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# ENVIRONMENTAL MONITORING IN CANADA

prepared for  
Fisheries and  
Environment Canada

Volume 3

## DIRECTORY OF CANADIAN ENVIRONMENTAL MONITORING ACTIVITIES

August 1977



SEI

PHILIPS ELECTRONICS LIMITED  
JAMES F. MacLAREN LIMITED  
BRISTOL AEROSPACE LIMITED  
COMPUTING DEVICES COMPANY  
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## PREFACE

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As a result of an unsolicited proposal, a contract for a study on environmental monitoring was awarded by Supply and Services Canada to a consortium of Canadian companies. The consortium was formed under the auspices of the Air Industries Association of Canada and endorsed by the Electronic Industries Association of Canada. It consisted of the following companies:

Philips Electronics Limited  
James F. MacLaren Limited  
Computing Devices of Canada  
Bristol Aerospace Limited

Philips was the lead company of the consortium. A major portion of the work was subcontracted to James F. MacLaren Limited.

The purpose of the study was to determine what information environmental authorities must have on a regular and systematic basis, in order to make sound decisions regarding management of resources and the quality of the environment in Canada.

The final report is broken into four volumes:

- Volume 1 - Summary Report
- Volume 2 - Main Report
- Volume 3 - Directory of Canadian Environmental Monitoring Activities
- Volume 4 - Background Information

The Summary Report briefly reviews the scope and methodology of the study and highlights key issues and concerns about current Canadian environmental monitoring. The conclusions and recommendations of the study are also included in this volume.

The Main Report contains a more detailed account of important issues and concerns about monitoring in Canada. Monitoring objectives, information needs, and data acquisition and management are among the issues addressed. A discussion of monitoring for contaminants and environmental assessment is also presented, followed by the study's conclusions and recommendations.

Volume 3 is an inventory of monitoring activities in Canada. It contains information related to departments involved, parameters monitored, availability of data, and users of data. It also contains a discussion of the term "monitoring".

Volume 4 outlines the history of the project and the approach used in carrying it out. A summary of Canadian interviews which were conducted as part of the study is included here, along with descriptions of monitoring programs carried out by the U.S.A., U.K., and the U.N.

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# INTRODUCTION

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## 1.1 General

During the early stages of this study, the need for a directory of monitoring activities in Canada became apparent. In response to that need, this volume "Directory of Canadian Environmental Monitoring Activities" was compiled from information obtained through interviews and correspondence with officials of federal, provincial and municipal government agencies and industrial associations. The directory is by no means complete in all respects, but it does provide a starting point for maintaining a current inventory of monitoring activities in Canada.

## 1.2 Definition of Monitoring

During the compilation of the directory, many definitions of monitoring were discussed; certainly no one definition was universally accepted. As an introduction to this directory, various definitions are discussed, and the definition most appropriate for this study is given.

Monitoring is defined in several reports on national, international and global environmental monitoring systems (1, 2, 3, 4). While the definitions vary in many respects there are several common points. The most important of these are:

1. Monitoring involves repeated measurements or observations of certain elements, indicators, or parameters.
2. The measurements or observations are carried out for defined purposes, and are done in a systematic manner.
3. Monitoring provides data that can be used in determining trends in environmental behaviour.

The major questions arising out of the differences in the definitions are:

1. Is monitoring concerned only with pollutants?
2. Does monitoring include measurements carried out for the purpose of determining relationships amongst various components of the environment, or causal factors of environmental behaviour? Or, are these simply "research studies"?
3. What is the difference between monitoring and surveillance?
4. Does monitoring include the evaluation of data collected in the measurement programs?

In the context of this study, monitoring cannot refer only to pollutants; it must also include measurements of the quantity and quality of resources for purposes related to the management of these resources, and measurements of relevant social and economic indicators.

The question of a distinction between monitoring and measurements undertaken for research studies was raised frequently during the study. Although measurements for research fall

under many definitions of monitoring, the emphasis of this study is on information that is gathered as a regular input to the decision-making process. Therefore, it was decided to consider monitoring mainly as those data gathering activities that are initiated with a view to being continued more or less indefinitely, and that are designed to directly serve continuing environmental or resource management programs. Measurements intended primarily for research purposes, such as determining relationships amongst various components of the environment, or causal factors of environmental behaviour are not included in the considerations of this report. Although they develop the knowledge base for monitoring systems, they cannot be considered part of the on-going monitoring program.

There is no general agreement on the meaning of the term "surveillance". MacKay and MacDonnel in "Environmental Monitoring" (4) suggest that surveillance deals with temporal trends and the relation of such trends to various causes. A contrary definition appears in an internal Environment Canada report, "Post-Stockholm Institutional Arrangements for Global Environmental Monitoring": "surveillance is defined as the assessment of patterns of distribution of environmental pollutants (and other variables) in space, so as to identify where concentrations are highest and problems potentially most severe". (5)

To make a distinction between monitoring and surveillance here does not seem worthwhile or necessary, especially since there is such a lack of agreement on the exact meaning of surveillance. There are several definitions of monitoring which are broad enough to encompass the various meanings of surveillance.



The 1971 Intergovernmental Working Group on Monitoring or Surveillance defined monitoring as "a system of continued observation, measurement, and evaluation for defined purposes". (6) In SCOPE\* Report 3, "Global Environmental Monitoring System (GEMS) - Action Plan for Phase 1", a distinction is made between monitoring and assessment (or evaluation). The definitions of these terms given in SCOPE Report 3 are the most appropriate for this study. They are as follows:

"Monitoring is defined here as the process of repetitive observing, for defined purposes, of one or more elements or indicators of the environment according to pre-arranged schedules in space and time, and using comparable methodologies for environmental sensing and data collection. Monitoring provides factual information concerning the present state and past trends (over the period of record) in environmental behaviour. As examples, monitoring could include hourly observations of trace gases, daily measurements of water-quality indicators, annual surveys of forest cover, and periodic sampling (at 5- to 10- year intervals) of the heavy metal concentrations in food or seaweed.

The observations need not be made at fixed times or at fixed locations. The system could include, for example, a mechanism for activation of supplementary data collections whenever pre-designated criteria were met, e.g. during high pollution episodes, during natural disasters, or whenever a few cases of cholera were detected in a region. The system could also include random or cluster sampling (of biota) according to standardized

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\* SCOPE - Scientific Committee on Problems of the Environment (International Council of Scientific Unions)

procedures. An important constraint, however, is that the observations be made in a systematic way.

Assessment is defined as the process of interpretation of data obtained from monitoring networks and diverse other sources. The word assessment has three distinct meanings in the context of monitoring:

- (a) quality control,
- (b) examination of the efficiency of networks, including optimization of space and time densities of observations so that interpolations between observations can be made with the desired accuracy,
- (c) examination of the state of the environment, the determination of trends, and the prediction of future states, often for use in comparisons with environmental criteria or standards". (1)

The subject of this study therefore, is monitoring and assessment as defined in SCOPE Report 3. The SCOPE 3 definition is considered to include sampling and analysis of effluents and emissions for the purpose of enforcing existing regulations or developing new regulations or guidelines. For this directory the definition is also restricted to physical, chemical, and biological elements of the environment, although monitoring of socio-economic elements is considered in the main report.

### 1.3 Compiling the Directory - Procedure

Several means were used to acquire the information contained in the directory:

1. Interviews with personnel of government agencies responsible for carrying out monitoring activities.  
(See Summary of Canadian Interviews - Appendix B).
2. Follow-up contact with these people (telephone, letter or interview).
3. Review of published reports describing monitoring activities.
4. Circulation of a draft directory to obtain corrections, additions, and comments on descriptions of monitoring activities.
5. Continuing contact with personnel of various government agencies.
6. Circulation of sections of the final draft to people connected with various monitoring activities to verify completeness and accuracy of the directory.

Throughout the interviews and review of published information there was much discussion as to which activities should be classified as monitoring and which should not. The final version of the directory, however, has been edited according to the definition of monitoring given in this section.

