis/Kejimkujik	8	29	1 Sep 86

The Montréal/Trois-Rivières scene is characterized by two distinct physiographic regions. To the north, the area is dominated by low, rolling hills of the Precambrian Canadian Shield. To the south, it is dominated by the St. Lawrence lowland, a relatively flat marine plain composed of thick, fine-textured clay-silt material underlain by Ordovician bedrock. The region contains relatively few randomly distributed lakes. Bogs, fens, and deciduous swamps occur on poorly drained, paludal sites. Many of the wetlands have been drained and are used for agricultural and horticultural activities.

Both the Lake Saint-Jean scenes are located entirely within the Canadian Shield and are characterized by numerous lakes occupying Precambrian bedrock depressions or valleys. Soils are typically thin, with frequent bedrock outcropping, and have a low potential to neutralize acidity. Wetlands occur primarily as bogs or poor fens that occupy former lake basins (lake in-filling), lake shorelines, or shallow embayments.

The Kejimkujik National Park area lies within the Appalachian region and is part of the Atlantic uplands of Nova Scotia. It is underlain by Devonian (345 to 400 million years old) metasediments and granitic intrusions. The metasedimentary rocks (metamorphosed sediments) are dominated by schist, slate, greywacke, and quartzite. Surficial deposits vary greatly in thickness, ranging from a thin veneer to a blanket several metres thick. The mineralogy and texture generally reflect the underlying bedrock geology. The soils are developed on locally derived till or glacial outwash and are distributed as podzols, gleysols, and organic deposits, depending on the physiographic setting and geology. Soils and bedrock associations present a low to moderate potential to reduce acidity.

Regional Study

One hundred twenty-nine Landsat TM scenes, covering most of eastern Canada south of 52° north latitude (Fig. 1), were acquired and processed in the regional application of the methodology. The area includes all the Atlantic provinces (excluding the Labrador portion of Newfoundland) and those portions of Quebec and Ontario that lie south of 52° north latitude. The portion of the study area

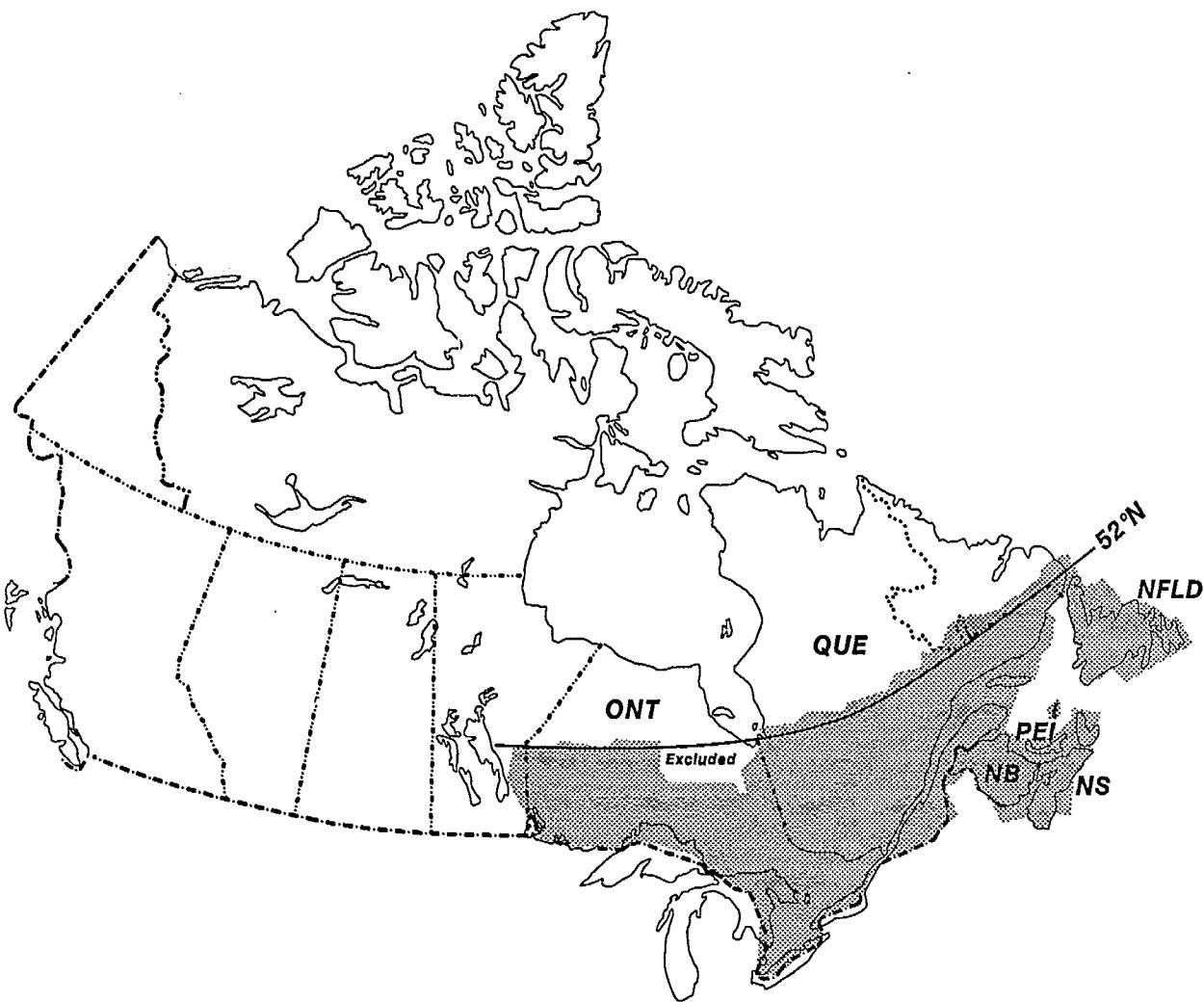


Figure 1. Study area.

covered by each Landsat TM scene is shown in Appendix A.

The study area was selected to coincide with that portion of eastern Canada which is most exposed to anthropogenically induced acidification. Furthermore, it includes many regions where the terrain is not able to buffer surface water from acidification (Environment Canada 1988).

The study area covers several physiographic landscapes: a large portion of the Canadian Shield (already described), including the Severn and Abitibi uplands and the whole Appalachian region (Bostock 1970), and the St. Lawrence and the Hudson Bay lowlands. Portions of the Hudson Bay lowland in northern Ontario (a clay plain dominated by wet-

lands) were not, however, included in the data base. Although the digital image analysis was carried out for the area, the vast number of ponds, lakes, and streams in the lowland surpassed the system's capacity of 45 000 water polygons per scene.

Existing Planimetric Statistics

While there are several planimetric data bases for lakes in eastern Canada (Energy, Mines and Resources Canada 1973; Minns 1984, 1986; Alexander et al. 1986), most of them are biased toward a specific purpose or limited by resources, or both. More comprehensive lake planimetric data bases exist, but they too are subject to various limitations, the most important being the map scale used for the inventory.

Traditionally, counts and measures data have been derived by manually digitizing topographic maps. The first data base was compiled to obtain an estimate of the surface water storage capacity in Canada. It was done to comply with a Unesco resolution that required participating countries to make an inventory of their major lakes. The results were published as an atlas (Energy, Mines and Resources Canada 1973) that lists and documents all Canadian lakes larger than 100 hectares (563 lakes).

Subsequently, larger scale inventories of smaller lakes in Ontario and Quebec were carried out. An inventory covering most of Ontario was generated from topographic maps (Cox 1978). In this study, counts and measures data were generated for 226 918 lakes from maps selected at three different scales, thus yielding heterogeneous resolution throughout the study area. The report is the best available source of counts and measures data for Ontario, but because it was generated before the introduction of microcomputers, none of the information is available in a digital format. Consequently, only very crude regional approximations are possible.

A similar comprehensive inventory was carried out in Quebec by the Ministère de l'environnement du Québec using a constant map scale (1:50 000). (This scale theoretically yields a maximum resolution of 0.25 hectare [Hélie 1989].) The data base from this inventory is fully computerized and is available as a well-structured, geographically referenced digital file. It covers most of the province south of 52° north latitude and contains 146 609 lakes; it has been used for an initial resources-at-risk assessment for southern Quebec (Hélie 1989). Because it is digital and has been compiled from large-scale maps, this point file was deemed the best source of information against which to compare Landsat TM data.

An important consideration in assessing the usefulness of an existing inventory within the context of the pilot study was the availability of a digital data base for geographic information system (GIS) integration and sorting. Until now, the only one available was the data base for southern Quebec mentioned above. The effort required to digitize all or portions of remaining areas in eastern Canada would have been substantial, and when complete, the

data base would still have significantly underestimated the total number of water bodies because of the inadequacies of the original data source and the map scale.

Few comprehensive data bases are available for wetlands. Although the situation is rapidly changing, comprehensive wetland inventories are generally limited to a class or two in general forestry maps. Detailed quantitative inventories are also usually restricted to specific areas, and the information is usually not available in a digital format suitable for GIS or data base manipulations. The province of Quebec published an atlas of wetlands for southern Quebec (Buteau 1989), which includes planimetric information. Unpublished data bases on maps or microfiches exist for peat inventories in the Atlantic provinces. There are several wetland data bases for Ontario, but few are digital.

METHODOLOGY

Data Sources

The four full Landsat TM scenes used for the pilot study were obtained from the Canada Centre for Remote Sensing in Prince Albert, Saskatchewan. Each covered an area of approximately 35 600 square kilometres (188.67 kilometres × 188.67 kilometres) and was contained on three MOSAICS computer compatible tapes (CCTs). The data were provided in both band interleaved by line (BIL) and band sequential (BSQ) formats. The BSQ format proved to be the most efficient downloading format for this study as only a few of the bands were required. Also, using the BSQ format, it was possible to read only the tape containing the selected band data. In contrast, the BIL format required that each of the three tapes be read in sequence, thereby increasing project time and cost.

The electromagnetic spectrum is subdivided into bands of varying wavelength. At one extreme of the spectrum, long wavelength, low-energy waves correspond to radio waves. Typical radio waves range in wavelength between 1 and 10 m. At the other end of the spectrum, there are short wavelength, high-energy waves called gamma radiations. These are characterized by extremely

short wavelengths, in the order of 10^6 metres. Somewhere in the middle of the electromagnetic spectrum lie the wavelengths corresponding to what the eye interprets as visible light. Spectral classes in this region range from infrared (10.40 micrometres) to ultraviolet (0.45 micrometres) and include the visible portion of the spectrum. This range has been normalized into spectral bands that are detected by scanners in aircrafts or on earth-orbiting satellites. Each band provides a measurement of the intensity of light being reflected from the earth's surface in that particular wavelength. The range is between 0 (no radiation detected) and 255 (maximum radiation detected, above which the sensor is saturated). The characteristic reflection of radiation from an object (such as a water body) is called a spectral signature.

The Landsat Thematic Mapper (TM), which is carried on Landsat satellites 4 and 5, provides better spectral and spatial resolution than its predecessor, the multispectral scanner. TM data give a spatial resolution of 30 metres in bands 1, 2, 3, 4, 5, and 7 and of 120 metres in band 6. The radiometric configuration is provided in Table 2.

Table 2. Radiometric Configuration of Landsat TM

Band	Spectral range (μm)
1	0.45–0.53
2	0.52–0.60
3	0.63–0.69
4	0.76–0.90
5	1.55–1.75
6	10.40–12.50
7	2.08–2.35

Three of the seven bands were used in the pilot study. Band 4 was used alone for the classification of water, and bands 3, 4, and 5 were used in combination for the classification of wetlands. Possible bands for the classification of wetlands were selected with guidance from previous work by Wickware (Wickware et al. 1980; Wickware and Howarth 1981; Howarth and Wickware 1981) and from work by Koeln et al. (1986) and Tomlins (1981, 1986). Area equivalent National Topographic System (NTS) map sheets at a scale of 1:250 000 were used during the image-to-map registration process, which corrected the geometry of the image to match the corresponding map base.

Analytical Software

EASI/PACE image processing software, developed by PCI Inc. (Toronto) and operated on a VAX 750, was used. In addition, new software within the EASI/PACE framework was written to take multispectral classification results and create a raster polygon coverage. This new coverage allowed the use of fully automated procedures to calculate basic water and wetland counts and measures data such as lake identification, UTM coordinates, area, and perimeter. Two programs (ICP and POG) were developed and designed to run interactively with the EASI/PACE image analysis software.

ICP was designed to build a series of polygons, where every output pixel contains the polygon number to which it belongs. Input to ICP is an eight-bit image channel in a UNIDISK file, which contains the classified information (classes 0–255). In creating the input file, the intensity value range associated with each spectral class is input directly. ICP then assigns (classifies) each pixel meeting the specified intensity range to that class. This feature eliminates the need to carry out time-consuming multispectral classification on entire scenes. The use of this feature in ICP, however, is appropriate only for those spectral classes where the class intensity value range is unique in a particular band and there is limited between-class confusion. Water is one of the few ecological classes whose spectral signature is not usually confused with other classes. The program is currently limited to 45 000 polygons per scene.

POG was designed to measure the area and perimeter of each polygon and determine the geographic coordinates (UTM, latitude, and longitude) of all pixels and polygons created through ICP (Table 3). Since the creation of counts and measures data does not require that a geometrically corrected scene be created, POG was designed to calculate, using the ground control point data, the correct UTM coordinates without creating a time-consuming, geometrically corrected image. POG also includes a summary of all polygon information.

Image Processing Procedures

There were six major steps in processing a TM scene to obtain the required counts and measures data

Table 3. Subset of Acceptable Processed Polygons

Polygon number	Line	Pixels	Northing	Easting	Area (km ²)	Area (ha)	Perimeter (m)
32	1	5 769	5172732	736588	704.126	70 412.59	1 837 711.13
14 677	4 586	1 853	5056306	596263	330.500	33 049.98	744 275.75
514	161	1 205	5192321	601300	93.828	9 382.77	356 175.72
15 966	5 111	6 229	5017202	722280	32.857	3 285.72	77 486.94
26	1	3 476	5184981	669045	14.368	1 436.76	81 242.81
33	1	5 990	5171551	743097	7.915	791.46	28 590.18
963	296	2 846	5179510	648894	3.616	361.62	29 411.05
1 148	361	3 388	5174668	664502	3.359	335.88	24 648.13
1 189	374	1 999	5181698	623523	2.316	231.57	9 973.74
1 326	408	2 774	5176540	646163	4.337	433.71	23 659.08
1 523	457	4 053	5168240	683564	3.209	320.85	12 960.36
1 566	469	3 573	5170444	669362	3.859	385.92	24 639.72
2 010	580	2 574	5172456	639335	3.771	377.10	32 136.66
2 513	589	1 787	5176391	616108	5.936	593.55	37 740.69
2 066	596	3 881	5164994	677741	6.988	698.76	59 120.77

(Fig. 2). The first step in the image analysis process was the downloading of image data from the MOSAICS-generated CCTs into a data base file on disk for use in the EASI/PACE software environment. Three bands (3, 4, and 5) were read directly from tape into a data base file using the VAX 750.

In step two, ground control (tie-down) points were interactively selected between the displayed image and positions were cursoried on a hard copy, 1:250 000 scale NTS map mounted on a digitizing table. An overview of the full TM scene was loaded into the display, although full-resolution (inset) windows could be selected during the point selection process. During the process of collecting ground control points, coordinate pairs were displayed in tabular format along with root mean square residual errors and mean distance from origin. An X-Y plot of the residual error could be displayed and ordered from best to worst. Points with unacceptably high residuals could be discarded and new points generated as required. Approximately 8 to 12 points were required for the image resampling transformation formula. The collected ground control points were subsequently used in POG to calculate the correct UTM coordinates for each pixel.

The third step involved determining the spectral bounds of water and wetlands. Different approaches were taken for determining the intensity value ranges

for each of the required counts and measures classes. The classification of water was relatively straightforward. Initially, TM bands 4 and 5, individually and in combination, were evaluated for effectiveness in classifying water; band 4 was ultimately judged to be the most effective. Once band 4 was downloaded from tape to disk, a series of full-resolution windows of the raw intensity values were examined to determine the intensity value range. Water across the entire scene was examined to ensure that the intensity values selected represented water. When this process was completed, the intensity value ranges were input into ICP and the scene was ready for processing counts and measures data through ICP and POG.

The classification of wetlands required a more intensive approach to determining class intensity value ranges. The process was complicated in the first instance because the discrimination of more than one wetland class was desired (e.g., bog, fen, marsh, and swamp). The process was further complicated by the fact that, in complex ecological environments, the spectral discrimination of wetland classes from upland classes was frequently difficult. It was decided that a full-scene multispectral classification would be necessary to determine whether or not wetlands and/or wetland classes could be spectrally discriminated and to determine the intensity value ranges (for input into ICP) for each of those classes. It was also decided that a supervised, maximum-

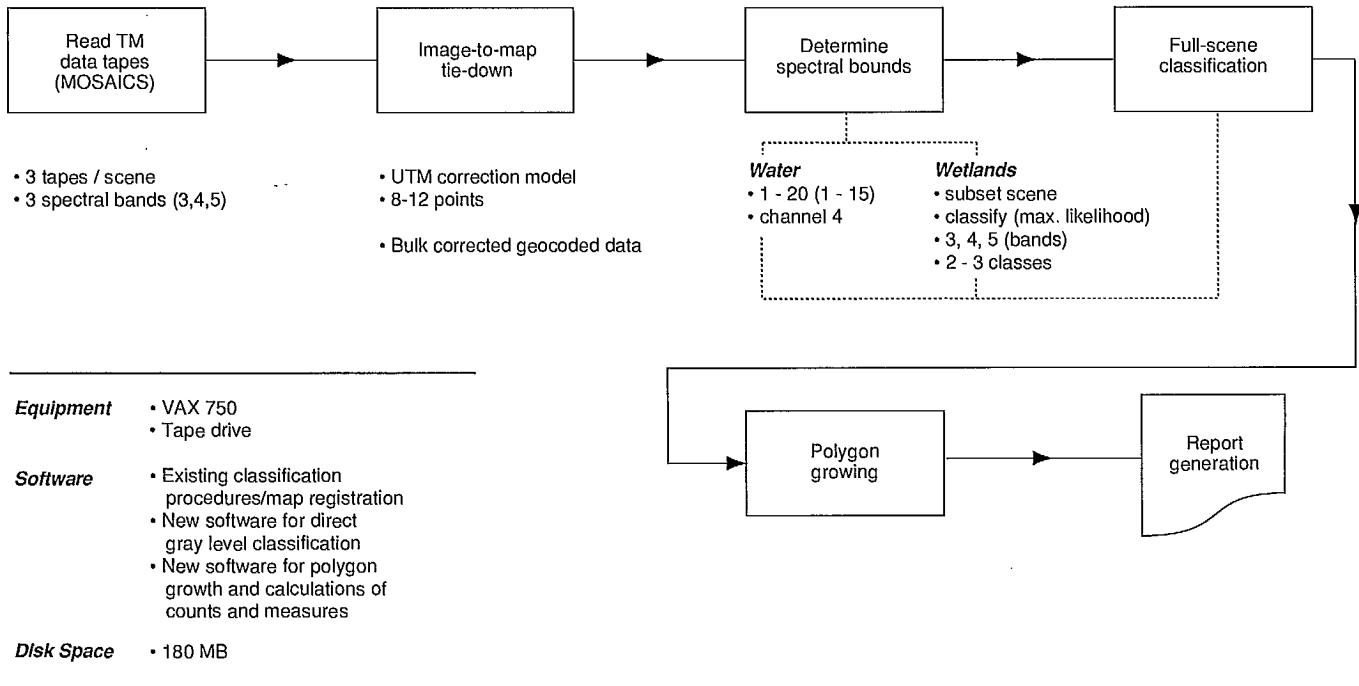


Figure 2. Image processing procedures for the classification of Landsat TM data.

likelihood classification would also be the most appropriate approach for this purpose.

The first task was to download TM bands 3, 4, and 5 from tape to disk and display a composite full-scene image. A 1024×1024 full-resolution scene of the Kejimkujik area in Nova Scotia was then displayed. Using 512×512 subscenes within the 1024×1024 scene, training signatures for three major wetland classes (open bog, open fen, and deciduous-treed swamp) were generated. Training sites used for each class had been field-sampled 10 days before acquiring the TM satellite data. Using these training signatures, a signature file for each class was created and used to classify all similar areas for the 1024×1024 scene. Results were not encouraging, and despite efforts to improve the signature files, merge classes, and try other approaches (e.g., principal components analysis), it was decided that the spectral discrimination of wetlands and wetland classes could not be realistically achieved within the automated framework and complex ecological environments

demanded for this study. (Further discussion of the classification results is presented in the section Effectiveness of TM Data for Surface Water Planimetry.) Had classification results been acceptable, intensity value ranges for each class would have been input to ICP and wetland counts and measures data automatically processed as for water.

Once all intensity value ranges were determined for water, full-scale classification was carried out in step 4. In step 5, ICP (polygon growing) and POG (planimetry) were initialized, intensity values were input to ICP, and the programs were run. As currently configured, a separate run was done for each class. In step 6, the output of all counts and measures data was downloaded to a 9-track tape, which could then be processed through a GIS to generate area-specific counts and measures data. The most efficient format for downloading the image data from MOSAICS-generated CCTs was BSQ. The total time to download the three TM bands was four hours compared with seven hours using the BIL format.

Image-to-Map Tie-down

In this study, image-to-map tie-down was accomplished using 1:250 000 scale NTS map sheets. With this method it was possible to achieve a mean distance from the origin of less than 10 metres. Although presumably greater accuracies could be achieved if 1:50 000 scale NTS maps were used, it would necessitate the use of a greater number of maps. Relatively accurate lake and wetland locations were important to this study because of the need to compare results on a lake-by-lake basis with existing counts and measures data. However, the requirements of regional acidification models are such that the greater accuracies, achieved at the expense of increased time and cost, are not warranted. Using existing EASI/PACE geometric correction software, the time required to generate the necessary 8 to 12 points for modelling purposes was approximately 30 minutes.

Classification of Water

The classification of water using TM band 4 was relatively simple and straightforward. Using a full-scene display, several full-resolution windows were selected and small bitmap areas were displayed (Fig. 3). These bitmap displays of various water features across the scene were used to determine the pixel intensity value ranges. These values varied slightly between scenes and across each scene. Typically, the values ranged between 1 and 27. In this spectral range, there was a high degree of confidence associated with those values in the range between 1 and 15. Within the 16-to-27 intensity value range, pixels typically fell along shorelines and in shallow water areas. Generally, water was classified between the spectral ranges of 1 to 21 and 1 to 23.

The choice of intensity value range was very important as the number of water bodies could easily have been overestimated by a slight variation in intensity value selection. Using the Trois-Rivières scene as an example, when intensity value ranges of 1 to 27 were used, 32 147 polygons were processed; when a range of 1 to 20 was used, 16 894 polygons were processed. Although the number of polygons was almost halved, the percentage of water for the scene remained virtually unchanged at 5%. This

relatively minor impact on total percentage of the scene as water suggests that most of the polygons eliminated consisted of only a few pixels each.

In addition to the importance of determining the appropriate intensity value range, one of the more significant and less easily resolved problems associated with the classification of water as it related to the software requirements was the differentiation between various forms of water bodies. Although water itself was effectively classified, whether that water, and the subsequently formed polygon, was a lake, river, or other body of water (e.g., ocean) was uncertain. In the Trois-Rivières scene (Fig. 4E), for example, the St. Lawrence River, which bisects the scene, has clearly been included in the classification statistics (Table 4). The software was designed so that the five largest polygons are printed first in the table (Table 3). A visual assessment of the tabular results suggests that the first two polygons (32 and 14 677) are extremely large relative to most other polygons. A comparison of the UTM coordinates from the table with a 1:250 000 scale NTS map sheet suggests the polygons are in fact components of the St. Lawrence River. These polygons must be manually extracted from the final counts and measures data set. Other rivers are clearly depicted on the scene, and depending on the sensitivity of the model, it may be necessary to locate and remove these values as well.

Table 4. Image Data Summary for Trois-Rivières Scene

Image processed	
Lines	5 728
Pixels	6 912
Pixel size	30 m
Area of window	35 632.746 km ²
UTM northing of top window	5203545.500
UTM easting of left of window	566712.875
Summary of all polygons processed	
Number processed	16 894
Total area	1 857.554 km ²
Total area as % of image	5.213%
Total perimeter	15 869 131 m
Summary of acceptable polygons processed	
Minimum size accepted	2 223 pixels 200.070 ha
Number processed	50
Total area	1 415.533 km ²
Total area as % of image	3.973%
Total perimeter	4 722 769.5 m

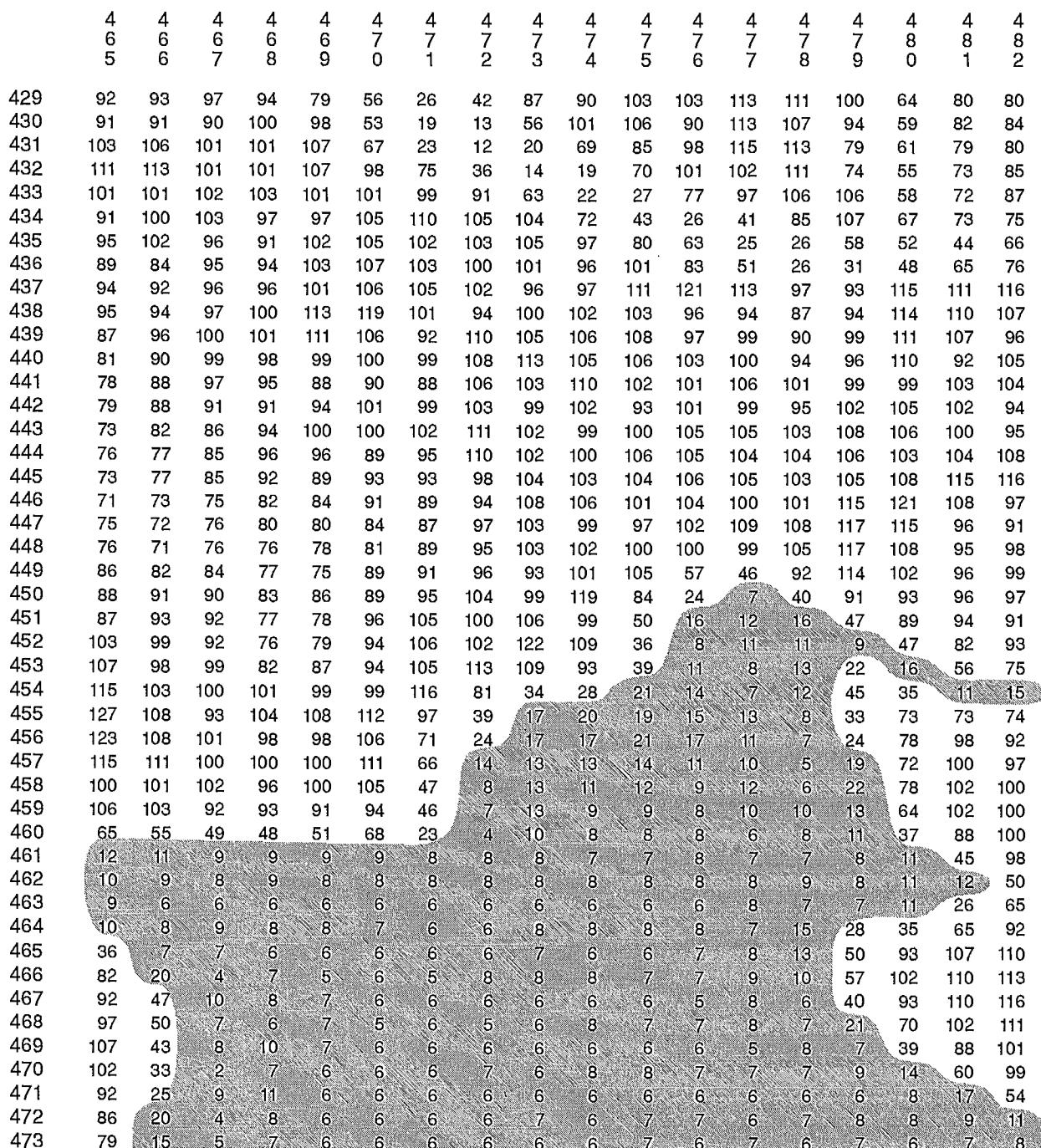


Figure 3. Bitmap of band 4 classification showing water polygon with intensity values 1-23.

Previous methods of calculating counts and measures data typically included only those water bodies 0.25 hectare or larger. It was felt that this resulted in a significant underestimation of the

number of water bodies affected by acid deposition. Using Landsat TM data, it is theoretically possible to determine water bodies as small as 0.09 hectare (a single 30-metre × 30-metre pixel). (See Table 5 for

a summary of water body distribution using various size classes for the Lake Saint-Jean [south] scene in southern Quebec.)

Table 5. Distribution of Water Bodies for the Lake Saint-Jean (south) TM Scene

Size class (ha)	Pixels	Number of polygons	Size class percentage	Cumulative percent
0.09–0.18	2	4 949	24.5	24.5
0.18–0.27	3	2 002	9.9	34.4
0.27–0.36	4	1 195	5.9	40.3
0.36–0.54	6	1 343	6.6	46.9
0.54–0.81	9	1 222	6.1	53.0
0.81–1.08	12	874	4.2	57.2
1.08–1.62	18	1 211	6.0	63.2
1.62–2.07	23	753	3.7	66.9
2.07–3.06	34	1 193	5.9	72.8
3.06–4.05	45	799	4.0	76.8
4.05–5.04	56	620	3.1	79.9
5.04–6.03	67	503	2.5	82.4
6.03–10.08	112	1 244	6.2	88.6
10.08–20.07	223	1 059	5.2	93.8
20.07–40.14	446	650	3.2	97.0
>40.14		579	2.9	99.9
Total		20 196		

Of the 20 196 water bodies classified on this scene, 57% (11 585) are approximately 1 hectare or smaller, and 77% (15 541) are approximately 4 hectares or smaller (Table 5). A detailed examination of all polygons classified as water bodies reveals that small pixel groups (i.e., groups with four or fewer pixels) may occasionally occur as a result of fragmentation of large water bodies. For example, embayments with narrow entrances, or long, narrow lakes and streams where opposite shorelines are less than 30 metres apart can result in classification contiguity and the formation of a new polygon.

Using the GIS overlay capability, drainage basins 2OB and 2RG (for which previously calculated counts and measures data were available from Hélie [1989]) were examined for TM-derived lake size distribution. In drainage basin 2OB, 32.2% of the water bodies were 0.09 to 0.18 hectare and 63% were smaller than 4.05 hectares. In drainage basin 2RG, 24.8% were 0.09 to 0.18 hectare and 68% were smaller than 4.05 hectares.

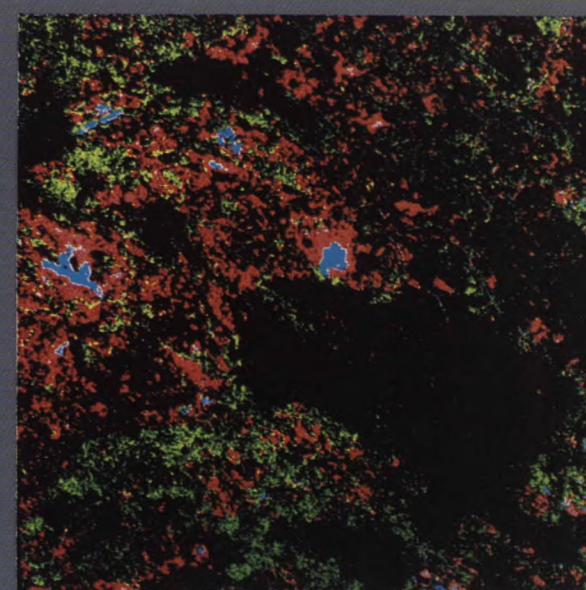
Classification of Wetlands

One of the limitations of regional acidification models is that they are effective only in those areas where natural sources of organic acids are minimal. For this reason, it is important to know the number and distribution of wetlands within the individual drainage basins being modelled. Because such information is limited, it was hoped that Landsat TM data could be used to fill the gap. It was determined that, since the occurrence of organic acids in the natural environment is linked to wetland distribution, it would be necessary to identify at least major wetland types, i.e., bogs, fens, and deciduous swamps.

It was expected that the spectral intensity value range for these types would overlap with other cover types not of interest in this study. Previous experience had shown that difficulty with spectral discrimination was particularly acute in ecologically complex environments. The Canadian Shield environment, where wetlands are typically small and discrete entities, is one such complex environment and characterizes the study area.

The determination of intensity value ranges for the three major wetland types followed standard supervised classification methods. Signature training files for each of the types were developed using field locations that had been previously surveyed by Wickware and Kessel-Taylor (1987). Training sites in the Kejimkujik National Park were used for the wetland class "bog" (Fig. 4A). Full-resolution subscenes (Fig. 4B) were used during delineation of the training sites. Similar procedures were followed for fens and deciduous swamps (Fig. 4C). Spectral overlap with other cover types was a significant problem in all three wetland types, but particularly in fens and swamps. Bogs, which occupy less than 1%

Figure 4. Image classification results for key areas of the study. (A) Bog training sites around Kejimkujik Lake, Nova Scotia. (B) Full resolution subscene of the Kejimkujik Lake area. (C) Wetlands in the Kejimkujik Lake area. (D) Attempt to improve classification of wetlands through refinements to training sites. (E) Trois-Rivières area (scene 14–28).

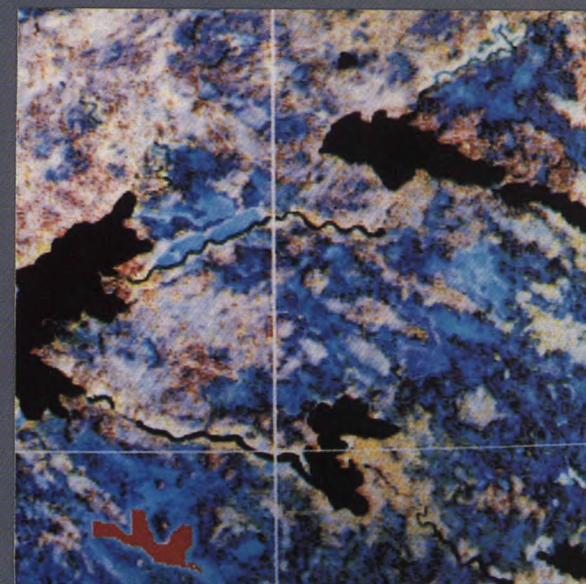


A

B



C



D



E

of the entire study area, were reasonably well discriminated, and confidence in their classification and distribution can be expressed. Attempts to improve the classification of all three wetland types were made through refinement of the training sites. (See Figure 4D for results of one of these efforts.) Although some classification improvements were achieved, a significant overlap with upland cover types continued and seriously impaired the usefulness of the classification results. Since spectral intensity values could not be effectively determined for this small area, it was felt that any extrapolation of these values to other portions of the scene would be of limited worth.

Comparison of TM-Derived and Manually Digitized Planimetric Data

Using results of the point/polygon overlay of TM data and the planimetric data previously determined by the Service du milieu hydrique, Ministère de l'environnement du Québec (which used manual digitizing methods based on topographic maps at a scale of 1:50 000), a simple comparison was made using drainage basins 2OB and 2RG (Table 6). In drainage basin 2RG, 1256 water bodies were digitized manually using 1:50 000 scale NTS map sheets. At this scale, all water bodies larger than 0.25 hectare are theoretically included. TM data for the same area indicate that there are 3432 water bodies. If those water bodies smaller than 0.25 hectare are excluded from the TM data set (for purposes of comparison), there are 1598 water bodies. This is 27.2% more than in the manually derived data. Similarly, for drainage basin 2OB, the Ministère de l'environnement du Québec estimated 1572 water bodies. TM data identified 1944 water bodies larger than 0.25 hectare. This is 23.7% more than the manually derived value, which is similar to that for drainage basin 2RG.

Table 6. Comparison of TM-derived and Manually Digitized Data for Drainage Basins 2OB and 2RG

Basin	Surface water bodies		Manually digitized data*	Difference (%)
	TM data (all)	TM data (>0.25 ha)		
2OB	3345	1944	1572	23.7
2RG	3432	1598	1256	27.2

*Data from the Ministère de l'environnement du Québec

To test the difference between manually digitized and TM-derived planimetric data, four sample areas were randomly selected in an area north of Montréal. The corresponding NTS map sheet was obtained at a scale of 1:50 000 for each area. On each of the four map sheets, one area was again randomly selected and the corresponding panchromatic air photo was obtained. All the lakes on the portion of the map covered by the air photo were manually digitized using the OCTOMETRE™ digitizing software package. This duplicated the methodology used by the Ministère de l'environnement du Québec and yielded results that could be compared on an individual lake basis.

To compare these measurements with TM-derived planimetric data for the same areas, selective windows were opened in the digital point file. The coordinates for each of the four windows were made to match the location of the air photos on the map base. The corresponding four point file subsets (one for each window) were then plotted on a transparent acetate base at the same scale as the maps (1:50 000). Each point on the plots was labelled so that the area and perimeter of each corresponding lake could be read from the point file attribute data. In this manner, each lake on the map sheet window could be compared to the actual lake on the air photo and its area compared to that obtained through the digital image analysis process. (See Figure 5 for the results of this comparison.)

The difference between the manually derived and the digital TM-derived planimetric data varies. Positive area and perimeter difference values computed using TM-derived data indicate that the measurement is less than the manual measurement. A negative value indicates that the TM measurement exceeds the manual measurement. This is more apparent for perimeter values. Area values usually vary by less than 25%, but differences of 80% to 90% have been recorded for smaller water bodies, which are more difficult to digitize manually.

On the whole, differences in area and perimeter are least for large water bodies having a relatively smooth and regular shoreline. For these, the ratio between the area computed and the length of the shoreline (which is directly proportional to the "length" of digitizing) is relatively low. The

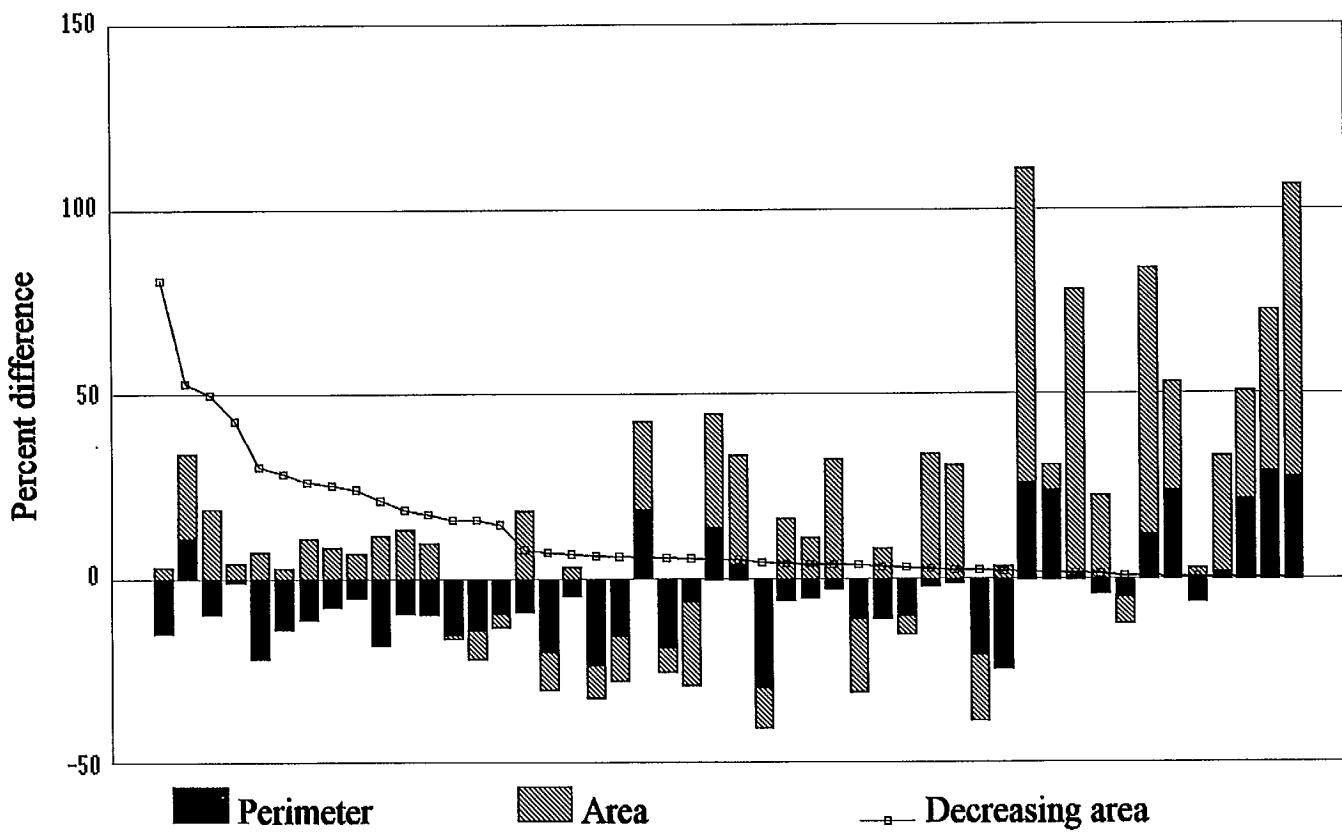


Figure 5. Comparison of TM and manually digitized area and perimeter values.

error introduced through the manual digitizing process is thus kept at minimum. The results, therefore, match those obtained through the Thematic Mapper, which is extremely accurate because of its 0.09 hectare resolution. As water bodies get gradually smaller, the ratio between area and perimeter increases and so does the error factor due to digitizing.

The same is true for water bodies having intricate and convoluted shorelines, as is the case in Newfoundland. The shoreline configuration generates a very high area-to-perimeter ratio. The resulting error introduced by relatively more digitizing per unit area is therefore greater.

The Thematic Mapper provides extremely accurate area and perimeter calculations. It is certain that the discrepancies discussed above are largely due to the relative inaccuracy of the manual digitizing method. The only reliable manner in which the TM planimetric data can be validated is by comparison with a more accurate standard. At this time, a

ground survey is the only method wherein a resolution better than 0.09 hectare can be achieved. Until such information is available on a regional scale, the TM-derived counts and measures data will be considered to be the most accurate available.

Geographical Framework Integration

Once a digital point file had been generated through the digital image analysis process, the information therein had to be integrated within a geographical framework to derive counts and measures statistics on a geographical basis. This was done by using a GIS.

The GIS has the ability to overlay several map coverages depicting various themes. It is also capable of performing area calculations on polygons. GIS technology is available at the macro, mini, and mainframe levels. In this study, because of the large size of the input point files and the extensive area involved, a mainframe GIS (the Canada Geographic Information System [CGIS] housed in Environment

Modified from Hélie and Fraser (1987).