#### 1.4 Recommendations

This directory should be widely circulated among people who are likely to find it useful, with the intention of initiating a broad discussion on its value and how it might be improved or expanded.

A procedure should be established whereby the directory is frequently updated and corrections or additions are made regularly. This would ensure that it remains a useful source of information on Canadian environmental monitoring activities.

The directory should be readily available to the public and non-government organizations through distribution to public libraries and sales agents for government publications.



1.5            References

1. R.E. Munn. Global environmental monitoring system (GEMS): action plan for phase I. Scientific Committee on Problems in the Environment (SCOPE) 3. Toronto: SCOPE, 1973. p.13.
2. B. Martin and F. Sella. "The development and implementation of the global environmental monitoring system. Draft." Presented at the Rockefeller Symposium on Environmental Monitoring, Belagis, Italy, February 11, 1977. p.2.
3. Office of Monitoring. U.S. Environmental Protection Agency. An integrated nationwide environmental monitoring system. Washington: EPA, 1972, p.3.
4. R.D. Mackay and T.D. MacDonnel. Environmental monitoring: A compendium of data gathering activities of Environment Canada. Environment Canada Planning and Finance Service report no. 4. Ottawa: Information Canada, 1975. p.2.
5. L. Douglas. Post-Stockholm institutional arrangements for global environmental monitoring. Ottawa: Resource and Environmental Law Division. Intergovernmental Affairs Directorate, 1972. p.1.
6. Cited in: L. Douglas. Post-Stockholm institutional arrangements for global environmental monitoring. Ottawa: Resource and Environmental Law Division. Intergovernmental Affairs Directorate, 1972.

**CANADIAN ENVIRONMENTAL  
MONITORING ACTIVITIES**

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# ATMOSPHERIC ENVIRONMENT SERVICE

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<b>ACTIVITY/TYPE OF DATA</b> SURFACE AND UPPER AIR SYNOPTIC WEATHER NETWORK - WATER - OCEAN STATION PAPA		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Cloud cover, visibility, weather, temperature, dew point, windspeed and direction, atmospheric pressure. Upper Air: temperature, dew point, pressure, wind. Some oceanographic parameters measured including subsurface observations - BT's, temperature, salinity, depth profiles.			
<b>No. OF STATIONS AND COVERAGE</b> 1 - Ocean Station PAPA 50°00'N, 145°00'W	<b>SAMPLING FREQUENCY</b> Surface observations every 3 hours. Upper air observations every 12 hours.		<b>DATA ACQUISITION</b> Field personnel and automatic equipment
<b>USERS OF DATA</b> Atmospheric Environment Service weather forecasters, foreign weather services, aviation, marine, public, special applications, news media, agriculture, utilities.			
<b>DATA USES</b> Diverse			
<b>AVAILABILITY OF DATA</b> Atmospheric Environment Service (AES) and World Meteorological Organization (WMO) communications circuits, compilations and summaries published by AES, magnetic tapes at AES, and U.S. National Climatic Centre (Asheville)			
<b>ADDITIONAL INFORMATION</b> The Marine Transport Administration of the Department of Transport operates two ships, QUADRA and VANCOUVER for Fisheries and Environment Canada.			

<b>ACTIVITY/TYPE OF DATA</b> SURFACE SYNOPTIC WEATHER NETWORK - WATER - VOLUNTARY SHIPS		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> cf Manual of Marine Weather Observing (MANMAR), Manual of Weather Observing for Auxiliary Ships Operating on the Great Lakes and St. Lawrence River (MANLAKE)			
<b>No. OF STATIONS AND COVERAGE</b> At present 234 permanent ships; and from 50 to 75 ships recruited from reports on a trip-to-trip basis	<b>SAMPLING FREQUENCY</b> Every 6 hours. Most ships do not carry out a full program because of hours of duty of Radio Officers		<b>DATA ACQUISITION</b> Ship's crew
<b>USERS OF DATA</b> Atmospheric Environment Service weather forecasters, foreign weather services, aviation, marine, public, special applications, news media, agriculture, utilities.			
<b>DATA USES</b> Diverse			
<b>AVAILABILITY OF DATA</b> Atmospheric Environment Service (AES) and World Meteorological Organization (WMO) Global Telecommunications System communications circuits, selected publications of magnetic tapes and punched cards of AES and U.S. National Climatic Centre (Asheville).			
<b>ADDITIONAL INFORMATION</b> The International Voluntary Observing Ship Scheme has the objective of collecting data over all ocean areas traversed by shipping. On the oceans the density of ships' reports is set at one report per 300 km for each synoptic hour and on the Great Lakes at one report per 1000 km. The degree to which these values are achieved depends upon the number and location of Voluntary Observing Ships at a particular time.			

<b>ACTIVITY/TYPE OF DATA</b> SURFACE SYNOPTIC WEATHER NETWORK - LAND		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada
<b>PARAMETERS MONITORED</b> Cloud cover, visibility, rain, snow, fog, temperature, dew point, windspeed and direction, atmospheric pressure (cf Manual of Surface Weather Observations - MANOBS, and Meteorological Stations in Canada - METSTAT)		
<b>No. OF STATIONS AND COVERAGE</b> National (cf METSTAT) 250 (in March 1977)	<b>SAMPLING FREQUENCY</b> Every 6 hours (some every 3 hours)	<b>DATA ACQUISITION</b> Field personnel and automatic equipment
<b>USERS OF DATA</b> Atmospheric Environment Service weather forecasters, foreign weather services, aviation, marine, public, special applications, news media, agriculture, utilities.		
<b>DATA USES</b> Real-time use for current information: weather forecasting, warnings. Climatological use in design of structures, planning, defining climate and understanding, managing, and protecting the environment. Settlement of litigations, etc.		
<b>AVAILABILITY OF DATA</b> Atmospheric Environment Service (AES) and World Meteorological Organization (WMO) communications circuits for near real-time data. Climatological information from compilations and summaries, punched cards and magnetic tape, as prepared by AES. Data on original documents as photocopies or microfilm.		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b> SURFACE HOURLY WEATHER NETWORK		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  cf MANOBS, METSTAT			
<b>No. OF STATIONS AND COVERAGE</b> National (cf METSTAT) 209 (in March 1977)	<b>SAMPLING FREQUENCY</b> Hourly (cf Meteorological Stations in Canada - METSTAT) (Some stations do not oper- ate 24 hr/day. Others main- tain a continuous watch)		<b>DATA ACQUISITION</b> Field personnel and automatic equipment
<b>USERS OF DATA</b> Atmospheric Environment Service weather forecasters, World Meteorological Organization, aviation, marine, public, special applications, news media, agriculture, utilities and provincial and industrial organizations.			
<b>DATA USES</b>  As for synoptic plus special uses where knowledge of weather on a continuous basis is required, especially for aviation and settlement of litigations.			
<b>AVAILABILITY OF DATA</b>  Atmospheric Environment Service (AES) communications circuits, for near real-time data. Selected summaries published by AES and data on original documents available as photocopies, microfilm.			
<b>ADDITIONAL INFORMATION</b>  Canadian Air Transportation Administration (CATA) states requirements for reports used for aeronautical purposes.			

<b>ACTIVITY/TYPE OF DATA</b> SURFACE NETWORK - MESOMETEOROLOGICAL		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Various parameters, individual programs (cf METSTAT)			
<b>No. OF STATIONS AND COVERAGE</b> National	<b>SAMPLING FREQUENCY</b> Various	<b>DATA ACQUISITION</b> Field personnel and automatic equipment	
<b>USERS OF DATA</b> Utilities, companies, universities, forestry, World Meteorological Organization			
<b>DATA USES</b> Diverse			
<b>AVAILABILITY OF DATA</b> Atmospheric Environment Service (AES) and various agencies observations			
<b>ADDITIONAL INFORMATION</b> A mesometeorological network usually is set up for a special purpose, and may be operated either by the agency concerned or by AES			

<b>ACTIVITY/TYPE OF DATA</b> SURFACE NETWORKS - AUTOMATIC WEATHER STATIONS		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada
<b>PARAMETERS MONITORED</b>  Temperature, humidity, windspeed and direction, altimeter setting, rain, visibility, cloud height, station pressure		
<b>No. OF STATIONS AND COVERAGE</b>  Variable 26 (in March 1977)	<b>SAMPLING FREQUENCY</b>  Hourly	<b>DATA ACQUISITION</b>  Automatic equipment
<b>USERS OF DATA</b>  Atmospheric Environment Service weather forecasters, World Meteorological Organization, aviation, marine, public, special applications, news media, agriculture, utilities		
<b>DATA USES</b>  As for synoptic		
<b>AVAILABILITY OF DATA</b>  Atmospheric Environment Service (AES) communications circuits for real-time data, selected publications and magnetic tapes.		
<b>ADDITIONAL INFORMATION</b>  The AES Meteorological Reporting Stations (MARS) I and II are being used primarily for hourly and synoptic reports.		

<b>ACTIVITY/TYPE OF DATA</b>  SURFACE NETWORKS - CLIMATOLOGICAL PRINCIPAL		<b>SPONSORING AGENCY</b>  Atmospheric Environment Service Environment Canada	
<b>PARAMETERS MONITORED</b>  cf Climatological Station Data Catalogue - CSDC METSTAT			
<b>No. OF STATIONS AND COVERAGE</b>  National cf CSDC  316 (March 1977)	<b>SAMPLING FREQUENCY</b>  Hourly		<b>DATA ACQUISITION</b>  Field personnel and automatic equipment
<b>USERS OF DATA</b>  As for synoptic			
<b>DATA USES</b>  Diverse, including design of structures, planning, defining climate understanding, managing and protecting the environment, settlement of litigations, etc.; and applications of climate to major sectors of the Canadian economy, such as agriculture, construction and energy exploration and development.			
<b>AVAILABILITY OF DATA</b>  Selected Atmospheric Environment Service (AES) publications, magnetic tapes. Data on original documents available in photocopies, microfilm.			
<b>ADDITIONAL INFORMATION</b>  A principal climatological station is defined as a station at which hourly readings are taken, or at which observations are made at least three times daily in addition to hourly tabulations from autographic records. Nearly all principal stations in Canada are also synoptic and/or hourly stations.			



<b>ACTIVITY/TYPE OF DATA</b> SURFACE NETWORKS CLIMATOLOGICAL - ORDINARY		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Environment Canada	
<b>PARAMETERS MONITORED</b> cf Climatological Station Data Catalogue - CSDC METSTAT			
<b>No. OF STATIONS AND COVERAGE</b> cf CSDC 1885 (In March 1977)	<b>SAMPLING FREQUENCY</b> Daily		<b>DATA ACQUISITION</b> Field personnel and automatic equipment
<b>USERS OF DATA</b> Diverse			
<b>DATA USES</b> Diverse, same as principal stations.			
<b>AVAILABILITY OF DATA</b> Magnetic tape "Monthly Record", microfilm or photocopies of original documents containing data.			
<b>ADDITIONAL INFORMATION</b> At ordinary climatological stations, daily readings of precipitation and temperature are taken.			

<b>ACTIVITY/TYPE OF DATA</b> SURFACE NETWORKS CLIMATOLOGICAL - PRECIPITATION		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada			
<b>PARAMETERS MONITORED</b> Precipitation					
<b>No. OF STATIONS AND COVERAGE</b> cf CSDC  436 (in March 1977)		<b>SAMPLING FREQUENCY</b>  Various		<b>DATA ACQUISITION</b>  Field personnel and automatic equipment	
<b>USERS OF DATA</b>  Diverse, including agriculture, forestry, engineers and legal firms.					
<b>DATA USES</b>  Diverse, including design of hydrologic structures and settlement of litigations.					
<b>AVAILABILITY OF DATA</b>  Magnetic tape "Monthly Record", microfilm and photocopies of original documents.					
<b>ADDITIONAL INFORMATION</b>  At precipitation stations, precipitation is measured, but not temperature.					

<b>ACTIVITY/TYPE OF DATA</b> SURFACE NETWORKS CLIMATOLOGICAL - PRECIPITATION INTENSITY		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Precipitation intensity			
<b>No. OF STATIONS AND COVERAGE</b>  cf CSDC  532 (March 1977)	<b>SAMPLING FREQUENCY</b>  Various		<b>DATA ACQUISITION</b>  Field personnel and automatic equipment
<b>USERS OF DATA</b>  Diverse, including hydrologists, engineers and legal firms.			
<b>DATA USES</b>  Diverse, including design of hydrologic and other structures, settlement of litigations, water quality management.			
<b>AVAILABILITY OF DATA</b>  Selected Atmospheric Environment Service publications and magnetic tape.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> SURFACE NETWORKS CLIMATOLOGICAL - EVAPORATION		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Evaporation (cf Evaporation 1974)			
<b>No. OF STATIONS AND COVERAGE</b>  cf CSDC  146 (March 1977)	<b>SAMPLING FREQUENCY</b>  Daily during summer	<b>DATA ACQUISITION</b>  Field personnel	
<b>USERS OF DATA</b>  Diverse			
<b>DATA USES</b>  Diverse, including estimates of irrigation water requirements, estimates of evaporation from rivers and lakes, estimation of water losses from river basins due to evaporation and evapotranspiration			
<b>AVAILABILITY OF DATA</b>  "Monthly Record", maps, listings, magnetic tape			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> SURFACE NETWORKS CLIMATOLOGICAL - SUNSHINE		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Hours of sunshine (cf Manual of Standard Procedures for Obtaining Sunshine Data - Sunshine)			
<b>No. OF STATIONS AND COVERAGE</b> cf CSDC 307 (March 1977)	<b>SAMPLING FREQUENCY</b> Continuous during hours of sunshine	<b>DATA ACQUISITION</b> Field personnel and automatic equipment	
<b>USERS OF DATA</b> Diverse			
<b>DATA USES</b> Diverse, including energy conservation, solar heating.			
<b>AVAILABILITY OF DATA</b> Monthly record of meteorological observations in Canada for daily values; hourly values available on original documents and microfilm to 1960.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> AIRCRAFT WEATHER REPORTS		<b>SPONSORING AGENCY</b> Canadian Air Transportation Administration	
<b>PARAMETERS MONITORED</b> (cf MANOBS), AIREPS ICAO Doc. #4444 PANS RAC & AES 63-9083			
<b>No. OF STATIONS AND COVERAGE</b> National and over inter- national waters	<b>SAMPLING FREQUENCY</b> Various	<b>DATA ACQUISITION</b> Pilots	
<b>USERS OF DATA</b> Aviation, Atmospheric Environment Service and foreign weather services.			
<b>DATA USES</b> For issuing aviation and other forecasts.			
<b>AVAILABILITY OF DATA</b> Atmospheric Environment Service (AES) communications system (cf TELDIS) and World Meteorological Organization (WMO) Global Telecommunication System			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> SUPPLEMENTARY AVIATION NETWORK (PRIVATE AVIATION WEATHER REPORTING STATIONS)		<b>SPONSORING AGENCY</b> Air Carriers and/or Operators of Private or Municipal Airports	
<b>PARAMETERS MONITORED</b> Sky condition, visibility, weather and obstructions to vision, temperature, windspeed and direction, altimeter setting			
<b>No. OF STATIONS AND COVERAGE</b> Varies, depending upon air carrier requirements	<b>SAMPLING FREQUENCY</b> Various, determined by aircraft operations		<b>DATA ACQUISITION</b> Field personnel
<b>USERS OF DATA</b> Aircraft, Atmospheric Environment Service weather forecasters			
<b>DATA USES</b> Diverse: primarily for planning and conducting aircraft operations			
<b>AVAILABILITY OF DATA</b> Atmospheric Environment Service (AES) communications system, (microfilm and photocopies of original documents)			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> SUPPLEMENTARY AVIATION NETWORK ARCTIC AVIATION WEATHER REPORTING STATIONS		<b>SPONSORING AGENCY</b> Transport Canada, Department of Indian and Northern Affairs Northwest Territorial Government/ Yukon Territorial Government	
<b>PARAMETERS MONITORED</b>  Sky condition, visibility, weather and obstructions to vision, temperature, windspeed and direction, altimeter setting			
<b>No. OF STATIONS AND COVERAGE</b>  Varies, depending upon air carriers operating require- ments	<b>SAMPLING FREQUENCY</b>  Various, determined by aircraft operations		<b>DATA ACQUISITION</b>  Field personnel
<b>USERS OF DATA</b>  Aircraft, Atmospheric Environment Service weather forecasters			
<b>DATA USES</b>  Diverse: primarily for planning and conducting aircraft operations at Arctic Community Airports			
<b>AVAILABILITY OF DATA</b>  Atmospheric Environment Service (AES) communications system, microfilm and photocopies of original documents			
<b>ADDITIONAL INFORMATION</b>			