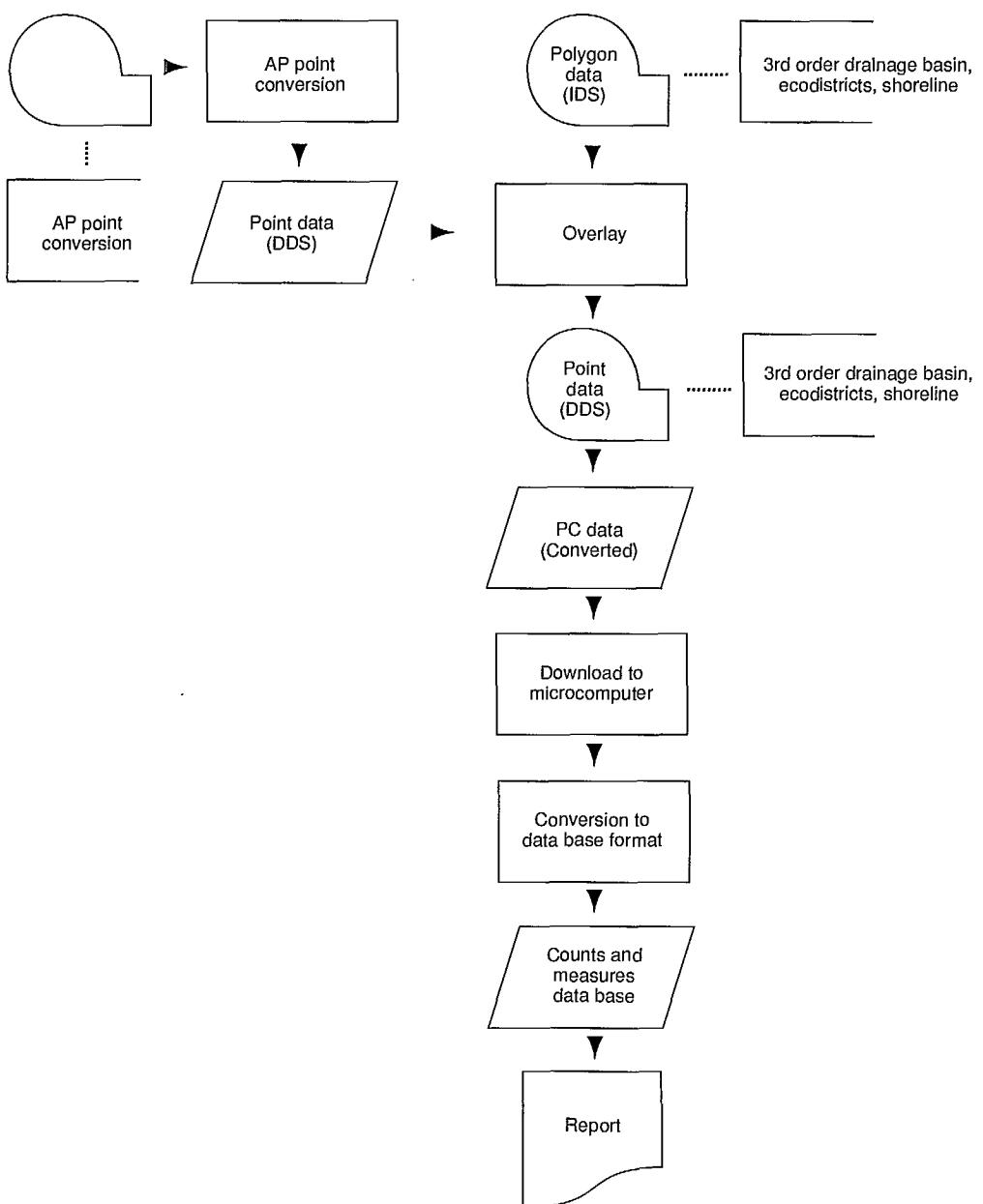


Figure 6. Downloading and conversion of TM-generated counts and measures data into GIS environment.

Canada) was used for all spatial manipulations and computations. (See Figure 6 for a flow chart outlining the merging process between the satellite-derived point data and the GIS spatial framework.)

Within the scope of this study, where hydrographic and ecological data on which sensitivity

is based were integrated, the surface water point files were merged with two distinct spatial coverages: drainage basins and ecodistricts. The drainage basins were those determined by the Water Survey of Canada (Fisheries and Environment Canada 1977), consisting of a hierarchical system comprising three drainage basin levels: main division, subdivision,

and sub-subdivision. The large-scale level (sub-subdivision) can be generalized into the other two levels. The ecodistricts, comprising relatively homogeneous physical attributes pertaining to physiography, geology, and vegetation (Rubec and Wiken 1983), provided the ecological setting necessary to relate counts and measures data to a biophysical setting. This was achieved through a point/polygon overlay.

Point/Polygon Overlay

The water bodies represented by each point file were simultaneously integrated within the two polygon coverages through a point/polygon overlay technique. During this process, the northing and easting of each point was matched to both the drainage basin and the ecodistrict framework. Thus, each water body was assigned to the drainage basin and ecodistrict in which it lay.

This manipulation resulted in the addition of more attribute data to each of the points (water bodies) in the original point file. In addition to the original parameters (Table 3), the following fields were generated:

- drainage basin main division
- drainage basin subdivision
- drainage basin sub-subdivision
- ecodistrict
- ecoregion
- province

This enhanced point file was then downloaded as a standard ASCII file to a microcomputer for final analysis.

Counts and Measures

Once transferred to a microcomputer, each point file was converted to a data base format. Specific selections were made to screen the data and identify those records that satisfy a given selection criteria (e.g., all records of water bodies located within a given drainage basin) (Fig. 7). Subfiles were created, corresponding to a specific selection, and translated into a spreadsheet format. At this stage, counts and measures statistics were computed. (The complex sequence of operations involved in

transforming digital satellite scenes into geographically referenced planimetric information is simplified in a flow chart in Figure 8.)

Final Adjustments to Methodology

As a result of the experience gained during the pilot study, and because of the operational realities of analyzing 129 Landsat TM scenes, a number of modifications to the software developed for the pilot study were required. After testing simple methods of improving accuracy (e.g., effects of minor changes in thresholds and diagonal measurements), algorithms POG and ICP received the following modifications: (a) a latitude/longitude geo-referencing option was included; (b) polygons were geo-referenced using the centre of each polygon; (c) a task-sequencing code was added to link all operations for user-friendly application; and (d) the experimental software was cleaned and upgraded to production level. Also, while a VAX 750 mini-computer was used for the pilot study, a SUN 3/260 and a 6250 BPI tape drive were used for the larger project to streamline the processing and classification procedures. A summary of the revised procedures follows.

Additional Software Development

A bounding polygon routine was required to define a limited map area within a Landsat TM scene for which POG reported counts and measures data. The vertices were given in UTM coordinates and were input into POG along with their UTM zone; these coordinates were then converted into longitude and latitude. The INPREP, INSIDE, and INSID2 procedures determined if a point fell within the bounding polygon. If the centroid of a water body was within the map area, the entire water body was accounted for in the POG report. In defining a bounding polygon, it was possible to eliminate double counting of water bodies and exclude problem areas such as cloud and cloud shadow.

Image Processing Procedures and Efficiency Routines

To process each TM scene at an efficient level for mass generation of counts and measures data,

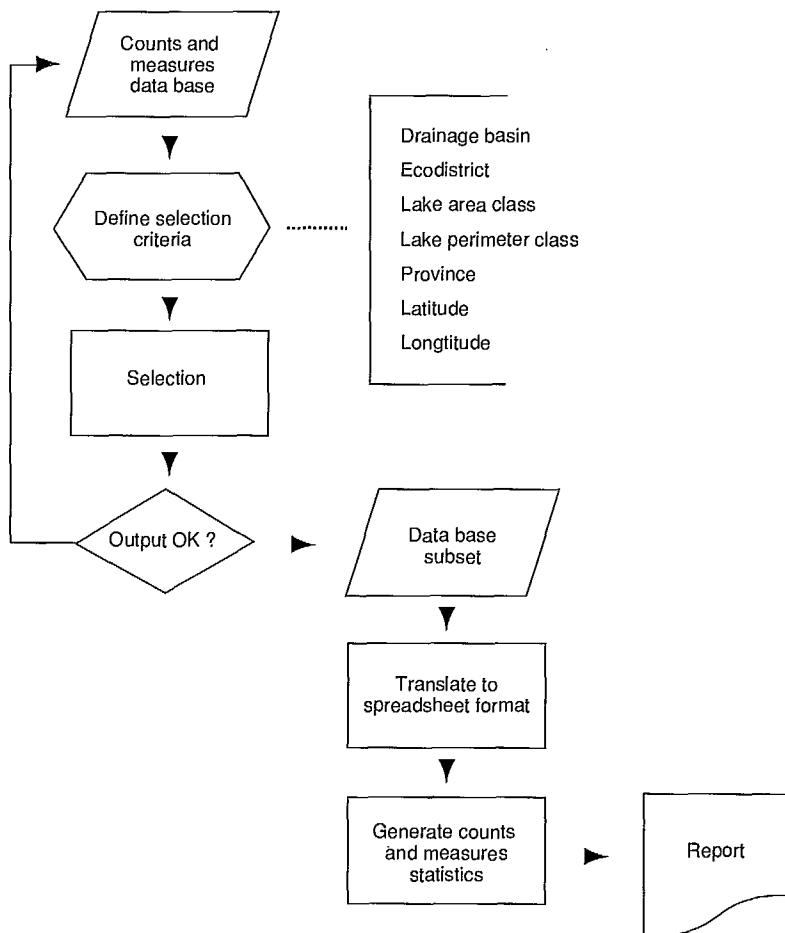


Figure 7. Conversion of point files to a data base format and generation of counts and measures statistics for geographic areas.

several stages were either added, modified, or reordered. The revised image processing procedures are schematically illustrated in Figure 9. This figure can be compared with Figure 2, which illustrates the pilot project processing procedures.

Within the EASI/PACE software environment, it was necessary to allocate space in memory to form the data base that contained the image data. To hold a one-band full TM scene and at the same time process the scene for counts and measures extraction, approximately 121 megabytes of memory were required to contain the three-channel image file. One channel was used to store the image data; the remaining two channels were reserved for polygons generated by ICP.

Image data from MOSAICS-generated CCTs were downloaded into the image file. Four tapes were required to contain a three-band image stored at 1600 BPI, whereas only one tape was required at 6250 BPI. For the regional application, 6250-BPI tapes were used. An operator was not required to be present to change tapes when using the higher density format. Only spectral band four was read from the tapes for the classification of water.

The water classification ranges were input into ICP. (Note: ICP was renamed IPG in the current version of EASI/PACE.) This program created the polygons and stored them in the remaining two image channels of the image base. When using the SUN workstation, the program could be run in the

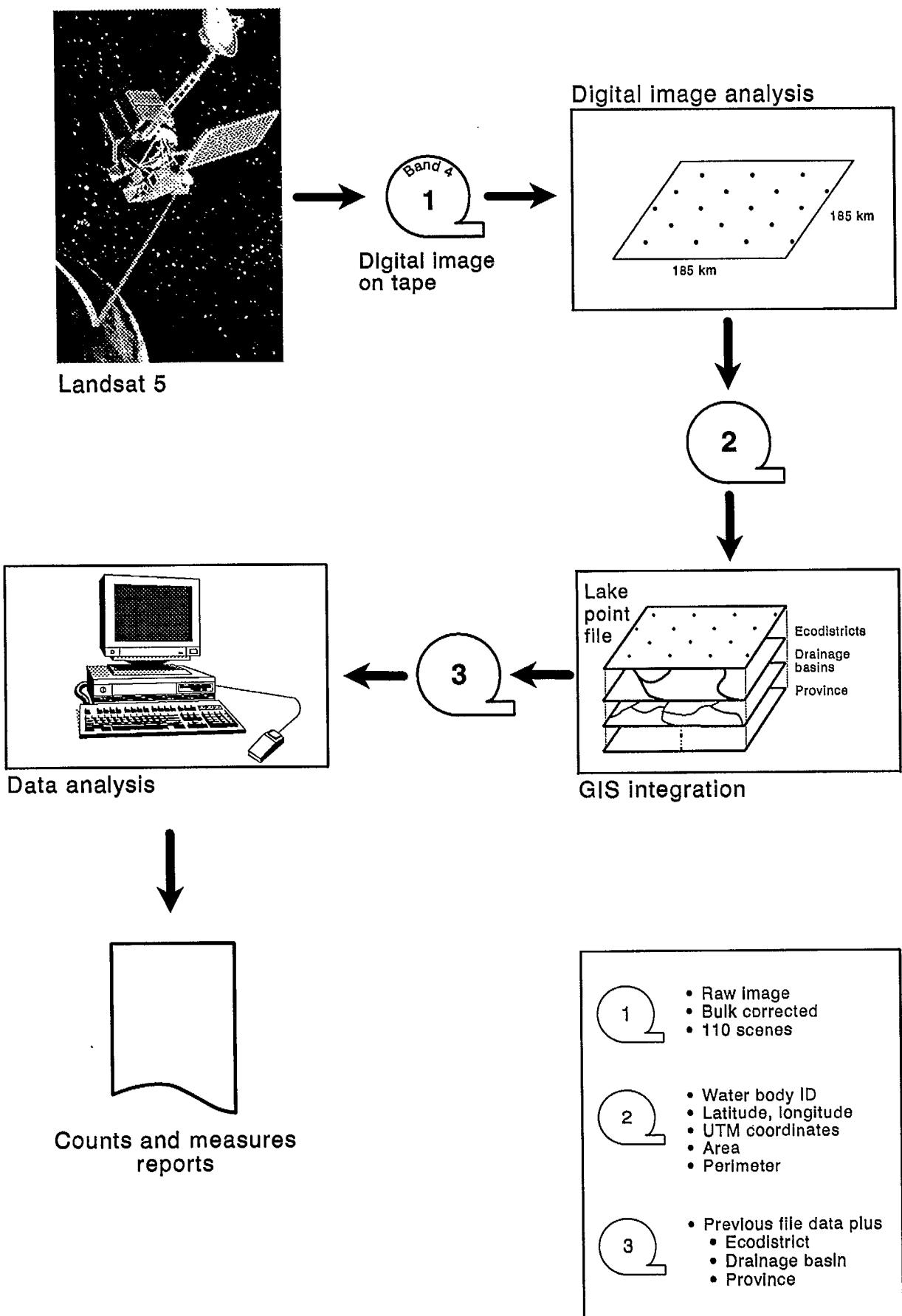


Figure 8. Simplified flow chart showing the generation of planimetric information from satellite data using a GIS.

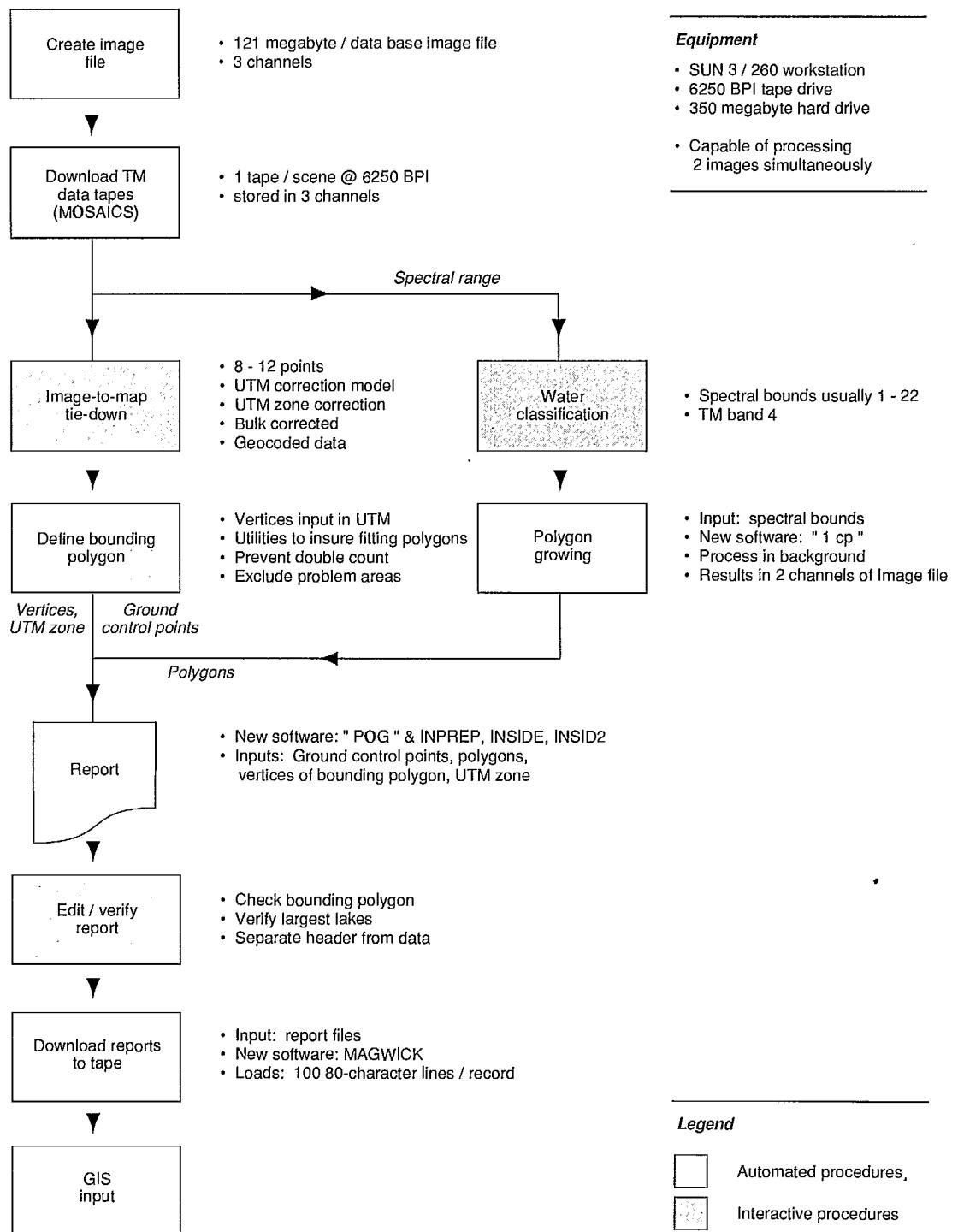


Figure 9. Revised image processing procedures.

background while the following interactive procedures were followed.

While collection of ground control points can also be carried out in the manner originally

described, it was more efficient to have ICP processing in the background. A utility was developed to convert UTM coordinates in one zone to the coordinates of another zone. When a scene fell across an area covered by two topographic maps

of differing UTM zones, it was possible to register both maps to one zone and locate ground control points across the entire scene. The ground control points were used both in utilities to define the map area and in POG.

One of the input options of POG was defining the area within a scene for which counts and measures data were to be reported. The vertices of this map area were given in UTM coordinates. To assist in the location of the required UTM coordinates within the image reporting area, several utilities were written. One of these programs locates the pixel on the scene that contains a UTM coordinate, while a second performs the reverse. A third utility converts a UTM coordinate from one zone to another. A procedure was also written to ensure that the vertices of a map area fall along the line of its neighbouring map area. With the aid of these utilities, it was possible to create a complete mosaic of neighbouring polygons that eliminated double counting of water bodies and avoided areas of poor image quality that affected the counts and measures data. To ensure complete coverage, care was taken to record all vertices of all polygons for later reference in defining neighbouring polygons.

Several inputs were required before POG could be run: creation of the ground control points, definition of the map area within the bounding polygon, provision of the appropriate UTM zone, and completion of the ICP program. POG would then produce a file that contained a header page and all the report statistics. The header information had to be separated from the counts and measures data before it was downloaded to tape and a printout of the header made. The editing stage provided a good opportunity to verify that map area boundaries were proper and to see if the largest polygons referred to the actual lakes on the topographic map.

Only the numerical output of the counts and measures data was uploaded to a nine-track tape using a specially written program called MAGWICK. This program will upload to tape in 100-line records of data at a time, where each line of data consists of 80 characters.

Streamlining Production

The EASI/PACE digital image processing software and the image resampling software for geo-referencing

purposes provided an efficient method for the classification of various land cover classes including water. Supplementary software designed for specific application in the collection of counts and measures data demonstrated that the necessary information required for various regional acidification models could be readily obtained.

In order to process the large number of scenes, some streamlining of the processing procedures was required. The multi-tasking capabilities of the SUN workstation allowed time-consuming routines such as loading the image data and running ICP and POG to take place in the background while interactive steps such as collecting ground control points and defining the map area were being performed. With the available memory on the SUN, it was possible to have two image files on disk at one time, thereby minimizing standby time. When using 6250-BPI image tapes, downloading typically occurred at the end of a day, with completion by morning.

Before the operational implementation of the programs, however, several modifications to the supplementary software were made. Originally, UTM coordinates for each of the water bodies were determined through the use of the first pixel encountered at the top left corner of the polygon. When performing the point/polygon overlay using the GIS, it was often difficult to be certain of the relationship between the TM-derived water body and the actual lake on the NTS map sheet. This uncertainty made it difficult to undertake a lake-by-lake comparison of counts and measures data (e.g., lake area and perimeter). To reduce confusion, a barycentric centroid was calculated for each water body.

Improvements in accuracy were attained by modifying parameters such as effects of minor changes in thresholds and diagonal measurements on water body area and perimeter. Optional perimeter calculation software was required as part of the accuracy improvement effort.

Effectiveness of TM Data for Surface Water Planimetry

As discussed in the section Classification of Water, TM data (band 4 alone) were effective for the classification of water. The use of a single band also

minimized the cost of data acquisition and reduced computer costs because of minimal downloading and processing time. Although only a single band was used for classification, selection of threshold intensity values was an important component of the process, as minor variations in intensity values can significantly alter the total number of water bodies classified. Area and perimeter calculations are less dramatically affected by the number of water bodies smaller than 0.25 hectare.

Uncertainty remains regarding the total number of water bodies for each TM scene since the nature of the water body being classified is a question not easily resolved. Rivers, creeks, and streams were all classified as water, but for the purposes of lake counts and measures calculations they should be excluded. Small, narrow fluvial water bodies were typically eliminated where polygons smaller than 0.25 hectare were filtered from the data set, however, large fluvial water bodies remained. Current procedures require a manual screening of the data set.

Research to date suggests that the number of water bodies smaller than 0.25 hectare may currently be underestimated by at least 23% to 27%. Furthermore, a considerable number of polygons are smaller than 0.25 hectare. At this stage it is not possible to estimate what percentage of these polygons are actually lakes. It is expected that improvements in geo-referencing (discussed above) will facilitate a more detailed comparison of TM-derived data with large-scale aerial photographs for the purposes of evaluating these smaller water bodies. In addition, a more detailed comparative study of the area and perimeter of specific lakes can be undertaken.

The classification of wetlands proved, as expected, to be difficult given their nature and distribution. Previous work by Wickware and Kessel-Taylor (1987) and by Tomlins (1986) had shown that in spatially complex environments, such as the Canadian Shield, differentiating wetlands and uplands was often impossible even using multi-date and/or multi-band data. During this study, TM bands 3, 4, and 5 were used, as well as a principal components enhancement, in an attempt to classify the wetlands. Although the digital classification of wetlands was not successful or appropriate for the counts and measures program, it was felt that a visual interpretation of enhanced TM scenes might offer a more successful approach.

Tomlins (1986) also recommended such an approach, particularly where individual wetland communities are diverse and small.

Regional Application

Following the successful completion of the pilot study, and after several adjustments were made to the methodology, regional application was planned and implemented. Besides upgrading the digital analysis software to speed up the processing of 129 scenes, special manipulations had to be developed to eliminate the overlap between adjacent scenes. Overlap on an east-west axis was, on average, 10% to 15%, whereas it could reach 20% to 30% on a north-south axis. This caused water bodies within the overlap area to be counted two, three, and four times, depending on their location on the Landsat scene. Editing the digital files for overlap at the image analysis stage was relatively easy and greatly simplified subsequent computations.

The full implementation of the counts and measures study required a mainframe GIS system. At the time, no micro-based GIS had the necessary power to handle large amounts of raw data at the required speed. No special upgrading was necessary for the point/polygon overlays. The process was carried out on the Canada Geographic Information System (CGIS), which was well suited for handling large data files such as the ones generated by the digital image analysis process for the whole study area.

Data Base Structure

A separate file was generated for each of the 129 Landsat TM scenes processed (see the section Geographical Framework Integration). As each file was generated on the mainframe GIS, it had to be translated and downloaded in an ASCII format to a microcomputer for final counts and measures computations. Table 7 shows the data structure of each scene after conversion from an ASCII to a data base format. Most of the fields pertain to information generated during the digital image analysis to derive scene parameters such as polygon and pixel number, locational data, and planimetric information for each water polygon record (see Figure 6).

Fields marked with an asterisk in Table 7 were added through GIS processes within a geographic

framework. These include drainage basin main division (DIV), drainage basin subdivision and sub-subdivision (SUB), ecoregion (REGION), ecodistrict (ECODI), UTM coordinates (fields 3, 4, and 5), system codes (fields 1, 2, and 22), shoreline characteristics (SHRLN), and province (PROV). Subsequent sorting and analysis of the data base can be based on any variable or combination of variables.

Table 7. Data Base Structure

Field name	Field type	Field Length
FACE*	C	6
SURF*	N	10
XUTM*	C	7
YUTM*	C	8
ZONE*	C	2
DIV*	C	2
SUB*	C	2
SHRLN*	C	1
PROV*	C	2
SPARE	C	1
REGION*	C	3
ECODI*	C	4
SPARE2	C	1
LAT	C	6
LONG	C	7
POLY	C	5
SCAN	C	7
PIXEL	C	7
AREAKM	N	11
AREAHA	N	12
PERIM	N	14
TM*	C	2
SPARE3	C	2

Note: The fields with an asterisk are appended through the GIS point/polygon overlay process.

C = character
N = number

Data Base Screening

The Landsat TM does not recognize provincial boundaries, nor does it differentiate between fresh and salt water. For that matter, the Thematic Mapper is incapable of differentiating between different types of fresh surface water such as lakes, ponds, rivers, streams, and open water wetlands. When a water body point file is generated, each discrete water body identified on the Landsat TM scene is reported. Extensive screening, therefore, was carried out to exclude unwanted water bodies from the data base prior

to counts and measures calculations. Excluded were (a) water bodies outside the study area; (b) saltwater bodies that were missed in the first screening because their centroid was within the study area, although the water polygon itself was outside; and (c) water bodies within the study area that were so small that they introduced background "noise" into the data base. Water bodies smaller than 0.1 hectare (corresponding to single, isolated pixels [0.09 hectare]) were therefore screened out.

Screening took place following the point/polygon overlay. The first two types of extraneous water bodies were screened out based on whether or not they belonged to selected portions of the spatial frameworks. Water bodies outside the study area did not possess the proper provincial or drainage basin code. Remaining saltwater bodies were screened out according to the shoreline variable (SHRLN), which displays an "S" to indicate that the water polygon centroid falls in an area classified as salt water (e.g., the St. Lawrence River estuary or the Atlantic Ocean) on the GIS shoreline overlay. This screening was particularly important in this study of the Atlantic provinces, where numerous water bodies are salty and therefore beyond the scope of the study. The final screening, which was based on area, was carried out using the area variable. Although much care was taken to screen this data base for unwanted water bodies, some remained. This was largely due to the manner in which water body centroids were generated. A brief discussion of this will help future users to recognize these relatively rare occurrences and delete them if necessary.

By the time the digital image analysis is completed, the centroid is all that remains of the water body; its geometric configuration is lost. This is of little consequence in the vast majority of cases (especially in view of the time and cost savings). The centroid of all water bodies is defined as the centre of gravity for the water polygon. For a perfectly circular water body, the centroid coincides with the geometric centre of that water body. In nature, however, circular water bodies are rare. Centroids, therefore, lie somewhere within the water body. In some instances, because of the irregular shape of the water polygon, the centroid falls outside the polygon. This merely causes a locational error and does not affect surface water statistics. In

areas adjacent to large water bodies, however, this can cause important "errors" that must be recognized.

In the Great Lakes, along the St. Lawrence River, around the Gulf of St. Lawrence, and around all the Atlantic provinces, the Landsat TM registered a single centroid for the entirety of contiguous large water bodies on any given scene. These were manually screened out of the data base.

Definition of Surface Water

Counts and measures statistical calculations were carried out on all water bodies within the study area after the initial screening. The screening procedure described in the previous section, however, still does not differentiate between kinds of freshwater bodies. As described in the section Classification of Water, surface water is identified exclusively by its spectral signature. As a result, this data base cannot be considered to be a "lake" data base. Although it includes all lakes (by any definition) in eastern Canada, it also incorporates open water wetlands, large ponds, and river segments that are wide enough to be detected by the Landsat Thematic Mapper.

Considering the resolution of the Thematic Mapper (0.09 hectare or 30 metres \times 30 metres), a "lake" in this data base must be redefined as any discrete water body that displays the spectral signature characteristic of water as calibrated in the pilot study. Naturally, there are many instances where a water body from the data base does not correspond, in terms of area and perimeter, to a specific lake as depicted on a topographic map. For example, Lake Saint-Pierre, near Montréal, which is actually a widening of the St. Lawrence River, is combined with a large segment of the latter. In New Brunswick, Grand Lake has been classified as being part of the St. John River system because the link between the river and the lake is wide enough to be detected as a continuous stream of water pixels. Caution, therefore, is necessary when interpreting counts and measures data. Specific applications where a distinct subset of water bodies (i.e., lakes only) is required can be undertaken using a GIS and interactively deleting unwanted records.

Data Base Transformations

In the following sections and appendices, surface water statistics are reported within drainage basin and provincial frameworks and a quantitative assessment of surface water at risk due to acidification is provided for each province. Because the original data files were processed on the basis of Landsat TM scenes, extensive data base transformations were required.

To provide a reporting framework based on drainage basins, the file for each original Landsat TM scene was split into a number of sub-files corresponding to the number of drainage basins covered by that particular scene. Those drainage basins that spanned two or more Landsat TM scenes were merged. This first transformation resulted in a number of files corresponding to each drainage basin in the study area. Naturally, the drainage basins located at the northern and western periphery of the study area were truncated to varying degrees. The degree of truncation for these drainage basins can be assessed by either consulting the Landsat TM scene coverage (Appendix A) or by using the geographical coordinates within the drainage basin file.

Drainage basins were combined for the provincial framework. Where provincial boundaries split a drainage basin, the portion of water bodies in each respective province was selected using the province variable identifier field (Table 7) and appended to the corresponding provincial compilation.

To carry out the resources-at-risk assessment on a provincial basis, the sensitivity of each water body was derived according to the ecodistrict framework. Each ecodistrict in the study area was rated in terms of the potential of soils and bedrock to reduce acidity (Environment Canada 1988). Water bodies lying within each sensitivity zone were identified by using the ecodistrict variable.

SURFACE WATER

Drainage Basin Statistics

Assessment of acidifying effects on surface water using models depends on the relative area covered by

surface water within a drainage basin. For modelling purposes, as well as to obtain a drainage basin perspective on surface water, the data base was manipulated to extract planimetric statistics within a drainage basin framework. Drainage basins were those determined by the Water Survey of Canada (Fisheries and Environment Canada [1977]). Using Data Base Management System (DBMS) software, water bodies within a given drainage basin were grouped and put into a separate file. Water bodies within each drainage basin were then regrouped into eighteen standard classes according to area (Table 8). The frequency distribution, area, and perimeter within each drainage basin were thus obtained and can readily be used for a wide range of applications. Summary statistics for drainage basins are provided in Appendix B.

Table 8. Size Classes

Class	Area interval (ha)
1	≤ 0.25
2	$> 0.25 - \leq 1.00$
3	$> 1 - \leq 5$
4	$> 5 - \leq 10$
5	$> 10 - \leq 20$
6	$> 20 - \leq 30$
7	$> 30 - \leq 40$
8	$> 40 - \leq 50$
9	$> 50 - \leq 60$
10	$> 60 - \leq 70$
11	$> 70 - \leq 80$
12	$> 80 - \leq 90$
13	$> 90 - \leq 100$
14	$> 100 - \leq 200$
15	$> 200 - \leq 300$
16	$> 300 - \leq 400$
17	$> 400 - \leq 500$
18	> 500

Provincial Statistics

Since the compilation was initially carried out within a drainage basin framework, the provincial compilation took place in two phases. First, drainage basins lying exclusively within a given province were combined as one file containing all the corresponding water bodies. Second, individual water bodies were extracted from the drainage basins that cross provincial boundaries according to the provincial code. These were then appended to the corresponding province file. The records for each

province were then sorted and processed to extract surface water statistics. Summary statistics for each province are provided in tables and histograms in Appendix C.

In Ontario and Quebec, most of the surface water lies within the Canadian Shield, where bedrock structure and glacial action have provided countless depressions where surface water accumulates. A large number of water bodies can be found in the Hudson Bay/James Bay lowlands. Underlain by marine deposits and covered largely with organic deposits, these lowlands are densely covered with small water bodies. In fact, in many instances the extremely high density of discrete water bodies exceeded the analytical limits (45 000 polygons per scene) of the digital image analysis process. This problem did not arise for any of the other provinces studied. The St. Lawrence lowland, however, is characterized by relatively few water bodies. In this region, a thick blanket of marine clay and flat topography do not favour the formation of lakes. Most of the lakes, ponds, and rivers in Newfoundland are situated along glacially scoured flutings (relatively linear depressions) on the bedrock surface. Limestone is found in the northern tip and west coast areas of the northern peninsula.

The study identified, located, and measured 891 451 water bodies in eastern Canada (Table 9). As expected, most of them are concentrated on the Canadian Shield of Ontario and Quebec, which is characterized by numerous small lakes and streams. Almost 50% of all the surface water area in eastern Canada is in Quebec (6 060 289 hectares). This is equivalent to the size of Prince Edward Island and Nova Scotia combined. In contrast, the 482 905 hectares of surface water in the Maritimes is only 4% of the total surface water of eastern Canada and the 1 177 956 hectares in insular Newfoundland is 10%.

The vast majority (80%) of water bodies in eastern Canada are smaller than 5 hectares. Small water bodies are usually prime waterfowl habitat. Among wildlife biologists, a water body of 5 hectares or less is widely accepted as "ideal." Small water bodies may also be important in terms of fish spawning and associated recreational potential. At the same time, they are usually more susceptible to acidification than larger ones because of internal biogeochemistry

Table 9. Summary Statistics for Surface Water

Province	Number of water bodies			Area (ha)			Total perimeter (km)
	Total	< 1 ha	< 5 ha	Total	< 1 ha	< 5 ha	
Ontario	288 166	145 778	221 522	4 457 103	59 682	242 792	470 576
Quebec	434 661	220 306	343 314	6 060 289	91 743	390 468	744 655
Newfoundland	143 052	83 377	124 549	1 177 956	38 062	142 991	110 670
Nova Scotia	13 137	7 279	10 068	285 474	2 743	9 534	22 863
New Brunswick	11 335	8 029	10 151	195 243	2 948	7 713	16 142
Prince Edward Island	1 100	790	1 015	2 188	303	805	753
Total	891 451	465 559	710 619	12 178 253	195 481	794 303	1 365 659

(Federal/Provincial Research and Monitoring Coordinating Committee [RMCC] 1990). In the Maritimes, 83% of all water bodies are smaller than 5 hectares and 63% are smaller than 1 hectare. In insular Newfoundland, 87% are smaller than 5 hectares and 58% are smaller than 1 hectare. In Ontario and Quebec, 77% and 79%, respectively, are smaller than 5 hectares and 51% are smaller than 1 hectare in both.

Large water bodies are few in number but may nevertheless constitute a large part of the total resource. For example, only 1% of Ontario's and Quebec's water bodies are larger than 100 hectares, but they cover 67% and 68%, respectively, of the surface water area in each province.

While a large percentage of Ontario and Quebec is covered with water, only small portions of the other eastern provinces are covered with water: 9% of insular Newfoundland, 5% of Nova Scotia, 2.6% of New Brunswick, and less than 1% of Prince Edward Island.

The best previous estimate of water bodies in Nova Scotia, 6600, was based on detailed analysis of topographic maps. This survey identified more than 7000 additional small water bodies in the province. Detailed provincewide surface water surveys had also been carried out for Prince Edward Island, but this was the first comprehensive inventory of water bodies in New Brunswick.

Although 1100 water bodies were identified in Prince Edward Island, this is an underestimation of the actual number. Many of the Island's wetlands have surface ponds associated with them. Because of the highly productive nature of these wetlands, many of the associated ponds have a continuous cover of floating vegetation that cannot be differentiated from surrounding upland vegetation. A detailed survey of

freshwater wetlands larger than 0.25 hectare carried out in the 1980s indicates that there are close to 3000 such wetlands. Many of these have a blanket of floating vegetation.

SURFACE WATER AT RISK

Introduction

Most of the surface water in the study area is exposed to acidic precipitation (Environment Canada 1988), receiving, on average, at least 10 kilograms per hectare of wet sulphate each year between 1982 and 1986. Potential impacts to surface water and related resources are a function of the geological setting. In areas where the soils and bedrock have a high potential to reduce acidity, surface water is well buffered and has a low sensitivity to acidification. Conversely, in areas where the soils and bedrock have a low potential to reduce acidity, surface water is likely to be sensitive to acidification.

Qualitative criteria pertaining to the potential of soils and bedrock to reduce acidity provided the basis upon which aquatic sensitivity to acidification could be estimated (Shilts 1981; Li 1985; Cowell and Lucas 1986). Applied within an ecosystem framework (ecodistricts), which was developed by the Canadian Committee on Ecological Land Classification (CCEL) (Rubec and Wiken 1983), these criteria were interpreted as areas having a low, moderate, or high potential to reduce acidity (Environment Canada 1988). Two additional classes were defined but not rated in terms of potential aquatic sensitivity: (a) ice fields and permanent snow cover and (b) areas dominated by bogs, fens, and other types of wetlands that generate their own acidity and sometimes actually buffer acidity.

To produce a national sensitivity map, each province and territory applied the model to rate soils and bedrock in terms of their potential to reduce acidity. The compilation produced the first geologically based national overview of areas where surface water is sensitive to acidification. The map, in combination with acid loading values, provides a useful tool to estimate the spatial extent of surface water at risk due to acidification (Environment Canada 1987). The map has been reproduced as one of several thematic maps of Canadian significance in the fifth edition of the National Atlas of Canada (Energy, Mines and Resources Canada 1991).

At the time when the national sensitivity map was compiled, knowledge of the influence of wetlands on regional acidity budgets was at best sketchy. Therefore, only those ecosystems that were clearly dominated by wetlands, such as the Hudson Bay lowland, were rated as such. As a result of this cautious approach to assessing the relative importance of wetlands and because of the resolution achieved in regional ecodistrict mapping, some regions (like Nova Scotia) appear to lack organic terrain. A similar mapping exercise carried out on a larger scale (higher resolution) and with today's understanding of wetland hydrogeochemistry would yield a different picture.

Using the same method as for drainage basins, surface water bodies were matched to an ecosystem framework. In the Atlantic provinces and Quebec, ecodistricts were used (H.E. Hirvonen, 1984, Lands Directorate, Atlantic Region, Environment Canada, pers. com.; Gilbert et al. 1985). A combination of ecodistricts and Ontario Land Inventory (OLI) polygons (Ontario Ministry of Natural Resources 1979; Wickware and Rubec 1989) was used for Ontario.

Applied to an ecological framework, the surface water sensitivity model yields a qualitative rating for the evaluation of surface water at risk due to acidification. The rating for aquatic sensitivity is based on the potential of soils and bedrock to reduce acidity. Published maps for Quebec (Li 1985), Nova Scotia (Hirvonen 1984), and Ontario (Wickware and Rubec 1989) were used to determine the number of surface water bodies in each of the potential to reduce acidity classes. Unpublished sources were used for Prince

Edward Island and New Brunswick. These have also been used for the national sensitivity map (Environment Canada 1987). A more detailed analysis of surface water at risk is available for the Atlantic provinces (Environment Canada 1991).

Provincial Statistics

Of the 881 634 water bodies inventoried (Table 10), 73% (646 072) lie in areas having a low potential to reduce acidity and are deemed sensitive to acidification. Seventy-eight percent (502 655) of these have a surface area of 5 hectares or less (Table 11). Although this adds up to only 598 717 hectares, a mere 5% of the total area covered by surface water, it accounts for 57% of all the water bodies. Of the total number of water bodies in the Maritimes, 20 472 (80%) occur within landscapes that have a moderate to low potential to reduce acidity and are thus considered sensitive to acidification.

Information on surface water at risk due to acidification for each province is provided in statistical tables and histograms in Appendix D. Water bodies exceeding 500 hectares (class 18) have been omitted from the area histograms because even a few of them would have overshadowed the rest of the distribution. Note also that because the interval beyond class 13 is 100 hectares (see Table 8), the histograms show an artificial bimodal distribution.

Ontario

Ontario's resources-at-risk assessment (unlike the rest of the study, which was based on an ecodistrict framework digital overlay) was based on a combination of ecodistrict and Ontario Land Inventory (OLI) framework, part of which was carried out manually. As a result, a small portion of the lake point file fell outside the study area, a normal occurrence when the same point file is overlaid on two different spatial frameworks. In this case, there was a difference of 9817 water bodies or 3.4% of the total, accounting for the discrepancy in the total number of water bodies for Ontario in Tables 9 and 10.

Seventy percent (195 396) of the 278 349 water bodies thus identified in Ontario south of 52° north latitude lie within an area having a low potential to reduce acidity. As is the case for the frequency

Table 10. Summary Statistics for Surface Water at Risk

Provinces	Total water bodies	High*		Moderate*		Low*	
		Number	Area (ha)	Number	Area (ha)	Number	Area (ha)
Ontario	278 349	23 736	431 190	51 043	687 765	195 396	1 710 682
Quebec	434 661	14 530	355 903	57 594	455 561	352 819	5 139 161
Newfoundland	143 052	16 555	82 012	37 022	149 131	84 579	930 239
Nova Scotia	13 137	3 894	4 689	1 804	148 359	7 439	132 426
New Brunswick	11 335	1 206	3 003	4 854	128 685	5 275	63 555
Prince Edward Island	1100	0	0	536	659	564	1 529
Total	881 634	59 921	876 797	152 853	1 570 160	646 072	7 977 592

Note: Organic terrain omitted

*Potential of soils and bed rock to reduce acidity.

Table 11. Summary Statistics for Small Water Bodies (< 5 ha) at Risk

Provinces	High*		Moderate*		Low*	
	Number	Area (ha)	Number	Area (ha)	Number	Area (ha)
Ontario	20 496	18 334	39 250	42 854	147 537	170 267
Quebec	13 246	9 402	49 935	48 892	271 769	325 505
Newfoundland	14 687	15 174	32 554	30 919	72 920	93 513
Nova Scotia	1 645	1 171	3 173	3 007	5 250	5 357
New Brunswick	1 119	741	4 364	3 332	4 668	3 640
Prince Edward Island	0	0	504	371	511	435
Total	51 193	44 822	129 780	129 375	502 655	598 717

Note: Organic terrain omitted

*Potential of soils and bed rock to reduce acidity.

distribution of all water bodies in eastern Canada, distribution is skewed toward the smaller water bodies. Of the 213 933 water bodies smaller than 5 hectares, 147 537 (69%) lie in areas having a low potential to reduce acidity. Only 23 736 (8%) of all the water bodies lie in areas that are well buffered, having geological safeguards against acidification under present rates of deposition (Cowell and Lucas 1986). In terms of area, 38% (1 710 682 hectares) of the total resource is deemed at risk. (See Table D.1 and Figure D.1 for details.)

Quebec

Eighty-one percent (352 819) of all water bodies in Quebec south of 52° north latitude are located in areas where the soils and bedrock have a low potential to reduce acidity. The surface water in these areas, therefore, has a high sensitivity to

acidification and has been under stress from it (Dupont 1991). A majority of these water bodies (271 769 or 77%) have a surface area less than 5 hectares. Nearly 85% (5 139 161 hectares) of the total surface water area is sensitive and exposed to acidic precipitation. (See Table D.2 and Figure D.2 for details.)

Newfoundland

Fifty-nine percent (84 579) of all water bodies in insular Newfoundland are situated in a high sensitivity zone. Of these, 86% (72 920) are smaller than 5 hectares. Water bodies deemed to be located in areas with a moderate to low potential to reduce acidity total more than 1 million hectares. The frequency and area distributions in Newfoundland are similar to those for Quebec and Ontario. One major difference is the relatively smaller proportion of

water bodies in the category having a low potential to reduce acidity with respect to the other potential groupings. (See Table D.3 and Figure D.3 for details.)

Nova Scotia

Fifty-seven percent (7439) of the total number of water bodies in Nova Scotia occur within landscapes that provide little protection against acidification. This adds up to a total area of 132 426 hectares (46% of the total surface water area). Of these, 71% (5250) are smaller than 5 hectares. Although these contribute little to the total surface water area of the province (5357 hectares), they represent the majority in terms of numbers. Compared to the larger provinces, Nova Scotia has a better balance between the number and area of water bodies within each of the groupings based on the potential to reduce acidity. This, however, may be counteracted by the high incidence of organic lakes in the province (Howell and El-Shaarawi 1991; Underwood and Schwartz 1989). (See Table D.4 and Figure D.4 for details.)

Many of Nova Scotia's drainage basins have a high component of wetlands, such as bogs and swamps, which release organic material into nearby waters. Such waters are often referred to as "brown" or "coloured" waters because of the dark colour associated with this organic material. This release of organic material from wetlands is associated with natural organic acids, which, like acid rain, acidify surface water. These naturally acidic lakes and ponds are special environments that, with additional acidic pollution from human activities, are more susceptible to damage caused by acidification.

New Brunswick

Of the 11 335 water bodies in New Brunswick, 89% (10 129) are located within areas with moderate to low potential to reduce acidity. There are few water bodies larger than 20 hectares, although the area distribution indicates a more homogeneous distribution of the resource among the different size classes. For the province in general, water bodies are almost equally distributed between the moderate and low potential to reduce acidity groupings. (See Table D.5 and Figure D.5 for details.)

Prince Edward Island

Surface water in Prince Edward Island has been classed as being moderately to highly sensitive to acidification. (See Table D.6 and Figure D.6 for details.) It is, however, well buffered despite being located where soils and bedrock have a moderate or low potential to reduce acidity.

The original rating of soils and bedrock to reduce acidity in Prince Edward Island has also been underestimated (United States-Canada Memorandum of Intent on Transboundary Air Pollution, 1983, Figure 3-9). Today it is known that very little carbonate is required to buffer surface water. In the original sensitivity mapping exercise, little consideration was given to carbonate cement in sandstone, resulting in a poor rating (Environment Canada 1991). Also the buffering potential of thick deposits of sandy material was underestimated. The published ratings (Environment Canada 1991) have been used in this study, although it would have been more realistic to assign a high rating (green) to the existing moderate (yellow), and a moderate rating (yellow) for the areas at the eastern and western tips of the Island instead of the low (red).

Inland surface waters are fed primarily from groundwater rather than surface runoff. The groundwater picks up carbonate as it percolates through the bedrock. This influx of carbonate-rich water results in highly productive and well-buffered surface water. There are only a few natural lakes that are negatively affected by acid rain. The vast majority of the Island's ponds, marshes, and streams are well buffered in spite of the fact that the surrounding landscape may have little buffering capacity to neutralize acidic precipitation.

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Appendix A

Landsat TM Scenes

Table A.1. Landsat TM Scenes

Frame	Track	Scene	Date
1	2	26	19 Jun 86
2	2	27	11 Aug 88
3	3	26	26 Aug 85
4	3	27	26 Aug 85
5	4	25	25 Aug 88
6	4	26	25 Aug 88
7	4	27	25 Aug 88
8	5	24	25 Sep 82
9	5	25	8 Aug 85
10	5	26	8 Aug 85
11	5	27	27 Oct 82
12	6	24	17 Jul 86
13, 14	6	27	14 May 86
15	6	28	6 Sep 87
16	6	29	6 Sep 87
17	7	24	13 Sep 87
18	7	25	24 Jul 86
19	7	27	17 Oct 88
20	7	28	17 Oct 88
21	7	29	8 Jun 85
22	8	24	4 Jul 88
23	8	25	4 Jul 88
125, 126	8	26	25 Sep 89
24	8	28	6 Oct 87
25	8	29	1 Sep 86
26	9	24	26 Oct 86
27	9	25	26 Oct 86
28	9	26	26 Oct 86
29	9	27	23 Aug 86
30	9	28	23 Aug 86
31	9	29	16 May 86
127, 128	9	30	16 Sept 89
32	10	24	4 Sep 88

Frame	Track	Scene	Date
33	10	25	4 Sep 88
35	10	26	14 Aug 86
36	10	27	14 Aug 86
37	10	28	23 May 85
38	10	29	23 May 85
39	11	24	2 Oct 84
40	11	25	2 Oct 84
41	11	26	4 Apr 87
42	11	27	4 May 87
43	12	24	29 Sep 86
44	12	25	27 Jul 86
45	12	26	27 Jul 86
46	12	27	27 Jul 86
47	13	24	19 Aug 86
48	13	25	19 Aug 86
49	13	26	10 Jun 84
50	13	27	3 Oct 85
51	13	28	25 Sep 88
52	14	24	29 Aug 87
53	14	25	29 Aug 87
54	14	26	26 Aug 86
55	14	27	26 Aug 86
56	14	28	27 Sep 86
57	15	24	9 Oct 88
58	15	25	18 May 88
59	15	26	13 May 86
60	15	27	13 May 86
61	15	28	13 May 86
62, 63	16	24	30 May 86
64	16	25	2 Aug 84
65	16	26	2 Aug 84
66	16	27	21 Jun 86
67	16	28	21 Jun 86

Table A.1. Continued

Frame	Track	Scene	Date
68	16	29	21 Jun 86
69	17	24	22 Jun 84
70	17	25	22 Jun 84
71	17	26	22 Jun 84
72	17	27	22 Jun 84
73	17	28	22 Jun 84
74	17	29	22 Jun 84
75	18	24	16 Jun 85
76	18	25	5 May 87
77	18	26	7 May 88
78	18	27	7 May 88
79	18	28	7 May 88
80	18	29	7 May 88
81	18	30	7 May 88
	18	31	7 May 88
82	19	24	25 May 86
83	19	25	25 May 86
84	19	26	25 May 86
85	19	27	12 May 87
86	19	28	25 May 86
87	19	29	25 May 86
88	19	30	2 Aug 88
89	19	31	2 Aug 88
	20	24	30 Jun 85
90	20	25	20 Jun 87
91	20	26	20 Jun 87
92	20	27	20 Jun 87
93	20	28	20 Jun 87
	21	24	7 Jul 85
94	21	25	7 Jul 85
95	21	26	7 Jul 85

Frame	Track	Scene	Date
96	21	27	24 Apr 87
97	21	28	7 Jul 85
	22	24	18 Aug 86
98	22	25	18 Aug 86
99	22	26	18 Aug 86
100, 101	22	27	18 Aug 86
	23	24	21 May 86
102	23	25	9 Jun 87
103	23	26	9 Jun 87
	24	24	2 Jun 88
104	24	25	28 May 86
105	24	26	28 May 86
106	25	24	9 Jun 88
107	25	25	9 Jun 88
108	25	26	9 Jun 88
109	26	24	11 Jun 86
110	26	25	14 Jun 87
111	26	26	14 Jun 87
112	26	27	14 Jun 87
113	27	24	28 Jul 89
114	27	25	10 Jun 89
115	27	26	21 Aug 86
	27	27	10 Jun 89
116	28	24	30 Jun 88
117	28	25	30 Jun 88
118	28	26	30 Jun 88
119	29	24	5 Jun 88
120	29	25	11 Aug 89
121, 122	29	26	11 Aug 89
123	30	24	22 May 86
124	30	25	22 May 86

Notes: Two frame numbers for a scene indicate that individual quadrants of that scene were processed separately.

Blank frame cells indicate scenes that were not processed either because there were too many water polygons, thus surpassing the capacity of the system (as in the Hudson Bay lowland), or because one of the adjacent scenes was sufficient to provide complete coverage.

Frame 34 has been omitted because it does not correspond to any TM scene. The area, which is west of Anicosti Island, is a gap in the data base that corresponds to a portion of the St. Lawrence estuary.

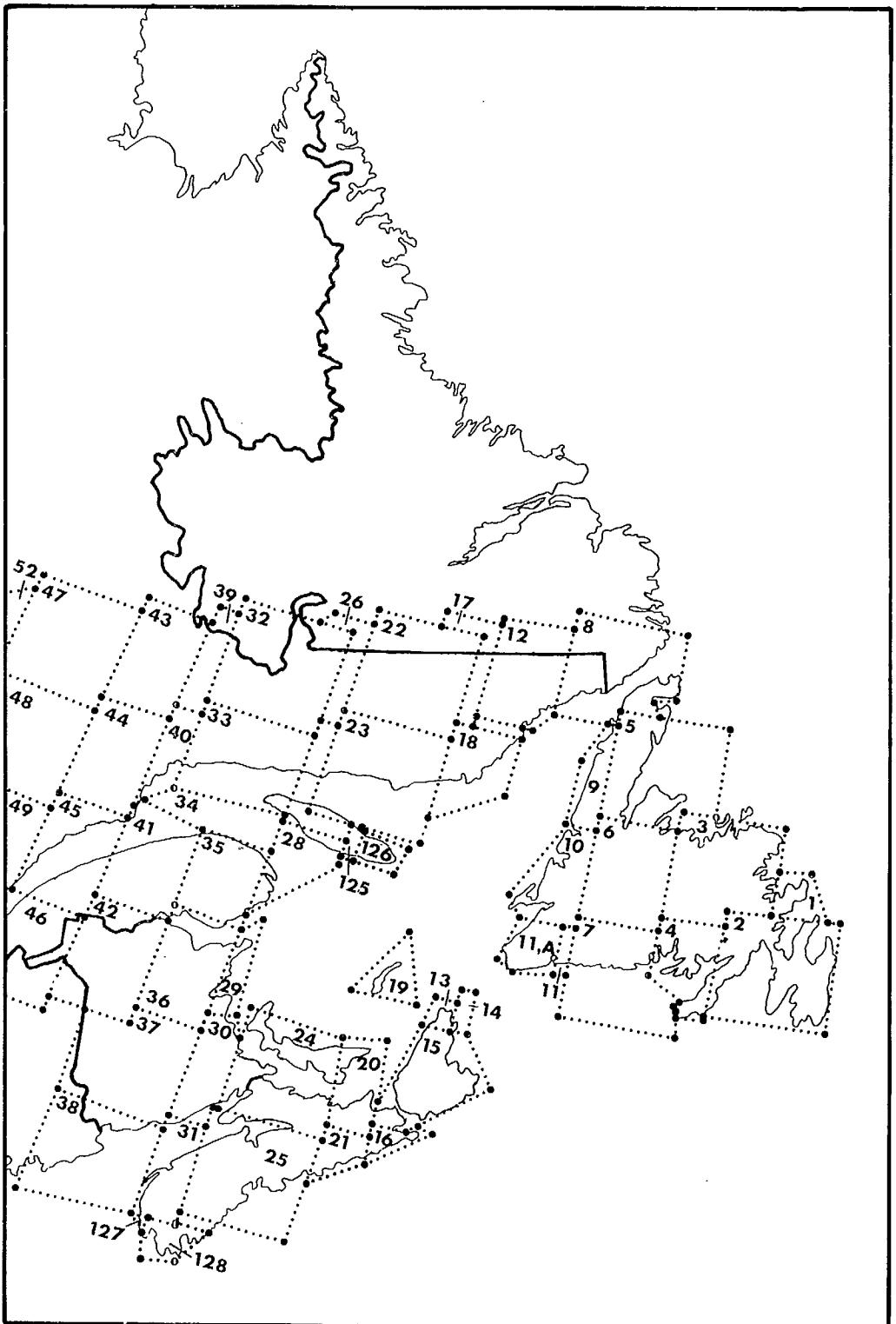


Figure A.1. Landsat TM coverage for the Atlantic provinces. Numbered frames correspond to TM scenes identified in Table A.1.

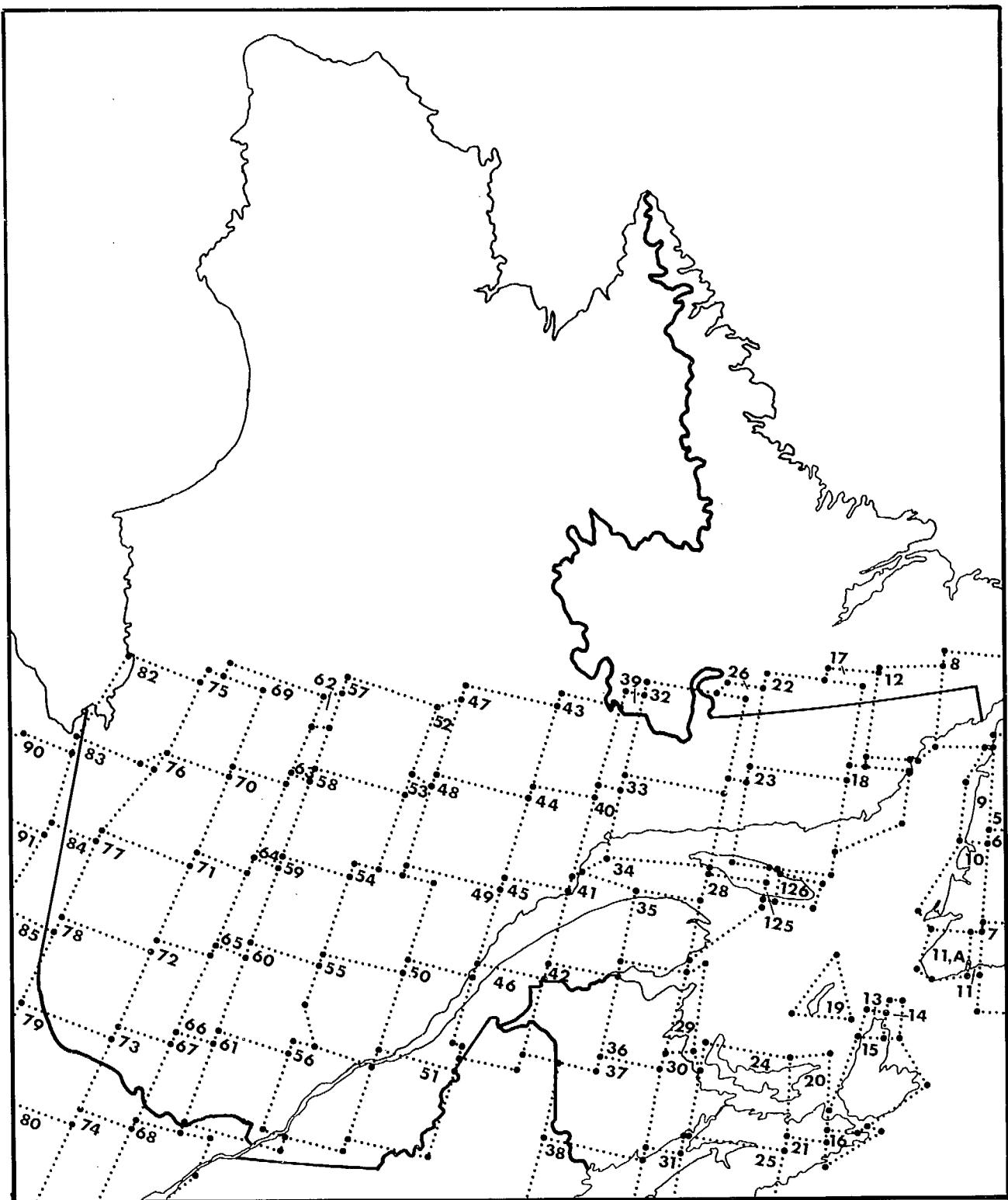


Figure A.2. Landsat TM coverage for Quebec. Numbered frames correspond to TM scenes identified in Table A.1.

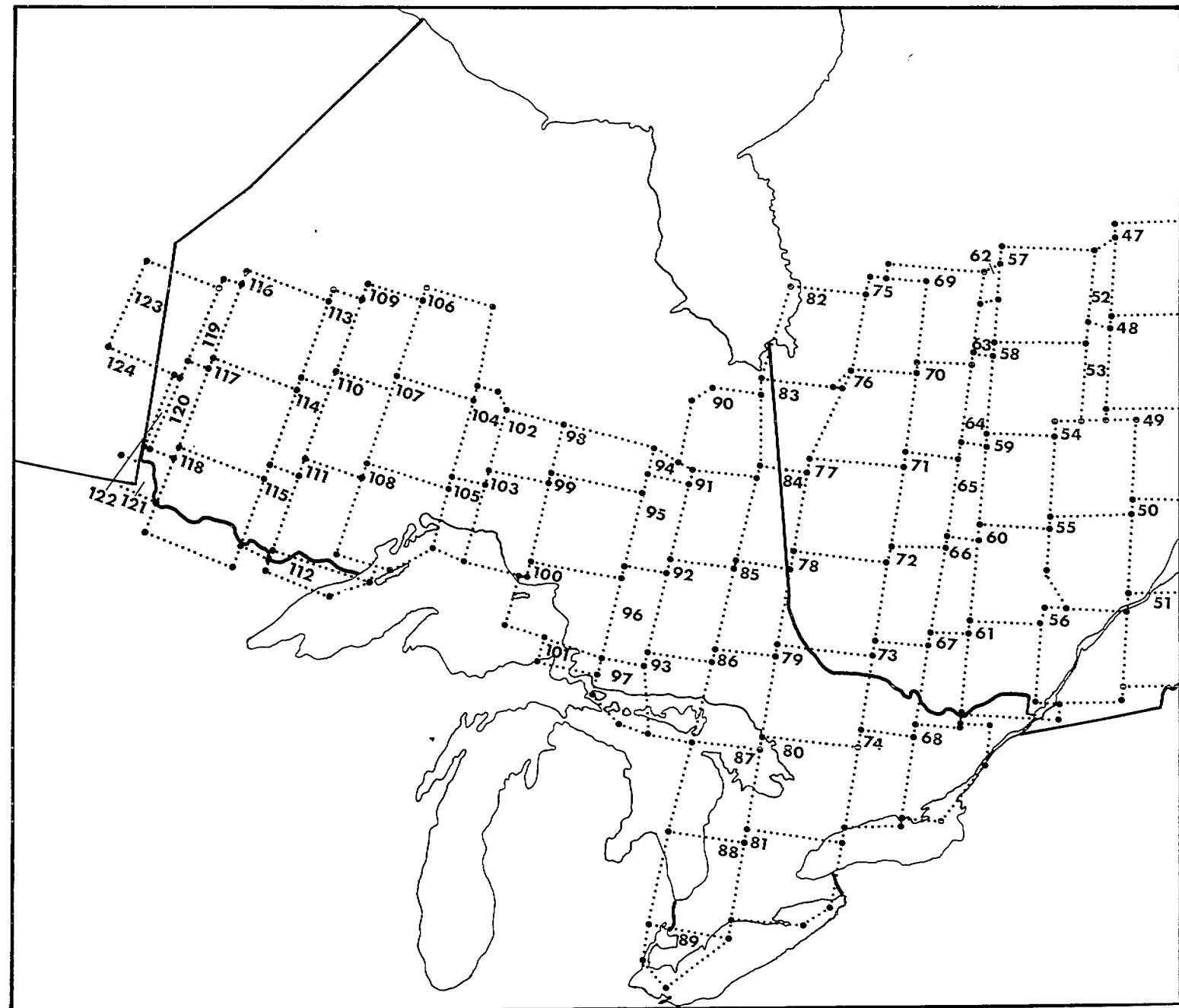


Figure A.3. Landsat TM coverage for Ontario. Numbered frames correspond to TM scenes identified in Table A.1.

Appendix B

Drainage Basin Counts and Measures Statistics

Drainage basin 1AA

Size class	Number	Area (ha)	Perimeter (m)
1	67	12.06	13 380.00
2	92	45.00	35 001.87
3	34	73.80	32 583.76
4	19	126.09	32 897.06
5	11	145.53	30 003.76
6	4	94.68	14 433.38
7	2	69.93	13 578.82
8	2	94.68	10 349.12
9	1	59.31	5 458.23
10	1	61.65	7 059.41
14	1	109.35	9 501.84

Drainage basin 1AB

Size class	Number	Area (ha)	Perimeter (m)
1	13	2.34	2 400.00
2	29	14.31	10 980.00
3	10	27.99	9 936.40
4	2	13.95	3 024.85
5	4	48.51	10 470.37
6	2	45.99	6 961.25
8	1	43.02	4 401.84
18	1	711.00	27 526.69

Drainage basin 1AD

Size class	Number	Area (ha)	Perimeter (m)
1	108	19.44	21 180.00
2	192	96.66	74 909.13
3	133	318.15	123 653.02
4	26	188.91	45 106.18
5	25	339.57	72 461.42
6	5	129.42	25 966.70
7	8	266.40	42 798.83
8	3	136.62	25 423.68
9	4	226.62	18 527.93
10	1	63.63	4 959.41
11	3	224.55	24 701.92
12	2	174.51	46 129.71
14	4	545.22	39 829.20
15	1	256.77	14 664.85
16	2	701.37	52 833.38
17	1	414.54	20 522.49
18	8	12 040.02	469 501.41

Drainage basin 1AF

Size class	Number	Area (ha)	Perimeter (m)
1	95	17.10	18 480.00
2	158	77.40	65 009.15
3	58	129.42	77 434.65
4	8	59.22	16 846.69
5	6	85.41	15 459.41
8	1	45.99	7 500.00
9	1	53.37	5 202.43
10	1	131.94	12 958.23
12	1	83.70	8 022.43
14	1	103.86	8 424.85
16	1	395.64	21 374.56
18	1	1 071.45	145 390.17

Drainage basin 1AG

Size class	Number	Area (ha)	Perimeter (m)
1	6	1.08	1 140.00
2	3	1.71	1 080.00
3	3	9.90	3 589.71
4	1	7.74	1 712.13
5	1	19.80	3 452.13

Drainage basin 1AH

Size class	Number	Area (ha)	Perimeter (m)
1	156	28.08	30 540.00
2	282	128.52	104 513.97
3	121	283.77	117 824.48
4	34	234.81	71 218.99
5	19	247.95	58 522.60
6	10	250.92	67 623.97
7	3	102.96	36 363.75
9	2	111.33	29 882.50
11	1	77.76	10 606.69
13	1	95.85	8 426.10
14	5	711.81	145 687.76
15	1	238.77	19 644.33
16	2	761.22	73 180.84
18	3	2 635.29	168 275.00

Drainage basin 1AJ

Size class	Number	Area (ha)	Perimeter (m)
1	128	23.04	25 260.00
2	213	99.81	84 392.15
3	86	185.85	96 934.66
4	11	73.26	22 801.26
5	5	64.62	14 126.10
6	3	81.09	15 027.36
7	1	38.34	3 882.43
10	1	60.66	5 760.00
14	1	125.19	33 314.02
17	1	411.84	40 066.14
18	1	868.32	82 255.20

Drainage basin 1AK

Size class	Number	Area (ha)	Perimeter (m)
1	106	19.08	20 400.00
2	191	88.02	72 434.58
3	90	230.58	106 998.34
4	18	127.26	37 019.50
5	10	143.91	22 240.66
6	9	230.49	47 889.25
7	2	66.87	7 874.56
8	5	221.76	34 607.95
9	2	104.40	10 274.56
11	1	75.33	5 132.13
12	2	162.90	13 609.71
13	2	187.20	32 478.30
14	1	197.82	8 761.25
15	3	735.75	61 251.66
18	6	11 192.67	644 568.65

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 1AL

Size class	Number	Area (ha)	Perimeter (m)
1	106	19.08	20 580.00
2	177	84.96	76 369.71
3	56	120.24	69 077.08
4	7	48.87	23 396.99
5	2	28.62	13 546.69
6	1	27.90	3 194.56
14	1	108.54	6 804.85

Drainage basin 1AM

Size class	Number	Area (ha)	Perimeter (m)
1	89	16.02	17 340.00
2	138	66.87	54 769.72
3	40	87.93	41 980.69
4	13	85.41	25 526.12
5	8	100.62	24 931.63
6	5	117.36	23 280.73
7	3	109.44	19 268.53
9	1	53.82	4 454.56
10	1	69.84	4 856.99
14	1	113.67	9 206.10
18	3	6 867.81	284 674.94

Drainage basin 1AN

Size class	Number	Area (ha)	Perimeter (m)
1	75	13.50	15 120.00
2	150	69.39	62 326.72
3	26	47.25	25 777.65
4	4	29.61	9 086.11
5	1	17.28	2 259.41
6	1	20.25	4 451.54
7	2	71.19	11 009.12
9	2	110.43	8 139.41
12	1	83.70	6 159.41

Drainage basin 1AO

Size class	Number	Area (ha)	Perimeter (m)
1	108	19.44	20 700.00
2	185	92.07	76 073.99
3	63	138.24	65 953.53
4	15	98.19	29 007.36
5	5	70.56	16 826.11
6	1	27.99	12 086.10
7	1	32.67	4 839.41
9	3	165.33	15 577.65
12	1	87.75	10 053.38
13	1	90.27	12 072.79
14	3	404.64	43 879.56
17	1	432.90	28 412.84

Drainage basin 1AP

Size class	Number	Area (ha)	Perimeter (m)
1	223	40.14	44 580.00
2	290	141.66	116 000.10
3	173	397.08	173 901.62
4	52	372.15	107 569.42
5	29	391.77	82 160.82
6	13	300.69	41 235.32
7	8	273.69	43 963.17
8	5	217.44	28 907.94
9	2	116.37	9 703.68
10	4	268.11	28 625.00
11	2	144.00	13 299.41
12	1	83.97	5 825.51
13	3	280.80	29 974.64
14	1	125.91	30 969.22
15	1	281.79	16 713.38
16	1	372.96	16 455.81
17	1	420.21	17 591.54
18	2	51 416.64	1 753 946.05

Drainage basin 1AQ

Size class	Number	Area (ha)	Perimeter (m)
1	151	27.18	30 300.00
2	339	172.17	136 356.43
3	194	439.56	194 507.00
4	46	317.25	82 118.42
5	39	540.36	112 074.22
6	11	280.89	48 938.91
7	7	247.14	44 970.36
8	4	178.47	23 990.96
9	6	325.35	38 812.20
10	7	452.43	47 140.15
11	3	229.05	21 263.09
12	4	340.74	46 858.96
13	3	281.34	24 449.12
14	9	1 196.46	84 361.99
15	7	1 684.53	150 791.89
16	2	720.45	48 554.02
18	4	5 590.80	206 289.69

Drainage basin 1AR

Size class	Number	Area (ha)	Perimeter (m)
1	78	14.04	15 720.00
2	170	81.45	67 747.29
3	85	208.71	94 412.91
4	16	116.01	44 480.07
5	22	306.90	63 445.59
6	7	166.23	22 578.82
7	7	237.24	39 530.96
8	5	219.69	30 732.80
9	4	214.20	23 020.67
10	1	66.51	7 507.28
11	2	142.56	21 640.66
13	1	99.36	5 894.56
14	7	868.41	63 971.03
15	1	262.71	12 413.97
16	5	1 812.60	113 910.55
17	1	412.20	25 858.23
18	4	13 737.78	579 730.55

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 1BA

Size class	Number	Area (ha)	Perimeter (m)
1	38	6.84	7 620.00
2	68	30.96	27 727.28
3	24	54.81	33 302.51
4	5	36.36	16 872.80
5	1	12.87	8 244.85

Drainage basin 1BE

Size class	Number	Area (ha)	Perimeter (m)
1	93	16.74	18 180.00
2	135	65.97	57 096.43
3	46	104.58	58 282.58
4	9	61.65	35 834.56
5	8	113.22	47 153.46
6	5	134.64	29 528.01
10	1	61.74	5 149.71

Drainage basin 1BB

Size class	Number	Area (ha)	Perimeter (m)
1	41	7.38	8 040.00
2	79	37.44	34 782.43
3	44	101.61	62 306.14
4	6	38.61	16 616.99
5	3	37.44	13 584.85
6	8	202.14	36 659.49
7	1	30.06	3 162.43
9	1	56.70	4 962.43
10	2	139.86	12 296.99
15	1	226.80	11 029.71

Drainage basin 1BF

Size class	Number	Area (ha)	Perimeter (m)
1	92	16.56	18 180.00
2	149	64.71	57 469.71
3	23	49.14	21 302.51
4	2	15.48	3 660.00
5	1	13.14	1 881.84

Drainage basin 1BC

Size class	Number	Area (ha)	Perimeter (m)
1	68	12.24	13 140.00
2	120	58.23	51 699.42
3	38	78.57	40 929.79
4	6	37.53	13 388.53
5	4	67.77	17 663.09
6	2	51.75	6 024.85
8	1	40.50	4 832.13
10	1	62.73	8 192.13
11	1	70.20	5 206.69
12	1	82.80	5 364.85
15	1	234.72	12 776.99
16	1	396.36	126 433.49

Drainage basin 1BH

Size class	Number	Area (ha)	Perimeter (m)
1	324	58.32	62 160.00
2	519	257.04	201 296.61
3	318	755.19	324 563.43
4	60	430.92	118 332.55
5	35	514.53	108 730.73
6	10	252.36	39 366.76
7	5	181.17	25 350.36
8	2	88.47	10 586.10
9	2	115.38	14 998.23
10	2	131.49	19 963.16
11	2	150.48	12 792.79
12	1	87.84	5 158.23
13	1	99.36	13 306.69
14	1	169.56	14 655.81
18	1	2 269.44	83 666.80

Drainage basin 1BD

Size class	Number	Area (ha)	Perimeter (m)
1	138	24.84	27 120.00
2	261	125.10	106 388.56
3	99	227.25	105 758.45
4	12	85.23	27 236.48
5	21	293.22	55 392.81
6	9	223.56	53 654.04
8	1	49.23	23 502.43
9	1	57.42	6 244.26
10	2	134.46	11 609.11
12	1	83.34	7 748.53
14	4	595.44	80 964.32
16	1	347.31	22 066.69
17	1	408.60	22 601.90
18	1	3 775.77	84 819.68

Drainage basin 1BJ

Size class	Number	Area (ha)	Perimeter (m)
1	68	12.24	13 260.00
2	118	62.28	46 610.99
3	60	146.07	58 322.01
4	13	91.62	22 040.08
5	7	94.50	18 294.71
6	7	161.19	25 312.21
7	1	32.04	8 914.63
14	1	100.89	11 104.26
18	2	29 704.86	495 174.90

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 1BK

Size class	Number	Area (ha)	Perimeter (m)
1	76	13.68	14 520.00
2	128	61.65	51 716.99
3	80	196.02	91 951.14
4	22	160.83	54 950.45
5	9	133.65	48 894.72
6	6	147.24	33 798.31
7	4	139.77	27 694.12
8	3	141.39	17 649.78
9	1	53.91	13 584.34
14	1	173.88	11 216.99

Drainage basin 1BL

Size class	Number	Area (ha)	Perimeter (m)
1	94	16.92	18 480.00
2	184	86.31	70 151.57
3	69	154.44	73 437.77
4	13	87.75	25 322.50
5	7	100.80	22 079.51
6	3	74.52	8 129.11
7	4	133.02	21 824.93
8	1	42.84	6 141.84
9	1	56.97	3 699.41
10	1	64.62	6 283.68
14	2	267.66	33 467.40
15	1	257.76	21 693.37
18	1	574.38	51 245.64

Drainage basin 1BM

Size class	Number	Area (ha)	Perimeter (m)
1	237	42.66	46 800.00
2	307	136.17	113 541.86
3	104	264.87	121 592.43
4	21	152.28	48 014.07
5	14	198.27	47 488.62
6	6	143.28	53 331.70
8	1	42.84	5 887.28
9	2	106.92	28 721.91
10	1	68.67	6 216.40
12	1	86.40	6 709.71
14	1	141.48	9 586.69
15	1	216.90	9 939.41
16	1	375.39	134 010.23

Drainage basin 1BN

Size class	Number	Area (ha)	Perimeter (m)
1	93	16.74	18 900.00
2	140	67.32	63 314.57
3	40	67.23	50 726.12
4	1	8.64	3 004.26
5	5	66.15	19 136.46
6	2	57.15	6 476.99
7	1	37.80	13 913.46
9	2	108.45	40 986.96
14	1	147.33	52 586.97
16	1	310.41	99 030.77

Drainage basin 1BO

Size class	Number	Area (ha)	Perimeter (m)
1	180	32.40	35 340.00
2	295	129.78	113 189.13
3	102	205.47	106 096.59
4	24	177.03	45 322.58
5	18	248.67	47 662.59
6	6	149.67	26 730.38
7	1	33.03	2 749.71
8	2	87.39	22 486.18
10	1	67.41	5 294.56
11	2	148.50	32 456.98
12	2	163.80	16 081.25
14	1	130.59	7 991.54
18	1	11 577.33	337 987.59

Drainage basin 1BP

Size class	Number	Area (ha)	Perimeter (m)
1	106	19.08	20 460.00
2	218	102.51	86 972.15
3	111	234.27	127 752.32
4	30	218.70	71 986.93
5	8	114.48	25 263.76
6	4	93.60	11 404.27
7	4	136.53	17 266.69
8	2	83.07	9 176.98
9	1	56.61	7 684.26
10	1	67.86	13 123.68
11	1	79.65	8 246.10
12	1	81.99	6 356.99
14	3	340.20	33 681.33
16	1	339.93	28 715.86

Drainage basin 1BQ

Size class	Number	Area (ha)	Perimeter (m)
1	57	10.26	11 160.00
2	119	53.10	47 089.71
3	47	108.45	55 960.68
4	14	104.22	31 653.38
5	5	74.07	17 009.12
6	5	131.22	17 674.63
8	1	47.97	5 894.56
12	1	83.34	6 181.25
14	1	159.84	15 040.66
15	1	298.26	13 117.65

Drainage basin 1BR

Size class	Number	Area (ha)	Perimeter (m)
1	115	20.70	21 900.00
2	216	103.50	79 529.15
3	89	181.53	85 163.92
4	17	116.19	30 014.03
5	12	186.48	37 683.77
6	5	109.98	20 405.51
7	2	72.54	10 476.40
9	1	55.89	7 038.82
15	1	261.72	35 944.41

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 1BS

Size class	Number	Area (ha)	Perimeter (m)
1	58	10.44	11 280.00
2	117	56.88	45 159.42
3	45	97.47	45 017.06
4	10	65.70	26 373.38
5	1	12.51	2 107.28
6	1	28.98	8 246.10
14	1	135.54	15 773.46

Drainage basin 1CA

Size class	Number	Area (ha)	Perimeter (m)
1	45	8.10	8 340.00
2	69	32.94	24 854.56
3	28	61.20	28 537.67
4	2	16.65	3 921.84
5	2	28.89	5 287.28
6	1	27.63	4 754.56
8	1	47.43	8 089.71

Drainage basin 1BT

Size class	Number	Area (ha)	Perimeter (m)
1	95	17.10	18 480.00
2	157	78.12	61 091.58
3	82	187.29	80 246.88
4	22	165.60	49 728.69
5	11	154.17	37 931.01
6	2	46.98	8 076.39
8	2	90.72	19 844.93
9	1	59.22	5 269.71
14	4	500.22	50 044.48

Drainage basin 1CB

Size class	Number	Area (ha)	Perimeter (m)
1	32	5.76	6 120.00
2	77	38.70	30 851.56
3	29	60.21	34 452.81
4	9	69.75	20 207.94
5	5	59.94	10 767.35

Drainage basin 1BU

Size class	Number	Area (ha)	Perimeter (m)
1	49	8.82	9 540.00
2	81	38.88	32 421.84
3	35	76.95	37 655.88
4	4	24.03	6 032.14
5	4	57.78	15 823.68
6	1	22.41	2 587.28
7	1	31.95	9 914.56
9	1	59.49	7 889.12
10	1	62.64	11 863.68
12	1	80.73	7 763.09
17	1	460.80	46 420.28

Drainage basin 1CC

Size class	Number	Area (ha)	Perimeter (m)
1	58	10.44	11 040.00
2	136	66.51	51 261.86
3	59	136.44	56 567.97
4	11	80.82	20 426.09
5	9	136.62	25 015.24
6	2	50.76	6 886.69
7	1	32.31	5 559.41
8	1	44.46	3 236.99
9	1	59.40	8 382.43
14	1	107.55	12 750.37

Drainage basin 1BV

Size class	Number	Area (ha)	Perimeter (m)
1	93	16.74	18 480.00
2	193	89.82	72 714.00
3	90	197.37	89 284.53
4	28	203.40	58 343.85
5	8	111.78	25 228.62
6	8	197.91	35 229.77
7	9	302.67	46 760.29
9	2	114.66	15 145.59
11	1	73.80	6 803.09
14	3	423.00	49 721.38
18	1	737.91	25 727.41

Drainage basin 1CD

Size class	Number	Area (ha)	Perimeter (m)
1	76	13.68	14 820.00
2	153	72.00	57 297.01
3	54	124.92	58 841.94
4	9	65.16	20 027.94
5	7	96.84	25 947.35
6	3	80.46	11 771.55
7	2	68.31	11 379.41
8	2	90.36	13 543.68
12	1	82.17	6 315.81

Drainage basin 1CE

Size class	Number	Area (ha)	Perimeter (m)
1	46	8.28	9 000.00
2	98	46.71	40 684.28
3	55	118.80	55 029.30
4	9	58.59	23 103.76
5	6	78.84	18 113.98

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 1DA

Size class	Number	Area (ha)	Perimeter (m)
1	25	4.50	4 980.00
2	42	21.33	17 107.29
3	34	83.97	37 184.95
4	15	124.20	30 034.65
5	16	225.36	50 513.46
6	21	516.24	81 129.27
7	10	330.75	50 277.74
8	8	348.03	49 049.85
9	6	330.57	36 864.35
10	6	382.41	49 183.15
11	3	225.63	25 091.03
12	2	172.35	30 081.31
13	3	284.58	26 074.64
14	4	501.75	61 968.67
15	2	433.44	33 944.91
16	1	328.59	43 529.81
18	1	1 137.06	44 864.91

Drainage basin 1DD

Size class	Number	Area (ha)	Perimeter (m)
1	50	9.00	9 840.00
2	90	42.21	34 464.86
3	37	80.01	36 898.26
4	11	84.78	22 915.23
5	8	107.10	20 760.74
6	5	125.64	22 777.66
7	5	162.45	24 298.23
9	1	55.98	8 544.85
11	1	72.90	11 838.82
13	3	290.16	38 876.47
14	5	638.91	72 922.05
15	1	293.76	45 272.84
18	3	45 272.84	205 823.03

Drainage basin 1DB

Size class	Number	Area (ha)	Perimeter (m)
1	25	4.50	4 980.00
2	55	23.40	18 564.86
3	39	102.96	49 976.52
4	27	208.80	53 614.65
5	26	377.19	62 763.26
6	17	428.49	59 300.81
7	9	298.89	36 835.96
8	7	304.56	35 986.18
9	1	56.97	6 169.71
10	4	260.82	26 317.13
11	1	70.92	6 769.71
12	1	89.73	7 967.94
14	10	1 405.17	154 439.38
15	4	860.58	93 210.03
16	1	306.18	19 784.93

Drainage basin 1DE

Size class	Number	Area (ha)	Perimeter (m)
1	31	5.58	6 180.00
2	91	47.52	37 066.69
3	70	173.97	68 972.41
4	35	248.58	67 270.55
5	22	329.40	70 060.17
6	8	183.96	30 977.06
7	2	69.75	9 548.53
8	2	88.38	14 104.26
9	2	113.67	15 770.96
11	3	233.37	34 784.93
12	1	80.19	8 651.54
14	2	328.50	31 697.78
15	1	245.16	22 678.23
16	2	649.62	77 123.25
17	1	412.29	35 024.91
18	1	1 401.12	101 788.90

Drainage basin 1DC

Size class	Number	Area (ha)	Perimeter (m)
1	57	10.26	10 980.00
2	132	63.27	51 770.98
3	86	214.65	89 488.12
4	21	146.88	37 260.75
5	19	280.26	54 463.16
6	15	355.41	64 390.51
7	4	134.46	25 840.66
8	7	312.57	36 242.52
9	1	53.10	6 321.84
10	1	60.03	12 321.84
11	2	157.59	18 426.77
12	3	257.22	31 535.88
13	1	93.60	19 571.54
14	6	897.03	111 276.59
15	2	514.26	56 941.95
16	1	354.69	51 192.23
18	2	1 766.97	151 141.18

Drainage basin 1DF

Size class	Number	Area (ha)	Perimeter (m)
1	13	2.34	2 520.00
2	18	10.71	8 700.00
3	10	16.02	7 542.43
4	4	26.28	6 967.28
6	1	23.04	2 682.43
7	2	64.71	7 221.84
8	1	41.85	3 822.43
13	1	92.16	6 282.43

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 1DG

Size class	Number	Area (ha)	Perimeter (m)
1	105	18.90	20 460.00
2	159	82.35	63 943.70
3	108	257.22	103 916.00
4	33	236.70	62 684.43
5	19	269.01	59 614.13
6	11	284.49	42 920.08
7	7	240.84	30 767.94
8	2	81.90	11 030.95
9	4	231.21	28 113.38
10	1	60.39	6 847.28
11	3	216.54	22 738.24
12	2	170.64	23 873.97
13	1	97.65	10 239.41
14	4	523.80	54 416.46
15	2	476.64	40 515.80
18	1	1 757.97	61 816.48

Drainage basin 1DH

Size class	Number	Area (ha)	Perimeter (m)
1	96	17.28	19 080.00
2	137	64.53	55 211.55
3	55	120.87	53 686.21
4	12	82.17	22 883.09
5	3	39.33	7 412.13
6	1	26.37	3 060.00
7	1	34.92	6 314.56
12	1	85.41	10 719.41

Drainage basin 1DJ

Size class	Number	Area (ha)	Perimeter (m)
1	53	9.54	10 560.00
2	88	43.56	35 813.98
3	26	50.76	26 365.58
4	7	46.53	10 038.82
5	2	25.56	5 181.84
6	2	51.48	7 274.56
7	1	39.60	4 849.71
8	1	43.83	4 549.71
11	1	74.70	9 184.26

Drainage basin 1DK

Size class	Number	Area (ha)	Perimeter (m)
1	23	4.14	4 680.00
2	32	13.41	12 307.28
3	15	33.03	14 440.66
4	1	7.92	2 767.28
5	2	29.70	4 761.84
6	2	49.59	8 535.81

Drainage basin 1DL

Size class	Number	Area (ha)	Perimeter (m)
1	60	10.80	11 880.00
2	71	36.09	28 634.57
3	30	71.55	30 867.37
4	6	44.37	11 086.69
5	3	36.90	11 070.37
6	3	74.16	15 227.93
7	2	68.49	13 335.81
8	1	43.29	4 761.84
13	1	91.44	5 594.56
14	1	143.01	9 606.76

Drainage basin 1DM

Size class	Number	Area (ha)	Perimeter (m)
1	38	6.84	7 440.00
2	86	43.74	34 754.58
3	31	61.74	28 484.94
4	11	81.00	21 435.83
5	2	28.71	7 448.53
6	2	49.32	11 281.25
11	1	76.59	4 949.12
12	1	83.52	18 751.61
13	1	90.99	6 358.23

Drainage basin 1DN

Size class	Number	Area (ha)	Perimeter (m)
1	80	14.40	15 600.00
2	157	71.19	57 431.56
3	54	114.39	51 630.41
4	10	74.79	19 957.64
5	9	137.52	23 176.55
7	1	34.20	5 209.71
8	1	44.01	4 059.41
12	1	80.28	5 781.84
14	2	248.13	22 253.46

Drainage basin 1DO

Size class	Number	Area (ha)	Perimeter (m)
1	38	6.84	7 320.00
2	94	42.57	34 461.85
3	40	98.01	44 675.92
4	5	31.86	7 659.42
5	4	49.86	11 970.38
14	1	111.24	11 240.07

Drainage basin 1DP

Size class	Number	Area (ha)	Perimeter (m)
1	94	16.92	18 840.00
2	133	66.33	53 711.57
3	48	127.98	53 159.52
4	7	45.81	16 193.97
5	5	69.12	13 695.81
7	1	33.66	5 604.85
8	3	137.52	19 075.22
10	1	63.90	5 700.00

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 1DQ

Size class	Number	Area (ha)	Perimeter (m)
1	101	18.18	19 860.00
2	175	81.54	65 390.99
3	49	92.34	43 281.34
4	10	71.28	18 767.96
5	4	58.86	10 101.84
6	1	28.44	3 522.43
8	1	48.24	8 004.85

Drainage basin 1DR

Size class	Number	Area (ha)	Perimeter (m)
1	116	20.88	22 740.00
2	182	86.76	69 887.99
3	74	154.35	69 357.25
4	6	38.97	11 453.98
5	2	33.03	5 449.71
6	3	77.67	9 639.41
7	2	75.60	9 131.55
12	1	83.43	6 346.69
14	1	115.47	10 296.40

Drainage basin 1DS

Size class	Number	Area (ha)	Perimeter (m)
1	2	0.36	360.00
2	22	10.35	8 700.00
3	25	55.08	23 789.12
4	3	23.85	7 292.13
5	7	104.40	19 367.95
6	4	102.15	12 876.40
11	1	71.82	7 136.99
14	1	128.88	14 966.10

Drainage basin 1EA

Size class	Number	Area (ha)	Perimeter (m)
1	57	10.26	11 160.00
2	66	33.30	27 144.86
3	62	159.84	70 075.24
4	25	188.01	53 608.62
5	41	583.29	114 679.08
6	26	646.11	98 979.66
7	14	509.49	77 668.10
8	11	502.74	71 821.99
9	12	653.85	73 686.24
10	7	441.54	54 060.73
11	7	517.86	65 857.14
12	4	329.04	35 092.21
13	3	283.05	38 992.20
14	29	4 051.80	418 729.46
15	3	744.12	80 785.03
16	3	1 013.13	81 329.83
18	3	2 003.31	258 708.88