<b>ACTIVITY/TYPE OF DATA</b> UPPER AIR NETWORKS RAWINSONDE		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  cf Manual of Upper Air Observations - MANUPP			
<b>No. OF STATIONS AND COVERAGE</b>  National (cf METSTAT) 37 (1977)	<b>SAMPLING FREQUENCY</b>  Every 12 hours	<b>DATA ACQUISITION</b>  Field personnel	
<b>USERS OF DATA</b>  Meteorological Services, researchers, aviation industry			
<b>DATA USES</b>  Diverse			
<b>AVAILABILITY OF DATA</b>  Atmospheric Environment Service (AES) and World Meteorological Organization (MWO) communications circuits, monthly bulletin - Canadian Upper Air Data and Northern Hemispheric Data Tabulations (U.S. National Climatic Centre, Asheville, North Carolina), microfilm of original documents.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> UPPER AIR NETWORKS PILOT BALLOONS		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Windspeed, direction (cf MANOBS)			
<b>No. OF STATIONS AND COVERAGE</b>  National (cf METSTAT)  15 (March 1977)	<b>SAMPLING FREQUENCY</b>  Various		<b>DATA ACQUISITION</b>  Field personnel
<b>USERS OF DATA</b>  Atmospheric Environment Service weather forecasters and service outlets and aviation			
<b>DATA USES</b>  Pollution monitoring, forest fire control, insect spraying, bird migration, special applications, forecasting, planning			
<b>AVAILABILITY OF DATA</b>  Local (cf TELDIS)			
<b>ADDITIONAL INFORMATION</b>  Pilot balloon measurements for special local studies may be taken by Atmospheric Environment Service or other agencies			

<b>ACTIVITY/TYPE OF DATA</b> UPPER AIR NETWORKS OZONE		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Total ozone, vertical ozone distribution			
<b>No. OF STATIONS AND COVERAGE</b>  5	<b>SAMPLING FREQUENCY</b>  cf Canadian Ozone Observers Manual - COOM	<b>DATA ACQUISITION</b>  Field personnel	
<b>USERS OF DATA</b>  Diverse			
<b>DATA USES</b>  Monitor long term changes in ozone levels			
<b>AVAILABILITY OF DATA</b>  Publication: "Ozone Data for the World"			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> JOINT ENVIRONMENTAL OBSERVATIONAL NETWORKS - SEISMOLOGY		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada, and Energy, Mines and Resources Canada	
<b>PARAMETERS MONITORED</b>  Seismic events			
<b>No. OF STATIONS AND COVERAGE</b>  7 National	<b>SAMPLING FREQUENCY</b>  Daily or weekly		<b>DATA ACQUISITION</b>  Field personnel
<b>USERS OF DATA</b>  Energy, Mines and Resources Canada			
<b>DATA USES</b>  Diverse			
<b>AVAILABILITY OF DATA</b>  Annual Energy, Mines and Resources Canada publication "Canadian Earthquakes"			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> JOINT ENVIRONMENTAL OBSERVATIONAL NETWORKS - AURORA		<b>SPONSORING AGENCY</b> Fisheries and Environment Canada and National Research Council	
<b>PARAMETERS MONITORED</b>  Aurora - visual			
<b>No. OF STATIONS AND COVERAGE</b>  44	<b>SAMPLING FREQUENCY</b>  Nightly	<b>DATA ACQUISITION</b>  Field personnel	
<b>USERS OF DATA</b>  National Research Council			
<b>DATA USES</b>  Diverse			
<b>AVAILABILITY OF DATA</b>  Program ran July 1, 1957 to June 30, 1971. Data was collected for NRC. Present availability not known.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> JOINT ENVIRONMENTAL OBSERVATIONAL NETWORKS - RADIOACTIVITY SAMPLING		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada Health and Welfare Canada Department of National Defence	
<b>PARAMETERS MONITORED</b> Precipitation, soil and surface layer of air for gamma, ion and isotope concentrations			
<b>No. OF STATIONS AND COVERAGE</b> 36	<b>SAMPLING FREQUENCY</b> At direction of agency concerned	<b>DATA ACQUISITION</b> Field personnel	
<b>USERS OF DATA</b> International Atomic Energy Agency, World Meteorological Organization, Energy Research and Development Agency, Department of National Defence, Health and Welfare Canada.			
<b>DATA USES</b> Diverse			
<b>AVAILABILITY OF DATA</b> International Atomic Energy Agency, World Meteorological Organization, Energy Research and Development Agency, Department of National Defence, National Health and Welfare			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> ICE OBSERVATIONS-AERIAL AND SHIPBOARD		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Location, type, thickness, concentration, age, snow cover, leads, rafting, ridging, and melting of ice. Also iceberg populations off Newfoundland and Labrador			
<b>No. OF STATIONS AND COVERAGE</b> Maritimes and Great Lakes areas in winter; Hudson Bay and Canadian Arctic from June to November	<b>SAMPLING FREQUENCY</b> Observation aircraft flights usually every 2-3 days. Over main supply routes observations from ships as required	<b>DATA ACQUISITION</b> Visual observation and radar, laser, infra-red, instruments from two specifically equipped aircraft, and visual from various ships	
<b>USERS OF DATA</b>  Canadian Coast Guard, shipping interests, oil companies, meteorologists, shipping companies			
<b>DATA USES</b>  To assist in the navigation of shipping and in support of northern oil drilling from marine vessels, and in planning and designing.			
<b>AVAILABILITY OF DATA</b>  Weekly and seasonal reports, and composite maps prepared from observations on each flight and from observations by ships and satellites are available from Atmospheric Environment Service			
<b>ADDITIONAL INFORMATION</b>  Ice atlases are being prepared			

<b>ACTIVITY/TYPE OF DATA</b> ICE OBSERVATIONS-LAND BASED		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Ice thickness, freeze-up and break-up, of lakes and rivers and near-shore ocean and lake conditions.			
<b>No. OF STATIONS AND COVERAGE</b> National	<b>SAMPLING FREQUENCY</b> During season weekly thickness measurements, daily visual observations if required	<b>DATA ACQUISITION</b> Visual observations and tape measurement	
<b>USERS OF DATA</b> Shipping and oil exploration and construction companies, meteorologists			
<b>DATA USES</b> To provide information for planning and designing			
<b>AVAILABILITY OF DATA</b> Atmospheric Environment Service publications "Ice Thickness Data", "Freeze-up and Break-up Dates of Water Bodies in Canada"			
<b>ADDITIONAL INFORMATION</b>			