Drainage basin 1EB

Size class	Number	Area (ha)	Perimeter (m)
1	17	3.06	3 240.00
2	24	12.33	10 542.43
3	20	45.63	23 224.27
4	6	41.67	10 620.00
5	4	58.68	13 624.27
6	4	108.27	18 329.12
7	4	141.30	19 289.12
8	5	209.43	26 715.81
9	5	269.55	31 562.50
10	1	60.66	8 234.56
11	4	293.40	30 447.36
12	2	168.48	17 651.55
14	2	259.29	23 601.84
15	2	410.40	55 229.82

Drainage basin 1EC

Size class	Number	Area (ha)	Perimeter (m)
1	23	4.14	4 680.00
2	51	23.67	19 962.43
3	22	57.33	24 301.27
4	9	68.04	18 854.56
5	16	255.60	4 512.23
6	5	114.75	1 716.10
7	10	343.98	56 374.64
8	6	264.69	34 410.36
9	4	225.72	31 745.52
10	5	324.36	46 774.64
11	5	385.29	40 981.26
12	2	166.05	17 541.84
13	2	191.07	16 154.56
14	6	801.99	75 129.26
15	2	447.48	35 039.48
18	1	1 365.03	91 358.45

Drainage basin 1ED

Size class	Number	Area (ha)	Perimeter (m)
1	74	13.32	14 820.00
2	152	74.97	58 839.44
3	67	154.71	70 560.76
4	31	213.12	54 274.65
5	46	708.66	146 558.61
6	17	423.81	71 584.99
7	12	412.56	65 509.21
8	11	499.50	72 303.25
9	5	274.95	34 397.06
10	9	581.49	75 608.03
11	5	366.30	41 117.07
12	5	428.04	53 425.59
13	3	285.84	33 744.34
14	15	1 853.55	180 379.79
15	10	2 509.02	213 136.20
16	2	735.75	40 161.32
17	2	815.76	52 077.71
18	5	16 980.03	755 333.65

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 1EE

Size class	Number	Area (ha)	Perimeter (m)
1	105	18.90	21 060.00
2	216	115.11	88 201.28
3	121	296.10	134 587.57
4	29	209.88	60 388.62
5	36	507.06	104 711.29
6	26	639.09	91 036.55
7	13	450.63	64 507.50
8	8	352.17	42 608.02
9	3	169.20	18 636.40
10	4	257.76	31 135.22
11	8	600.48	62 596.55
12	3	262.35	29 450.44
13	6	573.12	58 995.30
14	13	1 763.82	167 367.05
15	6	1 482.93	147 384.68
16	3	1 051.29	89 666.79
17	1	417.06	41 827.98
18	4	5 050.35	334 702.17

Drainage basin 1EH

Size class	Number	Area (ha)	Perimeter (m)
1	27	4.86	5 340.00
2	84	41.49	31 994.57
3	71	182.79	72 066.80
4	37	254.88	68 806.21
5	32	469.62	92 115.31
6	7	180.36	28 830.36
7	14	501.57	85 336.57
8	4	174.06	29 006.11
9	3	168.39	21 001.25
10	2	128.88	19 419.41
11	2	144.81	16 427.94
12	3	248.58	29 761.26
13	1	98.01	11 774.56
14	6	903.42	101 558.38
15	1	267.30	27 754.60
16	1	302.58	27 476.45
18	3	1 889.91	150 307.04

Drainage basin 1EF

Size class	Number	Area (ha)	Perimeter (m)
1	78	14.04	15 540.00
2	124	57.15	48 614.58
3	79	181.53	82 405.64
4	34	259.02	71 348.01
5	34	491.13	100 475.40
6	20	515.61	79 694.79
7	12	410.31	57 689.86
8	4	173.61	24 320.08
9	9	493.02	55 915.23
10	3	198.45	22 119.42
11	2	148.32	16 375.22
12	4	341.19	33 327.35
13	3	283.86	24 412.21
14	11	1 588.59	167 899.24
15	3	698.67	54 829.17
16	2	681.30	60 000.71
18	1	1 605.42	70 832.86

Drainage basin 1EJ

Size class	Number	Area (ha)	Perimeter (m)
1	56	10.08	11 160.00
2	150	80.37	58 966.70
3	157	397.80	159 398.49
4	54	376.11	100 389.30
5	41	567.54	117 676.07
6	22	545.40	93 900.22
7	10	329.94	52 723.17
8	6	263.70	37 534.64
9	9	491.58	66 866.82
10	4	268.38	34 107.35
11	4	299.43	31 847.95
12	1	80.82	8 796.40
13	5	466.65	50 272.20
14	8	1 090.17	117 256.01
15	2	460.80	45 697.63

Drainage basin 1EG

Size class	Number	Area (ha)	Perimeter (m)
1	50	9.00	9 720.00
2	81	39.06	31 704.86
3	41	105.93	40 686.78
4	15	104.67	26 260.66
5	18	252.09	45 155.88
6	13	322.83	47 564.94
7	3	105.39	19 963.68
8	1	44.82	7 419.41
9	3	170.01	18 353.97
10	4	255.87	26 468.53
11	2	151.92	14 499.42
12	2	163.44	19 773.38
13	2	193.05	19 427.94
14	6	877.14	99 884.41
15	3	677.07	49 168.59
17	1	412.11	21 033.38
18	1	1 020.69	51 289.16

Drainage basin 1EK

Size class	Number	Area (ha)	Perimeter (m)
1	75	13.50	14 580.00
2	160	80.10	61 677.00
3	180	462.33	177 706.47
4	59	423.00	117 674.84
5	41	572.13	124 368.15
6	16	398.61	77 502.63
7	8	294.21	48 656.47
8	8	356.40	53 343.75
9	10	557.19	76 189.93
10	5	326.97	48 100.67
11	2	153.36	14 224.26
12	1	81.90	14 244.85
13	2	184.05	21 128.53
14	6	788.94	82 826.32
15	2	490.86	34 980.71
16	3	1 009.98	78 791.00
18	2	1 721.97	114 616.56

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 1EL

Size class	Number	Area (ha)	Perimeter (m)
1	92	16.56	18 240.00
2	241	121.77	93 724.29
3	260	654.93	259 976.85
4	94	685.17	197 082.23
5	55	733.77	168 144.58
6	26	645.12	111 623.32
7	15	525.15	95 969.32
8	8	365.22	55 611.70
9	3	166.68	27 803.10
10	2	124.11	11 881.25
11	7	530.46	77 805.68
12	1	84.24	12 713.97
14	12	1 570.50	192 939.84
18	3	2 750.94	219 987.27

Drainage basin 1EO

Size class	Number	Area (ha)	Perimeter (m)
1	111	19.98	21 780.00
2	185	82.62	71 181.84
3	121	353.70	139 532.92
4	53	376.02	99 108.71
5	39	549.81	104 837.81
6	19	441.09	76 310.45
7	8	269.91	43 369.19
8	3	132.39	12 752.14
9	3	165.33	24 153.39
10	2	133.38	16 593.39
12	1	81.18	7 344.85
14	6	847.80	94 112.86
15	1	299.25	23 712.78

Drainage basin 1EM

Size class	Number	Area (ha)	Perimeter (m)
1	82	14.76	16 080.00
2	172	91.62	70 719.43
3	113	248.49	106 291.18
4	20	146.43	40 712.88
5	25	358.20	81 318.33
6	11	280.08	47 289.78
7	6	207.81	32 920.66
8	5	226.44	30 529.20
9	2	110.16	11 336.98
10	2	131.49	13 050.37
11	4	292.68	41 078.89
12	1	83.79	13 161.84
13	1	99.81	7 549.71
14	2	227.52	30 254.04
15	5	1 260.27	136 765.72
16	1	368.01	29 143.67
17	1	448.92	46 259.46
18	1	602.10	46 775.84

Drainage basin 1EP

Size class	Number	Area (ha)	Perimeter (m)
1	29	5.22	5 640.00
2	53	20.97	18 240.00
3	14	39.15	20 997.00
4	6	40.77	9 921.84
5	6	78.21	18 950.97
6	1	21.15	3 896.99
7	1	33.57	6 656.99
9	2	111.60	10 966.70
12	2	171.90	15 915.81
14	1	110.16	15 664.26

Drainage basin 1EQ

Size class	Number	Area (ha)	Perimeter (m)
1	155	27.90	28 980.00
2	171	71.73	63 282.43
3	23	64.53	36 280.66
4	9	61.74	24 918.83
5	9	140.49	24 185.51
6	1	21.24	3 024.85
7	5	174.69	22 745.52
8	3	124.47	20 010.36
10	1	62.55	6 854.56
16	1	316.53	13 261.25

Drainage basin 1ER

Size class	Number	Area (ha)	Perimeter (m)
1	10	1.80	1 920.00
2	32	15.66	11 784.86
3	23	63.63	23 683.68
4	20	149.31	38 086.18
5	15	207.18	37 783.17
6	4	98.01	14 941.25
8	1	47.70	5 301.84
12	2	163.53	14 764.27
13	1	98.82	11 750.96
16	1	336.51	19 688.53
18	1	1 009.71	58 567.97

Drainage basin 1EN

Size class	Number	Area (ha)	Perimeter (m)
1	62	11.16	12 120.00
2	154	77.22	60 629.15
3	109	263.97	116 448.73
4	35	243.36	67 843.21
5	30	428.49	81 098.38
6	10	241.47	37 196.45
7	14	483.93	67 920.75
8	5	229.77	26 642.50
9	8	439.83	46 988.00
10	4	258.48	24 002.50
11	2	155.52	14 640.00
12	2	171.27	17 213.97
13	2	195.03	19 028.53
14	6	747.18	80 379.63
15	3	718.29	55 581.30
16	1	304.56	21 652.19

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 1FA

Size class	Number	Area (ha)	Perimeter (m)
1	9	1.62	1 740.00
2	40	20.97	15 049.71
3	14	42.30	15 396.41
4	3	23.40	4 796.99
5	2	31.68	5 234.56
6	2	49.32	7 112.13
7	2	66.60	6 409.71
8	2	94.23	12 551.55
11	1	71.19	5 792.13
15	1	215.73	23 376.39

Drainage basin 1FB

Size class	Number	Area (ha)	Perimeter (m)
1	26	4.68	5 220.00
2	56	24.03	20 004.86
3	8	13.23	7 147.28
4	3	18.99	5 022.43
6	2	43.92	6 984.86
18	1	5 658.93	75 224.37

Drainage basin 1FC

Size class	Number	Area (ha)	Perimeter (m)
1	21	3.78	4 080.00
2	39	18.18	13 609.72
3	29	66.69	26 387.95
4	6	39.33	9 163.68
5	4	48.78	9 523.68
6	1	22.05	2 841.84
7	2	71.73	10 236.40
8	1	40.23	6 342.43
18	1	563.67	22 606.69

Drainage basin 1FD

Size class	Number	Area (ha)	Perimeter (m)
1	39	7.02	7 440.00
2	73	38.70	27 537.01
3	85	207.81	77 291.81
4	22	142.74	37 676.47
5	16	235.35	44 059.56
6	8	190.44	31 997.05
7	4	137.61	17 194.63
12	1	80.37	5 576.99
15	1	279.54	29 080.65

Drainage basin 1FE

Size class	Number	Area (ha)	Perimeter (m)
1	23	4.14	4 380.00
2	38	23.13	15 914.56
3	52	120.42	49 654.65
4	7	43.92	10 754.56
5	9	127.17	25 063.68
6	2	46.08	9 893.98
14	1	144.81	21 611.54
16	1	324.81	28 928.51

Drainage basin 1FF

Size class	Number	Area (ha)	Perimeter (m)
1	31	5.58	5 820.00
2	54	25.38	20 329.71
3	18	37.44	18 643.69
4	2	17.28	3 829.71
5	1	18.54	2 326.69
6	1	20.07	3 236.99
14	1	105.12	11 601.84

Drainage basin 1FG

Size class	Number	Area (ha)	Perimeter (m)
1	37	6.66	7 200.00
2	59	28.26	20 852.14
3	27	65.61	25 104.34
4	7	52.74	16 433.96
5	2	25.29	5 758.23

Drainage basin 1FH

Size class	Number	Area (ha)	Perimeter (m)
1	55	9.90	10 080.00
2	95	44.01	31 281.86
3	52	120.33	48 074.07
4	20	133.02	38 487.37
5	16	222.21	39 037.65
6	9	218.61	31 972.21
7	9	298.53	41 387.94
8	4	183.69	22 201.25
9	2	106.29	12 756.40
10	2	123.30	12 470.95
11	1	70.56	7 829.12
14	1	102.96	5 612.13
16	1	344.88	13 246.69
17	1	440.46	23 970.36
18	1	1 078.65	42 798.81

Drainage basin 1FJ

Size class	Number	Area (ha)	Perimeter (m)
1	251	45.18	46 800.00
2	322	155.52	115 827.42
3	184	463.68	183 112.75
4	75	536.22	148 328.01
5	49	672.39	134 958.29
6	43	1 079.91	157 310.89
7	15	508.23	63 539.71
8	10	442.80	44 921.41
9	8	429.03	44 271.68
10	5	336.51	32 643.75
11	6	435.24	43 652.35
12	3	254.07	31 581.32
13	1	91.35	10 540.66
14	7	935.55	68 653.23
15	1	266.04	13 521.32
16	2	715.23	44 233.48
17	1	493.02	37 636.50
18	3	1 969 941.02	7 552 806.08

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2AA

Size class	Number	Area (ha)	Perimeter (m)
1	47	8.46	9 300.00
2	81	37.53	29 714.57
3	35	88.11	33 786.78
4	8	63.00	16 824.33
5	6	79.11	14 547.35
6	1	27.18	2 629.71
7	1	32.85	4 532.13
8	1	48.42	5 072.13
11	1	79.47	5 376.40
18	1	1 540.44	68 766.96

Drainage basin 2AB

Size class	Number	Area (ha)	Perimeter (m)
1	494	88.92	95 520.00
2	1 029	500.67	388 594.27
3	569	1 344.15	543 170.82
4	192	1 351.35	355 635.54
5	111	1 586.61	317 582.31
6	50	1 241.46	240 236.28
7	28	1 003.77	160 509.19
8	15	663.66	95 261.83
9	8	434.07	57 131.75
10	5	315.00	38 645.00
11	9	668.25	98 310.98
12	7	599.22	95 081.04
13	2	183.69	16 477.64
14	11	1 423.89	178 871.14
15	5	1 186.11	103 170.91
17	1	403.02	25 872.96
18	2	15 340.86	548 704.87

Drainage basin 2AC

Size class	Number	Area (ha)	Perimeter (m)
1	324	58.32	63 780.00
2	727	354.33	277 571.13
3	494	1 199.79	468 763.04
4	187	1 323.54	332 251.85
5	103	1 467.63	277 414.35
6	60	1 432.08	237 015.96
7	20	701.19	98 491.83
8	19	841.95	108 182.72
9	10	552.42	77 048.23
10	8	504.27	58 770.58
11	4	290.43	27 347.43
12	6	500.04	56 048.03
13	1	90.99	5 521.25
14	15	2 217.33	194 447.56
15	9	2 104.02	162 450.75
16	4	1 348.11	123 419.81
17	5	2 141.37	112 033.73
18	7	9 733.23	247 717.10

Drainage basin 2AD

Size class	Number	Area (ha)	Perimeter (m)
1	916	164.88	177 900.00
2	2 320	1 184.85	901 356.73
3	2 164	5 428.35	2 084 378.05
4	756	5 344.20	1 355 378.55
5	508	7 141.05	1 376 457.21
6	225	5 540.04	896 464.81
7	137	4 730.67	698 512.58
8	66	2 928.24	420 845.80
9	53	2 928.15	353 074.16
10	33	2 117.25	249 805.44
11	34	2 552.67	288 598.79
12	28	2 348.37	249 181.61
13	23	2 167.74	211 600.49
14	75	10 416.24	956 098.73
15	37	8 774.46	714 064.75
16	19	6 482.16	483 093.98
17	7	3 214.98	187 677.18
18	37	533 445.04	5 525 126.85

Drainage basin 2AE

Size class	Number	Area (ha)	Perimeter (m)
1	191	34.38	36 480.00
2	522	281.43	203 693.59
3	505	1 210.59	494 463.88
4	135	947.07	264 154.14
5	69	967.41	209 679.57
6	21	510.39	98 062.78
7	15	517.95	84 376.55
8	8	360.81	55 179.63
9	5	275.22	41 886.76
10	6	383.94	46 881.32
11	1	76.86	8 121.84
12	3	258.66	29 254.63
13	1	90.27	8 936.99
14	13	1 652.13	186 768.36
17	1	439.65	24 601.24
18	2	1 139.58	87 785.11

Drainage basin 2BA

Size class	Number	Area (ha)	Perimeter (m)
1	354	63.72	68 460.00
2	921	485.46	355 837.28
3	919	2 155.77	857 252.58
4	266	1 894.32	495 294.48
5	170	2 429.37	505 413.93
6	75	1 865.97	304 614.39
7	45	1 561.77	219 072.22
8	24	1 077.12	166 906.09
9	14	768.87	99 820.37
10	9	577.71	78 391.10
11	12	891.72	102 160.37
12	7	598.41	50 808.67
13	3	281.97	23 687.94
14	30	4 211.73	393 888.20
15	5	1 135.71	101 071.81
16	2	659.16	50 301.84
17	2	925.02	44 437.65
18	6	7 145.28	321 097.58

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2BB

Size class	Number	Area (ha)	Perimeter (m)
1	416	74.88	80 340.00
2	953	484.11	368 078.53
3	869	2 163.87	842 459.59
4	297	2 132.55	530 547.19
5	209	3 026.16	568 134.30
6	104	2 552.40	449 425.09
7	34	1 168.74	168 662.41
8	25	1 116.18	148 844.33
9	17	924.66	122 249.80
10	3	188.10	26 187.35
11	10	744.48	96 375.00
12	15	1 244.88	153 491.63
13	9	848.70	104 088.90
14	25	3 361.05	303 979.61
15	6	1 403.37	115 781.05
16	3	1 102.95	70 411.79
17	4	1 777.14	102 462.24
18	2	4 451.58	271 711.98

Drainage basin 2BE

Size class	Number	Area (ha)	Perimeter (m)
1	543	97.74	105 660.00
2	1 484	799.38	580 163.14
3	1 495	3 585.96	1 392 606.86
4	477	3 278.79	851 037.82
5	294	4 184.73	838 940.03
6	87	2 158.38	361 727.50
7	48	1 651.14	246 555.96
8	23	1 008.18	139 897.58
9	15	819.90	108 024.05
10	10	637.56	84 711.91
11	6	454.50	62 110.52
12	10	850.68	94 758.52
13	3	289.17	26 794.64
14	14	1 863.18	207 642.74
15	6	1 444.50	148 804.81
17	1	430.74	16 730.96
18	2	4 067.73	269 452.79

Drainage basin 2BC

Size class	Number	Area (ha)	Perimeter (m)
1	986	177.48	191 340.00
2	2 421	1 242.54	931 332.29
3	1 929	4 637.97	1 837 668.44
4	580	4 144.59	1 069 969.76
5	335	4 644.90	934 571.21
6	114	2 777.31	462 379.36
7	56	1 970.73	338 861.47
8	33	1 473.12	186 739.51
9	17	912.78	113 808.39
10	12	791.91	88 550.65
11	8	595.35	55 369.93
12	11	909.72	104 154.40
13	8	770.85	90 787.71
14	32	4 178.79	375 210.85
15	4	956.79	57 472.41
16	3	941.13	58 365.11
17	3	1 405.44	55 858.44
18	9	12 183.39	471 798.15

Drainage basin 2BF

Size class	Number	Area (ha)	Perimeter (m)
1	662	119.16	129 840.00
2	1 555	800.37	610 485.39
3	1 201	2 847.33	1 125 435.14
4	323	2 272.59	582 694.34
5	199	2 744.19	556 970.31
6	58	1 380.24	244 311.61
7	40	1 384.47	210 250.43
8	22	999.00	130 169.55
9	6	323.46	44 618.39
10	8	517.50	64 225.08
11	7	527.40	58 437.72
12	2	168.84	19 872.79
13	2	187.02	21 665.52
14	24	3 371.58	327 596.79
15	2	433.44	31 701.31
16	3	1 004.13	79 922.66

Drainage basin 2BD

Size class	Number	Area (ha)	Perimeter (m)
1	1 050	189.00	205 320.00
2	2 729	1 419.12	1 052 249.10
3	2 353	5 705.01	2 269 328.66
4	704	4 944.69	1 308 439.56
5	415	5 919.30	1 215 277.34
6	157	3 751.92	645 859.92
7	73	2 513.70	390 192.79
8	50	2 242.62	329 699.04
9	39	2 118.96	286 685.58
10	17	1 089.18	126 219.56
11	18	1 358.73	181 134.09
12	18	1 519.65	191 462.63
13	11	1 066.23	116 779.99
14	43	6 275.25	635 837.27
15	11	2 861.82	236 422.43
16	3	1 101.06	87 805.73
17	2	903.24	88 022.23
18	22	34 818.66	2 029 259.79

Drainage basin 2CA

Size class	Number	Area (ha)	Perimeter (m)
1	268	48.24	51 300.00
2	603	308.61	228 229.26
3	462	1 086.30	436 297.38
4	102	673.74	183 808.42
5	70	993.15	198 349.67
6	38	914.31	139 591.33
7	15	528.57	76 449.27
8	5	225.00	25 199.49
9	9	480.69	56 389.93
10	2	129.06	13 466.10
11	5	381.78	37 107.35
12	3	252.90	23 330.95
13	1	94.95	10 505.51
14	10	1 686.51	135 630.75
15	6	1 364.49	83 518.97
16	2	768.15	60 644.36
17	1	436.77	17 972.13
18	5	5 796.27	204 424.39

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2CB

Size class	Number	Area (ha)	Perimeter (m)
1	636	114.48	124 680.00
2	1 610	848.70	625 260.03
3	1 547	3 854.43	1 465 403.14
4	538	3 859.02	999 692.44
5	332	4 573.53	938 864.73
6	130	3 184.56	545 485.94
7	63	2 125.98	349 647.93
8	38	1 677.15	237 998.55
9	27	1 467.54	195 793.95
10	12	767.61	108 603.96
11	16	1 190.52	174 701.81
12	10	854.28	107 130.58
13	6	558.45	71 774.25
14	27	3 824.73	397 824.87
15	12	2 957.31	265 516.59
16	4	1 390.59	110 895.61
17	1	417.60	34 837.10
18	11	11 511.36	783 893.00

Drainage basin 2CE

Size class	Number	Area (ha)	Perimeter (m)
1	830	149.40	160 440.00
2	2 190	1 134.72	845 110.25
3	2 096	5 095.17	1 975 003.42
4	704	4 987.44	1 310 702.90
5	416	5 752.98	1 205 923.22
6	145	3 523.68	616 270.40
7	85	2 931.21	487 592.67
8	42	1 857.60	286 021.92
9	42	2 293.29	316 382.64
10	12	778.95	103 842.13
11	25	1 881.99	248 332.15
12	7	606.42	71 686.91
13	13	1 240.65	156 081.54
14	44	5 924.43	690 925.16
15	10	2 436.21	250 089.08
16	6	2 146.77	227 587.25
17	3	1 329.75	109 373.06
18	15	26 344.08	2 230 799.63

Drainage basin 2CC

Size class	Number	Area (ha)	Perimeter (m)
1	384	69.12	73 260.00
2	960	507.51	376 316.15
3	796	1 924.47	782 639.56
4	259	1 839.87	506 354.06
5	147	1 987.38	430 237.08
6	50	1 268.91	229 515.97
7	22	780.84	134 122.28
8	15	700.74	117 360.94
9	10	539.37	61 622.72
10	9	605.52	80 085.14
11	7	537.75	87 446.32
12	7	594.72	69 935.36
13	3	279.81	51 505.58
14	13	1 840.59	135 764.62
15	6	1 449.54	95 451.15
16	2	659.43	44 703.21
17	3	1 382.04	84 382.01
18	8	11 290.50	393 251.74

Drainage basin 2CF

Size class	Number	Area (ha)	Perimeter (m)
1	1 089	196.02	212 340.00
2	2 425	1 217.07	936 135.43
3	1 820	4 331.52	1 782 172.29
4	444	3 147.57	860 513.54
5	307	4 426.20	970 927.51
6	105	2 597.85	464 338.03
7	74	2 589.03	421 543.44
8	36	1 622.16	251 614.25
9	24	1 313.91	186 281.84
10	17	1 096.20	153 791.48
11	18	1 346.40	183 174.13
12	9	767.52	114 229.62
13	13	1 245.69	150 510.50
14	52	7 042.14	807 271.94
15	17	4 202.37	435 086.88
16	8	2 663.55	233 610.52
17	2	854.19	73 989.93
18	17	24 269.13	1 797 634.01

Drainage basin 2CD

Size class	Number	Area (ha)	Perimeter (m)
1	394	70.92	76 020.00
2	798	403.29	310 426.29
3	464	1 075.14	444 638.58
4	128	917.55	242 327.97
5	97	1 383.12	272 224.99
6	44	1 091.70	183 687.85
7	22	744.66	111 538.46
8	19	853.56	110 963.33
9	11	597.51	76 055.36
10	7	458.01	61 206.26
11	5	384.30	35 217.72
12	10	838.71	88 997.28
13	6	565.56	60 463.16
14	30	3 870.54	385 956.20
15	12	2 901.24	213 372.16
16	3	1 034.37	78 515.33
17	3	1 369.89	73 836.58
18	9	14 760.90	668 716.24

Drainage basin 2CG

Size class	Number	Area (ha)	Perimeter (m)
1	106	19.08	20 400.00
2	165	75.42	58 921.27
3	93	214.74	87 888.22
4	32	225.99	52 986.27
5	27	394.20	66 700.88
6	11	266.67	37 923.22
7	9	312.84	41 379.63
8	5	218.70	23 535.82
9	1	51.48	4 373.97
10	5	330.93	28 707.36
11	3	225.09	23 709.77
12	2	171.09	23 401.25
13	1	99.81	5 989.71
14	7	1013.40	63 474.19
15	8	1 933.20	92 656.77
16	1	370.26	15 315.81
17	2	909.36	27 056.46
18	6	616 175.28	8 644 035.80

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2DA

Size class	Number	Area (ha)	Perimeter (m)
1	199	35.82	39 360.00
2	626	320.22	241 297.71
3	517	1 292.67	497 719.24
4	169	1 159.20	303 603.30
5	95	1 314.63	271 199.48
6	43	1 040.31	176 295.01
7	21	717.48	101 183.33
8	13	566.73	80 811.71
9	9	493.47	65 249.86
10	6	393.12	56 794.11
11	6	455.67	55 328.01
12	4	342.09	48 131.03
13	2	187.20	19 423.68
14	5	740.16	92 534.23
15	2	450.99	41 102.49
16	2	726.30	59 817.15
18	3	14 909.76	291 126.78

Drainage basin 2DD

Size class	Number	Area (ha)	Perimeter (m)
1	1 977	355.86	383 880.00
2	4 492	2 236.95	1 747 845.31
3	2 319	4 982.22	2 269 723.72
4	351	2 431.80	716 074.54
5	180	2 512.08	590 149.50
6	81	1 930.95	387 598.14
7	36	1 257.75	233 011.97
8	20	895.14	128 884.15
9	11	618.30	91 446.46
10	9	578.61	87 848.98
11	9	674.91	97 363.37
12	5	420.75	53 696.69
13	4	385.47	58 288.08
14	21	2 889.54	367 074.13
15	7	1 683.09	202 266.72
16	7	2 338.56	259 158.98
17	3	1 355.67	171 333.37
18	15	99 290.52	2 777 399.85

Drainage basin 2DB

Size class	Number	Area (ha)	Perimeter (m)
1	468	84.24	91 920.00
2	1 114	568.62	454 892.60
3	540	1 096.20	524 783.28
4	88	599.94	192 518.06
5	34	455.22	91 926.52
6	16	376.92	70 189.40
7	10	358.38	73 432.94
8	4	179.10	22 076.46
9	6	327.96	41 949.26
10	4	266.40	31 515.28
13	4	380.70	38 340.74
14	6	776.88	86 678.04
15	4	905.76	82 125.10
16	2	741.60	113 074.32

Drainage basin 2EA

Size class	Number	Area (ha)	Perimeter (m)
1	2 113	380.34	411 120.00
2	4 836	2 445.93	1 866 672.36
3	2 618	5 799.96	2 620 018.64
4	473	3 279.87	955 203.93
5	217	3 102.57	693 196.20
6	103	2 565.63	464 232.07
7	46	1 578.06	269 932.78
8	32	1 442.88	226 380.36
9	22	1 183.32	180 877.06
10	15	964.71	142 550.87
11	15	1 110.87	133 786.60
12	14	1 202.04	136 564.20
13	3	279.09	38 079.62
14	37	5 058.45	602 760.45
15	15	3 724.56	368 354.06
16	3	1 024.29	76 480.83
17	5	2 292.03	252 552.87
18	12	12 072.69	746 518.50

Drainage basin 2DC

Size class	Number	Area (ha)	Perimeter (m)
1	904	162.72	175 620.00
2	2 282	1 187.19	892 465.17
3	1 441	3 493.80	1 389 048.37
4	423	3 038.49	803 180.48
5	288	4 011.30	844 999.14
6	124	3 070.98	539 046.57
7	58	1 994.13	302 602.99
8	44	1 958.94	276 753.04
9	28	1 553.76	206 217.12
10	18	1 163.16	145 279.80
11	17	1 277.64	148 589.05
12	9	770.22	96 859.77
13	14	1 347.03	182 325.88
14	41	5 653.62	618 846.02
15	12	2 902.05	298 580.95
16	11	3 845.61	324 445.92
17	5	2 215.62	175 138.55
18	23	43 177.50	2 679 430.80

Drainage basin 2EB

Size class	Number	Area (ha)	Perimeter (m)
1	1 167	210.06	229 140.00
2	2 807	1 430.82	1 108 879.66
3	1 744	4 018.59	1 771 763.71
4	469	3 304.71	928 791.09
5	287	4 070.61	849 141.54
6	92	2 223.54	404 251.89
7	51	1 727.28	295 349.29
8	19	869.31	126 962.19
9	22	1 198.44	154 796.39
10	16	1 023.12	109 184.12
11	11	819.18	105 055.44
12	11	934.11	110 327.66
13	11	1 036.17	123 020.00
14	45	5 948.73	610 760.45
15	16	3 849.66	370 946.65
16	5	1 824.12	138 094.25
17	2	930.24	91 603.98
18	17	41 785.74	2 004 443.10

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2EC

Size class	Number	Area (ha)	Perimeter (m)
1	1 375	247.50	267 840.00
2	3 052	1 523.52	1 186 279.25
3	1 415	3 090.51	1 432 032.80
4	197	1 337.94	427 897.60
5	105	1 439.73	325 064.61
6	31	740.43	142 286.56
7	14	464.85	84 463.89
8	20	869.40	131 304.04
9	4	214.11	23 334.71
10	6	379.80	50 771.03
11	3	219.60	27 972.80
12	3	249.57	31 154.05
13	5	475.65	56 627.43
14	19	2 614.77	316 590.30
15	3	681.93	77 572.90
16	2	717.48	132 505.03
18	11	84 999.42	1 032 468.04

Drainage basin 2ED

Size class	Number	Area (ha)	Perimeter (m)
1	152	27.36	29 400.00
2	254	121.14	96 138.84
3	98	196.11	92 441.47
4	10	70.02	21 326.10
5	5	75.87	13 492.21
6	6	142.47	29 427.36
7	1	34.02	3 684.85
8	1	40.86	4 496.99
11	1	72.00	3 949.71
13	1	91.26	5 079.41
14	3	384.93	24 306.77
15	2	514.44	18 044.92
17	2	922.77	67 733.61
18	1	535.23	12 962.50

Drainage basin 2FA

Size class	Number	Area (ha)	Perimeter (m)
1	135	24.30	26 880.00
2	261	129.42	99 877.67
3	152	337.14	145 215.59
4	38	274.86	78 390.60
5	26	360.72	73 370.64
6	13	302.13	43 987.50
7	11	374.49	50 887.51
8	2	89.28	8 510.96
9	3	158.85	14 155.22
10	4	267.12	27 410.45
11	1	77.85	14 109.78
12	2	170.73	14 431.62
14	10	1 497.60	116 681.82
15	2	471.96	25 983.74
16	3	1 059.84	49 829.84
18	1	559.70	16 969.20

Drainage basin 2FB

Size class	Number	Area (ha)	Perimeter (m)
1	57	10.26	11 040.00
2	89	41.85	31 754.58
3	36	92.88	31 978.22
4	5	37.26	8 156.98
5	7	108.72	18 255.81
6	2	47.61	6 826.69
8	2	90.63	12 980.07
11	1	72.27	6 870.37
18	1	557.82	28 129.18

Drainage basin 2FC

Size class	Number	Area (ha)	Perimeter (m)
1	141	25.38	27 720.00
2	274	128.43	106 694.58
3	112	262.08	119 326.24
4	32	228.78	56 595.31
5	7	102.42	15 424.29
6	8	191.52	35 781.32
7	1	32.76	4 352.13
8	1	43.47	3 589.71
9	2	108.00	11 753.97
10	1	60.39	8 164.26

Drainage basin 2FD

Size class	Number	Area (ha)	Perimeter (m)
1	24	4.32	4 440.00
2	29	10.35	9 060.00
3	6	15.93	5 209.72
4	4	27.00	7 024.27
5	1	16.56	3 444.85

Drainage basin 2FE

Size class	Number	Area (ha)	Perimeter (m)
1	16	2.88	3 240.00
2	32	14.49	12 600.00
3	12	28.71	11 993.96
4	1	9.90	2 922.43
6	1	27.81	4 362.43
18	1	1 242.45	63 854.72

Drainage basin 2FF

Size class	Number	Area (ha)	Perimeter (m)
1	13	2.34	2 460.00
2	26	13.68	10 369.71
3	22	51.21	18 244.26
4	1	6.48	1 080.00
5	2	25.65	12 236.98
9	1	51.84	5 266.69

Drainage basin 2GA

Size class	Number	Area (ha)	Perimeter (m)
1	26	4.68	5 040.00
2	40	19.35	15 300.00
3	21	42.21	21 544.27
4	3	22.86	6 872.13
5	1	12.60	2 609.12

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2GB

Size class	Number	Area (ha)	Perimeter (m)
1	34	6.12	6 540.00
2	48	22.05	19 704.85
3	29	65.79	38 364.33
4	9	62.01	27 554.57
5	1	14.58	5 100.00
6	7	171.54	31 555.23
9	1	52.74	13 620.00
17	1	480.51	83 366.88

Drainage basin 2GG

Size class	Number	Area (ha)	Perimeter (m)
1	111	19.98	21 720.00
2	180	87.57	71 499.43
3	96	226.44	96 166.21
4	22	163.71	52 402.61
5	6	93.06	22 199.48
6	1	25.47	2 982.43
7	1	35.10	3 240.00
8	1	49.68	7 164.85
9	1	53.55	9 321.84
18	1	571.95	27 458.88

Drainage basin 2GC

Size class	Number	Area (ha)	Perimeter (m)
1	77	13.86	14 820.00
2	148	72.81	60 346.72
3	71	178.11	75 982.60
4	22	144.72	44 567.42
5	14	194.31	38 940.73
6	3	71.01	16 647.35
7	1	30.78	3 600.00
9	1	54.90	12 323.09

Drainage basin 2GH

Size class	Number	Area (ha)	Perimeter (m)
1	75	13.50	14 820.00
2	147	72.81	59 997.00
3	68	152.37	66 991.62
4	12	82.71	27 886.69
5	3	51.30	13 417.65
6	1	25.29	4 147.28
7	3	105.57	15 410.96
9	2	118.89	12 775.22
11	1	73.44	16 084.26
14	3	420.84	37 256.48
15	1	231.30	20 368.58
16	1	301.86	36 258.81

Drainage basin 2GD

Size class	Number	Area (ha)	Perimeter (m)
1	29	5.22	5 580.00
2	43	20.61	17 287.28
3	11	22.59	8 421.85
4	2	10.44	4 080.00
5	2	31.95	6 261.84
14	1	154.44	14 058.31

Drainage basin 2HA

Size class	Number	Area (ha)	Perimeter (m)
1	135	24.30	27 240.00
2	226	109.98	94 927.29
3	105	221.85	107 612.90
4	20	142.29	48 352.21
5	10	147.15	49 235.37
6	3	70.65	15 043.68
7	6	209.52	49 000.14
8	3	129.15	19 643.10
9	1	50.94	8 040.00
11	1	70.56	19 284.33
14	3	346.14	39 324.34
15	2	485.37	54 350.44
16	1	374.49	108 133.91
18	1	848.43	35 049.76

Drainage basin 2HB

Size class	Number	Area (ha)	Perimeter (m)
1	84	15.12	165.00
2	195	95.67	77 909.15
3	81	188.01	83 903.85
4	19	116.55	31 512.81
5	9	117.27	27 233.98
6	3	74.43	10 567.28
7	2	71.10	12 418.24
8	3	125.64	14 733.39
10	1	66.33	15 020.07
14	1	174.78	14 417.06
17	1	441.81	10 501.25
18	1	1 979.37	52 472.31

Drainage basin 2GF

Size class	Number	Area (ha)	Perimeter (m)
1	14	2.52	2 760.00
2	20	9.09	7 482.43
3	11	22.41	9 364.27
4	2	13.50	2 760.00
5	3	48.33	13 274.56

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2HC

Size class	Number	Area (ha)	Perimeter (m)
1	95	17.10	18 540.00
2	131	61.29	49 709.14
3	46	101.52	50 526.78
4	6	44.91	12 276.40
5	10	151.65	33 903.76
6	5	107.82	18 874.11

Drainage basin 2HD

Size class	Number	Area (ha)	Perimeter (m)
1	27	4.86	5 400.00
2	34	17.46	14 509.71
3	12	23.40	10 941.84
4	3	18.09	7 564.27
5	1	10.26	1 514.56
8	1	49.14	5 252.13

Drainage basin 2HE

Size class	Number	Area (ha)	Perimeter (m)
1	27	4.86	5 160.00
2	40	21.87	17 442.43
3	14	23.76	14 213.98
5	2	24.39	6 301.25
11	1	78.57	8 952.79
12	2	172.17	10 411.62
14	1	147.96	8 030.96
18	1	721.71	26 495.34

Drainage basin 2HF

Size class	Number	Area (ha)	Perimeter (m)
1	835	150.30	163 440.00
2	1 949	972.27	744 482.56
3	1 130	2 561.85	1 091 609.98
4	227	1 593.09	422 058.02
5	120	1 719.18	332 788.70
6	43	1 086.21	153 443.01
7	16	557.91	72 076.03
8	22	979.11	126 898.14
9	9	496.35	57 834.20
10	5	321.57	30 643.16
11	9	665.46	75 057.93
12	4	337.77	35 567.42
13	4	384.12	33 243.75
14	20	2 798.55	237 702.98
15	9	2 122.92	168 963.63
16	7	2 426.85	167 589.79
17	3	1 382.94	95 334.15
18	14	16 667.46	685 132.50

Drainage basin 2HG

Size class	Number	Area (ha)	Perimeter (m)
1	30	5.40	5 520.00
2	37	19.17	14 629.71
3	18	44.55	20 651.55
4	7	51.12	18 261.84
5	1	16.83	3 296.99
6	1	22.68	6 011.54
13	1	98.73	15 146.10
18	1	6 614.55	180 833.20

Drainage basin 2HH

Size class	Number	Area (ha)	Perimeter (m)
1	320	57.60	62 280.00
2	799	394.20	301 879.73
3	457	991.62	434 913.57
4	92	627.75	170 272.71
5	38	510.30	109 824.58
6	23	558.09	85 994.27
7	14	483.57	80 154.94
8	7	316.26	46 741.99
9	5	262.62	40 600.15
10	5	326.79	39 429.27
11	3	220.68	23 155.22
12	3	264.69	27 917.06
13	2	185.94	21 355.22
14	9	1 260.54	128 323.35
15	2	477.99	42 236.46
16	1	348.21	15 396.40
17	1	428.31	46 742.64
18	12	28 265.67	1 330 067.33

Drainage basin 2HJ

Size class	Number	Area (ha)	Perimeter (m)
1	23	4.14	4 440.00
2	77	38.52	30 371.56
3	38	92.88	44 667.41
4	6	42.12	15 707.94
5	7	116.82	31 379.49
6	2	50.49	5 983.68
8	1	41.04	15 152.13
10	1	69.93	9 124.26
14	2	268.38	26 863.67
18	1	9 573.21	279 323.41

Drainage basin 2HK

Size class	Number	Area (ha)	Perimeter (m)
1	516	92.88	99 360.00
2	1 169	585.90	442 351.28
3	651	1 383.93	634 701.09
4	118	821.79	242 317.11
5	59	784.44	158 814.45
6	24	597.15	109 227.09
7	8	272.25	47 069.84
8	14	619.83	90 411.19
9	6	336.51	44 568.67
10	4	265.05	35 456.48
11	3	226.53	21 166.17
12	2	168.75	17 506.69
13	2	197.46	21 580.66
14	11	1 530.63	151 579.99
15	5	1 318.50	107 579.16
16	1	380.79	40 431.65
17	2	846.54	68 354.88
18	9	8 405.28	594 862.39

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2HL

Size class	Number	Area (ha)	Perimeter (m)
1	418	75.24	81 420.00
2	716	339.66	270 476.61
3	298	647.37	302 108.59
4	41	296.46	88 773.59
5	18	263.88	54 284.41
6	8	204.21	35 717.06
7	4	144.63	17 787.36
8	4	181.35	19 057.64
9	2	101.61	10 924.27
10	1	69.75	9 307.28
12	1	81.90	6 989.12
14	8	1 105.65	152 634.04
16	1	324.36	29 844.32
18	4	2 823.30	208 472.25

Drainage basin 2HM

Size class	Number	Area (ha)	Perimeter (m)
1	355	63.90	68 760.00
2	681	331.65	264 142.71
3	275	595.98	267 258.41
4	59	422.91	111 003.50
5	38	548.28	109 286.51
6	16	401.22	65 562.86
7	6	201.42	35 213.46
8	3	131.22	18 170.95
9	4	219.42	25 112.87
10	3	190.62	23 327.43
11	3	224.10	27 100.87
12	2	173.34	23 067.35
13	2	183.24	23 114.05
14	14	2 097.36	223 563.23
15	3	806.49	58 057.84
16	1	379.71	31 826.44
18	4	2 283.93	127 118.65

Drainage basin 2JA

Size class	Number	Area (ha)	Perimeter (m)
1	649	116.82	126 180.00
2	1 840	986.31	719 606.90
3	2 154	5 485.23	2 065 706.61
4	772	5 467.59	1 400 562.93
5	548	7 776.54	1 549 940.04
6	201	4 820.13	824 320.37
7	97	3 359.43	520 214.99
8	52	2 352.42	326 851.92
9	31	1 706.76	230 286.39
10	25	1 609.20	196 332.18
11	26	1 956.15	262 073.48
12	18	1 545.39	191 488.24
13	15	1 414.53	162 604.40
14	70	9 896.22	1 021 535.30
15	14	3 416.67	331 392.85
16	9	3 034.17	275 851.77
17	6	2 807.37	223 812.55
18	30	75 201.12	5 171 705.88

Drainage basin 2JB

Size class	Number	Area (ha)	Perimeter (m)
1	899	161.82	174 780.00
2	1 799	869.58	681 152.12
3	910	2 087.64	869 072.74
4	298	2 139.03	555 312.17
5	191	2 680.11	527 387.53
6	100	2 405.16	377 485.72
7	65	2 206.44	308 062.59
8	29	1 327.77	164 299.68
9	21	1 147.86	122 211.40
10	17	1 090.53	137 775.00
11	13	969.12	82 841.10
12	13	1 111.68	110 428.30
13	7	663.84	60 011.75
14	34	4 607.28	438 944.87
15	16	3 925.62	286 890.31
16	12	4 096.98	291 198.47
17	5	2 293.83	107 696.66
18	31	104 658.75	4 973 079.36