<b>ACTIVITY/TYPE OF DATA</b> RADIATION		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Global solar radiation, diffuse sky radiation, reflected solar radiation, net radiation, daylight illumination and direct solar radiation			
<b>No. OF STATIONS AND COVERAGE</b> 54 National		<b>SAMPLING FREQUENCY</b> Continuous	<b>DATA ACQUISITION</b> Field personnel, automatic equipment
<b>USERS OF DATA</b> Diverse, including architects, engineers, power companies, research scientists			
<b>DATA USES</b> Diverse, including solar-energy potential, climatic conditions and changes in climate			
<b>AVAILABILITY OF DATA</b> Selected Atmospheric Environment Service publications: "Monthly Radiation Summary", "Monthly Record", until December 1976, and magnetic tape			
<b>ADDITIONAL INFORMATION</b> The Canada Centre for Inland Waters operates a network of land and lake stations, publishing their data in an "Annual Radiation Summary"			

<b>ACTIVITY/TYPE OF DATA</b> RADAR		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Locate precipitation areas, monitor motion and growth, estimate areal precipitation amounts			
<b>No. OF STATIONS AND COVERAGE</b>  9 radars 1 of which archives quantitative information	<b>SAMPLING FREQUENCY</b>  Radar continuous		<b>DATA ACQUISITION</b>  Field personnel, automatic equipment
<b>USERS OF DATA</b>  Diverse, including forecasters, hydrologists, fisheries			
<b>DATA USES</b>  Diverse, including short term precipitation and severe weather forecasts, development of hydrologic models			
<b>AVAILABILITY OF DATA</b>  Selected Atmospheric Environment Service (AES) publications. Real-time radar reports on AES communication circuits. Radar data on magnetic tape and 35 mm film from Woodbridge radar.			
<b>ADDITIONAL INFORMATION</b>  Five radars which will replace some of the current 9 will begin archiving quantitative radar information from 5 sites across Canada in 1978.			

<b>ACTIVITY/TYPE OF DATA</b> REMOTE SENSING AIRBORNE RADIATION THERMOMETER (ART)		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Water temperature of Great Lakes except Lake Michigan. (The skin temperature of the water surface is obtained.)			
<b>No. OF STATIONS AND COVERAGE</b>  A flight is flown to cover all parts of the lakes	<b>SAMPLING FREQUENCY</b>  Once a month during ice-free periods		<b>DATA ACQUISITION</b>  Automatic equipment
<b>USERS OF DATA</b>  Hydrometeorologists, hydrologists, Great Lakes - St. Lawrence Study office			
<b>DATA USES</b>  Estimation of evaporation, net gain or loss of water from Great Lakes			
<b>AVAILABILITY OF DATA</b>  Monthly maps and ART surveys available on request			
<b>ADDITIONAL INFORMATION</b>  This activity has been in operation since 1966. It is hoped to use IR information from satellites to estimate changes occurring between flights			

<b>ACTIVITY/TYPE OF DATA</b> MESOMETEOROLOGICAL NETWORK - EDMONTON		<b>SPONSORING AGENCY</b> City of Edmonton, and Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Rate of rainfall			
<b>No. OF STATIONS AND COVERAGE</b> 26 Edmonton area	<b>SAMPLING FREQUENCY</b> Continuous during summer season	<b>DATA ACQUISITION</b> Data from 21 instruments is telemetered over phone lines; remainder recorded on daily charts	
<b>USERS OF DATA</b> City of Edmonton, Atmospheric Environment Service			
<b>DATA USES</b> City of Edmonton uses information to divert sewers during heavy localized storms			
<b>AVAILABILITY OF DATA</b> Not known, some computer printouts available from Atmospheric Environment Service, Western Region.			
<b>ADDITIONAL INFORMATION</b> This is an example of a mesometeorological network operated by a city. Other cities and agencies, such as universities, provincial services, etc. operate similar networks for various purposes.			

<b>ACTIVITY/TYPE OF DATA</b> METEOROLOGICAL TALL TOWER NETWORK		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada
<b>PARAMETERS MONITORED</b> Wind and temperature at various heights		
<b>No. OF STATIONS AND COVERAGE</b> National - 23	<b>SAMPLING FREQUENCY</b> Continuous	<b>DATA ACQUISITION</b> Automatic recording equipment. Stations operated by federal, provincial, university and private agencies
<b>USERS OF DATA</b> Fisheries and Environment Canada, research scientists and researchers in the private sector engaged in air pollution, air quality and boundary layer studies and applications		
<b>DATA USES</b> Air pollution analysis (impact statements) and research studies		
<b>AVAILABILITY OF DATA</b> <ul style="list-style-type: none"><li>- Quarterly Tower Bulletin published by Atmospheric Environment Service</li><li>- Available in computer compatible form from Atmospheric Environment Service Headquarters</li><li>- May be available directly from operating agencies</li></ul>		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b>  BACKGROUND AIR POLLUTION MONITORING NETWORK		<b>SPONSORING AGENCY</b>  Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Precipitation chemistry (major ions, pH, alkalinity, acidity)*, turbidity, aerosol content, carbon dioxide.  *A separate national 40-station network for precipitation chemistry is to be set up in 1977.			
<b>No. OF STATIONS AND COVERAGE</b>  8 - Regional 2 - Global	<b>SAMPLING FREQUENCY</b>  Precipitation - monthly Turbidity - 3 daily		<b>DATA ACQUISITION</b>  Field personnel, see below for additional information**
<b>USERS OF DATA</b>  Atmospheric Environment Service (AES) and other public and private agencies			
<b>DATA USES</b>  To determine global and regional air quality, and to study long range transport of pollutants			
<b>AVAILABILITY OF DATA</b>  Publication: "Atmospheric Turbidity and Precipitation Chemistry Data for the World". National Climatic Centre, Asheville, North Carolina, U.S.A.  - Turbidity data archived at AES Headquarters. - Precipitation chemistry data archived at AES Headquarters and in NAQUADAT (IWD Ottawa). - Carbon dioxide data archived at AES Headquarters.			
<b>ADDITIONAL INFORMATION</b>  **Turbidity data recorded manually by field personnel and mailed monthly to AES Headquarters.  Precipitation chemistry - samples in containers mailed monthly to AES Headquarters for analysis by Inland Waters Directorate.  Carbon dioxide - vacuum flask samples shipped regularly from global stations for analysis.			

<b>ACTIVITY/TYPE OF DATA</b> NOCTILUCENT CLOUD NETWORK		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada
<b>PARAMETERS MONITORED</b> Visual/photographic, cf "International Noctilucent Cloud Observation Manual" WMO No. 250.TP.138; 1970.		
<b>No. OF STATIONS AND COVERAGE</b> 62 National	<b>SAMPLING FREQUENCY</b> Daily March 1 to November 1 inclusive	<b>DATA ACQUISITION</b> Data mailed monthly to Atmospheric Environment Service Headquarters
<b>USERS OF DATA</b> Research scientists, NLC data collection centres in Canada, Estonia and Scotland		
<b>DATA USES</b> Diverse		
<b>AVAILABILITY OF DATA</b> Punched cards, photographs published annually in "Noctilucent Cloud Data - Alaska, Canada, Greenland, Iceland"		
<b>ADDITIONAL INFORMATION</b> Atmospheric Environment Service is the NLC data collection centre for North America, Greenland and Iceland		

<b>ACTIVITY/TYPE OF DATA</b> ENVIRONMENTAL SATELLITE READOUT		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Scanning radiometer measurements in the visual (.6 to .7 $\mu$ ) and infra-red (10.5 to 12.5 $\mu$ ) spectral intervals presented in an imagery format.			
<b>No. OF STATIONS AND COVERAGE</b> 4 Ground receiving stations, international date-line to Atlantic Ocean, Bering Strait to Mexico	<b>SAMPLING FREQUENCY</b> Depends upon orbital parameters and availability of transmission systems		<b>DATA ACQUISITION</b> Data are collected from United States satellites carrying meteorological imagery sensors
<b>USERS OF DATA</b> Atmospheric Environment Service, private and public agencies, research institutes, news media, ship operators, airlines, etc.			
<b>DATA USES</b> Diverse			
<b>AVAILABILITY OF DATA</b> Atmospheric Environment Service weather facsimile circuits, magnetic tape, photographic imagery.			
<b>ADDITIONAL INFORMATION</b> High resolution imagery is received at Toronto and Edmonton. Low resolution imagery is received at Halifax and Vancouver. The Edmonton station is scheduled to become operational during 1977.			