Drainage basin 2JC

Size class	Number	Area (ha)	Perimeter (m)
1	382	68.76	73 020.00
2	697	337.32	261 596.52
3	365	876.96	340 268.15
4	88	624.87	160 791.44
5	71	1 013.85	187 867.42
6	35	860.67	135 848.98
7	22	768.06	110 043.98
8	14	611.73	80 297.80
9	8	442.08	45 557.80
10	6	391.50	48 298.97
11	5	368.73	45 133.52
12	7	608.04	63 051.69
13	4	375.12	38 687.43
14	13	1 889.01	202 104.95
15	3	681.66	61 746.21
16	2	719.73	32 903.82
17	3	1 296.72	96 893.42
18	6	7 072.02	264 616.18

Drainage basin 2JD

Size class	Number	Area (ha)	Perimeter (m)
1	510	91.80	98 460.00
2	1 362	716.40	527 859.85
3	1 184	2 948.31	1 135 990.86
4	390	2 760.48	698 737.69
5	278	3 963.87	809 136.60
6	130	3 164.58	531 599.60
7	64	2 237.58	367 254.88
8	37	1 670.58	249 732.74
9	25	1 375.65	189 254.49
10	25	1 641.15	191 966.01
11	16	1 191.24	121 964.64
12	9	739.53	71 694.70
13	5	468.18	45 581.40
14	32	4 435.74	408 312.63
15	17	4 128.12	427 945.05
16	4	1 395.72	147 702.05
17	4	1 772.37	158 916.26
18	15	18 883.89	1 387 308.04

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2JE

Size class	Number	Area (ha)	Perimeter (m)
1	3 113	286.92	601 980.00
2	7 512	1 895.04	2 867 310.47
3	5 718	6 504.75	5 438 086.85
4	2 144	6 449.76	3 859 117.16
5	1 578	9 186.66	4 391 823.78
6	651	6 799.32	2 614 595.87
7	323	5 021.55	1 630 197.79
8	173	7 740.00	1 087 838.15
9	165	9 024.93	1 241 938.52
10	119	7 780.14	1 012 158.48
11	46	3 393.00	378 282.49
12	99	8 286.30	1 058 177.33
13	26	2 495.34	260 831.38
14	156	22 688.28	2 405 101.79
15	23	5 547.06	590 171.07
16	11	3 692.79	308 403.03
17	7	3 211.11	227 964.82
18	35	222 520.59	8 934 863.21

Drainage basin 2KC

Size class	Number	Area (ha)	Perimeter (m)
1	465	83.70	89 700.00
2	1 085	541.71	410 119.71
3	596	1 331.83	541 417.65
4	126	864.81	208 872.00
5	93	1 302.75	237 928.57
6	34	838.62	133 945.82
7	9	312.48	42 911.02
8	14	626.22	86 024.42
9	6	336.87	34 768.60
10	7	448.74	56 782.57
11	5	368.37	35 589.78
12	2	165.24	18 978.82
13	2	193.95	17 120.07
14	13	1 883.07	199 521.20
15	5	1 263.06	97 194.15
16	1	386.73	28 505.50
18	11	30 297.42	1 160 070.50

Drainage basin 2KA

Size class	Number	Area (ha)	Perimeter (m)
1	649	116.82	124 920.00
2	1 748	918.72	681 879.93
3	1 351	3 387.15	1 300 574.39
4	478	3 388.14	825 408.52
5	324	4 538.25	838 398.07
6	78	1 883.34	272 174.23
7	76	2 687.22	363 344.03
8	34	1 507.23	197 799.89
9	20	1 062.09	114 076.03
10	13	858.60	109 551.92
11	7	528.21	71 037.73
12	6	511.83	60 214.63
13	8	755.28	73 216.54
14	37	4 726.17	460 949.13
15	2	468.72	42 147.35
16	2	770.76	76 537.26
17	2	859.32	83 457.14
18	6	20 946.60	794 212.52

Drainage basin 2KD

Size class	Number	Area (ha)	Perimeter (m)
1	632	113.04	121 980.00
2	1 283	656.01	486 810.81
3	957	2 267.19	890 866.10
4	245	1 744.20	429 177.19
5	176	2 487.51	464 285.89
6	72	1 749.06	287 843.52
7	36	1 252.35	172 802.67
8	19	827.91	109 376.68
9	16	873.90	112 232.58
10	10	651.51	72 859.05
11	10	755.37	77 784.56
12	7	599.85	66 666.26
13	9	853.38	83 389.41
14	25	3 547.26	311 669.90
15	13	3 170.52	218 737.71
16	3	988.65	59 479.01
17	2	900.90	102 302.64
18	13	24 819.39	1 231 245.67

Drainage basin 2KB

Size class	Number	Area (ha)	Perimeter (m)
1	456	82.08	87 780.00
2	986	497.52	374 941.68
3	559	1 344.87	519 390.05
4	161	1 154.16	283 176.09
5	127	1 838.88	341 549.01
6	50	1 207.89	192 724.39
7	32	1 102.86	144 974.51
8	10	443.25	54 865.07
9	15	812.97	113 475.73
10	9	581.31	66 465.16
11	3	222.03	23 642.50
12	7	592.83	72 781.48
13	1	97.20	9 662.50
14	18	25 96.05	230 042.33
15	6	15 89.85	128 294.42
16	4	14 11.65	110 496.71
17	6	27 24.39	213 635.84
18	12	148 53.87	818 363.63

Drainage basin 2KE

Size class	Number	Area (ha)	Perimeter (m)
1	273	49.14	53 280.00
2	594	300.15	228 820.30
3	408	973.08	386 033.43
4	70	489.60	131 552.62
5	58	793.62	161 387.38
6	19	448.56	73 844.62
7	12	405.18	54 170.46
8	8	348.30	40 381.99
9	4	214.56	30 665.00
10	2	130.95	20 005.58
11	3	227.52	27 240.74
12	1	84.42	12 296.47
13	4	370.44	34 228.60
14	6	890.37	70 774.84
15	3	727.83	82 471.79
16	1	311.22	50 784.08
17	2	877.32	73 880.76
18	6	6 693.21	476 277.07

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2KF

Size class	Number	Area (ha)	Perimeter (m)
1	682	122.76	133 500.00
2	1 340	665.64	519 829.66
3	623	1 361.25	592 432.11
4	121	865.08	231 064.50
5	72	1 035.27	212 617.33
6	32	798.48	138 908.96
7	17	575.37	85 835.59
8	8	354.24	68 492.35
9	4	222.39	31 172.87
10	7	447.30	75 875.35
11	4	304.47	41 286.76
12	2	163.62	12 807.35
13	3	276.93	27 056.47
14	15	2 252.52	235 329.06
15	4	966.51	75 387.75
17	4	1 755.72	138 754.06
18	11	21 055.05	911 251.57

Drainage basin 2KG

Size class	Number	Area (ha)	Perimeter (m)
1	391	70.38	76 740.00
2	1 025	534.33	404 636.56
3	971	2 544.75	954 585.71
4	413	2 994.93	764 408.52
5	295	4 128.93	852 623.99
6	104	2 518.02	428 624.83
7	53	1 818.09	289 895.31
8	28	1 239.57	177 696.83
9	26	1 405.71	191 097.42
10	10	665.28	82 174.11
11	10	743.22	89 951.76
12	9	768.24	91 352.35
13	6	562.05	65 969.33
14	31	4 339.35	393 179.61
15	11	2 658.51	234 558.35
16	5	1 711.98	122 109.95
17	2	917.46	65 556.00
18	12	11 814.03	806 817.90

Drainage basin 2KH

Size class	Number	Area (ha)	Perimeter (m)
1	307	55.26	61 020.00
2	668	348.66	274 340.12
3	437	1 095.48	421 628.21
4	177	1 240.02	308 141.93
5	128	1 865.25	355 545.67
6	38	901.89	141 134.81
7	32	1 115.46	151 959.13
8	16	738.81	97 501.47
9	13	718.92	89 600.80
10	9	592.65	65 743.16
11	3	225.00	23 266.69
12	7	587.16	67 756.54
13	6	559.80	63 866.85
14	12	1 728.99	160 789.61
15	5	1 157.13	98 572.38
16	3	1 028.34	89 852.28
17	1	433.17	49 979.46
18	7	8 896.41	482 461.16

Drainage basin 2KJ

Size class	Number	Area (ha)	Perimeter (m)
1	273	49.14	53 820.00
2	655	337.77	250 648.67
3	687	1 795.68	657 431.79
4	266	1 931.04	468 703.14
5	226	3 143.97	611 867.28
6	97	2 379.51	383 219.41
7	58	2 033.82	319 325.91
8	28	1 241.01	152 765.25
9	36	1 997.37	235 798.17
10	12	789.48	89 263.88
11	17	1 262.52	150 970.22
12	4	326.43	37 496.48
13	7	654.57	73 466.31
14	25	3 512.88	337 534.21
15	8	1 971.18	184 769.49
16	8	2 751.57	241 744.25
17	3	1 254.06	112 305.59
18	10	16 585.20	993 394.43

Drainage basin 2LA

Size class	Number	Area (ha)	Perimeter (m)
1	359	64.62	69 900.00
2	721	358.38	279 413.58
3	276	577.44	277 071.03
4	59	421.20	119 945.26
5	31	453.42	112 656.89
6	13	309.96	54 783.23
7	9	318.69	52 838.39
8	5	230.58	26 105.01
9	4	211.05	38 872.21
10	2	130.86	17 951.03
12	2	165.06	19 010.44
14	7	1 002.51	90 022.27
15	5	1 242.81	77 454.87
16	4	1 280.97	93 807.71
17	1	419.94	22 266.76
18	11	13 561.74	860 542.44

Drainage basin 2LB

Size class	Number	Area (ha)	Perimeter (m)
1	143	25.74	28 140.00
2	243	112.14	93 434.58
3	93	203.58	101 357.85
4	23	149.22	43 083.77
5	8	111.87	38 269.19
6	3	72.63	9 569.13
8	1	49.95	6 519.41
10	1	69.84	16 172.13
11	1	78.75	17 417.05
15	1	204.30	1 250.12
18	1	14 676.03	643 403.88

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2LC

Size class	Number	Area (ha)	Perimeter (m)
1	642	115.56	124 620.00
2	1 446	760.05	579 396.91
3	1 309	3 260.07	1 249 000.71
4	438	3 122.46	792 376.58
5	272	3 729.96	720 982.13
6	114	2 736.09	477 924.89
7	53	1 824.57	298 201.10
8	38	1 718.46	225 571.24
9	31	1 700.37	233 475.94
10	19	1 235.70	154 525.50
11	10	759.69	109 527.56
12	12	1 019.88	93 233.67
13	5	472.23	38 712.28
14	32	4 140.00	397 936.31
15	11	2 782.08	201 696.79
16	8	2 697.93	191 963.63
17	4	1 823.58	118 458.08
18	7	6 832.08	341 551.79

Drainage basin 2LF

Size class	Number	Area (ha)	Perimeter (m)
1	319	57.42	61 620.00
2	819	436.95	316 208.14
3	808	1 888.92	732 384.34
4	231	1 607.13	414 232.99
5	119	1 628.82	324 762.17
6	49	1 190.97	198 659.93
7	23	824.22	116 772.51
8	13	575.91	67 257.20
9	7	371.97	49 909.94
10	6	384.57	45 445.59
11	7	528.57	73 050.60
12	3	258.03	44 800.66
13	3	291.87	31 629.78
14	23	3 005.91	324 710.56
15	4	920.43	93 098.36
16	4	1 352.52	108 936.76
17	2	901.89	64 355.32
18	9	13 410.45	824 781.14

Drainage basin 2LD

Size class	Number	Area (ha)	Perimeter (m)
1	240	43.20	46 860.00
2	584	307.17	225 817.73
3	568	1 391.85	538 013.95
4	197	1 366.65	351 533.51
5	110	1 611.45	326 333.69
6	26	624.78	101 405.74
7	13	441.45	69 351.68
8	15	665.64	83 144.43
9	8	455.49	49 629.26
10	2	127.71	10 444.27
11	6	453.15	55 685.00
12	5	419.94	51 638.89
13	6	581.31	74 257.14
14	13	1 623.78	175 271.45
15	7	1 791.63	145 511.92
16	6	1 997.73	131 626.57
17	3	1 409.67	89 142.06
18	6	7 982.91	294 487.25

Drainage basin 2LG

Size class	Number	Area (ha)	Perimeter (m)
1	887	159.66	172 980.00
2	2 355	1 244.43	924 067.61
3	2 773	7 020.27	2 663 485.82
4	1 027	7 246.35	1 892 982.50
5	708	9 952.83	2 053 700.80
6	233	5 626.71	1 004 086.23
7	130	4 526.37	707 108.70
8	86	3 839.04	539 038.49
9	55	2 979.54	426 042.72
10	34	2 188.08	295 151.40
11	29	2 185.74	313 982.36
12	20	1 712.52	188 048.66
13	15	1 405.53	162 833.90
14	62	8 231.49	857 911.29
15	16	3 794.85	378 669.09
16	10	3 584.79	365 593.85
17	3	1 306.26	79 022.17
18	27	94 160.25	5 114 350.77

Drainage basin 2LE

Size class	Number	Area (ha)	Perimeter (m)
1	331	59.58	64 680.00
2	861	456.30	334 137.36
3	962	2 474.28	909 734.43
4	357	2 574.36	635 936.32
5	277	3 871.53	746 775.11
6	93	2 292.57	365 599.61
7	49	1 688.22	268 807.14
8	42	1 851.66	278 671.26
9	26	1 414.17	165 490.47
10	16	1 030.68	141 901.17
11	10	738.00	81 175.42
12	10	846.81	123 076.74
13	5	470.79	57 535.96
14	31	4 177.44	463 962.15
15	19	4 710.33	475 471.52
16	4	1 448.19	108 110.57
17	4	1 816.02	97 583.96
18	10	18 831.51	983 085.99

Drainage basin 2LH

Size class	Number	Area (ha)	Perimeter (m)
1	531	95.58	102 060.00
2	1 424	738.90	544 988.98
3	1 284	3 186.81	1 179 048.42
4	433	3 119.58	742 228.96
5	328	4 713.93	847 219.34
6	145	3 548.34	537 628.17
7	54	1 888.20	268 600.11
8	41	1 809.90	233 078.31
9	26	1 431.18	157 861.18
10	22	1 425.96	168 200.52
11	9	675.45	74 461.47
12	12	1 011.87	108 135.51
13	11	1 044.90	99 124.71
14	61	8 403.30	869 543.80
15	18	4 335.93	367 415.27
16	8	2 799.45	224 227.08
17	3	1 291.95	67 378.42
18	23	27 314.73	1 640 870.49

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2MA

Size class	Number	Area (ha)	Perimeter (m)
1	215	38.70	42 480.00
2	414	195.30	159 341.97
3	169	384.57	170 633.25
4	45	312.21	93 000.95
5	27	381.60	81 063.47
6	18	468.90	75 996.09
7	10	362.25	66 430.73
8	5	227.88	26 909.86
9	5	266.76	31 892.86
10	1	69.48	8 161.25
11	3	219.96	31 031.03
12	3	255.51	28 632.28
13	1	91.17	7 441.25
14	12	1 749.33	162 713.05
15	7	1 712.07	144 939.26
16	2	728.73	76 556.78
18	13	13 545.27	1 052 344.13

Drainage basin 2NA

Size class	Number	Area (ha)	Perimeter (m)
1	1 706	307.08	329 040.00
2	4 006	2 065.32	1 542 342.92
3	3 792	9 471.69	3 609 815.48
4	1 377	9 773.01	2 435 972.59
5	905	12 610.26	2 439 727.36
6	333	8 132.40	1 349 841.30
7	197	6 761.07	978 188.58
8	118	5 269.77	746 053.83
9	74	3 995.55	526 111.39
10	65	4 205.25	508 550.20
11	34	2 554.02	269 815.37
12	40	3 393.90	363 286.21
13	32	3 043.53	338 562.47
14	113	16 011.72	1 623 681.51
15	31	7 591.68	721 235.79
16	20	6 966.63	562 154.54
17	5	2 195.64	165 685.35
18	43	328 724.01	14 799 547.45

Drainage basin 2NB

Size class	Number	Area (ha)	Perimeter (m)
1	250	45.00	47 760.00
2	622	318.51	242 177.12
3	707	1 764.45	678 306.47
4	285	2 012.40	499 576.12
5	225	3 162.96	606 350.36
6	59	1 430.46	231 138.78
7	40	1 357.38	177 297.45
8	26	1 153.44	159 081.74
9	13	698.58	92 463.24
10	7	453.15	53 432.87
11	6	445.77	46 812.28
12	10	848.88	89 618.60
13	3	281.79	25 768.60
14	25	3 453.66	363 007.06
15	9	1 926.45	157 601.58
16	3	1 066.59	93 989.27
17	1	460.71	45 943.13
18	10	32 504.58	1 434 457.90

Drainage basin 2NC

Size class	Number	Area (ha)	Perimeter (m)
1	542	97.56	105 540.00
2	1 322	696.96	522 176.11
3	1 384	3 565.89	1 337 749.23
4	546	3 871.35	978 396.60
5	361	4 992.66	1 037 367.49
6	121	2 980.80	515 328.02
7	71	2 481.30	380 811.33
8	33	1 449.54	196 321.68
9	32	1 733.67	231 847.43
10	15	994.05	135 000.43
11	16	1 188.00	154 336.76
12	6	509.40	62 458.97
13	11	1 039.41	112 859.18
14	30	3 906.45	460 446.05
15	7	1 717.02	235 761.83
16	3	963.09	114 120.17
17	5	2 278.53	224 423.38
18	4	9 497.97	658 409.26

Drainage basin 2MC

Size class	Number	Area (ha)	Perimeter (m)
1	43	7.74	8 340.00
2	47	23.49	19 419.42
3	25	58.68	22 982.53
4	7	46.53	11 887.28
5	1	11.52	3 356.99
6	2	42.48	8 181.84
7	1	31.14	3 241.25
8	2	97.02	11 405.51
9	1	53.28	7 676.99
10	2	126.63	16 681.25
14	1	144.81	7 196.99
18	2	11 494.44	213 369.62

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2ND

Size class	Number	Area (ha)	Perimeter (m)
1	121	21.78	23 520.00
2	354	189.00	139 063.73
3	354	903.51	345 897.08
4	169	1 188.63	290 377.14
5	126	1 750.86	348 849.97
6	51	1 257.93	203 976.86
7	23	802.89	143 066.54
8	15	660.24	82 040.84
9	6	334.62	38 488.61
10	7	451.71	46 241.39
11	7	531.99	57 650.45
12	6	525.87	66 486.77
13	3	290.34	43 500.72
14	17	2 564.91	279 802.19
15	3	704.97	68 551.07
16	5	1 731.69	155 726.27
17	2	891.36	89 821.42
18	3	1 931.67	119 786.28

Drainage basin 2NG

Size class	Number	Area (ha)	Perimeter (m)
1	376	67.68	74 340.00
2	645	306.00	241 828.69
3	381	917.55	374 437.28
4	110	785.34	201 435.81
5	64	878.94	176 257.62
6	29	726.21	121 148.29
7	15	541.80	80 297.78
8	6	270.00	39 817.12
9	3	162.63	23 951.03
10	1	68.40	7 622.50
11	2	151.65	18 890.96
12	2	162.27	22 346.10
13	2	189.27	21 788.52
14	12	1 688.49	178 164.75
15	1	210.33	22 864.26
16	4	1 465.83	126 635.51
17	5	2 138.31	157 542.07
18	4	714.29	532 049.15

Drainage basin 2NE

Size class	Number	Area (ha)	Perimeter (m)
1	469	84.42	92 280.00
2	1 066	541.35	415 073.07
3	984	2 421.54	944 259.69
4	362	2 593.08	658 212.96
5	224	3 122.10	622 085.12
6	88	2 105.91	354 165.58
7	48	1 673.19	253 020.88
8	21	929.88	133 001.61
9	22	1 211.94	151 082.95
10	13	826.11	104 040.96
11	9	688.59	78 649.41
12	2	174.15	20 570.96
13	3	285.03	36 638.38
14	25	3 400.11	327 084.90
15	9	2 120.85	188 510.80
16	7	2 626.92	197 324.73
17	2	917.01	64 147.99
18	5	6 122.79	282 175.94

Drainage basin 2OA

Size class	Number	Area (ha)	Perimeter (m)
1	120	21.60	23 520.00
2	212	101.43	82 613.98
3	79	187.02	99 844.52
4	13	82.98	27 692.86
5	9	136.26	42 808.62
6	2	45.72	8 506.69
7	2	71.82	14 816.99
11	1	75.78	34 377.68
13	1	90.09	19 076.99
15	1	267.48	45 944.50

Drainage basin 2OB

Size class	Number	Area (ha)	Perimeter (m)
1	518	93.24	102 960.00
2	1 067	532.89	419 833.71
3	741	1 771.29	758 342.48
4	206	1 441.89	392 800.38
5	104	1 488.51	323 657.77
6	53	1 273.95	207 910.23
7	33	1 124.55	167 271.43
8	13	568.53	73 774.11
9	9	487.80	72 155.37
10	6	387.36	44 411.03
11	4	294.57	31 985.52
12	2	164.34	20 405.51
13	2	188.37	26 835.81
14	16	2 179.98	206 342.38
15	4	1 003.32	72 377.78
17	1	449.28	31 263.73
18	3	3 148.02	138 152.98

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2OC

Size class	Number	Area (ha)	Perimeter (m)
1	836	150.48	164 220.00
2	1 445	694.26	558 683.51
3	785	1 831.50	802 859.90
4	210	1 484.82	380 010.39
5	99	1 411.20	266 994.66
6	61	1 450.98	224 803.33
7	34	1 158.30	166 427.17
8	20	903.60	126 890.14
9	9	506.34	66 291.69
10	9	576.18	72 360.22
11	5	375.03	41 863.16
12	7	580.86	60 541.99
13	2	188.28	20 443.68
14	14	1 823.40	152 850.08
15	3	724.32	40 629.26
16	2	633.15	65 694.67
18	5	4 189.14	205 015.04

Drainage basin 2OD

Size class	Number	Area (ha)	Perimeter (m)
1	202	36.36	40 260.00
2	294	139.05	122 143.71
3	90	195.66	118 406.35
4	18	115.92	44 681.91
5	9	114.57	42 815.89
6	5	128.97	54 982.57
7	3	100.89	29 086.17
8	2	86.58	41 564.92
9	2	103.05	39 705.63
11	1	76.23	6 750.37
15	3	690.66	113 493.84
17	1	401.67	17 311.62

Drainage basin 2OE

Size class	Number	Area (ha)	Perimeter (m)
1	197	35.46	38 460.00
2	307	144.45	121 275.86
3	104	214.74	114 856.59
4	16	111.33	34 043.10
5	12	184.41	33 403.17
6	8	198.99	28 009.20
7	5	184.23	23 874.71
8	1	47.43	5 322.43
9	3	157.14	24 558.31
10	4	254.70	30 040.15
12	1	88.11	13 120.66
14	8	1 141.38	72 036.63
15	3	728.73	38 090.44
16	2	680.67	104 107.86
18	3	8 699.31	284 061.67

Drainage basin 2OF

Size class	Number	Area (ha)	Perimeter (m)
1	175	31.50	34 260.00
2	316	155.61	121 240.70
3	140	312.66	138 794.88
4	26	180.18	59 169.81
5	23	311.49	65 956.55
6	4	97.65	17 450.96
7	4	136.98	21 425.51
8	3	134.28	13 695.81
10	1	68.13	5 852.13
11	1	74.70	5 389.71
14	3	420.03	56 995.21
15	1	229.05	17 231.02
16	3	1 004.58	141 726.16
18	3	3 813.93	409 521.02

Drainage basin 2OG

Size class	Number	Area (ha)	Perimeter (m)
1	448	80.64	84 780.00
2	802	365.04	293 068.70
3	206	442.62	221 272.01
4	29	204.57	80 711.04
5	19	257.22	61 628.04
6	6	139.23	60 042.65
7	2	64.44	12 245.52
8	5	221.67	53 151.67
10	1	67.95	18 314.04
14	4	598.05	86 211.68
15	1	223.38	52 769.80
17	1	437.13	19 523.08
18	1	1 425.96	27 635.86

Drainage basin 2OH

Size class	Number	Area (ha)	Perimeter (m)
1	10	1.80	1 980.00
2	13	6.39	4 944.86
3	5	9.54	4 020.00
4	1	7.38	2 082.43
5	1	15.03	3 949.71
7	1	38.16	5 764.26

Drainage basin 2OJ

Size class	Number	Area (ha)	Perimeter (m)
1	192	34.56	36 420.00
2	319	145.62	113 835.85
3	105	222.30	100 766.90
4	10	72.00	20 553.40
5	9	117.54	25 190.95
6	2	51.30	6 434.56
7	2	70.92	12 498.83
8	2	82.44	10 723.67
9	1	55.71	8 072.13
10	1	64.35	10 447.28
14	1	155.97	23 083.68
15	1	270.81	28 082.49
16	1	382.77	42 692.13
18	3	106 876.71	2 870 658.73

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2PA

Size class	Number	Area (ha)	Perimeter (m)
1	428	77.04	83 400.00
2	845	420.66	317 517.85
3	847	2 136.87	806 279.76
4	325	2 323.08	581 096.99
5	173	2 488.68	481 385.14
6	95	2 254.32	398 460.60
7	35	1 193.76	179 362.30
8	23	1 028.70	167 998.70
9	21	1 155.78	172 540.60
10	17	1 109.70	147 581.09
11	11	823.05	100 094.27
12	7	587.25	84 549.97
13	2	188.19	17 889.78
14	14	1 868.40	245 507.84
15	8	1 996.02	173 673.25
16	4	1 386.72	79 944.55

Drainage basin 2PB

Size class	Number	Area (ha)	Perimeter (m)
1	220	39.60	42 540.00
2	444	231.93	172 604.99
3	346	835.20	323 025.75
4	126	884.07	225 001.48
5	81	1 151.73	215 385.41
6	30	745.11	106 934.79
7	14	466.02	66 202.58
8	15	644.49	88 204.49
9	9	501.30	70 528.07
10	8	522.72	55 943.82
11	2	142.29	15 274.63
12	1	88.65	13 479.41
13	2	188.10	42 160.30
14	14	1 952.64	198 006.61
15	1	251.82	24 078.82
16	3	1 091.61	64 977.71

Drainage basin 2PC

Size class	Number	Area (ha)	Perimeter (m)
1	169	30.42	33 120.00
2	386	194.40	149 112.86
3	306	746.10	302 753.53
4	123	885.51	236 203.13
5	49	718.29	161 781.06
6	31	768.78	153 353.68
7	21	704.43	118 891.34
8	12	540.36	79 596.63
9	6	339.30	49 465.07
10	2	125.64	14 312.13
11	3	217.17	32 015.37
12	1	80.91	7 892.13
13	1	95.94	6 762.43
14	10	1 479.15	130 505.95
16	1	330.57	20 882.49
18	2	2 272.32	75 104.37

Drainage basin 2PD

Size class	Number	Area (ha)	Perimeter (m)
1	87	15.66	17 100.00
2	188	94.14	79 454.58
3	104	235.08	105 644.46
4	37	255.33	71 539.59
5	23	282.51	54 834.74
6	9	219.15	34 022.51
7	1	36.81	7 038.82
8	1	46.71	3 512.13
9	2	114.57	16 713.38
11	1	77.49	5 859.41
15	1	295.47	20 369.12
18	2	1 683.72	61 694.76

Drainage basin 2PE

Size class	Number	Area (ha)	Perimeter (m)
1	296	53.28	57 840.00
2	467	228.60	180 283.23
3	243	575.01	242 723.88
4	74	528.12	137 606.58
5	45	632.07	121 321.74
6	15	375.48	55 585.59
7	7	242.64	32 828.03
8	4	189.18	27 312.80
9	6	318.24	29 861.93
10	5	315.99	31 467.35
11	2	143.55	15 476.47
12	1	83.79	10 129.71
14	4	595.62	50 700.73

Drainage basin 2PF

Size class	Number	Area (ha)	Perimeter (m)
1	378	68.04	73 620.00
2	874	442.71	341 311.26
3	514	1 187.46	479 041.33
4	143	1 005.12	268 745.02
5	98	1 379.52	284 061.47
6	42	1 020.96	176 950.75
7	18	631.44	89 035.45
8	7	311.13	44 872.94
9	4	222.12	28 812.79
10	6	389.43	40 261.97
11	4	292.95	25 281.33
12	2	165.60	17 889.78
13	5	472.50	50 855.88
14	8	1 123.56	105 400.34
15	5	1 280.52	77 334.18
16	1	317.07	21 356.45
18	1	651.51	20 660.06

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2PG

Size class	Number	Area (ha)	Perimeter (m)
1	91	16.38	18 360.00
2	148	73.17	59 924.95
3	73	162.09	79 279.82
4	14	111.06	30 268.08
5	13	185.04	32 714.06
6	2	44.10	9 106.70
8	2	96.57	11 175.29
9	1	57.42	6 882.43
11	1	79.11	4 966.69
14	2	262.71	14 930.95
15	1	245.79	17 906.30
17	1	441.72	24 715.21
18	1	573.75	25 383.21

Drainage basin 2PH

Size class	Number	Area (ha)	Perimeter (m)
1	141	25.38	28 500.00
2	231	105.03	92 402.53
3	98	232.83	126 736.03
4	34	223.92	84 993.08
5	19	285.39	60 199.05
6	8	198.09	35 297.79
7	6	213.93	26 327.43
9	3	157.41	18 752.87
13	1	98.28	6 931.62
15	1	230.13	12 713.97

Drainage basin 2PJ

Size class	Number	Area (ha)	Perimeter (m)
1	282	50.76	55 980.00
2	459	215.64	184 114.71
3	176	390.96	182 108.54
4	41	303.57	81 469.41
5	22	331.92	63 823.36
6	10	242.10	45 837.20
7	3	98.46	12 280.66
8	2	88.65	8 126.10
9	5	276.30	53 661.32
10	2	133.38	21 757.64
11	2	153.00	8 932.21
12	2	168.12	41 647.28
13	1	97.20	6 674.56
14	5	642.60	124 995.98
15	2	527.58	66 301.41
16	1	390.15	24 456.58
18	3	4 183.92	229 185.07

Drainage basin 2PK

Size class	Number	Area (ha)	Perimeter (m)
1	128	23.04	25 920.00
2	158	66.87	60 399.43
3	49	89.46	56 210.49
4	3	20.25	5 354.55
5	2	25.02	13 274.56
7	1	36.27	3 109.71

Drainage basin 2PL

Size class	Number	Area (ha)	Perimeter (m)
1	128	23.04	25 620.00
2	212	97.29	82 850.97
3	75	181.89	86 336.73
4	25	178.02	63 566.84
5	13	171.27	47 464.47
6	4	93.96	27 600.74
7	5	175.59	66 630.06
9	4	217.35	56 645.19
11	1	73.53	6 485.51
12	1	89.82	6 792.79
13	2	191.34	18 311.03
14	5	647.10	156 678.79
15	1	238.68	13 112.87
17	1	467.73	22 638.82

Drainage basin 2QA

Size class	Number	Area (ha)	Perimeter (m)
1	268	48.24	52 980.00
2	473	237.87	187 732.29
3	346	840.06	340 055.17
4	87	620.46	159 527.61
5	69	978.12	184 921.65
6	19	450.54	80 285.94
7	13	447.30	54 482.21
8	10	439.74	55 783.38
9	4	216.27	23 234.04
10	7	447.84	41 875.95
11	1	78.57	6 166.69
12	3	263.52	23 978.90
14	13	1 662.75	139 715.06
15	2	452.79	37 591.08
16	3	994.41	85 140.17
17	1	436.77	16 765.07
18	4	3 583.62	271 792.83

Drainage basin 2QB

Size class	Number	Area (ha)	Perimeter (m)
1	176	31.68	35 400.00
2	370	178.65	149 399.51
3	164	358.83	162 595.76
4	44	308.16	78 584.12
5	15	220.77	37 709.33
6	11	263.34	37 648.10
7	7	237.60	29 037.73
8	2	88.02	11 569.71
9	1	53.73	8 171.54
12	1	80.64	10 316.47
14	2	270.90	23 001.84

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2QC

Size class	Number	Area (ha)	Perimeter (m)
1	330	59.40	62 940.00
2	676	342.36	256 212.42
3	342	760.86	344 624.10
4	43	289.89	83 609.39
5	17	232.92	45 691.62
6	5	112.14	18 661.26
7	1	38.79	6 289.71
11	2	154.62	16 817.06
14	2	244.71	25 526.11

Drainage basin 2RA

Size class	Number	Area (ha)	Perimeter (m)
1	2 132	383.76	412 080.00
2	5 085	2 629.71	1 951 948.75
3	3 857	9 051.93	3 680 315.11
4	1 084	7 659.54	2 064 462.74
5	610	8 520.66	1 805 197.65
6	260	6 379.11	1 100 121.24
7	121	4 185.81	697 488.75
8	72	3 187.98	518 742.74
9	58	3 182.76	483 978.90
10	36	2 338.65	283 002.58
11	25	1 857.42	219 168.06
12	25	2 127.69	251 014.78
13	15	1 432.89	176 678.82
14	58	8 105.58	1 010 421.37
15	28	6 799.68	676 362.48
16	14	4 846.14	424 141.05
17	6	2 592.63	188 997.86
18	19	67 516.74	3 151 684.23

Drainage basin 2RB

Size class	Number	Area (ha)	Perimeter (m)
1	353	63.54	68 760.00
2	848	442.62	328 519.66
3	816	2 004.57	773 498.97
4	306	2 177.37	552 963.90
5	176	2 479.77	488 547.67
6	83	1 946.79	338 357.21
7	38	1 271.43	228 454.26
8	17	776.79	131 141.62
9	17	939.33	123 640.87
10	12	786.78	92 654.77
11	8	604.89	85 890.58
12	3	254.79	30 898.23
13	5	479.52	46 434.70
14	17	2 367.27	282 723.06
15	4	922.95	72 819.62
16	4	1 387.08	98 071.79
18	9	8 205.66	606 377.97

Drainage basin 2RC

Size class	Number	Area (ha)	Perimeter (m)
1	644	115.92	125 220.00
2	1 292	649.71	496 200.40
3	1 016	2 452.32	1 005 279.92
4	362	2 570.13	665 113.61
5	228	3 203.73	657 320.20
6	90	2 141.64	381 090.27
7	48	1 663.74	259 832.79
8	20	891.72	150 995.61
9	17	935.28	129 081.01
10	5	327.24	51 765.67

11	6	446.76	66 343.16
12	6	505.71	41 611.61
13	5	488.88	81 323.80
14	16	2 266.47	219 018.73
15	6	1 525.05	121 383.95
16	3	1 104.30	59 196.07
17	3	1 408.95	92 449.88
18	6	36 846.09	1 061 798.51

Drainage basin 2RD

Size class	Number	Area (ha)	Perimeter (m)
1	789	142.02	151 260.00
2	2 102	1 122.57	813 517.73
3	1 970	4 859.55	1 881 443.00
4	647	4 657.41	1 215 174.16
5	399	5 534.19	1 139 871.75
6	142	3 494.97	618 889.53
7	66	2 275.65	360 662.88
8	41	1 815.93	249 932.83
9	29	1 578.15	227 175.21
10	21	1 353.87	178 952.07
11	9	673.02	93 739.04
12	15	1 285.65	168 658.66
13	5	483.30	66 262.06
14	42	5 587.74	688 829.50
15	8	1 992.24	174 227.07
16	4	1 294.83	102 948.64
17	1	404.46	80 816.48
18	9	11 866.95	898 227.47

Drainage basin 2RE

Size class	Number	Area (ha)	Perimeter (m)
1	891	160.38	171 480.00
2	1 957	1 013.76	759 908.55
3	1 671	4 061.97	1 618 765.53
4	548	3 899.34	1 023 897.44
5	339	4 783.95	1 000 725.08
6	145	3 531.33	647 934.51
7	81	2 792.79	469 478.46
8	35	1 571.76	207 604.17
9	26	1 410.84	239 716.26
10	17	1 128.33	150 875.58
11	13	964.71	122 109.46
12	9	760.41	77 737.13
13	5	469.89	52 874.05
14	43	5 776.56	714 004.86
15	14	3 375.72	415 212.77
16	7	2 461.95	217 073.77
17	2	934.38	100 318.41
18	6	4 595.49	417 902.66

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2RF

Size class	Number	Area (ha)	Perimeter (m)
1	1 316	236.88	253 860.00
2	3 179	1 637.64	1 224 032.50
3	2 808	7 030.35	2 685 189.19
4	1 000	7 042.59	1 778 776.10
5	659	9 250.47	1 853 987.40
6	265	6 523.74	1 119 320.25
7	145	5 047.02	851 509.13
8	79	3 504.51	520 327.56
9	57	3 104.55	403 633.59
10	42	2 717.01	359 426.44
11	31	2 325.24	300 675.42
12	14	1 197.72	152 370.05
13	23	2 167.92	291 956.60
14	72	10 001.25	1 059 837.06
15	28	6 963.12	730 812.81
16	16	5 338.80	550 476.65
17	12	5 192.91	479 102.76
18	27	37 836.72	2 241 001.47

Drainage basin 2SA

Size class	Number	Area (ha)	Perimeter (m)
1	1 151	207.18	221 520.00
2	3 298	1 763.82	1 270 841.16
3	3 402	8 416.71	3 204 700.83
4	1 135	7 968.60	2 063 547.13
5	674	9 443.16	1 924 561.02
6	265	6 455.16	1 072 626.72
7	130	4 449.60	671 943.81
8	66	2 923.65	420 605.61
9	44	2 428.47	325 698.67
10	32	2 102.22	256 888.72
11	24	1 783.71	223 653.54
12	16	1 330.83	177 442.28
13	14	1 337.67	186 255.67
14	66	9 051.30	913 627.81
15	20	4 983.75	491 218.83
16	14	4 674.87	317 813.16
17	9	4 142.25	251 283.53
18	22	123 832.53	4 572 408.66

Drainage basin 2RG

Size class	Number	Area (ha)	Perimeter (m)
1	174	31.32	34 980.00
2	291	145.17	110 214.01
3	269	703.08	261 081.87
4	132	941.76	224 329.18
5	75	1 021.14	217 541.36
6	30	722.16	144 274.35
7	16	556.74	87 659.72
8	7	311.22	44 144.41
9	6	341.19	35 545.58
10	4	248.22	51 440.80
11	4	289.44	31 904.92
12	2	168.30	19 547.94
13	1	94.77	15 384.85
14	8	10 39.86	113 628.15
15	5	11 87.64	109 172.30
16	1	3 98.70	31 626.74
17	2	8 52.66	61 098.99
18	2	13 32.27	92 338.38

Drainage basin 2SB

Size class	Number	Area (ha)	Perimeter (m)
1	519	93.42	100 440.00
2	1 531	819.45	583 824.84
3	1 577	4 023.63	1 478 604.45
4	534	3 793.32	987 585.84
5	304	4 273.56	854 060.82
6	114	2 760.57	472 315.89
7	58	1 974.87	275 074.80
8	44	1 968.84	238 278.45
9	25	1 396.17	152 112.52
10	14	895.05	113 222.20
11	11	833.22	99 425.21
12	8	676.53	72 067.49
13	7	671.67	69 728.75
14	24	3 364.83	3 22 275.40
15	6	1 409.76	1 07 824.47
16	5	1 690.11	1 37 847.75
17	1	457.11	37 982.48
18	11	14 796.99	5 68 538.58

Drainage basin 2RH

Size class	Number	Area (ha)	Perimeter (m)
1	911	163.98	177 060.00
2	2 435	1 290.60	947 835.38
3	2 051	4 837.68	1 922 328.68
4	545	3 749.04	985 170.72
5	335	4 621.14	934 536.37
6	109	2 634.03	432 871.72
7	62	2 145.33	301 146.93
8	31	1 365.84	163 132.64
9	24	1 314.99	163 702.29
10	17	1 106.28	107 037.91
11	20	1 512.63	159 008.96
12	11	951.30	102 836.69
13	10	941.58	89 823.96
14	23	3 267.09	303 433.64
15	4	922.32	92 562.60
16	2	659.34	40 729.17
17	1	418.77	36 732.26
18	5	3 012.66	156 159.04

Drainage basin 2SC

Size class	Number	Area (ha)	Perimeter (m)
1	698	125.64	135 240.00
2	2 000	1 055.34	771 311.10
3	1 982	4 822.38	1 860 244.83
4	578	4 086.90	1 043 050.73
5	396	5 479.38	1 071 035.20
6	114	2 835.72	455 462.14
7	64	2 212.11	317 518.59
8	42	1 879.20	254 336.62
9	33	1 749.15	203 503.62
10	19	1 212.57	142 902.34
11	16	1 184.85	137 354.97
12	6	515.79	80 835.99
13	6	576.90	103 640.25
14	42	5 904.45	518 170.74
15	9	2 310.48	153 750.99
16	4	1 430.73	103 371.13
17	2	845.91	49 235.86
18	7	165 790.26	1 212 584.70

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2TA

Size class	Number	Area (ha)	Perimeter (m)
1	688	123.84	132 420.00
2	1 669	865.17	639 750.82
3	1 217	2 944.35	1 173 959.41
4	401	2 848.50	725 637.69
5	252	3 479.04	689 497.78
6	96	2 321.28	406 924.86
7	36	1 235.52	181 606.63
8	26	1 141.74	155 402.74
9	22	1 200.60	177 282.38
10	20	1 278.81	149 340.43
11	13	981.90	128 729.55
12	9	758.61	84 607.50
13	9	853.56	81 740.81
14	28	4 041.18	437 306.55
15	9	2 144.25	263 435.52
16	3	1 070.19	80 422.02
17	2	874.89	81 266.24
18	6	5 758.29	367 967.03

Drainage basin 2TD

Size class	Number	Area (ha)	Perimeter (m)
1	1 019	183.42	196 140.00
2	2 499	1 284.84	933 769.21
3	2 097	5 028.75	1 937 229.73
4	642	4 542.57	1 163 900.98
5	393	5 420.61	1 126 440.02
6	167	4 040.55	704 524.91
7	77	2 660.40	386 271.57
8	48	2 139.75	310 900.83
9	39	2 149.11	275 526.89
10	19	1 241.37	152 611.31
11	17	1 285.65	117 741.75
12	14	1 194.93	133 024.71
13	13	1 223.01	121 489.41
14	42	5 632.65	545 593.26
15	19	4 652.55	384 417.95
16	8	2 730.33	198 359.51
17	2	858.78	90 131.69
18	21	57 127.68	2 369 293.79

Drainage basin 2TB

Size class	Number	Area (ha)	Perimeter (m)
1	1 405	252.90	270 360.00
2	3 293	1 694.61	1 251 292.59
3	2 577	6 178.50	2 406 767.38
4	723	5 130.00	1 286 499.38
5	509	6 990.84	1 338 103.33
6	185	4 572.90	741 651.78
7	90	3 085.74	418 475.79
8	59	2 562.66	332 062.03
9	35	1 893.15	235 120.61
10	24	1 548.36	194 936.15
11	26	1 920.69	216 852.00
12	19	1 607.13	182 166.49
13	11	1 072.44	134 835.49
14	66	9 493.29	926 444.04
15	26	6 678.00	587 166.64
16	8	2 799.00	192 306.40
17	1	479.70	37 732.18
18	20	212 193.90	4 483 186.49

Drainage basin 2TE

Size class	Number	Area (ha)	Perimeter (m)
1	781	140.58	150 720.00
2	2 142	1 139.04	813 042.78
3	2 177	5 263.11	2 003 433.11
4	682	4 714.02	1 213 808.11
5	411	5 719.77	1 110 101.34
6	163	3 991.14	654 800.50
7	74	2 547.45	368 424.95
8	45	2 025.99	262 731.84
9	23	1 239.57	159 932.55
10	21	1 350.99	169 316.39
11	11	829.35	92 928.16
12	13	1 101.24	122 214.41
13	10	936.54	110 579.71
14	37	4 863.78	448 945.33
15	9	2 197.44	140 102.19
16	5	1 818.63	126 582.76
17	3	1 392.93	67 270.49
18	10	71 864.37	2 389 532.89