<b>ACTIVITY/TYPE OF DATA</b> WAVE MEASUREMENTS		<b>SPONSORING AGENCY *</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Temperature - surface, depth; sea state, wave measurements			
<b>No. OF STATIONS AND COVERAGE</b>  East and west coasts, Great Lakes	<b>SAMPLING FREQUENCY</b>  Various	<b>DATA ACQUISITION</b> Field personnel and automatic equipment. Ocean weather ships, drilling rigs, moored buoys, ships of opportunity, marine patrol aircraft, lighthouses, government and military vessels	
<b>USERS OF DATA</b>  Military, Department of Transport, Coast Guard, research establishments, universities, fishermen, oil companies, private industry, legal, IGOSS, ICNAF, U.S. Military, NATO, U.S. and U.K. Fleet Weather Centres, foreign weather centres.			
<b>DATA USES</b>  Diverse			
<b>AVAILABILITY OF DATA</b>  Atmospheric Environment Service facsimile networks, Radio Fax, Atmospheric Environment Service Climatology, punched cards and computer printouts.			
<b>ADDITIONAL INFORMATION</b>  *Measurements are made by many agencies including Ocean and Aquatic Sciences, Department of National Defence.			

<b>ACTIVITY/TYPE OF DATA</b> SURFACE NETWORKS, CLIMATOLOGY, WIND		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  cf CSDC			
<b>No. OF STATIONS AND COVERAGE</b>  cf CSDC  241 (March 1977)	<b>SAMPLING FREQUENCY</b>  Some continual, others on the hour		<b>DATA ACQUISITION</b>  Field personnel
<b>USERS OF DATA</b>  Atmospheric Environment Service, World Meteorological Organization, aviation, marine, public, special applications, news media, agriculture, utilities.			
<b>DATA USES</b>  Diverse			
<b>AVAILABILITY OF DATA</b>  Selected Atmospheric Environment Service publications, computer tape, microfiche			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> SURFACE NETWORKS CLIMATOLOGY SOIL TEMPERATURE		<b>SPONSORING AGENCY</b> Atmospheric Environment Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Soil temperature			
<b>No. OF STATIONS AND COVERAGE</b>  67 National	<b>SAMPLING FREQUENCY</b>  Once or twice daily at 5, 10, 20, 50, 100, 150 and 300 cm		<b>DATA ACQUISITION</b>  Field personnel
<b>USERS OF DATA</b>  Atmospheric Environment Service, World Meteorological Organization, agricultural and engineering uses			
<b>DATA USES</b>  Diverse, including growing season information, depth of frost, etc.			
<b>AVAILABILITY OF DATA</b>  Atmospheric Environment Service publishes in Monthly Record, also on magnetic tape			
<b>ADDITIONAL INFORMATION</b>			



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# ENVIRONMENTAL MANAGEMENT SERVICE

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<b>ACTIVITY/TYPE OF DATA</b>  HYDROMETRIC		<b>SPONSORING AGENCY</b>  Water Survey of Canada Inland Waters Directorate Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Water levels, water discharges, water temperatures, water depths, river widths, water velocities.			
<b>No. OF STATIONS AND COVERAGE</b>  2400 National - in Quebec limited to federal stations only		<b>SAMPLING FREQUENCY</b>  Water level: 1800 continuous;  Other parameters: approximately monthly.	
<b>DATA ACQUISITION</b>  Automatic recorders and field personnel, some local residents.			
<b>USERS OF DATA</b>  Federal and provincial governments, power corporations, universities, private groups, consultants, any industries that use water.			
<b>DATA USES</b>  Environmental impact assessment, flood control and forecasting, water supply, power development requirements, industrial and residential requirements, irrigation, navigation, and fisheries programs, planning, design, construction and implementation of water projects.			
<b>AVAILABILITY OF DATA</b>  (1) "Surface Water Data" - Seven volumes published annually, lists daily water levels or discharges on a regional or provincial basis. Ontario publication includes federal stations in Quebec. (2) "Historical Streamflow Summary" - Seven volumes published every 3 years. Lists monthly and annual mean discharges, annual maximum and minimum daily discharges and annual maximum instantaneous discharges for the period of record of all stations, active and discontinued. (3) "Surface Water Data Reference Index" - One volume published annually. Lists available data at all sites, active or discontinued.  Streamflow data are also available on magnetic tape upon request; other data are available upon application to Water Survey offices.			

<b>ACTIVITY/TYPE OF DATA</b>  HYDROMETRIC	<b>SPONSORING AGENCY</b> Water Survey of Canada Inland Waters Directorate Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Sediment concentrations, particle sizes, sediment loads, river channel deformation.		
<b>No. OF STATIONS AND COVERAGE</b>  172 National except Quebec	<b>SAMPLING FREQUENCY</b>	<b>DATA ACQUISITION</b>  Field personnel and local residents sample water and river bed material
<b>USERS OF DATA</b>  Federal and provincial governments, power corporations, universities, private groups.		
<b>DATA USES</b>  Environmental impact assessment, assessment of effects on: reservoir capacity, canal capacity, flood potential, water supply systems, power generation equipment, and fish spawning grounds. Also to determine degree of land erosion.		
<b>AVAILABILITY OF DATA</b>  (1) "Sediment Data for Canadian Rivers" - One volume published annually. Lists daily suspended sediment discharges, concentrations and bed material particle size analyses.  (2) "Sediment Data Reference Index" - One volume published annually. Lists available sediment data at all sites, active or discontinued.  (3) Reports giving results of geomorphological studies are published on completion of the study.		



<b>ACTIVITY/TYPE OF DATA</b>  HYDROMETRIC		<b>SPONSORING AGENCY</b>  Inland Waters Directorate Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Water level			
<b>No. OF STATIONS AND COVERAGE</b>  116 National	<b>SAMPLING FREQUENCY</b>  On demand or several times/day	<b>DATA ACQUISITION</b>  Satellite, radio, or land line systems	
<b>USERS OF DATA</b>  Federal and provincial agencies			
<b>DATA USES</b>  Preparation of flood and water supply forecasts for flood warning and relief measures, operation of river diversion and reservoir systems, navigation			
<b>AVAILABILITY OF DATA</b>  May be obtained from district offices of Water Survey of Canada, forecasting centres, or through public releases			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  HYDROMETRIC	<b>SPONSORING AGENCY</b>  Water Survey of Canada Inland Waters Directorate Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Tides - water levels		
<b>No. OF STATIONS AND COVERAGE</b>  140 Coast and St. Lawrence - Great Lakes System	<b>SAMPLING FREQUENCY</b>  Continuous	<b>DATA ACQUISITION</b>  Automatic recorders, telemetry, field personnel and local residents
<b>USERS OF DATA</b>  Federal and provincial governments, transportation companies.		
<b>DATA USES</b>  Assistance to navigation in coastal areas and St. Lawrence - Great Lakes System. Also used in preparation of tidal predictions.		
<b>AVAILABILITY OF DATA</b>  Ocean and Aquatic Sciences (Fisheries and Environment Canada) analyses the data and makes information available to the public, e.g. tide tables.		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b> HYDROMETRIC		<b>SPONSORING AGENCY</b> Water Survey of Canada Inland Waters Directorate Environmental Management Service Fisheries and Environment Canada			
<b>PARAMETERS MONITORED</b>  Snow depth and snow water equivalent					
<b>No. OF STATIONS AND COVERAGE</b>  200 National except for B.C., Manitoba and Quebec		<b>SAMPLING FREQUENCY</b>  6/year		<b>DATA ACQUISITION</b>  Field personnel	
<b>USERS OF DATA</b>  Water Resources Branch of Inland Waters Directorate, provincial agencies.					
<b>DATA USES</b>  To provide an indication of potential floods and to estimate seasonal water supplies.					
<b>AVAILABILITY OF DATA</b>  Data are forwarded to Atmospheric Environment Service (Fisheries and Environment Canada) who are responsible for publishing all snow survey data. Critical information is supplied to flood forecasters immediately upon completion of surveys.					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b>  HYDROMETRIC		<b>SPONSORING AGENCY</b> Water Survey of Canada Inland Waters Directorate Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Ice thickness, duration of ice cover.			
<b>No. OF STATIONS AND COVERAGE</b>		<b>SAMPLING FREQUENCY</b>	<b>DATA ACQUISITION</b>  By-product of winter discharge measurements.
<b>USERS OF DATA</b>  Fishermen, logging companies, pipeline companies, transportation services.			
<b>DATA USES</b>  Planning of transportation across lakes and rivers in winter.			
<b>AVAILABILITY OF DATA</b>  On request from District Offices of the Water Survey of Canada.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  GLACIERS		<b>SPONSORING AGENCY</b>  Glaciology Division Inland Waters Directorate Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Ablation			
<b>No. OF STATIONS AND COVERAGE</b>  2 Arctic	<b>SAMPLING FREQUENCY</b>  Yearly	<b>DATA ACQUISITION</b>  Aerial and terrestrial photogrammetry	
<b>USERS OF DATA</b>  Glaciology Division, Inland Waters Directorate			
<b>DATA USES</b>  To monitor changes, research and technical development.			
<b>AVAILABILITY OF DATA</b>  Reports are published by Glaciology Division			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  GLACIERS	<b>SPONSORING AGENCY</b>  Glaciology Division Inland Waters Directorate Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Snow depth and density, ice thickness, windspeed, temperature, humidity, precipitation, solar radiation, reflected radiation, runoff (all parameters involved in computing mass balance).		
<b>No. OF STATIONS AND COVERAGE</b>  2	<b>SAMPLING FREQUENCY</b>  Intensive	<b>DATA ACQUISITION</b>  A variety of sensors and recorders
<b>USERS OF DATA</b>  Glaciology Division, Inland Waters Directorate		
<b>DATA USES</b>  To develop and validate models to predict runoff from glaciers in alpine regions - when models are developed a small number of parameters will be measured to predict runoff.		
<b>AVAILABILITY OF DATA</b>  Reports are published by Glaciology Division		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b>  GLACIERS	<b>SPONSORING AGENCY</b>  Glaciology Division Inland Waters Directorate Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Snow added in winter, snow and ice lost in summer		
<b>No. OF STATIONS AND COVERAGE</b>  5 Cordillera Region	<b>SAMPLING FREQUENCY</b>  Monthly	<b>DATA ACQUISITION</b>  A variety of sensors and recorders
<b>USERS OF DATA</b>  Federal and provincial governments, International Permanent Service on the Fluctuation of Glaciers (PSFG), and International Association of Hydrological Sciences (IAHS)		
<b>DATA USES</b>  Runoff predictions		
<b>AVAILABILITY OF DATA</b>  Reports are published by the Glaciology Division		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b>  GLACIERS	<b>SPONSORING AGENCY</b>  Applied Hydrology Division Inland Waters Directorate Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Areal, lineal and volumetric changes of glaciers		
<b>No. OF STATIONS AND COVERAGE</b>  7 glaciers Western Canada	<b>SAMPLING FREQUENCY</b>  Every 2nd year	<b>DATA ACQUISITION</b>  Terrestrial photo- grammetry
<b>USERS OF DATA</b>  Federal and provincial governments and universities, results are also submitted to the International Permanent Service on the Fluctuation of Glaciers (PSFG), part of the Federation of Astronomical and Geophysical Services (FAGS) and to the International Association of Hydrological Sciences (IAHS), UNESCO.		
<b>DATA USES</b>  Predictions of runoff and for monitoring large scale climatic changes.		
<b>AVAILABILITY OF DATA</b>  Biennial reports with maps showing survey results.		
<b>ADDITIONAL INFORMATION</b>		



<b>ACTIVITY/TYPE OF DATA</b>  GROUNDWATER - QUALITY AND QUANTITY	<b>SPONSORING AGENCY</b> Hydrology Research Division and Water Survey of Canada, Inland Waters Directorate, Environmental Management Service, Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Groundwater levels, direction of flow, well yield, some water quality		
<b>No. OF STATIONS AND COVERAGE</b>  50 B.C., Manitoba, Ontario, Maritimes	<b>SAMPLING FREQUENCY</b>  Continuous	<b>DATA ACQUISITION</b>  Recorders, field personnel
<b>USERS OF DATA</b>  Federal and provincial governments, universities		
<b>DATA USES</b>		
<b>AVAILABILITY OF DATA</b>  Some data stored on magnetic tape, other data are published		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY		<b>SPONSORING AGENCY</b> Water Quality Branch Inland Waters Directorate Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> (a) major ions, colour, turbidity, pH, specific conductance, and suspended solids; (b) heavy metals, trace elements, nutrients, and organochlorides plus field measurements of colour, pH, specific conductance, dissolved oxygen, and temperature.			
<b>No. OF STATIONS AND COVERAGE</b> 521 National	<b>SAMPLING FREQUENCY</b> for (a): monthly plus annual low and high discharge (b): 4x/yr or more depending on site requirements		<b>DATA ACQUISITION</b> (a): trained technicians and lay collectors (b): trained technicians Analysis in regional laboratories
<b>USERS OF DATA</b> Federal, provincial, and municipal agencies, universities, associations, private sector organizations.			
<b>DATA USES</b> To determine pollution trends on a national and regional basis, to measure the effectiveness of remedial measures to control pollution, and to understand better the pathways, behaviour and fate of pollutants in the environment and their effect on physical, chemical and biological systems, and to contribute to improved water resources program planning and implementation. Baseline data.			
<b>AVAILABILITY OF DATA</b> Data available on a retrieval basis from NAQUADAT central data bank. Water quality data series reports containing water quality data and maps showing sampling station locations, and interpretative reports assessing the data and containing graphical displays. The publication "Index of National Water Quality Monitoring Stations" lists both active and discontinued stations as of 1971. Current station listings are available on request.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY		<b>SPONSORING AGENCY</b> Water Quality Branch, Ontario Region, Inland Waters Directorate, Environmental Management Service, Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Temperature, pH, % transmission, secchi disc, specific conductance, dissolved oxygen, % oxygen saturation, total phosphorus, chlorophyll "a", particulate organic carbon and particulate organic nitrogen. For some cruises, additional samples for soluble phosphorus, nitrate and nitrite, ammonia, reactive silica, potassium, sodium, calcium, magnesium, total coliform, fecal coliform, fecal strip, aerobic heterotrophs, total counts, pseudomonas aeruginosa.			
<b>No. OF STATIONS AND COVERAGE</b> 94 Lake Ontario	<b>SAMPLING FREQUENCY</b> 9 times per year between March and November, approximately 1 time per month	<b>DATA ACQUISITION</b> Sampling aboard ship by field personnel and analysis by water quality laboratory aboard ship and at CCIW	
<b>USERS OF DATA</b> Fisheries and Environment Canada, International Joint Commission, Ontario Ministry of Environment, industry, researchers, consulting firms and other groups.			
<b>DATA USES</b> To assess compliance with Fisheries and Environment Canada and International Joint Commission water quality objectives, to provide basic information relevant to the need for and response to remedial and preventative waste management programs, trans-boundary movement and distribution of pollutants, water use suitability and supporting information necessary for assessment of localized water use problems.			
<b>AVAILABILITY OF DATA</b> Data are stored on magnetic tape and are available in computer printout format within 6 to 8 weeks after sampling.			
<b>ADDITIONAL INFORMATION</b> The monitoring plan for Lake Erie is being directed by the United States. No operational plans exist yet for the Upper Great Lakes, although they are being developed at the present time.			