Drainage basin 2TC

Size class	Number	Area (ha)	Perimeter (m)
1	1 331	239.58	259 440.00
2	3 463	1 836.63	1 334 643.82
3	3 158	7 703.19	2 924 685.00
4	946	6 684.12	1 665 405.31
5	667	9 492.21	1 781 836.04
6	247	6 004.80	933 999.08
7	138	4 757.58	680 280.98
8	71	3 203.64	411 216.51
9	58	3 163.59	376 264.35
10	33	2 120.04	225 858.26
11	20	1 499.49	138 674.98
12	23	1 937.97	178 595.81
13	15	1 415.16	145 874.98
14	69	9 375.48	788 435.22
15	36	8 605.98	632 039.35
16	20	6 873.66	492 502.55
17	2	951.75	35 251.61
18	33	93 421.71	3 293 435.18

Drainage basin 2UA

Size class	Number	Area (ha)	Perimeter (m)
1	1 122	201.96	217 920.00
2	3 086	1 598.76	1 195 721.05
3	2 760	6 617.52	2 568 377.87
4	751	5 271.21	1 347 837.53
5	458	6 541.20	1 235 250.83
6	185	4 490.10	690 175.78
7	84	2 912.49	400 115.97
8	54	2 422.17	304 344.18
9	26	1 412.55	152 255.59
10	24	1 552.23	176 575.14
11	20	1 475.55	157 630.73
12	15	1 260.18	149 482.28
13	21	1 978.02	200 289.71
14	60	8 050.50	699 788.21
15	19	4 642.83	319 389.03
16	4	1 456.65	72 255.99
17	4	1 813.95	101 235.46
18	15	18 607.14	911 572.73

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2UB

Size class	Number	Area (ha)	Perimeter (m)
1	870	156.60	168 900.00
2	1 936	983.97	740 862.04
3	1 434	3 362.49	1 326 035.76
4	393	2 756.43	699 646.13
5	258	3 630.24	717 809.39
6	94	2 290.23	370 492.08
7	66	2 263.41	325 773.59
8	29	1 285.47	198 048.39
9	23	1 263.96	158 107.20
10	8	526.95	64 533.60
11	16	1 200.69	129 454.33
12	6	513.81	51 732.79
13	5	471.60	61 918.97
14	25	3 515.58	380 696.04
15	10	2 447.19	154 484.27
16	8	2 814.03	200 493.06
17	4	1 768.41	94 088.73
18	13	11 749.95	987 801.60

Drainage basin 2VB

Size class	Number	Area (ha)	Perimeter (m)
1	3 744	673.92	721 620.00
2	9 103	4 680.99	3 434 198.56
3	6 113	13 896.18	5 720 779.05
4	1 406	9 897.03	2 718 820.61
5	789	11 011.68	2 369 636.33
6	293	7 098.39	1 283 706.47
7	144	4 931.91	740 416.00
8	74	3 264.48	464 942.26
9	58	3 170.43	487 127.76
10	45	2 894.04	409 249.01
11	32	2 389.59	330 739.41
12	24	2 029.68	258 804.73
13	20	1 894.95	304 415.41
14	85	11 748.06	1 450 811.47
15	12	2 767.86	283 082.06
16	20	6 766.65	491 796.49
17	5	2 255.76	234 085.46
18	21	34 797.06	1 425 501.41

Drainage basin 2UC

Size class	Number	Area (ha)	Perimeter (m)
1	2 107	379.26	409 080.00
2	5 051	2 581.56	1 923 195.78
3	3 874	9 204.21	3 649 405.22
4	1 035	7 329.33	1 863 141.91
5	680	9 463.86	1 900 328.74
6	272	6 626.70	1 130 129.97
7	153	5 288.58	759 155.63
8	112	5 013.18	674 667.16
9	52	2 854.89	371 759.85
10	45	2 899.26	322 234.25
11	30	2 248.83	247 423.08
12	27	2 303.01	266 202.04
13	18	1 709.01	161 307.78
14	86	12 162.24	1 093 983.52
15	37	8 704.98	803 548.18
16	25	8 815.95	729 438.49
17	11	4 845.87	444 607.57
18	26	33 106.86	1 619 529.33

Drainage basin 2VC

Size class	Number	Area (ha)	Perimeter (m)
1	5 115	920.70	991 860.00
2	10 270	5 044.32	3 855 675.44
3	5 310	12 157.74	5 266 756.68
4	1 212	8 592.93	2 482 451.82
5	869	12 262.23	2 767 161.59
6	332	8 032.23	1 569 356.09
7	166	5 745.06	957 295.52
8	101	4 509.45	740 050.17
9	57	3 118.32	464 897.90
10	53	3 404.34	514 819.83
11	30	2 251.80	313 396.15
12	30	2 563.02	342 120.79
13	33	3 113.28	421 345.60
14	124	16 912.89	1 864 490.87
15	32	7 569.45	822 203.06
16	21	7 146.36	693 767.27
17	16	7 204.59	737 360.28
18	29	45 714.06	3 569 058.16

Drainage basin 2VA

Size class	Number	Area (ha)	Perimeter (m)
1	1 322	237.96	254 220.00
2	3 444	1 767.96	1 298 827.60
3	2 253	5 161.41	2 144 115.70
4	502	3 545.46	991 223.68
5	262	3 683.97	787 143.33
6	85	2 075.13	363 735.70
7	49	1 681.20	265 059.05
8	25	1 127.61	153 639.87
9	15	824.13	128 791.82
10	13	851.22	99 434.29
11	9	673.02	73 118.38
12	8	686.97	92 476.03
13	4	378.36	41 135.88
14	28	3 800.07	391 066.72
15	5	1 155.51	87 489.46
16	6	1 939.23	176 420.40
17	2	901.53	44 161.97
18	5	11 422.80	389 750.52

Drainage basin 2WA

Size class	Number	Area (ha)	Perimeter (m)
1	1 283	230.94	245 880.00
2	2 460	1 202.85	933 521.03
3	1 365	3 143.43	1 369 978.98
4	380	2 680.38	746 534.94
5	235	3 336.21	738 428.13
6	99	2 394.81	449 898.21
7	52	1 779.30	281 294.21
8	36	1 633.95	254 503.04
9	24	1 294.65	171 774.95
10	17	1 119.15	143 054.26
11	12	883.26	109 778.38
12	7	601.29	53 340.74
13	6	566.46	58 216.55
14	23	3 349.89	317 064.99
15	9	2 195.73	259 071.63
16	3	966.69	67 257.71
17	4	1 775.52	89 932.91
18	6	6 524.28	328 256.51

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2WB

Size class	Number	Area (ha)	Perimeter (m)
1	2 199	395.82	427 800.00
2	4 345	2 150.01	1 657 443.01
3	2 759	6 647.13	2 723 748.82
4	715	5 089.77	1 369 356.19
5	510	7 137.09	1 459 746.97
6	202	4 928.22	859 192.81
7	130	4 482.45	641 988.31
8	70	3 132.27	451 884.75
9	48	2 599.29	365 416.70
10	33	2 106.27	227 261.64
11	26	1 951.02	270 330.80
12	18	1 508.22	184 752.49
13	17	1 627.65	164 822.72
14	65	9 206.19	921 061.17
15	24	5 682.60	401 721.39
16	13	4 606.74	387 805.00
17	7	2 948.13	217 773.18
18	29	45 351.09	2 742 406.41

Drainage basin 2WC

Size class	Number	Area (ha)	Perimeter (m)
1	1 089	196.02	209 400.00
2	2 879	1 510.38	1 101 758.80
3	2 887	7 180.20	2 722 755.66
4	965	6 908.13	1 720 029.17
5	550	7 769.07	1 516 224.68
6	214	5 204.16	847 026.62
7	122	4 171.41	616 301.82
8	72	3 203.46	430 176.52
9	57	3 108.96	383 261.45
10	40	2 603.34	290 171.42
11	27	2 034.27	234 017.74
12	23	1 924.65	204 497.70
13	17	1 613.70	155 257.05
14	92	13 164.66	1 274 271.39
15	29	6 895.26	590 230.83
16	13	4 414.86	419 048.93
17	11	4 832.37	265 598.42
18	27	26 843.76	1 219 186.02

Drainage basin 2WD

Size class	Number	Area (ha)	Perimeter (m)
1	1 789	322.02	348 960.00
2	2 917	1 392.39	1 115 575.11
3	1 309	2 923.29	1 322 675.60
4	271	1 922.85	555 104.98
5	155	2 174.49	493 674.30
6	59	1 421.19	262 148.38
7	24	820.71	153 970.94
8	17	750.96	118 428.38
9	7	382.77	53 637.21
10	3	188.46	14 309.11
11	8	607.77	85 345.76
12	4	343.08	72 434.22
14	7	1 041.21	66 838.46
15	3	672.12	32 243.09
16	2	681.03	25 363.68
18	1	573.21	31 904.37

Drainage basin 2WE

Size class	Number	Area (ha)	Perimeter (m)
1	48	8.64	9 300.00
2	83	40.59	30 424.28
3	19	44.19	19 413.39
4	5	36.99	10 264.26
5	1	14.04	3 039.41
6	3	75.33	11 543.09
8	1	49.68	5 749.71
14	4	563.85	50 820.21
15	1	201.24	30 107.93
18	1	1 420.20	35 537.04

Drainage basin 2XA

Size class	Number	Area (ha)	Perimeter (m)
1	2 385	429.30	445 680.00
2	5 636	2 910.60	2 140 051.99
3	4 730	11 435.85	4 430 095.34
4	1 457	10 225.98	2 607 106.17
5	990	13 936.14	2 765 921.35
6	352	8 519.49	1 440 660.74
7	190	6 556.05	989 820.19
8	118	5 343.57	730 463.64
9	88	4 804.65	607 676.02
10	57	3 681.72	439 986.59
11	45	3 339.63	362 284.41
12	43	3 623.22	370 659.78
13	29	2 732.67	328 692.22
14	120	16 617.06	1 530 414.10
15	47	11 658.96	1 014 371.53
16	13	4 533.03	427 609.18
17	10	4 362.75	302 545.55
18	35	41 022.54	2 147 312.92

Drainage basin 2XB

Size class	Number	Area (ha)	Perimeter (m)
1	717	129.06	137 220.00
2	2 185	1 192.68	851 915.95
3	2 403	5 778.90	2 250 865.54
4	716	5 023.89	1 318 091.83
5	504	7 196.67	1 479 630.40
6	167	4 070.43	696 586.78
7	114	3 941.91	600 695.70
8	60	2 645.82	365 276.12
9	40	2 173.41	296 559.55
10	25	1 598.76	206 679.33
11	18	1 354.95	152 570.66
12	14	1 183.32	132 476.68
13	12	1 139.22	128 058.53
14	59	8 240.76	753 710.58
15	15	3 588.66	264 206.70
16	9	3 197.70	208 206.05
17	5	2 206.44	134 494.26
18	13	12 239.37	650 161.34

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2XC

Size class	Number	Area (ha)	Perimeter (m)
1	668	120.24	130 560.00
2	1 580	807.48	590 739.36
3	1 144	2 610.09	1 045 997.57
4	257	1 811.79	468 678.50
5	179	2 507.76	501 021.67
6	65	1 553.76	255 972.45
7	30	1 052.28	156 472.64
8	16	725.31	96 779.69
9	17	912.42	101 454.20
10	7	449.64	43 180.14
11	6	437.58	43 107.35
12	7	600.21	61 778.90
13	6	571.68	50 746.18
14	12	1 596.96	172 291.99
15	13	3 243.42	251 643.73
16	2	678.06	65 555.84
17	2	851.31	57 811.06
18	6	8 009.19	335 540.36

Drainage basin 2YB

Size class	Number	Area (ha)	Perimeter (m)
1	1 903	224.55	270 000.00
2	1 829	1 185.81	418 556.45
3	1 376	3 779.20	454 730.36
4	421	3 083.82	177 040.97
5	48	653.76	123 670.73
6	30	745.20	126 110.90
7	11	381.24	46 825.07
8	10	441.45	56 745.66
9	4	217.71	35 552.87
10	3	196.56	24 068.01
11	5	388.44	36 181.99
12	1	83.61	4 886.10
13	4	3 78.54	29 004.34
14	6	8 74.08	63 987.57
15	2	4 26.24	31 748.01
16	1	3 51.72	20 537.05
18	1	5 22.54	37 493.44

Drainage basin 2XD

Size class	Number	Area (ha)	Perimeter (m)
1	1 126	202.68	215 280.00
2	2 651	1 357.02	973 570.99
3	1 542	3 492.81	1 391 870.39
4	316	2 213.46	598 694.29
5	161	2 269.80	452 641.75
6	59	1 444.32	231 297.15
7	31	1 078.47	172 421.33
8	28	1 262.34	173 947.42
9	23	1 274.13	162 067.94
10	11	716.94	89 060.28
11	6	467.10	50 886.24
12	6	519.57	49 643.81
13	7	658.71	65 550.59
14	18	2 446.38	239 096.61
15	6	1 424.70	137 002.74
16	7	2 525.13	150 982.94
17	1	402.39	109 562.96
18	2	1 216.98	58 003.32

Drainage basin 2YC

Size class	Number	Area (ha)	Perimeter (m)
1	1 149	137.34	165 660.00
2	1 106	669.50	298 211.31
3	771	2 051.91	388 976.55
4	215	1 570.51	125 051.74
5	54	777.78	156 738.24
6	14	349.74	67 521.53
7	7	246.06	34 868.03
8	5	219.96	28 174.64
9	1	55.17	5 729.12
10	1	66.06	6 036.40
11	4	3 01.05	37 898.38
13	2	1 86.75	18 912.79
14	3	4 37.40	35 609.85
15	1	2 07.90	25 907.93

Drainage basin 2YA

Size class	Number	Area (ha)	Perimeter (m)
1	5 352	633.24	757 470.00
2	3 637	1 811.28	1 158 827.48
3	1 822	4 259.01	1 223 236.46
4	353	2 585.78	389 932.06
5	125	1 732.41	329 274.11
6	59	1 465.20	224 571.85
7	32	1 118.16	163 680.15
8	10	445.41	52 315.43
9	14	779.85	90 829.41
10	11	707.13	73 767.58
11	6	446.22	42 172.94
12	5	431.37	44 777.79
13	3	282.96	24 683.08
14	21	2 833.02	268 515.12
15	3	783.45	61 665.64
16	3	1 027.98	77 760.91
18	3	1 948.59	108 101.52

Drainage basin 2YD

Size class	Number	Area (ha)	Perimeter (m)
1	2 454	291.33	352 740.00
2	1 830	882.00	665 826.82
3	934	2 079.63	866 788.08
4	187	1 319.31	372 478.38
5	111	1 568.61	342 885.53
6	44	1 057.05	206 778.99
7	23	779.22	132 927.81
8	7	309.96	41 294.05
9	12	645.84	106 664.13
10	8	513.63	53 022.63
11	1	78.66	9 296.99
12	2	178.11	15 061.25
13	2	183.69	31 097.05
14	12	1 525.50	168 977.67
15	2	508.86	38 483.80
16	1	348.30	22 480.66
18	1	817.56	48 875.31

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2YE

Size class	Number	Area (ha)	Perimeter (m)
1	1 406	162.18	196 080.00
2	1 243	790.44	326 971.92
3	1 073	2 857.50	498 734.81
4	339	2 453.59	257 209.50
5	112	1 588.95	289 197.39
6	39	973.26	132 633.85
7	25	880.20	114 530.16
8	12	526.68	58 715.89
9	11	629.10	65 072.35
10	11	717.03	72 494.26
11	8	585.36	57 815.36
12	3	243.45	22 549.19
13	5	484.56	37 801.98
14	11	1 514.70	107 850.08
15	7	1 634.13	109 901.58
16	1	378.54	16 679.48
18	10	16 356.06	403 326.76

Drainage basin 2YH

Size class	Number	Area (ha)	Perimeter (m)
1	324	47.88	54 360.00
2	563	286.07	206 819.39
3	395	930.49	352 784.76
4	106	748.46	177 027.76
5	53	768.42	141 287.34
6	22	535.68	81 359.69
7	11	379.89	53 159.70
8	7	305.64	42 241.98
9	7	391.59	37 399.56
10	5	317.34	36 979.55
11	7	529.47	50 060.28
12	6	505.17	59 559.63
13	1	96.21	11 756.99
14	5	604.71	53 155.45
15	4	963.27	53 404.48
18	4	4 647.69	189 428.47

Drainage basin 2YF

Size class	Number	Area (ha)	Perimeter (m)
1	2 711	319.86	386 820.00
2	1 929	920.32	695 878.16
3	1 096	2 441.81	1 026 123.72
4	217	1 520.17	433 587.50
5	106	1 475.28	354 147.42
6	35	839.34	160 967.36
7	8	272.70	53 862.64
8	10	455.31	63 759.13
9	4	215.46	26 417.06
10	1	61.83	11 156.99
11	6	445.95	59 975.37
12	1	84.51	18 097.64
13	1	92.70	7 994.56
14	5	591.30	74 631.15
15	1	278.46	34 080.71
18	1	5 112.36	234 871.28

Drainage basin 2YJ

Size class	Number	Area (ha)	Perimeter (m)
1	169	30.42	33 120.00
2	365	178.11	141 930.42
3	241	547.20	232 026.83
4	44	301.68	80 079.13
5	32	452.25	89 678.56
6	9	226.26	33 404.41
7	2	62.64	9 971.54
8	3	135.54	17 968.60
9	3	164.25	18 871.62
10	1	68.04	5 019.41
13	1	96.93	6 071.54
14	3	426.78	29 401.98
15	1	245.34	23 066.81
16	1	322.56	15 605.00
18	2	1 609.83	65 019.56

Drainage basin 2YG

Size class	Number	Area (ha)	Perimeter (m)
1	942	112.23	135 240.00
2	1 112	705.94	294 206.35
3	961	2 585.74	458 235.09
4	279	2 026.30	173 302.29
5	46	622.71	136 365.92
6	20	478.17	77 193.62
7	13	449.19	63 279.64
8	9	395.19	48 134.06
9	5	288.72	40 034.03
10	7	455.49	59 684.43
11	4	297.90	36 906.76
12	1	80.91	11 818.23
13	1	94.68	8 278.23
14	2	289.44	28 177.65
15	3	700.92	50 512.93
16	1	333.54	16 458.82
18	2	2 007.09	112 183.96

Drainage basin 2YK

Size class	Number	Area (ha)	Perimeter (m)
1	1 507	186.48	222 120.00
2	1 097	547.38	402 645.86
3	688	1 580.76	609 039.64
4	162	1 165.05	277 152.51
5	86	1 164.24	210 137.00
6	33	799.47	119 971.32
7	14	475.65	68 190.60
8	17	758.79	90 671.98
9	12	674.37	79 497.93
10	6	378.81	32 972.85
11	3	228.06	19 202.50
12	4	345.51	45 840.73
13	2	193.50	15 573.38
14	12	1 696.50	142 785.36
15	3	660.87	53 850.55
16	2	721.17	49 585.56
18	6	53 633.43	984 397.62

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2YL

Size class	Number	Area (ha)	Perimeter (m)
1	701	89.28	105 660.00
2	1 026	652.97	285 290.44
3	910	2 453.93	495 383.81
4	302	2 182.18	223 409.67
5	73	1 041.12	229 264.45
6	20	510.39	86 573.70
7	10	344.79	44 640.23
8	1	46.26	5 616.40
9	6	3 29.94	42 723.22
10	4	2 61.00	36 286.17
11	4	3 04.47	35 046.25
12	1	80.46	10 420.66
14	9	12 22.92	189 218.51
15	2	4 62.69	53 346.37
18	3	87 48.81	144 934.72

Drainage basin 2YO

Size class	Number	Area (ha)	Perimeter (m)
1	1 428	168.84	204 900.00
2	1 940	1 398.48	396 055.85
3	2 129	6 046.52	774 887.60
4	673	4 908.17	382 339.16
5	143	1 998.72	403 073.52
6	42	1 010.88	170 027.87
7	26	903.51	125 533.24
8	18	795.42	93 698.61
9	15	839.61	95 878.67
10	7	449.82	50 662.07
11	15	1 119.15	126 534.93
12	7	592.11	66 796.76
13	5	492.03	43 731.69
14	24	3 385.17	318 937.68
15	15	3 797.82	254 246.07
16	4	1 361.79	81 637.82
18	3	1 925.91	181 353.92

Drainage basin 2YM

Size class	Number	Area (ha)	Perimeter (m)
1	1 271	149.94	182 520.00
2	1 588	1 017.74	425 622.41
3	1 334	3 614.14	635 499.70
4	383	2 788.04	254 655.54
5	106	1 539.99	343 402.13
6	36	848.97	155 301.96
7	21	746.37	107 441.10
8	10	440.28	56 442.66
9	5	271.53	44 906.33
10	6	382.32	45 857.79
11	2	147.60	21 536.47
12	1	82.71	9 961.25
13	5	459.63	54 230.66
14	9	1 106.73	115 406.01
18	1	707.22	37 250.42

Drainage basin 2YP

Size class	Number	Area (ha)	Perimeter (m)
1	1 005	118.71	143 580.00
2	1 088	742.17	239 769.82
3	1 057	3 116.11	332 726.93
4	341	2 488.78	90 667.00
5	52	738.99	144 275.31
6	12	285.39	42 799.56
7	8	272.52	46 045.08
8	6	266.04	33 025.59
9	2	105.30	15 230.96
10	4	262.53	26 820.73
11	2	147.87	18 329.85
12	2	164.70	23 866.17
13	1	99.09	10 226.10
14	4	6 01.74	52 413.60
15	6	13 94.82	97 432.61
18	4	35 08.92	111 152.15

Drainage basin 2YN

Size class	Number	Area (ha)	Perimeter (m)
1	2 421	301.05	357 960.00
2	2 612	1 547.99	745 725.04
3	1 830	4 783.11	945 927.20
4	485	3 455.83	466 084.68
5	136	1 927.17	383 877.50
6	46	1 096.11	205 316.63
7	22	756.09	113 110.23
8	18	802.71	101 918.61
9	16	879.03	132 170.00
10	6	380.61	47 616.62
11	7	518.94	55 988.75
12	4	330.30	33 909.26
13	5	463.41	43 381.47
14	19	2 659.41	209 477.09
15	9	2 157.21	197 068.99
16	3	1 037.52	59 810.62
17	3	1 311.57	84 394.25
18	12	43 343.91	1 096 080.04

Drainage basin 2YQ

Size class	Number	Area (ha)	Perimeter (m)
1	2 149	252.36	305 220.00
2	1 354	633.60	490 699.73
3	843	1 927.71	777 094.28
4	170	1 182.60	321 570.12
5	108	1 480.32	311 849.75
6	47	1 143.90	181 638.98
7	24	826.92	114 376.77
8	16	697.41	90 366.99
9	14	762.66	95 464.70
10	10	655.38	90 099.10
11	4	297.36	26 349.78
12	5	423.99	60 413.44
13	2	186.03	15 618.82
14	22	2 845.71	309 349.16
15	11	2 690.82	261 215.21
16	3	1 075.77	78 202.72
17	4	1 765.80	86 366.30
18	8	515 047.68	6 559 474.45

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2YR

Size class	Number	Area (ha)	Perimeter (m)
1	2 523	298.98	311 800.00
2	2 315	1 430.57	662 771.17
3	2 405	6 434.73	1 420 397.20
4	811	5 872.51	758 511.18
5	231	3 282.30	665 251.67
6	105	2 584.89	420 101.19
7	56	1 963.17	290 281.10
8	35	1 578.15	220 463.20
9	27	1 481.58	191 900.75
10	16	1 041.84	125 443.61
11	18	1 340.01	145 562.43
12	9	768.06	88 830.09
13	12	1 131.21	113 936.39
14	41	5 370.84	511 689.90
15	14	3 407.76	279 016.06
16	12	4 334.04	251 550.06
17	13	6 050.97	432 387.46
18	25	51 149.34	1 419 542.50

Drainage basin 2YS

Size class	Number	Area (ha)	Perimeter (m)
1	1 321	158.76	190 980.00
2	1 472	1 007.30	344 751.42
3	1 601	4 461.84	669 805.70
4	587	4 237.93	335 730.17
5	84	1 193.13	247 942.78
6	34	861.93	133 517.01
7	21	741.60	110 185.81
8	11	489.78	68 562.64
9	7	392.67	41 718.32
10	5	333.81	36 049.93
11	5	369.18	37 237.13
13	1	95.49	8 627.94
14	14	18 34.38	173 017.03
15	2	5 18.58	38 078.89
16	3	11 02.41	72 182.68
17	4	18 05.58	125 301.68
18	10	373 35.87	855 840.01

Drainage basin 2ZA

Size class	Number	Area (ha)	Perimeter (m)
1	2 431	437.58	470 400.00
2	4 784	2 358.75	1 729 337.88
3	2 209	5 114.21	2 047 151.21
4	543	3 834.60	985 441.60
5	298	4 203.63	990 242.87
6	106	2 566.17	536 731.09
7	72	2 522.52	466 798.97
8	47	2 100.87	337 916.33
9	29	1 580.49	288 560.41
10	26	1 666.89	252 028.97
11	17	1 266.21	161 499.32
12	16	1 327.59	208 424.50
13	12	1 136.88	179 372.25
14	34	4 486.68	552 794.23
15	10	2 509.92	293 422.33
16	6	2 040.66	210 962.47

Drainage basin 2ZB

Size class	Number	Area (ha)	Perimeter (m)
1	2 390	430.20	459 360.00
2	4 817	2 354.95	1 721 716.62
3	1 916	4 162.51	1 682 395.66
4	320	2 253.18	609 282.77
5	176	2 428.02	588 634.09
6	73	1 738.08	337 285.88
7	25	824.94	141 969.93
8	13	567.18	81 038.59
9	12	649.17	106 670.87
10	7	449.91	58 999.04
11	2	158.04	22 777.65
12	11	937.53	117 699.85
13	5	461.70	77 205.32
14	8	1 003.86	107 069.01
18	2	1 023.39	86 418.97

Drainage basin 2ZC

Size class	Number	Area (ha)	Perimeter (m)
1	1 215	218.70	233 520.00
2	2 569	1 331.00	843 413.83
3	1 390	3 340.88	950 698.63
4	246	1 757.54	314 708.75
5	95	1 366.47	284 254.25
6	37	911.97	168 725.44
7	11	395.19	67 671.69
8	10	433.80	56 905.08
9	9	495.45	51 206.84
10	5	327.60	37 889.85
11	3	213.03	26 661.32
12	2	173.88	17 984.92
13	4	391.32	38 921.39
14	11	1 464.84	136 660.59
15	2	507.51	29 198.90
16	1	350.37	37 021.95
17	1	420.66	18 666.76
18	5	9 170.46	403 407.46

Drainage basin 2ZD

Size class	Number	Area (ha)	Perimeter (m)
1	1 535	276.30	294 900.00
2	3 594	1 919.98	1 131 472.40
3	1 975	4 904.33	1 160 309.03
4	516	3 732.87	485 233.89
5	138	1 863.99	430 484.87
6	50	1 233.90	237 680.74
7	25	872.64	133 107.06
8	14	611.91	88 257.23
9	15	831.24	120 537.94
10	8	518.76	77 700.94
11	9	662.31	88 873.02
12	5	414.36	64 269.27
13	7	671.22	83 257.12
14	12	1 723.86	187 660.05
15	2	431.55	45 808.59
16	1	321.39	17 444.93
17	1	473.76	35 769.77
18	1	1 765.62	53 716.48

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2ZE

Size class	Number	Area (ha)	Perimeter (m)
1	739	133.02	142 800.00
2	3 007	2 129.32	676 607.20
3	2 856	8 150.60	987 512.24
4	957	7 010.86	335 061.21
5	79	1 065.96	228 134.98
6	34	841.23	153 855.77
7	23	787.23	122 366.55
8	10	464.94	63 099.10
9	3	159.21	21 684.34
10	10	643.14	81 562.07
11	3	224.64	27 049.18
12	2	166.86	20 423.09
13	2	194.76	29 808.67
14	15	2 099.07	191 851.55
15	2	439.74	39 054.69
16	4	1 290.15	95 973.03
18	5	24 085.80	645 831.07

Drainage basin 2ZH

Size class	Number	Area (ha)	Perimeter (m)
1	1 197	215.46	232 440.00
2	2 707	1 291.23	995 719.22
3	1 267	2 699.46	1 165 941.99
4	2 021	418.40	408 863.22
5	981	388.25	309 251.94
6	30	725.40	134 676.83
7	23	789.94	147 610.21
8	7	313.02	59 373.59
9	9	487.89	65 285.74
10	5	323.64	41 214.71
11	9	672.48	99 501.54
12	2	163.26	14 835.81
13	4	381.51	38 680.15
14	12	1 720.71	184 202.61
15	7	1 734.48	140 894.94
16	1	332.37	19 209.77
17	1	480.69	26 381.90
18	3	2 478.87	156 284.76

Drainage basin 2ZF

Size class	Number	Area (ha)	Perimeter (m)
1	1 169	210.42	223 800.00
2	3 800	2 541.70	957 941.01
3	3 083	8 332.77	1 301 905.62
4	839	6 161.62	547 919.37
5	164	2 238.66	466 044.98
6	61	1 519.65	258 671.24
7	34	1 173.87	186 932.07
8	16	702.63	102 387.58
9	11	602.82	75 379.56
10	6	388.26	48 185.01
11	10	752.85	84 094.83
12	3	253.08	27 317.06
13	6	561.78	59 062.57
14	12	1 593.27	152 878.67
15	7	1 621.62	142 144.12
16	3	1 002.78	85 327.46
17	2	924.21	63 989.81
18	2	3 484.35	171 351.41

Drainage basin 2ZJ

Size class	Number	Area (ha)	Perimeter (m)
1	215	38.70	41 460.00
2	1 126	797.92	295 090.86
3	1 449	4 068.61	667 730.56
4	483	3 535.55	338 239.01
5	94	1 323.27	294 587.11
6	29	678.69	121 584.98
7	16	540.54	81 153.07
8	13	581.67	84 079.04
9	4	219.42	31 064.93
10	3	198.99	20 614.63
11	5	378.36	50 657.80
12	3	259.20	26 052.28
13	2	184.50	16 694.04
14	4	519.57	48 784.48
15	4	976.77	94 594.81
16	1	379.35	35 641.95
17	1	458.82	24 381.30
18	1	677.34	38 984.36

Drainage basin 2ZG

Size class	Number	Area (ha)	Perimeter (m)
1	774	139.32	149 280.00
2	1 897	950.74	703 669.83
3	970	2 188.67	885 050.75
4	202	1 412.26	361 432.92
5	139	1 937.07	397 320.10
6	65	1 591.29	247 370.11
7	36	1 244.88	188 381.88
8	14	629.19	90 801.53
9	10	543.33	64 168.10
10	6	379.26	42 312.27
11	4	296.01	58 280.80
12	6	497.52	47 672.36
13	4	384.12	40 873.53
14	9	1 154.43	114 821.63
15	3	700.11	41 438.37
16	1	368.82	23 112.78

Drainage basin 2ZK

Size class	Number	Area (ha)	Perimeter (m)
1	464	83.52	89 640.00
2	1 031	513.72	387 000.47
3	768	1 812.15	713 771.51
4	198	1 381.95	366 281.87
5	110	1 547.55	317 062.47
6	45	1 119.33	191 785.54
7	21	720.36	111 241.68
8	14	631.98	86 348.74
9	10	526.32	66 862.79
10	4	258.93	30 803.83
11	2	142.11	16 164.34
12	4	332.64	38 278.97
13	3	276.75	27 101.90
14	8	1 007.73	91 235.59
15	7	1 650.24	182 520.72

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 2ZL

Size class	Number	Area (ha)	Perimeter (m)
1	177	31.86	34 320.00
2	446	242.73	175 805.09
3	582	1 428.30	550 373.59
4	183	1 257.39	326 552.29
5	110	1 522.80	298 151.08
6	55	1 373.49	216 631.98
7	28	966.24	143 845.53
8	27	1 213.38	162 159.55
9	16	863.82	107 181.02
10	8	521.82	50 685.67
11	5	367.92	42 759.63
12	7	590.40	52 791.17
13	3	281.79	26 091.69
14	18	2 588.31	235 417.95
15	2	461.97	44 271.66
17	1	499.50	25 200.72

Drainage basin 3AA

Size class	Number	Area (ha)	Perimeter (m)
1	1 048	188.64	204 660.00
2	2 703	1 412.64	1 058 519.87
3	2 238	5 622.57	2 163 898.82
4	923	6 584.31	1 677 696.00
5	729	10 229.13	2 001 856.55
6	268	6 523.65	1 087 315.11
7	179	6 209.73	938 682.22
8	116	5 236.83	686 833.66
9	75	4 099.41	514 965.35
10	60	3 892.14	489 982.52
11	32	2 390.49	253 716.97
12	18	1 533.96	171 009.91
13	26	2 437.56	225 069.40
14	146	20 027.52	1 919 485.71
15	30	7 195.14	550 690.45
16	30	10 589.49	774 273.78
17	14	6 222.42	525 705.80
18	68	195 708.78	10 447 204.94

Drainage basin 2ZM

Size class	Number	Area (ha)	Perimeter (m)
1	455	81.90	88 440.00
2	1 082	527.31	400 030.74
3	708	1 600.11	651 409.25
4	170	1 201.50	308 421.60
5	142	1 983.06	384 332.28
6	52	1 308.33	191 701.93
7	36	1 259.73	188 030.37
8	15	668.88	84 011.77
9	12	649.89	81 633.61
10	7	450.09	47 545.07
11	4	292.05	25 695.81
12	3	255.96	27 578.90
13	7	665.73	62 321.41
14	22	2 727.00	249 998.51
15	4	881.91	67 652.33
16	4	1 357.11	99 729.42
17	1	466.29	33 847.46
18	2	1 509.40	84 686.00

Drainage basin 3AB

Size class	Number	Area (ha)	Perimeter (m)
1	310	55.80	61 860.00
2	585	291.96	229 599.01
3	374	903.96	379 825.72
4	181	1 315.44	357 871.36
5	131	1 873.71	339 849.95
6	68	1 694.16	268 168.24
7	25	856.44	102 991.32
8	30	1 334.70	155 640.15
9	17	939.33	83 124.56
10	9	569.43	67 609.93
11	14	1 049.31	88 983.96
12	7	602.10	58 213.01
13	10	965.16	155 174.42
14	43	5 928.75	498 678.67
15	18	4 358.16	303 192.78
16	14	4 961.61	292 482.36
17	3	1 387.89	77 629.36
18	19	34 708.41	1 369 630.83

Drainage basin 2ZN

Size class	Number	Area (ha)	Perimeter (m)
1	476	85.68	92 160.00
2	983	477.63	358 494.87
3	533	1 175.49	490 696.78
4	96	671.31	187 821.30
5	52	728.64	166 848.57
6	21	522.27	92 102.76
7	5	161.82	26 292.80
8	9	402.48	73 650.58
9	11	593.19	80 772.50
10	3	198.54	25 931.03
11	5	375.12	40 664.41
12	4	334.17	55 322.72
13	4	382.95	46 289.85
14	3	393.93	50 104.98
15	2	448.65	29 277.71
16	1	330.84	19 682.49
18	1	2 224.17	63 479.05

Drainage basin 3AC

Size class	Number	Area (ha)	Perimeter (m)
1	1 661	298.98	323 400.00
2	3 924	2 052.09	1 524 372.23
3	3 805	9 398.25	3 640 004.84
4	1 340	9 624.60	2 444 899.05
5	907	12 578.13	2 477 424.53
6	372	9 103.77	1 550 403.94
7	162	5 635.26	824 386.68
8	105	4 665.15	615 534.16
9	64	3 526.74	463 560.74
10	62	3 987.09	500 126.85
11	41	3 069.36	374 336.96
12	31	2 648.16	280 161.61
13	31	2 968.20	330 566.34
14	103	14 672.88	1 683 930.00
15	32	7 442.55	656 015.31
16	16	5 351.67	538 089.22
17	17	7 532.46	521 831.71
18	47	106 589.79	6 784 627.53

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 3AD

Size class	Number	Area (ha)	Perimeter (m)
1	275	49.50	53 880.00
2	454	213.39	171 209.16
3	204	467.19	195 885.80
4	57	397.62	106 486.19
5	38	550.17	99 109.21
6	12	296.64	55 310.96
7	15	509.76	82 689.78
8	13	580.86	79 919.49
9	8	448.11	72 476.47
10	5	321.66	62 806.18
11	2	142.29	9 536.98
12	2	165.96	13 846.69
13	3	281.61	47 111.55
14	10	1 434.96	183 268.75
15	4	867.60	42 134.05
16	1	314.64	12 014.56
18	3	7 611.75	388 942.32

Drainage basin 3BC

Size class	Number	Area (ha)	Perimeter (m)
1	244	43.92	47 640.00
2	736	400.41	291 885.36
3	754	1 828.44	712 978.49
4	284	2 031.84	533 721.50
5	187	2 601.18	518 761.90
6	83	2 042.01	321 755.39
7	33	1 130.04	162 252.42
8	42	1 881.90	249 542.78
9	27	1 480.50	159 473.08
10	12	765.45	96 545.43
11	17	1 292.67	160 728.08
12	9	765.63	76 644.05
13	8	764.46	98 487.27
14	36	5 027.40	472 890.89
15	15	3 643.83	274 968.30
16	8	3 010.59	228 991.95
17	5	2 166.48	165 639.57
18	15	43 319.70	2 584 180.99

Drainage basin 3BA

Size class	Number	Area (ha)	Perimeter (m)
1	2 977	535.86	578 520.00
2	6 986	3 563.19	2 662 392.34
3	4 950	11 701.89	4 776 034.13
4	1 274	8 951.31	2 418 935.24
5	801	11 265.84	2 386 261.16
6	307	7 432.38	1 327 473.02
7	163	5 639.94	938 732.31
8	94	4 190.13	650 118.23
9	65	3 572.64	503 515.95
10	48	3 137.13	429 203.62
11	33	2 433.96	316 925.05
12	26	2 243.79	287 029.51
13	17	1 629.54	189 538.36
14	80	11 081.79	1 290 832.27
15	24	6 036.21	606 226.21
16	13	4 522.23	453 333.46
17	13	5 628.96	478 922.79
18	27	289 291.23	7 211 112.14

Drainage basin 3BD

Size class	Number	Area (ha)	Perimeter (m)
1	257	46.26	49 620.00
2	620	318.87	236 385.78
3	662	1 694.79	642 890.78
4	254	1 805.13	445 318.80
5	216	3 030.48	559 458.51
6	94	2 281.41	335 865.16
7	70	2 403.81	341 471.81
8	33	1 446.12	190 357.29
9	36	1 981.44	236 691.52
10	18	1 178.55	117 258.75
11	20	1 498.23	164 030.35
12	20	1 677.87	160 611.09
13	6	562.05	52 633.01
14	59	8 531.73	788 105.72
15	14	3 454.74	285 564.93
16	12	4 151.79	286 761.87
17	7	3 121.83	274 044.02
18	26	67 028.85	3 731 135.28

Drainage basin 3BB

Size class	Number	Area (ha)	Perimeter (m)
1	1 825	328.50	353 220.00
2	5 266	2 802.33	2 042 911.07
3	5 206	12 687.66	4 986 608.73
4	1 728	12 324.24	3 203 003.48
5	1 123	15 925.41	3 233 687.09
6	475	11 543.58	1 970 371.82
7	257	8 942.49	1 347 114.90
8	177	7 911.72	1 126 579.54
9	130	7 088.85	960 527.96
10	93	6 017.58	750 730.48
11	72	5 358.69	617 228.55
12	39	3 314.25	385 764.32
13	49	4 641.66	549 926.00
14	214	29 267.55	3 132 000.07
15	78	18 642.15	1 844 845.18
16	30	10 316.16	873 843.02
17	25	11 098.89	923 914.36
18	71	131 262.03	10 036 327.38

Drainage basin 3BE

Size class	Number	Area (ha)	Perimeter (m)
1	97	17.46	18 600.00
2	212	108.81	82 191.01
3	105	251.46	96 132.34
4	40	285.48	72 439.56
5	25	355.32	63 132.27
6	12	303.39	44 421.34
7	5	175.50	21 021.84
8	7	316.98	31 041.30
9	4	216.36	18 757.64
10	3	193.50	15 691.61
11	2	145.44	15 388.60
12	1	84.69	7 119.41
13	1	98.46	7 641.84
14	5	605.61	35 504.41
15	3	702.36	30 464.41
16	3	987.84	43 326.24
17	1	483.39	12 849.78
18	4	10 622.79	506 292.55

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 3BF

Size class	Number	Area (ha)	Perimeter (m)
1	282	50.76	55 440.00
2	570	289.35	220 272.38
3	463	1 100.07	450 059.32
4	141	963.27	261 457.70
5	85	1 176.48	235 897.72
6	30	703.35	111 533.39
7	19	671.76	113 006.76
8	12	532.35	68 411.27
9	8	425.52	49 869.47
10	5	323.46	38 881.99
11	8	588.51	74 314.33
12	3	258.93	29 652.28
13	4	382.95	36 903.97
14	13	1 721.43	227 529.00
15	4	1 016.91	141 407.68
16	3	923.67	87 165.39
17	4	1 765.08	113 097.87
18	5	5 832.09	344 371.61

Drainage basin 3OA

Size class	Number	Area (ha)	Perimeter (m)
1	45	8.10	8 760.00
2	106	53.10	38 686.72
3	73	180.99	69 265.59
4	22	153.90	38 010.38
5	16	220.68	43 778.37
6	6	150.84	23 503.67
7	3	104.04	15 767.95
9	1	51.84	4 599.41
10	1	61.29	7 716.40
12	1	87.84	11 513.97
14	2	316.26	29 197.65
16	2	692.10	34 262.49
18	1	508.59	40 094.71

Drainage basin 3CA

Size class	Number	Area (ha)	Perimeter (m)
1	808	145.44	158 520.00
2	2 028	1 043.10	783 942.72
3	1 428	3 384.36	1 371 187.80
4	380	2 658.24	703 505.62
5	248	3 499.02	748 347.28
6	78	1 983.78	338 191.92
7	62	2 138.04	365 750.72
8	38	1 738.08	251 054.38
9	26	1 449.36	246 578.24
10	12	762.84	98 961.78
11	6	446.22	49 778.38
12	10	869.76	111 880.58
13	2	193.32	30 807.36
14	34	4 536.18	549 448.42
15	12	2 866.32	277 103.22
16	6	2 134.26	166 759.52
18	10	12 441.60	592 351.58

Drainage basin 3OC

Size class	Number	Area (ha)	Perimeter (m)
1	2 196	395.28	424 500.00
2	4 690	2 307.51	1 703 279.65
3	2 322	5 199.12	2 094 221.11
4	547	3 833.01	1 017 440.60
5	309	4 296.06	882 891.54
6	97	2 387.70	389 959.97
7	48	1 683.27	224 366.03
8	30	1 317.96	190 604.87
9	17	952.11	120 442.78
10	18	1 162.80	133 912.43
11	18	1 352.16	149 050.75
12	12	1 034.64	89 025.13
13	5	481.05	43 269.78
14	42	5 805.00	533 832.45
15	17	4 295.25	299 685.50
16	8	2 672.91	220 538.51
17	2	889.20	44 051.01
18	18	36 014.13	1 800 086.62

Drainage basin 3CB

Size class	Number	Area (ha)	Perimeter (m)
1	889	160.02	173 640.00
2	2 223	1 177.47	874 749.73
3	1 717	4 031.28	1 638 834.28
4	511	3 587.85	981 900.25
5	273	3 815.19	806 706.69
6	101	2 485.44	454 608.68
7	67	2 284.11	386 325.93
8	26	1 166.58	185 115.44
9	25	1 348.74	213 971.90
10	21	1 356.30	173 356.70
11	13	965.34	123 003.15
12	7	592.92	74 073.09
13	8	767.43	93 428.96
14	36	4 982.94	565 777.03
15	10	2 515.05	235 481.81
16	9	3 161.43	370 600.32
17	6	2 630.16	231 412.28
18	9	17 141.76	1 615 165.03

Drainage basin 3OE

Size class	Number	Area (ha)	Perimeter (m)
1	197	35.46	37 260.00
2	430	217.71	158 945.58
3	231	535.23	225 676.43
4	56	380.52	107 489.37
5	59	822.06	167 579.22
6	11	276.93	48 565.60
7	7	260.46	45 031.62
8	5	229.59	26 063.09
9	4	214.74	26 430.37
10	3	189.27	22 767.35
11	3	221.31	21 941.92
13	3	290.34	48 255.28
14	4	573.30	47 284.48
15	2	436.41	37 397.05
16	1	338.49	21 849.77
17	2	872.01	111 742.68
18	4	6 489.90	354 861.45

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 3QA

Size class	Number	Area (ha)	Perimeter (m)
1	2	0.36	360.00
2	22	10.26	7 500.00
3	4	7.02	3 469.71
4	1	7.20	2 544.85
9	1	52.02	5 461.25

Drainage basin 3QC

Size class	Number	Area (ha)	Perimeter (m)
1	54	9.72	10 080.00
2	138	75.69	51 936.42
3	65	143.01	55 862.55
4	14	96.57	23 879.51
5	9	135.18	25 632.80
6	5	114.12	16 982.50
12	1	83.97	7 353.38
14	1	134.91	7 656.40

Drainage basin 4FA

Size class	Number	Area (ha)	Perimeter (m)
1	18	3.24	3 360.00
2	55	28.53	21 956.99
3	48	116.73	44 197.65
4	19	131.13	30 504.36
5	14	170.46	33 331.61
6	7	171.63	24 150.38
7	4	139.68	12 153.39
13	1	98.10	5 926.69
14	3	397.80	29 970.36
15	1	218.70	20 355.80
18	1	7 770.51	362 330.75

Drainage basin 4FB

Size class	Number	Area (ha)	Perimeter (m)
1	105	18.90	20 520.00
2	260	139.05	102 457.69
3	313	801.63	293 147.22
4	126	874.98	188 721.52
5	99	1 351.62	221 695.67
6	30	730.17	96 276.82
7	12	412.20	55 419.64
8	11	490.50	57 116.68
9	5	262.71	25 202.50
10	7	449.01	39 262.57
11	4	303.12	35 881.98
12	4	329.31	44 281.47
13	2	194.49	15 783.74
14	8	1 134.36	94 407.79
15	3	754.65	44 274.18
16	1	372.24	24 303.21
17	2	855.99	61 792.36
18	1	550.80	33 817.10

Drainage basin 4GB

Size class	Number	Area (ha)	Perimeter (m)
1	179	32.22	34 140.00
2	520	276.12	197 106.83
3	606	1 560.96	574 278.56
4	255	1 823.13	456 897.73
5	177	2 580.66	498 913.90
6	98	2 403.27	389 993.33
7	53	1 805.13	279 657.38
8	23	1 019.25	135 321.75
9	17	927.18	121 603.39
10	10	637.92	80 689.93
11	9	680.13	75 422.73
12	6	500.94	53 320.14
13	4	381.69	43 518.32
14	27	3 558.06	365 858.92
15	5	1 256.85	117 359.14
16	5	1 756.89	125 082.98
17	1	478.80	30 617.04
18	8	43 013.07	2 210 179.51

Drainage basin 4GC

Size class	Number	Area (ha)	Perimeter (m)
1	150	27.00	28 740.00
2	479	263.79	187 314.78
3	514	1 274.58	450 028.50
4	185	1 327.50	298 714.76
5	128	1 812.06	309 231.19
6	55	1 361.34	187 779.79
7	33	1 138.41	129 613.44
8	22	976.05	119 434.04
9	18	995.76	95 906.53
10	6	387.63	28 611.70
11	8	578.97	52 131.18
12	4	335.52	31 026.25
13	6	564.66	56 823.97
14	34	4 436.91	355 200.20
15	12	2 858.22	186 301.78
16	5	1 595.43	91 922.36
17	4	1 732.59	67 349.53
18	16	41 731.38	1 617 495.26

Drainage basin 4GD

Size class	Number	Area (ha)	Perimeter (m)
1	283	50.94	55 620.00
2	808	424.80	314 814.82
3	847	2 100.24	775 823.81
4	328	2 358.00	543 657.55
5	260	3 729.24	642 475.26
6	116	2 809.89	385 530.87
7	58	2 018.52	261 502.94
8	53	2 420.73	265 794.56
9	30	1 680.39	174 458.53
10	7	457.29	57 526.90
11	18	1 366.02	129 660.64
12	16	1 350.27	123 706.62
13	8	766.62	76 750.72
14	52	7 342.74	680 136.75
15	16	4 042.35	344 302.09
16	6	2 022.84	154 375.94
17	6	2 778.66	259 615.64
18	15	37 270.08	1 959 428.53

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 4GE

Size class	Number	Area (ha)	Perimeter (m)
1	158	28.44	31 140.00
2	367	184.77	144 182.57
3	379	981.99	380 121.84
4	127	914.85	222 277.30
5	124	1 773.63	319 440.83
6	55	1 324.98	195 590.07
7	37	1 281.69	180 504.46
8	21	948.33	121 805.44
9	7	375.93	31 722.65
10	7	457.02	67 567.16
11	6	433.89	46 034.26
12	7	589.68	66 950.67
13	3	284.85	43 003.89
14	27	3 754.98	361 821.23
15	13	3 142.80	222 204.99
16	8	2 729.16	279 630.78
18	3	8 949.15	402 657.79

Drainage basin 4HA

Size class	Number	Area (ha)	Perimeter (m)
1	56	10.08	10 620.00
2	106	51.12	37 941.84
3	56	127.44	47 974.67
4	18	123.57	28 682.52
5	10	139.41	21 614.58
6	1	20.52	2 142.43
7	3	110.79	12 538.24
8	1	43.83	3 720.00
9	1	50.85	5 181.84
13	1	98.19	4 832.13
16	1	317.52	11 846.10
18	3	6 181.83	103 904.63

Drainage basin 4JA

Size class	Number	Area (ha)	Perimeter (m)
1	230	41.40	45 600.00
2	526	269.73	204 426.87
3	468	1 150.38	437 612.20
4	189	1 354.50	341 851.55
5	118	1 637.28	317 543.00
6	54	1 312.47	201 433.65
7	29	1 002.96	136 653.83
8	16	690.84	78 529.41
9	12	646.56	75 041.62
10	9	578.70	57 419.71
11	8	621.99	69 099.12
12	11	941.76	100 863.95
13	3	275.94	31 660.15
14	8	1 021.77	90 603.96
15	1	220.95	13 244.93
16	2	650.16	33 918.30
17	1	469.80	13 193.97
18	7	18 215.10	761 385.84

Drainage basin 4JB

Size class	Number	Area (ha)	Perimeter (m)
1	241	43.38	48 300.00
2	417	199.98	162 759.44
3	211	459.99	218 471.33
4	69	484.56	138 718.53
5	38	521.01	129 528.89
6	28	652.41	121 901.12
7	14	492.84	48 608.02
8	11	485.10	38 766.79
9	7	379.35	25 562.51
10	2	128.61	36 330.35
11	4	297.81	19 826.10
12	2	168.93	10 649.12
13	4	380.43	49 428.66
14	19	2 662.47	198 082.39
15	5	1 196.64	60 999.62
16	3	988.92	30 069.78
18	7	9 707.22	222 929.77

Drainage basin 4JC

Size class	Number	Area (ha)	Perimeter (m)
1	342	61.56	67 440.00
2	742	376.11	302 068.68
3	511	1 208.97	505 415.23
4	158	1 157.85	283 221.01
5	133	1 812.87	360 042.56
6	46	1 150.29	199 110.51
7	26	879.12	123 413.88
8	17	769.23	108 127.20
9	13	702.09	87 354.92
10	3	196.92	17 578.24
11	3	219.51	24 189.78
12	6	500.13	73 987.69
13	1	95.67	14 894.04
14	18	2 399.40	350 178.75
15	3	778.68	74 189.30
16	3	970.83	80 145.28
18	7	20 772.81	429 294.76

Drainage basin 4JD

Size class	Number	Area (ha)	Perimeter (m)
1	543	97.74	106 860.00
2	1 329	681.57	526 968.31
3	1 142	2 797.11	1 115 750.39
4	391	2 759.94	690 409.60
5	257	3 625.29	696 298.32
6	112	2 778.12	438 168.70
7	56	1 913.94	282 148.18
8	39	1 747.53	231 349.76
9	24	1 334.97	163 668.30
10	20	1 304.37	130 369.64
11	17	1 287.36	157 963.26
12	19	1 608.93	160 686.34
13	4	369.00	34 269.26
14	41	6 075.72	573 757.24
15	15	3 698.64	250 556.76
16	8	2 808.99	191 837.60
17	4	1 723.95	165 572.24
18	23	43 312.23	1 614 977.25

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 4JE

Size class	Number	Area (ha)	Perimeter (m)
1	119	21.42	24 000.00
2	253	120.87	100 523.12
3	154	380.34	153 463.66
4	51	358.02	85 591.33
5	40	549.45	107 929.13
6	25	618.39	81 418.68
7	9	319.59	42 646.91
8	10	448.11	58 679.20
9	4	217.62	27 692.86
10	6	382.59	48 815.36
11	1	76.32	7 659.41
12	2	172.80	13 287.36
13	2	188.28	12 488.53
14	7	963.72	80 984.63
15	4	899.01	95 070.22
16	1	324.45	20 004.33
17	1	431.28	28 371.65
18	3	4 260.87	167 099.01

Drainage basin 4LA

Size class	Number	Area (ha)	Perimeter (m)
1	464	83.52	89 220.00
2	1 083	560.07	411 602.15
3	1 033	2 565.27	983 699.87
4	370	2 596.77	672 100.70
5	242	3 387.51	665 491.55
6	99	2 398.95	410 950.42
7	52	1 811.97	284 638.39
8	35	1 551.87	220 993.99
9	24	1 337.58	177 089.03
10	11	711.27	99 917.80
11	14	1 039.23	165 943.58
12	14	1 176.48	148 010.65
13	5	470.79	56 386.18
14	32	4 402.98	500 778.82
15	12	2 831.94	219 905.39
16	7	2 378.34	227 932.73
17	1	439.20	38 223.72
18	11	13 992.03	1 147 212.48

Drainage basin 4JF

Size class	Number	Area (ha)	Perimeter (m)
1	416	74.88	80 880.00
2	902	456.57	354 459.83
3	736	1 805.67	737 329.48
4	259	1 883.70	479 704.55
5	217	2 993.76	594 489.15
6	73	1 829.88	299 522.25
7	59	2 055.60	277 344.63
8	30	1 316.25	188 376.25
9	24	1 325.34	163 009.33
10	16	1 056.69	131 844.26
11	14	1 035.09	102 232.12
12	4	344.07	41 944.99
13	7	666.45	51 333.60
14	38	5 351.31	522 495.02
15	13	3 260.16	284 186.94
16	7	2 347.11	196 500.90
17	7	3 138.75	315 511.97
18	18	38 688.66	1 638 912.61

Drainage basin 4LB

Size class	Number	Area (ha)	Perimeter (m)
1	182	32.76	35 280.00
2	443	219.42	170 598.87
3	291	713.34	266 279.30
4	113	809.37	193 622.83
5	85	1 190.79	204 391.37
6	29	689.22	94 669.91
7	15	506.79	71 154.72
8	13	591.12	70 105.09
9	5	277.29	32 844.34
10	5	318.87	52 742.51
11	4	311.40	28 274.04
13	1	98.28	14 789.12
14	9	1 338.66	125 907.02
15	2	521.82	122 239.56
16	2	649.44	63 528.65
17	3	1 458.72	120 671.75
18	3	1 836.18	289 866.56

Drainage basin 4JG

Size class	Number	Area (ha)	Perimeter (m)
1	1	0.18	180.00
2	13	6.30	5 400.00
3	4	10.17	3 614.56
4	4	25.02	9 266.11

Drainage basin 4LC

Size class	Number	Area (ha)	Perimeter (m)
1	719	129.42	139 200.00
2	1 729	902.16	674 643.00
3	1 546	3 763.80	1 465 679.86
4	511	3 682.44	915 197.30
5	340	4 892.22	927 228.85
6	146	3 569.22	622 948.89
7	70	2 422.17	367 129.81
8	37	1 697.67	237 173.10
9	34	1 859.76	226 809.93
10	24	1 551.60	192 257.70
11	17	1 290.06	151 655.79
12	14	1 163.16	151 858.89
13	12	1 139.13	142 516.96
14	38	5 249.34	533 658.50
15	9	2 170.89	173 778.85
16	9	3 038.31	246 283.85
17	1	497.88	34 032.24
18	14	20 254.05	1 195 939.73

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 4LD

Size class	Number	Area (ha)	Perimeter (m)
1	79	14.22	15 420.00
2	152	79.11	60 149.13
3	133	338.94	135 008.78
4	44	335.70	83 188.09
5	32	465.66	70 804.47
6	6	145.98	18 393.38
7	4	143.55	33 029.32
8	5	222.48	33 554.05
9	2	101.25	18 284.92
10	3	202.14	28 186.18
11	2	143.55	13 359.41
12	1	85.23	6 356.99
13	1	94.23	7 189.71
14	5	680.40	74 297.79
16	2	683.55	22 523.09
17	3	1 312.83	133 216.19
18	1	585.63	149 453.06

Drainage basin 4LE

Size class	Number	Area (ha)	Perimeter (m)
1	284	51.12	54 360.00
2	738	391.68	286 159.67
3	623	1 499.13	577 185.91
4	201	1 425.96	372 865.47
5	128	1 860.66	382 449.37
6	50	1 225.26	189 395.85
7	20	674.55	118 033.25
8	18	817.29	113 053.74
9	8	443.97	75 458.37
10	11	709.92	92 094.37
11	6	445.77	64 583.83
12	3	255.06	33 931.62
13	3	281.97	32 131.62
14	18	2 498.76	228 342.77
15	5	1 193.85	110 135.52
16	2	743.04	85 619.09
17	4	1 851.21	182 778.75
18	10	10 981.08	732 690.34

Drainage basin 4LF

Size class	Number	Area (ha)	Perimeter (m)
1	169	30.42	33 600.00
2	331	168.93	135 788.59
3	198	451.44	190 182.24
4	62	443.25	113 133.66
5	37	544.77	105 182.73
6	15	365.40	61 414.11
7	10	335.16	34 137.71
8	4	172.17	14 926.70
9	6	335.34	46 650.36
10	6	400.05	61 940.80
11	3	225.54	29 310.57
12	6	517.23	34 552.21
13	1	97.29	7 356.40
14	8	1 055.16	147 947.92
15	2	458.82	19 735.22
16	2	655.11	23 766.76
17	1	414.45	13 976.99
18	2	4 360.59	109 749.40

Drainage basin 4LG

Size class	Number	Area (ha)	Perimeter (m)
1	74	13.32	14 220.00
2	166	81.18	64 211.58
3	109	267.03	107 945.28
4	18	121.05	28 000.67
5	21	310.77	50 282.00
6	8	192.15	24 807.35
7	5	173.52	17 774.04
8	5	213.57	21 131.03
9	4	221.49	20 838.30
10	2	128.79	9 689.12
11	1	74.07	14 295.81
12	2	168.84	38 842.02
13	1	93.69	4 874.56
14	3	397.26	23 396.47
15	2	548.73	19 034.04
16	2	775.98	21 251.03
17	1	429.21	20 740.13
18	9	33 976.62	2 414 084.35

Drainage basin 4LH

Size class	Number	Area (ha)	Perimeter (m)
1	23	4.14	432.00
2	72	37.26	27 836.99
3	85	220.05	81 426.30
4	23	161.37	41 609.87
5	18	247.86	45 107.42
6	3	72.00	12 584.92
7	6	200.43	33 767.44
8	3	136.08	17 870.96
9	3	161.64	27 977.05
10	2	133.11	17 165.51
11	1	72.54	9 675.81
12	1	83.07	12 368.53
14	3	377.82	37 882.56
15	1	215.19	16 654.12

Drainage basin 4LJ

Size class	Number	Area (ha)	Perimeter (m)
1	59	10.62	11 700.00
2	75	36.27	28 419.41
3	49	112.05	47 375.90
4	10	79.83	20 180.09
5	1	16.65	2 619.41
6	4	95.49	10 021.25
10	1	60.21	11 835.81
13	2	189.27	15 715.22
14	2	280.98	44 487.02
17	1	476.28	94 900.95
18	1	747.81	97 007.79

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 4LK

Size class	Number	Area (ha)	Perimeter (m)
1	419	75.42	82 800.00
2	674	323.82	274 991.10
3	266	611.46	274 910.46
4	80	568.89	158 530.96
5	44	587.43	114 667.71
6	24	582.12	81 782.21
7	16	540.54	97 345.80
8	5	228.15	29 384.41
9	3	158.31	20 793.39
10	4	260.37	20 818.23
11	4	306.54	26 766.76
12	1	89.91	10 777.65
13	1	94.59	8 663.09
14	9	1 402.20	81 937.87
15	6	1 450.26	116 784.51
16	3	974.34	34 993.52
17	4	1 792.62	108 685.21
18	12	69 221.52	2 354 858.71

Drainage basin 4MA

Size class	Number	Area (ha)	Perimeter (m)
1	519	93.42	101 460.00
2	957	462.51	369 706.27
3	400	925.02	401 153.57
4	100	684.27	189 761.71
5	51	743.58	148 338.02
6	32	797.67	132 818.61
7	20	691.02	98 244.05
8	11	494.19	69 880.14
9	10	542.43	55 077.72
10	3	191.97	21 453.39
11	5	374.58	34 799.49
12	5	415.08	67 054.09
13	5	471.60	33 931.61
14	14	1 883.25	137 413.75
15	6	1 297.53	76 258.46
16	3	1 015.47	53 464.99
17	1	406.08	19 163.09
18	8	109 484.46	2 586 295.64

Drainage basin 4LL

Size class	Number	Area (ha)	Perimeter (m)
1	323	58.14	63 660.00
2	608	295.11	239 421.42
3	271	626.49	271 509.86
4	76	558.81	149 584.02
5	52	737.55	154 371.89
6	15	370.89	45 165.65
7	15	510.75	61 246.90
8	8	355.86	35 172.28
9	2	107.64	8 471.55
10	2	130.41	14 317.65
11	4	297.81	21 317.06
12	5	420.39	28 989.78
13	1	95.58	26 635.93
14	9	1 330.74	82 814.78
15	1	225.18	14 743.68
17	1	464.22	19 985.51
18	6	69 187.77	1 471 553.66

Drainage basin 4MB

Size class	Number	Area (ha)	Perimeter (m)
1	213	38.34	40 980.00
2	414	203.13	152 035.28
3	254	597.51	224 145.28
4	90	653.58	162 050.71
5	61	878.85	150 570.12
6	25	618.12	87 402.64
7	16	564.57	67 149.25
8	6	259.47	31 944.34
9	3	164.79	15 361.25
10	4	260.37	25 919.48
11	1	78.75	5 484.85
12	4	353.52	35 092.2
13	2	192.15	14 813.97
14	10	1 359.36	94 801.47
18	3	3 330.81	267 601.23

Drainage basin 4LM

Size class	Number	Area (ha)	Perimeter (m)
1	75	13.50	14 760.00
2	96	47.97	38 224.27
3	52	124.29	55 467.38
4	20	160.02	37 487.43
5	17	218.34	45 168.69
6	5	129.51	19 526.11
7	3	112.14	11 853.39
8	2	90.27	11 870.95
9	2	116.19	11 190.36
10	2	129.15	8 913.38
11	1	77.22	7 341.84
13	2	189.72	11 563.68
14	5	801.54	48 271.83
16	1	355.23	71 945.16
18	7	19 121.67	747 540.74

Drainage basin 4MC

Size class	Number	Area (ha)	Perimeter (m)
1	171	30.78	33 360.00
2	337	165.33	127 564.29
3	204	493.56	195 216.72
4	71	499.05	127 592.39
5	46	652.41	129 698.43
6	32	778.14	154 552.95
7	10	350.10	46 129.19
8	6	263.70	41 184.34
9	6	322.47	53 612.88
10	6	383.40	34 212.80
11	2	149.13	17 541.84
12	2	171.09	42 403.67
13	1	90.72	20 020.66
14	7	1 018.53	118 531.08
16	1	385.20	13 529.12
18	2	1 646.73	246 282.50

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 4MD

Size class	Number	Area (ha)	Perimeter (m)
1	253	45.54	48 780.00
2	619	311.31	234 984.42
3	450	1 136.25	444 287.51
4	149	1 037.70	263 332.75
5	88	1 266.93	254 423.58
6	39	980.64	181 219.26
7	24	837.54	111 983.31
8	5	228.51	27 977.06
9	9	466.20	56 722.57
10	7	453.24	51 984.34
11	2	158.40	17 676.40
12	1	85.05	5 139.41
13	1	90.99	11 404.26
14	11	1 743.84	166 919.87
15	2	469.98	25 537.65
18	3	15 430.59	428 899.69

Drainage basin 4ME

Size class	Number	Area (ha)	Perimeter (m)
1	617	111.06	120 840.00
2	1 393	708.75	537 328.73
3	1 059	2 524.05	1 047 233.71
4	345	2 436.75	593 652.67
5	231	3 281.31	590 425.59
6	93	2 291.85	373 798.19
7	32	1 152.72	151 919.74
8	29	1 294.56	145 079.72
9	18	993.78	137 779.02
10	19	1 224.63	138 169.43
11	11	824.13	63 624.34
12	11	949.14	90 328.10
13	3	280.62	19 426.69
14	28	4 003.47	338 641.36
15	8	1 980.36	119 982.12
16	3	1 027.98	83 792.85
18	10	15 499.44	1 285 647.66

Drainage basin 4MF

Size class	Number	Area (ha)	Perimeter (m)
1	1 056	190.08	207 120.00
2	2 100	1 061.82	827 202.82
3	1 382	3 307.68	1 345 874.82
4	486	3 438.90	911 962.92
5	346	4 864.14	972 681.90
6	112	2 768.40	387 775.24
7	64	2 291.58	322 278.28
8	30	1 332.54	126 100.82
9	44	2 370.60	283 604.20
10	30	1 948.14	179 596.76
11	16	1 213.20	104 211.18
12	8	704.16	61 471.60
13	6	553.32	56 551.62
14	42	5 043.96	361 564.42
15	8	1 695.96	133 071.88
18	10	11 436.48	702 522.72

Drainage basin 4NA

Size class	Number	Area (ha)	Perimeter (m)
1	78	14.04	15 060.00
2	131	68.40	52 161.86
3	68	165.96	68 686.22
4	15	104.67	23 698.25
5	11	163.35	30 312.81
6	9	212.04	36 438.30
7	4	136.98	19 984.27
8	2	83.61	8 750.95
9	3	161.46	16 148.53
10	3	192.42	19 410.37
12	1	81.36	5 552.13
14	1	161.37	13 719.41
15	2	489.51	57 608.53
16	1	366.57	12 920.07
18	3	11 477.43	361 968.14

Drainage basin 4NB

Size class	Number	Area (ha)	Perimeter (m)
1	527	94.86	105 660.00
2	975	475.56	390 295.29
3	598	1 503.81	639 878.61
4	200	1 499.40	376 789.76
5	150	2 152.71	418 995.23
6	77	1 897.92	271 466.62
7	63	2 206.26	299 922.36
8	31	1 394.73	159 851.25
9	33	1 815.66	246 843.09
10	17	1 088.46	95 059.55
11	7	522.81	45 160.15
12	12	1 032.30	70 424.42
13	10	952.02	69 389.86
14	36	4 858.20	300 840.66
15	19	4 555.53	219 483.45
16	4	1 328.49	136 647.82
17	2	995.04	35 903.08
18	7	9 324.45	637 427.22

Drainage basin 4NC

Size class	Number	Area (ha)	Perimeter (m)
1	2 509	451.62	488 580.00
2	4 548	2 177.55	1 689 776.53
3	2 028	4 565.97	1 883 555.81
4	500	3 591.54	908 538.00
5	363	5 012.64	956 129.68
6	161	3 961.17	552 186.49
7	82	2 851.02	319 261.17
8	47	2 094.93	213 045.19
9	60	3 330.18	296 421.07
10	26	1 675.26	137 166.28
11	17	1 298.88	95 335.47
12	18	1 522.71	126 917.81
13	20	1 903.68	135 262.77
14	76	10 847.25	674 460.22
15	25	6 072.93	301 649.99
16	12	4 142.52	145 997.27
17	2	931.77	49 784.91
18	16	58 511.61	1 704 708.94

Notes: See Fisheries and Environment Canada (1977) for location of drainage basins. See Table 8 for area interval of each size class.

Drainage basin 5PA

Size class	Number	Area (ha)	Perimeter (m)
1	3	0.54	600.00
2	7	3.69	2 640.00
3	7	15.21	5 852.15
4	1	5.85	1 482.43
5	1	11.52	3 176.99
6	1	20.43	3 127.28

Drainage basin 5PB

Size class	Number	Area (ha)	Perimeter (m)
2	1	0.72	540.00
3	1	2.25	769.71
4	1	7.56	1 274.56
7	1	32.49	5 354.56
8	1	43.74	4 196.99

Appendix C

Surface Water Counts and Measures Statistics

Table C.1. Ontario

Size class*	Number	Area (ha)	Perimeter (m)
1	44 368	7 985.52	8 588 580.00
2	101 410	51 695.64	39 198 352.48
3	75 744	183 110.80	72 931 012.45
4	25 362	180 690.30	46 315 035.24
5	18 460	261 836.80	52 062 212.46
6	7 902	193 585.70	32 228 235.27
7	4 173	144 440.90	21 623 280.14
8	2 549	113 975.90	15 687 747.84
9	1 737	94 895.82	12 258 872.02
10	1 092	70 679.97	8 849 033.00
11	798	59 820.75	7 169 098.89
12	615	52 032.60	6 078 059.73
13	419	39 732.75	4 311 867.02
14	1 782	245 796.60	24 302 597.86
15	560	135 608.70	11 624 292.37
16	257	88 132.14	7 268 426.02
17	172	77 257.44	6 188 098.70
18	766	2 455 825.00	93 891 380.85
Total	288 166	4 457 103.33	470 576 182.34

*See Table 8 for area interval of each size class.

Table C.2. Quebec

Size class*	Number	Area (ha)	Perimeter (m)
1	65 926	11 866.69	14 851 620.00
2	154 380	79 875.81	67 766 331.57
3	123 008	298 726.10	129 676 689.40
4	38 075	270 050.90	75 045 545.63
5	24 199	339 426.50	747 954 26.95
6	9 257	225 244.60	41 509 024.54
7	4 946	170 762.10	28 015 843.10
8	2 968	132 494.90	19 788 838.70
9	2 086	114 027.40	16 182 921.07
10	1 439	93 113.28	12 494 836.23
11	1 054	78 825.15	10 069 557.06
12	818	69 327.00	8 669 685.57
13	665	62 733.60	7 809 948.74
14	3 014	416 636.50	45 772 147.77
15	953	231 748.00	21 442 664.71
16	542	187 543.50	16 035 018.86
17	286	126 986.60	10 445 211.46
18	1 045	3 150 900.00	144 283 715.80
Total	434 661	6 060 288.63	744 655 027.16

*See Table 8 for area interval of each size class.

Table C.3. Newfoundland

Size class*	Number	Area (ha)	Perimeter (m)
1	23 428	4 217.04	4 513 350.00
2	59 949	33 844.65	18 576 860.06
3	41 172	104 929.40	25 417 345.54
4	11 030	79 519.74	10 871 089.16
5	3 401	47 603.52	10 057 668.94
6	1 305	31 941.63	5 514 594.71
7	689	23 858.82	3 698 310.71
8	414	18 431.91	2 540 144.83
9	316	17 326.62	2 327 069.68
10	210	13 575.06	1 649 511.22
11	179	13 346.82	1 560 775.81
12	120	10 101.42	1 235 439.09
13	116	10 992.42	1 206 606.90
14	390	52 303.59	5 156 080.71
15	138	33 203.61	28 133 05.81
16	58	20 169.18	1 406 597.63
17	32	14 657.85	956 687.41
18	105	647 933.00	11 168 220.05
Total	143 052	1 177 956.28	110 669 658.26

*See Table 8 for area interval of each size class.

Table C.4. Nova Scotia

Size class*	Number	Area (ha)	Perimeter (m)
1	2 611	469.98	508 860.00
2	4 668	2 272.59	1 799 261.44
3	2 789	6 791.67	2 848 976.70
4	906	6 479.55	1 766 176.88
5	742	10 570.41	2 129 549.25
6	393	9 719.46	1 550 878.01
7	228	7 865.46	1 185 306.23
8	141	6 265.26	831 175.02
9	107	5 900.40	714 536.26
10	75	4 841.73	583 894.73
11	78	5 816.88	666 092.21
12	53	4 463.01	521 048.08
13	43	4 084.29	436 768.98
14	177	23 927.85	2 519 544.85
15	58	14 051.61	1 318 607.83
16	27	9 143.64	739 210.64
17	8	3 439.62	257 830.30
18	33	159 371.10	2 485 510.07
Total	13 137	285 474.51	22 863 227.48

*See Table 8 for area interval of each size class.

Table C.5. New Brunswick

Size class*	Number	Area (ha)	Perimeter (m)
1	2 949	530.82	579 060.00
2	5 080	2 417.40	2 017 959.34
3	2 122	4 764.87	2 325 394.54
4	466	3 299.76	1 022 585.87
5	272	3 793.41	880 302.76
6	125	3 073.95	594 442.08
7	63	2 169.00	385 631.64
8	34	1 506.78	237 675.76
9	36	1 980.09	280 290.21
10	23	1 512.36	174 140.02
11	13	970.65	119 448.15
12	16	1 341.54	162 601.69
13	11	1 034.82	113 295.51
14	51	6 695.19	742 869.76
15	17	4 238.19	341 510.07
16	16	5 880.6	683 040.69
17	5	2 137.95	158 349.03
18	36	147 895.80	5 323 272.45
Total	11 335	195 243.18	16 141 869.57

*See Table 8 for area interval of each size class.

Table C.6. Prince Edward Island

Size class*	Number	Area (ha)	Perimeter (m)
1	257	46.26	49 320.00
2	533	256.86	204 949.27
3	225	501.57	233 429.69
4	40	290.97	87 687.57
5	29	401.13	85 131.20
6	6	158.85	23 412.80
7	3	100.62	16 938.82
8	4	182.25	24 870.38
9	1	59.4	8 382.43
10			
11			
12	1	82.17	6 315.81
13			
14	1	107.55	12 750.37
15			
16			
17			
18			
Total	1 100	2 187.63	753 188.34

*See Table 8 for area interval of each size class.

Number (x1000)

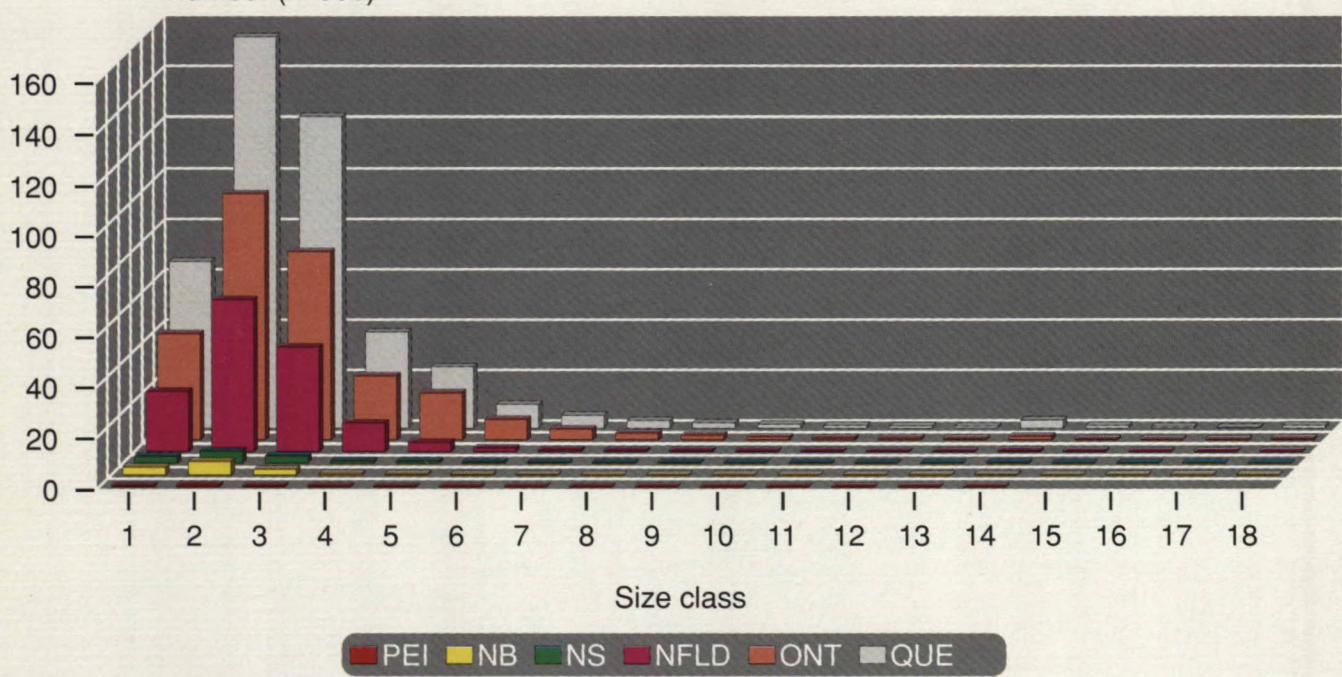


Figure C.1. Surface water frequency distribution by province.

Hectares (x1000)

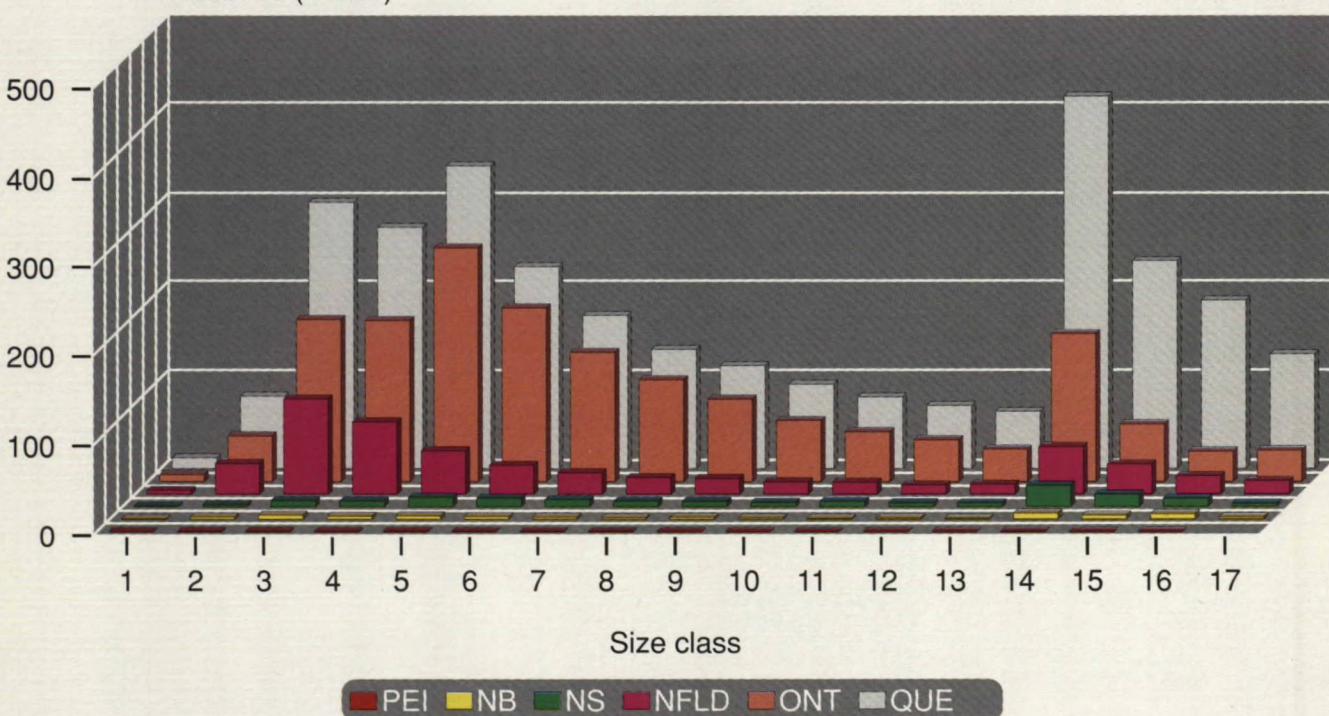


Figure C.2. Surface water area distribution by province.

Appendix D

Surface Water at Risk Statistics

Table D.1. Ontario

Size class [†]	High*			Moderate*			Low*			Organic		
	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)
1	4 996	899.28	973 560.00	7 879	1 418.22	1 522 020.00	27 482	4 946.58	5 308 380.00	1 605	288.90	312 600.00
2	10 030	4 918.59	3 923 278.15	18 052	9 187.11	6 964 846.49	66 274	34 134.84	25 583 491.46	3 198	1 592.73	1 226 472.80
3	5 470	12 515.76	5 480 359.71	13 319	32 248.62	12 804 434.13	53 781	131 184.81	51 586 698.30	1 847	4 360.05	1 762 869.97
4	1 316	9 257.85	2 552 050.79	4 530	32 417.37	8 228 428.40	18 698	133 204.41	34 027 670.90	589	4 183.65	1 010 510.62
5	839	11 850.21	2 371 474.68	3 271	46 514.70	9 140 560.84	13 823	196 260.30	39 164 381.09	432	6 035.49	1 149 523.14
6	354	8 737.29	1 459 393.78	1 474	36 201.06	5 921 076.05	5 882	143 912.79	24 205 210.09	174	4 314.78	606 837.64
7	172	5 942.25	845 435.71	785	27 154.98	4 053 908.07	3 088	106 771.59	16 117 084.32	95	3 359.43	432 231.88
8	134	5 905.44	787 579.23	438	19 602.90	2 693 902.42	1 901	85 021.29	11 880 945.59	43	1 936.62	207 014.00
9	69	3 715.38	524 391.65	331	18 014.22	2 271 726.89	1 208	65 988.09	8 659 334.16	50	2 762.64	295 727.88
10	60	3 905.10	507 489.78	202	13 019.22	1 613 813.90	741	47 940.03	6 180 843.76	31	1 998.00	187 159.79
11	34	2 529.90	313 536.91	140	10 459.98	1 189 561.49	533	4 0021.20	4 929 161.89	20	1 498.77	124 818.52
12	33	2 823.75	300 583.52	104	8 754.48	1 017 233.00	387	32 698.53	3 932 126.40	17	1 455.48	117 169.94
13	26	2 428.38	221 755.37	81	7 676.10	861 196.42	253	24 005.34	2 645 576.23	13	1 236.06	103 392.49
14	90	12 218.58	1 252 115.54	269	36 436.41	3 703 419.70	816	109 865.61	11 522 763.53	44	5 639.58	461 123.81
15	24	6 030.99	539 567.37	54	13 081.95	1 257 234.47	176	42 310.53	3 952 902.12	6	1 349.19	81 065.71
16	12	4 092.12	474 628.99	21	7 169.31	727 756.00	64	21 951.45	2 108 506.23			
17	13	5 833.98	561 928.91	11	4 884.93	424 410.01	52	23 227.92	2 273 306.54	1	497.52	17 951.54
18	64	327 585.24	9 632 063.33	82	363 523.41	18 900 928.22	237	467 236.62	30 106 387.65	9	34 282.89	2 358 174.73
Total	23 736	431 190.09	32 721 193.42	51 043	687 764.97	83 296 456.50	195 396	1 710 681.93	284 184 770.26	8 174	76 791.78	10 454 644.46

*Potential of soils and bedrock to reduce acidity.

[†]See Table 8 for area interval of each size class.

Table D.2. Quebec

Size class [†]	High [*]			Moderate [*]			Low [*]			Organic		
	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)
1	3 925	706.50	768 540.00	10 839	1 951.02	21 004 80.00	48 865	8 795.70	11 535 420.00	2 297	413.46	447 180.00
2	6 823	3 240.81	2 644 074.33	24 029	12 167.83	9 100 721.53	119 312	62 453.14	54 447 889.64	4 216	2 014.02	1 573 646.07
3	2 498	5 453.73	2 629 287.45	15 067	34 772.68	14 394 919.53	103 592	254 256.01	110 899 518.01	1 851	4 243.68	1 752 964.45
4	518	3 648.24	1 112 502.50	3 465	24 406.52	6 713 920.74	33 599	238 516.49	66 314 855.03	493	3 479.67	904 267.36
5	285	3 997.08	918 981.42	2 119	29 734.29	6 357 789.44	21 441	300 717.00	66 567 706.06	354	4 978.17	950 950.03
6	113	2 730.24	559 901.72	743	17 968.95	3 208 708.58	8 273	201 373.29	37 220 452.48	128	3 172.14	519 961.76
7	65	2 243.07	390 738.89	373	12 848.58	2 021 967.90	4 430	152 993.97	25 213 042.85	78	2 676.51	390 093.46
8	38	1 685.07	289 772.24	197	8 728.65	1 307 390.85	2 697	120 496.41	17 953 331.33	36	1 584.81	238 344.28
9	44	2 374.92	374 054.03	135	7 362.27	1 052 613.90	1 858	101 630.97	14 451 430.21	49	2 659.23	304 822.93
10	17	1 098.63	154 662.34	113	7 327.53	927 826.70	1 285	83 160.63	11 243 181.87	24	1 526.49	169 165.32
11	17	1 285.74	161 479.43	77	5 764.59	732 742.69	940	70 286.85	9 034 057.36	20	1 487.97	141 277.58
12	5	341.28	41 165.00	63	5 369.67	651 607.42	732	62 093.52	7 814 300.97	18	1 522.53	162 612.18
13	17	1 248.48	163 572.85	43	4 088.25	565 044.71	593	56 251.17	6 896 988.23	12	1 145.70	184 342.95
14	64	8 382.69	941 811.62	199	27 007.65	3 156 685.38	2 687	372 315.78	40 797 119.47	64	8 930.34	876 531.30
15	29	7 700.04	730 809.94	39	9 259.83	899 204.70	861	209 116.08	19 371 472.24	24	5 672.07	441 177.83
16	16	5 526.63	589 638.39	30	1 0115.19	875 265.75	478	165 569.67	14 224 940.67	18	6 332.04	345 174.05
17	6	2 672.91	237 666.00	18	7 992.00	772 153.31	255	113 085.99	9 225 096.62	7	3 235.68	210 295.53
18	50	301 567.23	10 014 074.62	45	228 695.04	6 026 045.89	921	2 566 048.23	124 929 188.80	29	54 589.68	3 314 406.44
Total	14 530	355 903.29	22 722 732.77	57 594	455 560.54	60 865 089.02	352 819	5 139 160.90	648 139 991.84	9 718	109 664.19	12 927 213.52

^{*}Potential of soils and bedrock to reduce acidity.[†]See Table 8 for area interval of each size class.

Table D.3 Newfoundland

Size class [†]	High [*]			Moderate [*]			Low [*]			Organic		
	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)
1	3 018	543.24	573 270.00	7 299	1 313.82	1 403 700.00	11 917	2 145.06	2 303 400.00	1 194	214.92	232 980.00
2	7 274	3 888.63	2 271 390.51	16 128	8 211.47	5 710 354.56	34 286	20 668.13	9 749 522.13	2 261	1 076.42	845 592.86
3	4 395	10 741.57	2 823 341.37	9 127	21 393.82	7 593 378.90	26 717	70 699.88	14 045 780.91	933	2 094.16	954 844.36
4	1 051	7 647.36	1 104 942.26	2 108	14 811.47	3 391 197.68	7 671	55 656.10	5 945 811.30	200	1 404.81	429 137.92
5	364	5 119.29	969 766.43	1 091	15 241.50	3 211 395.21	1 804	25 232.04	5 397 938.00	142	2 010.69	478 569.30
6	156	3 854.61	610 676.42	425	10 468.17	1 776 267.01	672	16 357.41	2 871 144.18	52	1 261.44	256 507.10
7	74	2 561.04	360 019.34	225	7 765.20	1 224 536.89	361	12 529.89	1 915 473.97	29	1 002.69	198 280.51
8	33	1 454.85	182 780.22	154	6 897.96	994 110.31	208	9 210.69	1 225 670.63	19	868.41	137 583.67
9	34	1 879.92	231 242.13	104	5 639.49	779 166.58	167	9 203.31	1 202 597.29	11	603.90	114 063.68
10	26	1 680.12	178 106.23	56	3 630.33	424 476.92	114	7 375.05	896 513.97	14	889.56	150 414.10
11	18	1 365.39	123 973.97	46	3 424.32	402 121.52	107	7 966.62	954 059.43	8	590.49	80 620.89
12	18	1 526.94	165 634.03	50	4 210.02	487 615.43	45	3 774.96	464 964.83	7	589.50	117 224.80
13	8	759.24	62 471.76	40	3 792.33	432 832.15	62	5 875.74	611 562.50	6	565.11	99 740.49
14	49	6 625.35	569 008.72	104	13 986.90	1 362 986.63	223	29 903.85	2 984 444.19	14	1 787.49	239 641.17
15	15	3 591.72	269 972.03	39	9 122.49	759 406.55	80	19 502.82	1 620 439.89	4	986.58	163 487.34
16	5	1 702.26	113 902.96	11	3 857.13	298 625.71	40	13 981.68	900 247.99	2	628.11	93 820.97
17				5	2 277.81	138 879.41	27	12 380.04	817 808.00			
18	17	27 070.82	782 066.30	10	13 086.54	470 824.75	78	607 775.61	9 915 329.00			
Total	16 555	82 012.35	11 392 564.68	37 022	149 130.77	30 861 876.21	84 579	930 238.88	63 822 708.21	4 896	16 574.28	4 592 509.16

*Potential of soils and bedrock to reduce acidity.

[†]See Table 8 for area interval of each size class.

Table D.4. Nova Scotia

Size class*	High†			Moderate†			Low†		
	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)
1	502	90.36	98 940.00	825	148.50	160 440.00	1 284	231.12	249 480.00
2	814	397.26	323 714.92	1504	729.63	572 824.65	2 350	1 145.70	902 721.87
3	329	683.64	309 539.72	844	2 127.78	865 141.03	1 616	3 980.25	1 674 295.95
4	68	478.89	126 302.75	256	1 810.17	486 284.48	582	4 190.49	1 153 589.65
5	43	613.89	118 882.29	182	2 575.89	506 744.84	517	7 380.63	1 503 922.12
6	19	477.00	70 374.71	90	2 239.83	342 928.24	284	7 002.63	1 137 575.06
7	10	355.86	51 509.87	49	1 679.31	231 590.37	169	5 830.29	902 205.99
8	7	308.34	34 196.48	35	1 559.52	193 991.49	99	4 397.40	602 987.05
9	1	56.88	6 476.99	20	1 117.17	134 350.00	86	4 726.35	573 709.27
10	1	63.90	5 700.00	10	647.64	64 320.22	64	4 130.19	513 874.51
11	2	146.52	16 321.25	13	961.20	90 260.29	63	4 709.16	559 510.67
12	3	249.03	26 423.09	11	917.91	116 796.10	39	3 296.07	377 828.89
13	2	183.60	11 876.99	3	282.69	39 508.59	38	3 618.00	385 383.40
14	2	338.67	33 197.78	28	3 634.83	361 032.09	147	19 954.35	2 125 314.98
15	1	245.16	22 678.23	9	2 146.59	184 282.21	48	11 659.86	1 111 647.39
16				3	990.45	79 531.78	24	8 153.19	659 678.86
17				2	852.75	58 995.27	6	2 586.87	198 835.03
18				10	123 937.50	511 942.67	23	35 433.63	1 973 567.40
Total	1 804	4 689.00	1 256 135.07	3 894	148 359.36	5 000 964.32	7 439	132 426.18	16 606 128.09

*Potential of soils and bedrock to reduce acidity.

†See Table 8 for area interval of each size class.

Table D.5. New Brunswick

Size class [†]	High*			Moderate*			Low*		
	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)
1	339	61.02	67 320.00	1 270	228.60	248 760.00	1 340	241.20	262 980.00
2	589	273.33	231 020.14	2 179	1 066.68	887 609.08	2 312	1 077.39	899 330.12
3	191	406.53	201 322.34	915	2 036.25	1 027 903.33	1 016	2 322.09	1 096 168.87
4	42	310.59	101 459.72	184	1 267.92	407 936.14	240	1 721.25	513 190.01
5	20	276.57	62 572.95	110	1 555.56	377 098.67	142	1 961.28	440 631.14
6	6	134.82	26 484.33	47	1 156.05	219 498.23	72	1 783.08	348 459.52
7	5	175.68	25 508.02	27	926.55	172 377.42	31	1 066.77	187 746.20
8	2	96.21	19 859.49	17	751.77	114 817.15	15	658.80	102 999.12
9	5	280.17	28 675.95	16	876.33	85 327.52	15	823.59	166 286.74
10				13	859.77	94 431.18	10	652.59	79 708.84
11				5	373.05	34 562.50	8	597.60	84 885.65
12	1	83.70	6 159.41	6	506.70	74 706.25	9	751.14	81 736.03
13				8	753.03	70 457.80	3	281.79	42 837.71
14	5	642.60	85 094.98	19	2 435.67	221 776.40	27	3 616.92	435 998.38
15	1	261.72	35 944.41	5	1 199.34	73 049.84	11	2 777.13	232 515.82
16				8	3 007.08	277 217.95	8	2 873.52	405 822.74
17				3	1 313.91	92 424.66	2	824.04	65 924.37
18				22	108 370.71	3 424 143.71	14	39 525.12	1 899 128.74
Total	1 206	3 002.94	891 421.74	4 854	128 684.97	7 904 097.83	5 275	63 555.30	7 346 350.00

*Potential of soils and bedrock to reduce acidity.

[†]See Table 8 for area interval of each size class.

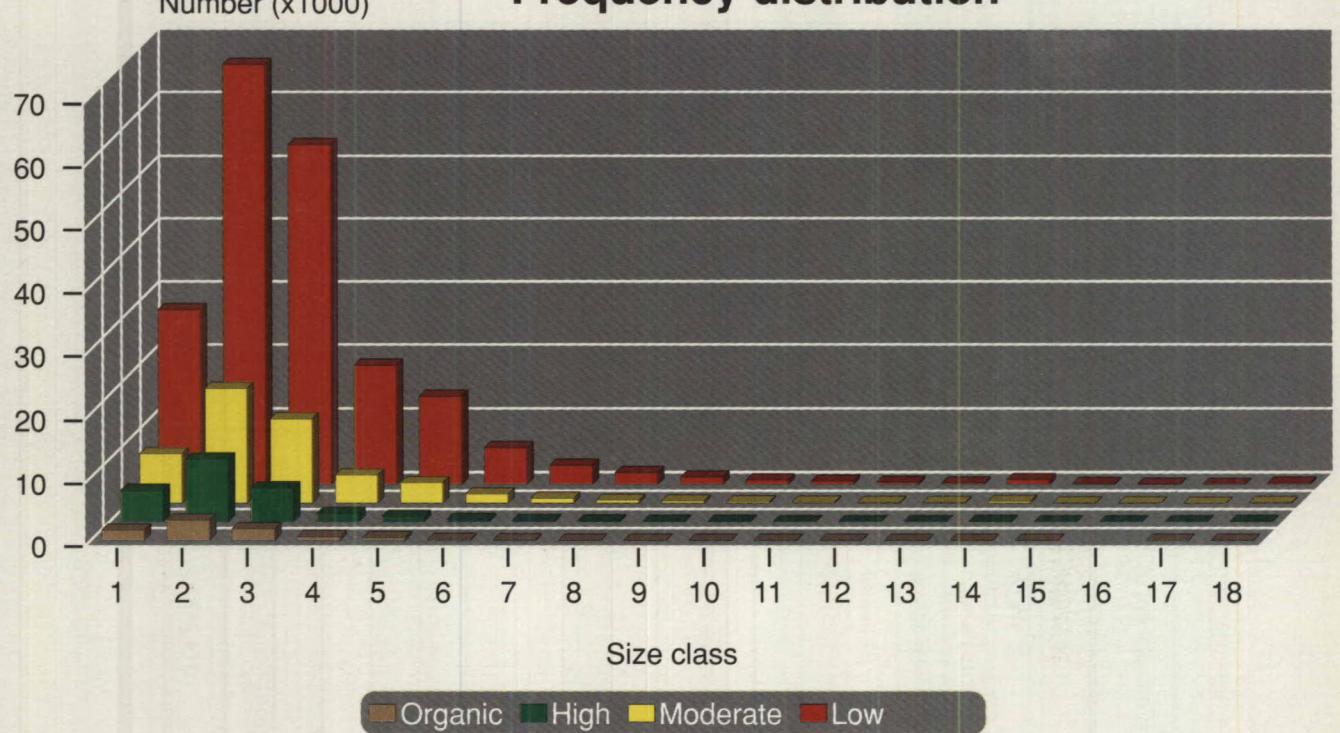
Table D.6. Prince Edward Island

Size class [†]	High			Moderate			Low		
	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)	Number	Area (ha)	Perimeter (m)
1				137	24.66	26 220.00	120	21.60	23 100.00
2				263	124.56	103 378.27	270	132.30	101 571.00
3				104	221.04	109 618.52	121	280.53	123 811.17
4				22	156.24	50 695.96	18	134.73	36 991.61
5				10	132.48	24 356.48	19	268.65	60 774.72
6							6	158.85	23 412.80
7							3	100.62	16 938.82
8							4	182.25	24 870.38
9							1	59.40	8 382.43
10									
11									
12							1	82.17	6 315.81
13									
14							1	107.55	12 750.37
15									
16									
17									
18									
Total				536	658.98	314 269.23	564	1 528.65	438 919.11

^{*}Potential of soils and bedrock to reduce acidity.

[†]See Table 8 for area interval of each size class.

Frequency distribution



Area distribution

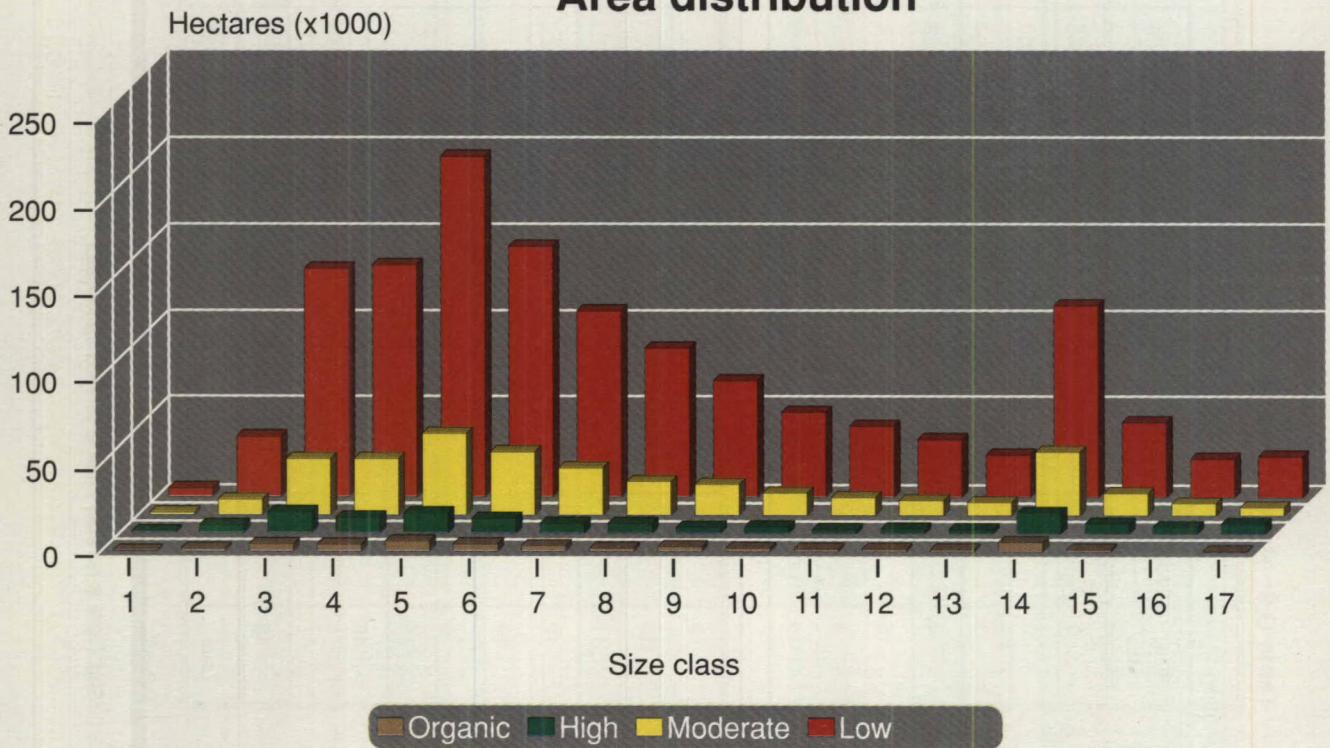
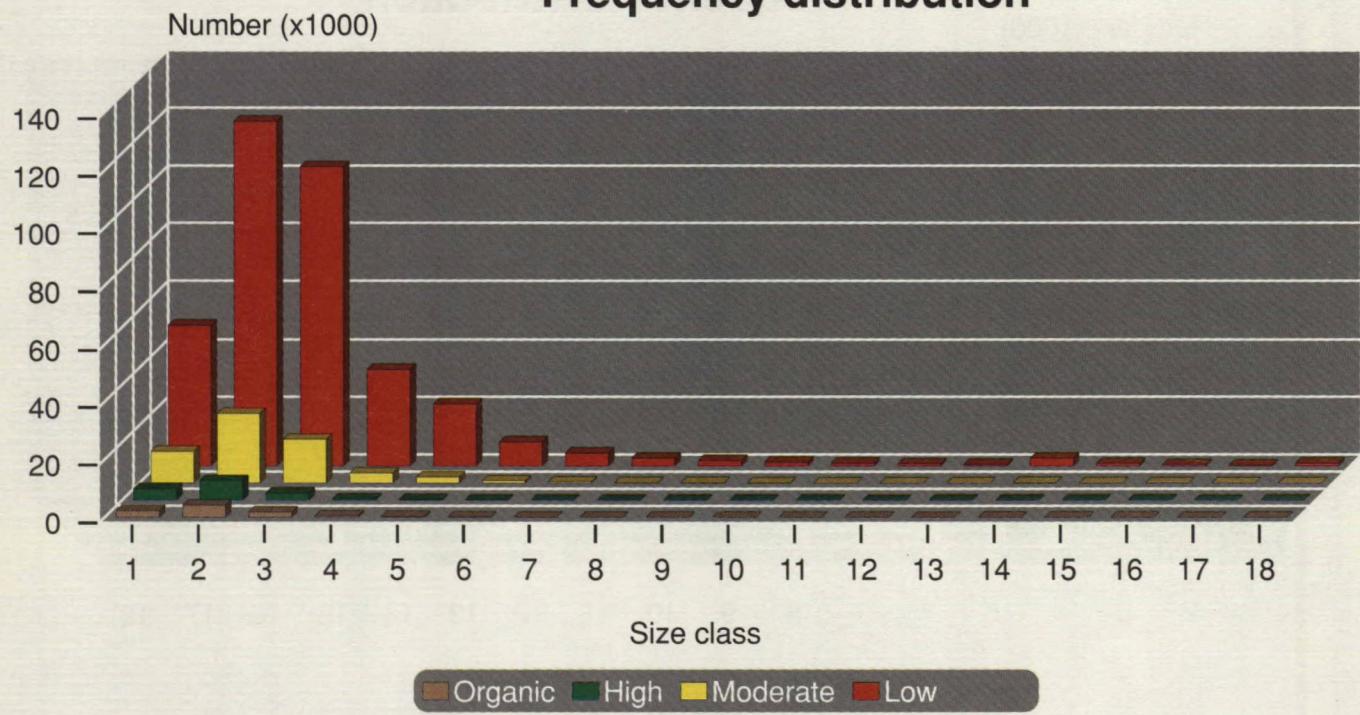


Figure D.1 Ontario

Frequency distribution



Area distribution

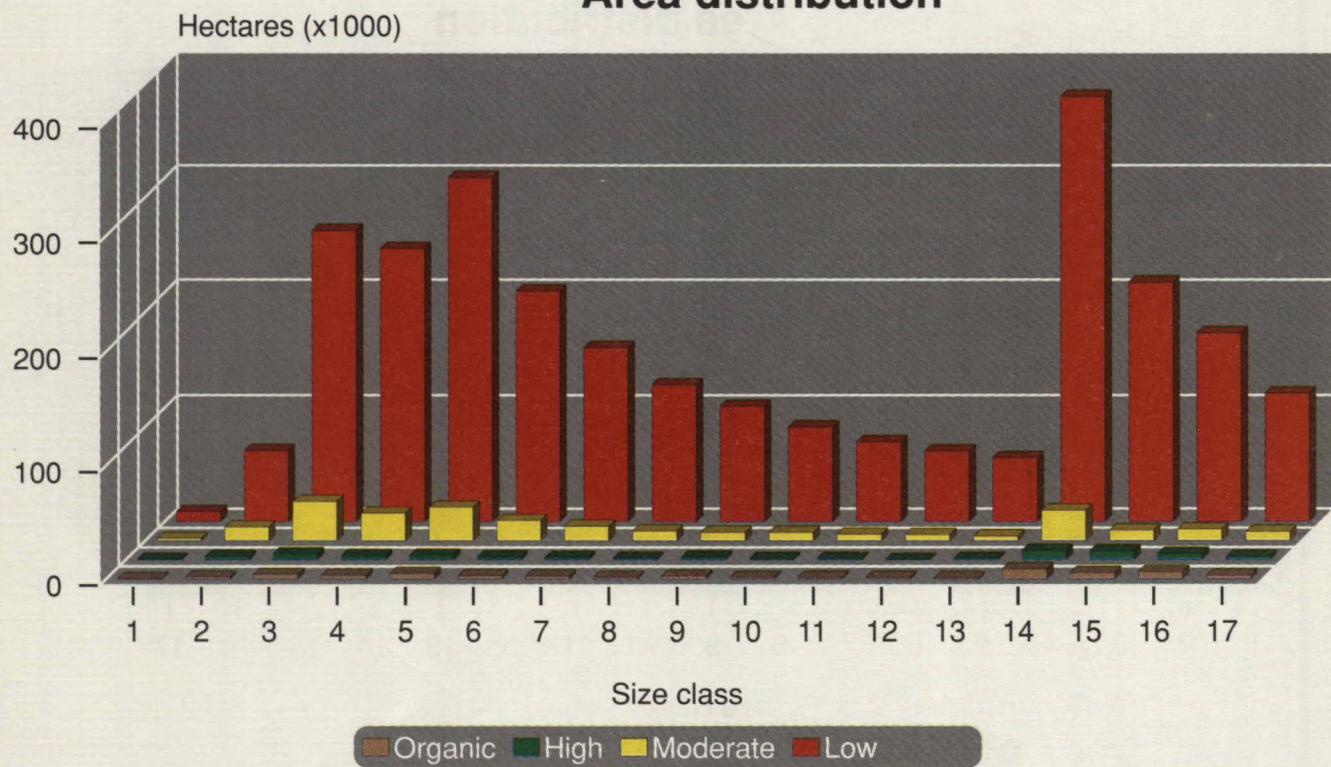
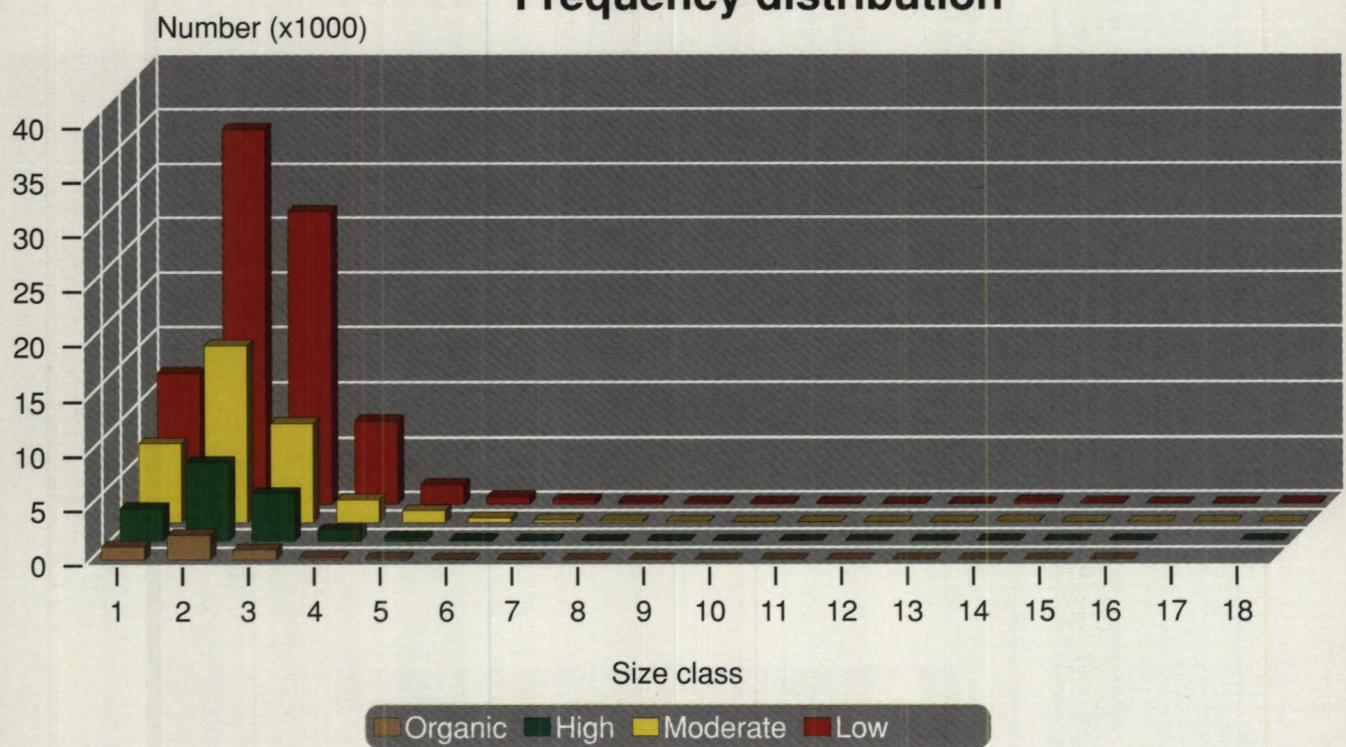


Figure D.2 Quebec

Frequency distribution



Area distribution

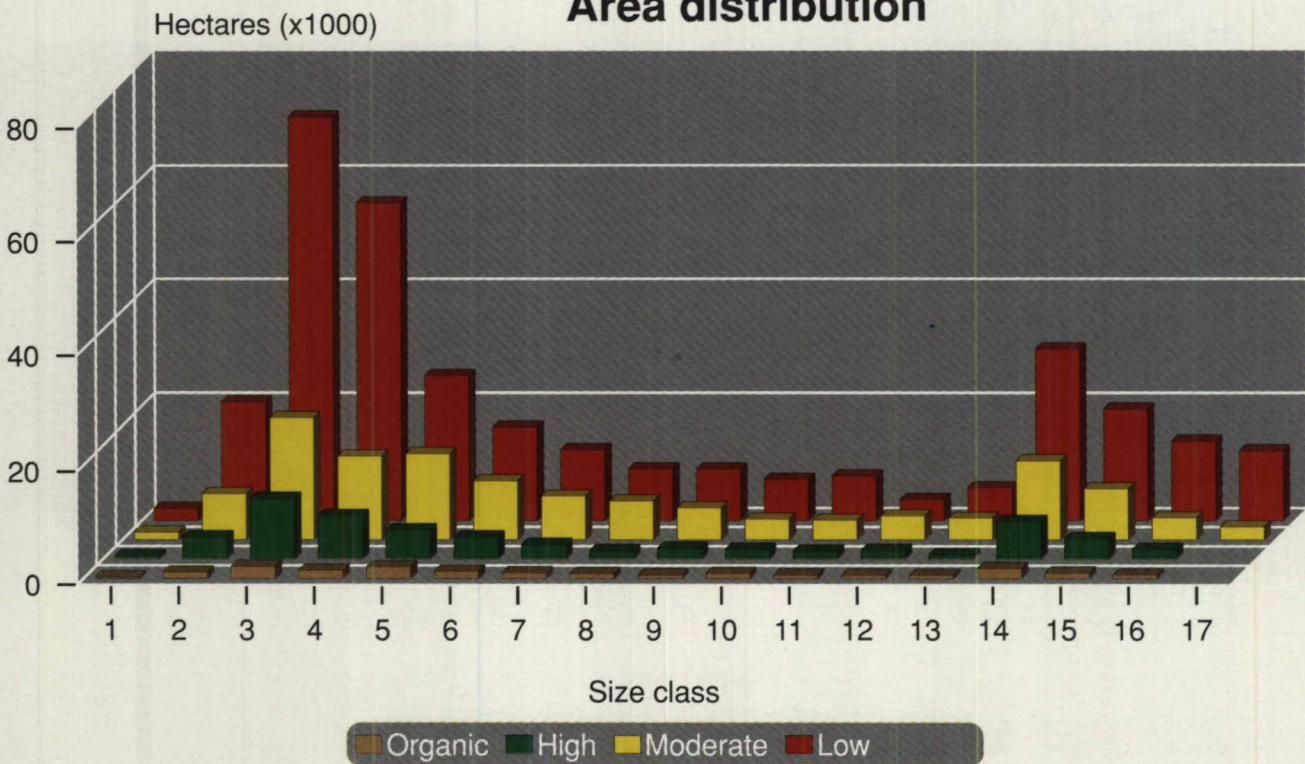
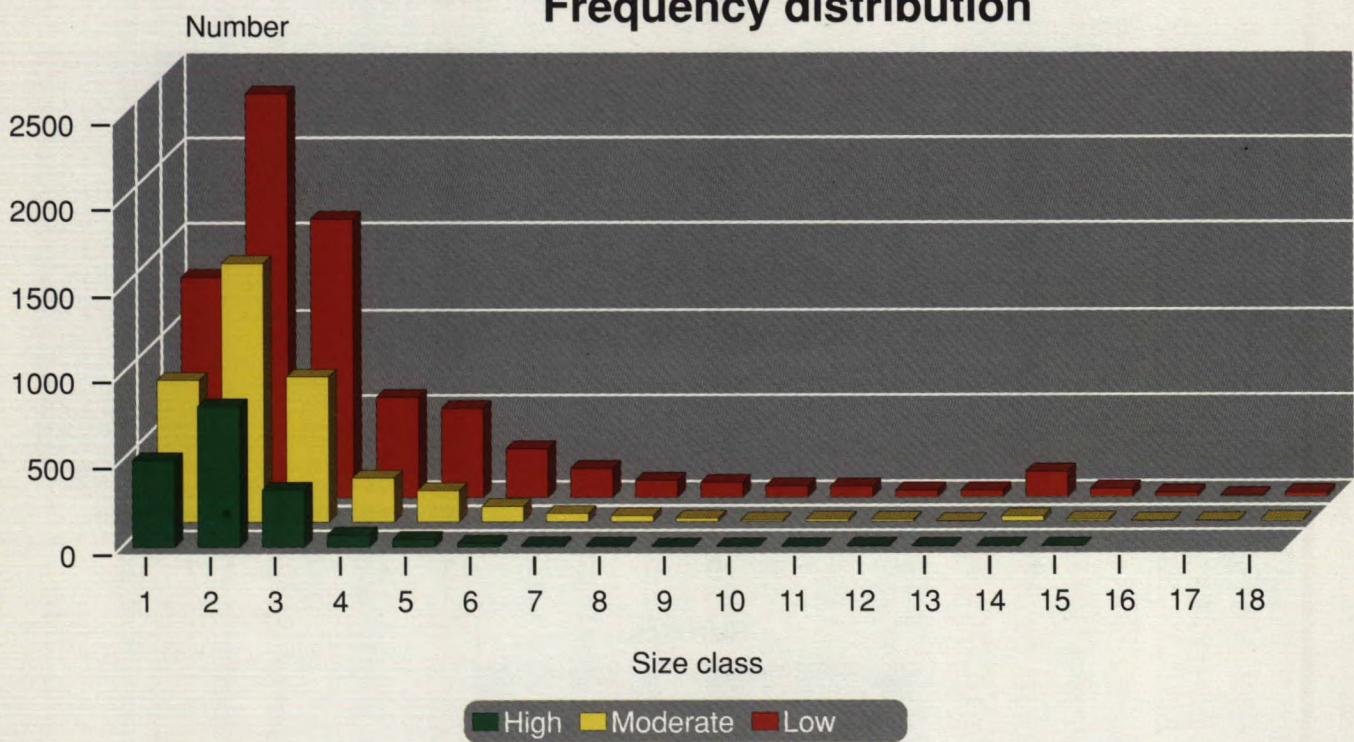


Figure D.3 Newfoundland

Frequency distribution



Area distribution

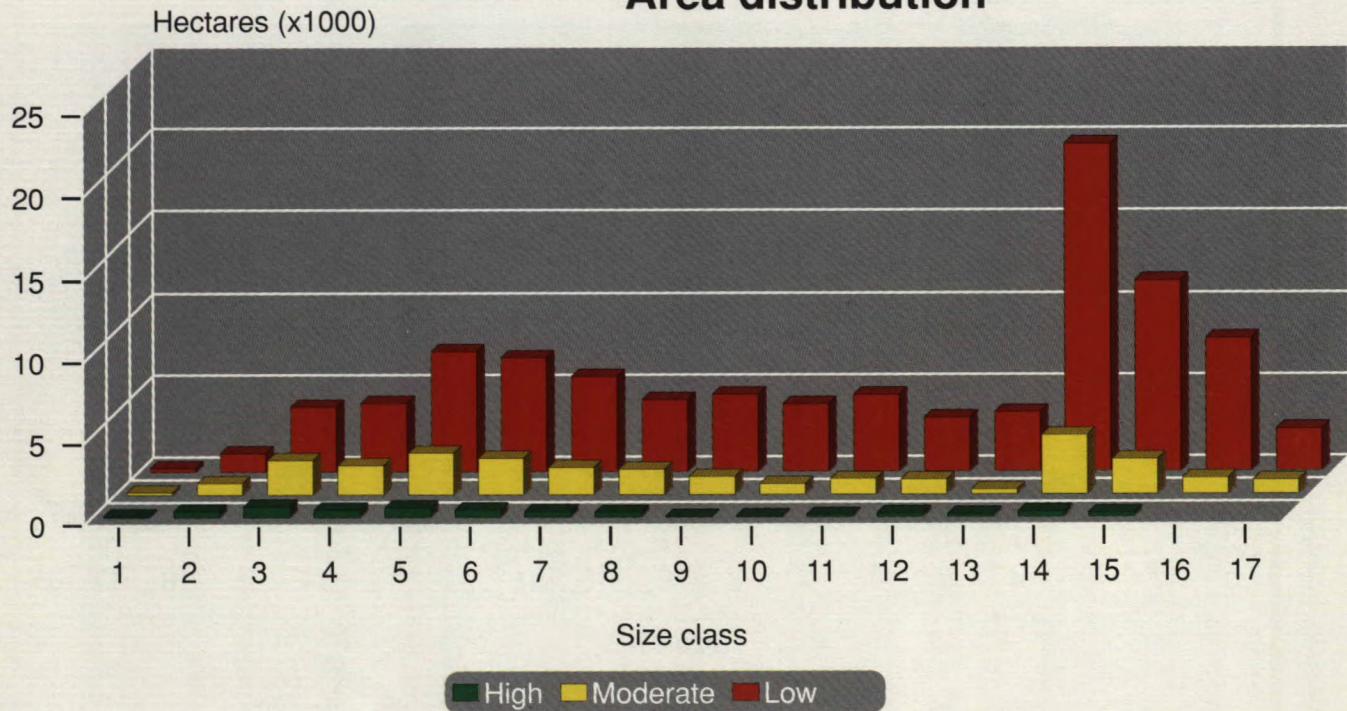
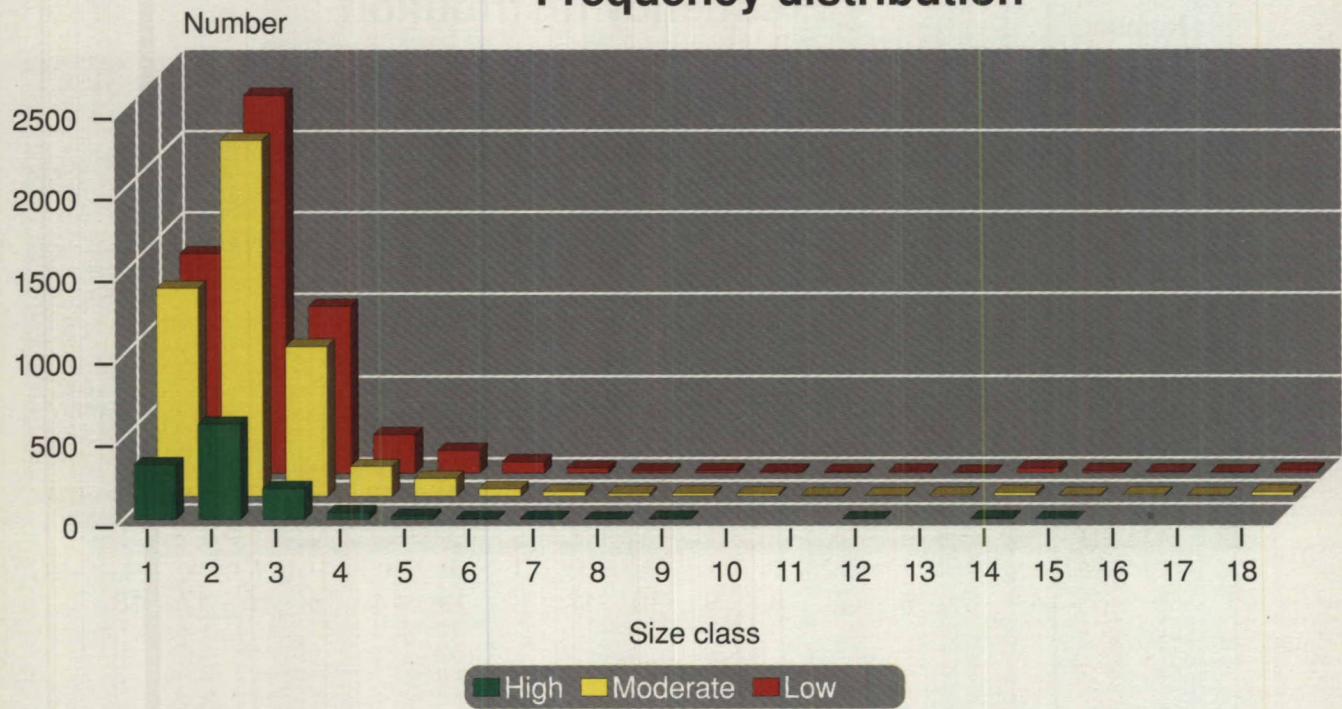


Figure D.4. Nova Scotia

Frequency distribution



Area distribution

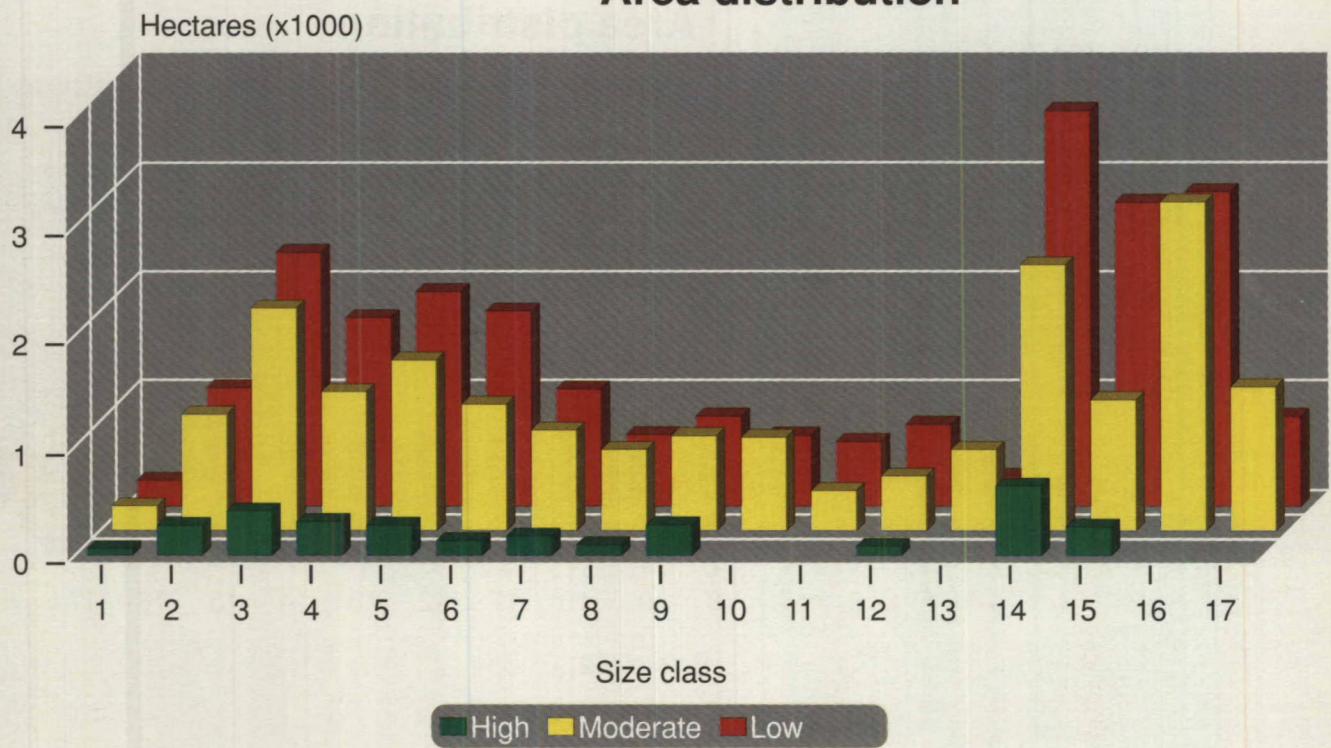
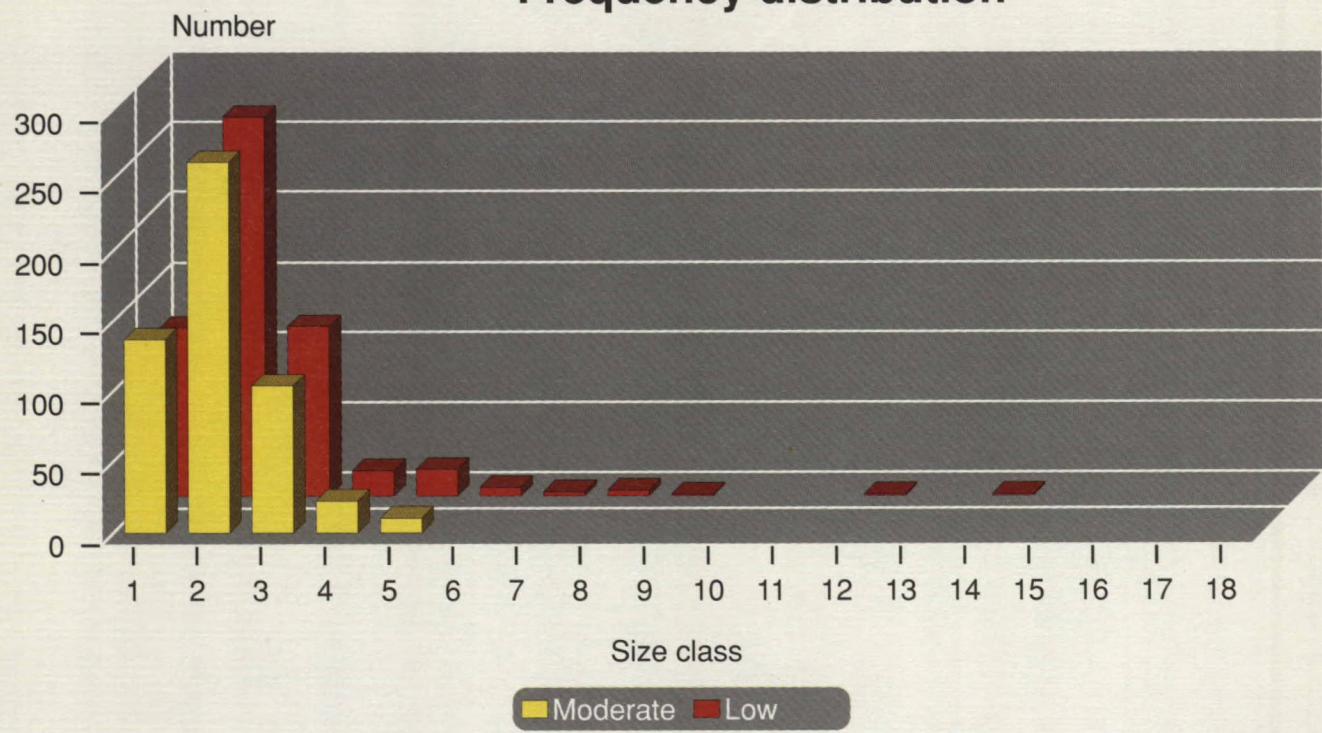


Figure D.5. New Brunswick

Frequency distribution



Area distribution

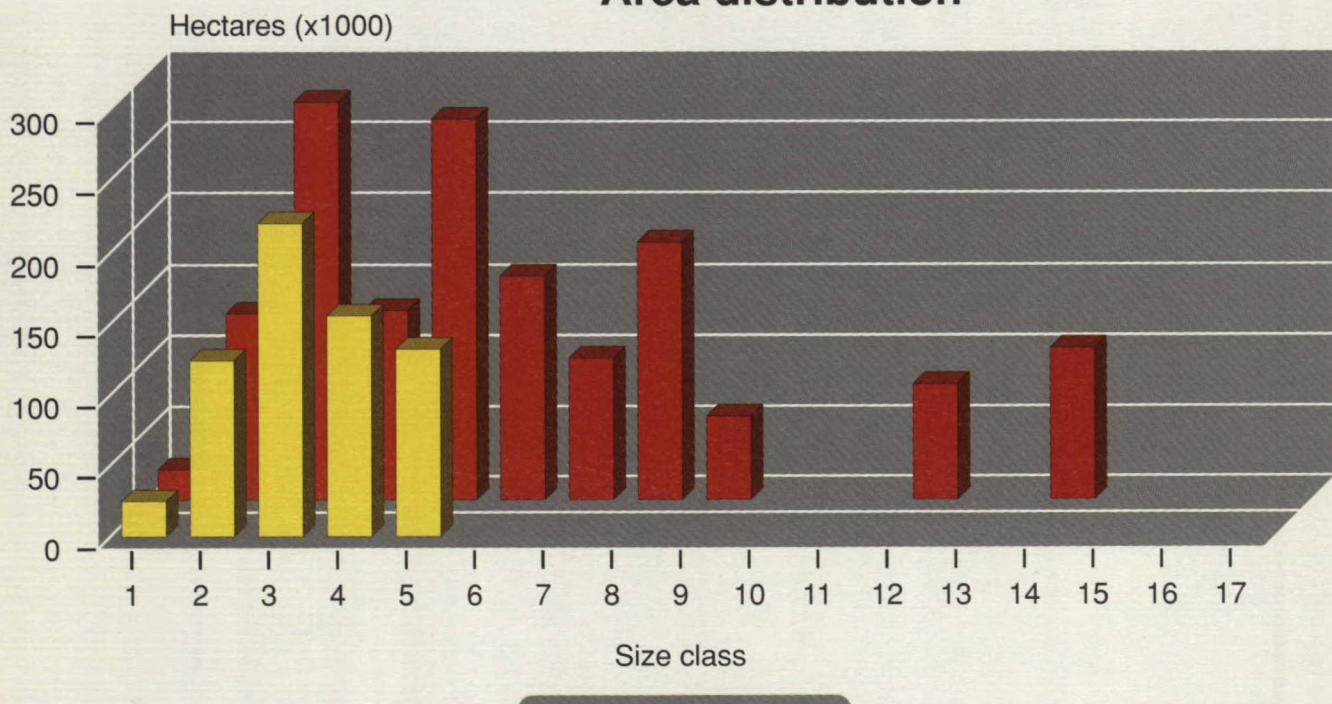


Figure D.6. Prince Edward Island