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY		<b>SPONSORING AGENCY</b> Water Quality Branch Inland Waters Directorate Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Bacteriological Parameters			
<b>No. OF STATIONS AND COVERAGE</b> Lakes Ontario and Erie	<b>SAMPLING FREQUENCY</b>		<b>DATA ACQUISITION</b> Sampling from research vessel and analysis in Environment Canada laboratory
<b>USERS OF DATA</b> Fisheries and Environment Canada, International Joint Commission			
<b>DATA USES</b> To evaluate trends in bacteriological conditions and to indicate potential problem areas.			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  PRECIPITATION CHEMISTRY		<b>SPONSORING AGENCY</b>  Water Quality Branch Inland Waters Directorate Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  pH, nitrates, nitrites, ammonia, soluble salts of alkali metals and alkaline earth metals, phosphates, Pb, Cd, As, B, Se, fluorides and other heavy metals.			
<b>No. OF STATIONS AND COVERAGE</b>  20 Ontario - Great Lakes		<b>SAMPLING FREQUENCY</b>	<b>DATA ACQUISITION</b>
<b>USERS OF DATA</b>  Fisheries and Environment Canada			
<b>DATA USES</b>  To determine the contribution of rainfall and dry fallout to the chemical make-up of the St. Lawrence River and the Great Lakes			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  BIOLOGICAL	<b>SPONSORING AGENCY</b>  Great Lakes Biolimnology Laboratory Inland Waters Directorate Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Eutrophication (biomass and related parameters): chlorophyll a, particulate organic carbon, total particulate nitrogen, phytoplankton species composition (at 5 master stations)		
<b>No. OF STATIONS AND COVERAGE</b>  Nearshore and open waters of Lake Ontario	<b>SAMPLING FREQUENCY</b>  Bi-weekly from March to December on an annual basis	<b>DATA ACQUISITION</b>  Sampling from research vessels and analysis in Fisheries and Environment Canada Laboratories
<b>USERS OF DATA</b>  Fisheries and Environment Canada, International Joint Commission		
<b>DATA USES</b>  To provide information on a year-to-year basis on conditions in the near shore and open waters of the Great Lakes in response to the surveillance requirements of the Canada-U.S. Agreement on Great Lakes Water Quality		
<b>AVAILABILITY OF DATA</b>  International Joint Commission reports		
<b>ADDITIONAL INFORMATION</b>  This program is part of the overall surveillance program on the Great Lakes conducted under the aegis of the International Joint Commission		

<b>ACTIVITY/TYPE OF DATA</b>  FOREST INSECT AND DISEASE SURVEY		<b>SPONSORING AGENCY</b>  Forest Protection Branch Environmental Management Service Fisheries and Environment Canada			
<b>PARAMETERS MONITORED</b>  All forest pests					
<b>No. OF STATIONS AND COVERAGE</b>  National		<b>SAMPLING FREQUENCY</b>  Annual		<b>DATA ACQUISITION</b>  Aerial and ground surveys conducted by the six regional offices	
<b>USERS OF DATA</b>  Principal users are provincial forest authorities and the forest industry; others include officials of national, provincial and municipal parks and research institutions.					
<b>DATA USES</b>  To detect, evaluate and predict forest losses from insects, diseases, climate, and air pollutants.					
<b>AVAILABILITY OF DATA</b>  Data is published in the Annual Report of the Forest Insect and Disease Survey and a more frequently published Information Report Series.					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b> PEST CONTROL		<b>SPONSORING AGENCY</b> Forest Protection Branch Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Extent, distribution, formulation, and types of insecticides applied to Canadian forests.			
<b>No. OF STATIONS AND COVERAGE</b>  National	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  See Additional Information	
<b>USERS OF DATA</b>  Forest Protection Branch			
<b>DATA USES</b>  For planning research and future pest control operations			
<b>AVAILABILITY OF DATA</b>  Annual reports			
<b>ADDITIONAL INFORMATION</b>  Gathered through the Annual Forest Pest Control Forum which includes Fisheries and Environment Canada, Agriculture Canada, National Health and Welfare, provincial forestry departments and the forest industry.			



<b>ACTIVITY/TYPE OF DATA</b>  FOREST INVENTORIES		<b>SPONSORING AGENCY</b>  Forest Protection Branch Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Forest cover, growth, harvest, losses due to fire, disease and insects, cover withdrawn from productive use.			
<b>No. OF STATIONS AND COVERAGE</b>  National	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Provinces collect data and a national picture compiled by Forest Protection Branch	
<b>USERS OF DATA</b>  Federal and provincial governments, forest product industries, Food and Agriculture Organization (FAO)			
<b>DATA USES</b>  To make projections and outline trends of supply and demand			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>  Data are collected individually by the provinces. The federal government attempts to aggregate the data into a national picture.			

<b>ACTIVITY/TYPE OF DATA</b>  FOREST GROWTH SURVEY	<b>SPONSORING AGENCY</b>  Laurentian Forest Research Centre Quebec Region, Environmental Management Service, Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Species composition, height, diameter and volume growth of trees and stands, natural mortality, natural regeneration		
<b>No. OF STATIONS AND COVERAGE</b>  15 forest observation areas in Quebec, each 1300 ha of commercially harvested forest	<b>SAMPLING FREQUENCY</b>  10 year remeasurement cycle	<b>DATA ACQUISITION</b>  Field studies by EMS personnel
<b>USERS OF DATA</b>  Forest Management Institute, Quebec Lands and Forests, forestry faculties, forest industry.		
<b>DATA USES</b>  Forest management planning.		
<b>AVAILABILITY OF DATA</b>  Raw and compiled data are available on request from a data bank and are supplied to users. Scientific reports and analyses are published as required.		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b>  FOREST FIRES		<b>SPONSORING AGENCY</b>  Forest Protection Branch Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Current fire situation and prevailing weather conditions			
<b>No. OF STATIONS AND COVERAGE</b>  National		<b>SAMPLING FREQUENCY</b>  Daily during fire season	<b>DATA ACQUISITION</b>  Fire situation information obtained from provinces and weather information from Atmospheric Environment Service
<b>USERS OF DATA</b>  Forest Fire Research Institute			
<b>DATA USES</b>  To make a daily forest fire danger forecast			
<b>AVAILABILITY OF DATA</b>  Forecasts are transmitted to appropriate regions in the form of facsimile maps and accompanying interpretation			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  MIGRATORY BIRD POPULATIONS IN QUEBEC		<b>SPONSORING AGENCY</b> Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Number of individuals, number of species, distribution, period of stay, status of individuals (male, female, reproducing, adult, young) for sea birds, large white geese, and migrating waterfowl. Also atmospheric conditions.			
<b>No. OF STATIONS AND COVERAGE</b>  St. Lawrence River and Gulf of St. Lawrence		<b>SAMPLING FREQUENCY</b>	<b>DATA ACQUISITION</b>
<b>USERS OF DATA</b>  Canadian Wildlife Service			
<b>DATA USES</b>  To evaluate habitat conditions, population standard, and the pressures upon the birds and their environment; as a framework for research studies.			
<b>AVAILABILITY OF DATA</b>  Internal reports			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> CENSUS OF MIGRATORY NON-GAME BIRDS IN BIRD SANCTUARIES ON NORTH SHORE OF GULF OF ST. LAWRENCE		<b>SPONSORING AGENCY</b> Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Number of breeding and non-breeding birds			
<b>No. OF STATIONS AND COVERAGE</b>  North Shore Gulf of St. Lawrence	<b>SAMPLING FREQUENCY</b>  Once every 5 years (since 1925)		<b>DATA ACQUISITION</b>  Counts from ground and boats - standardized methods
<b>USERS OF DATA</b>  Canadian Wildlife Service			
<b>DATA USES</b>  Detecting population trends			
<b>AVAILABILITY OF DATA</b>  Up to 1965 published in Canadian Field Naturalist			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  WOODCOCK SINGING SURVEY	<b>SPONSORING AGENCY</b>  Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Number of woodcocks singing in a given area		
<b>No. OF STATIONS AND COVERAGE</b>  Maritimes, Ontario and Quebec	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Roadside counts by provincial wildlife agency personnel and volunteers
<b>USERS OF DATA</b>  Canadian Wildlife Service, provincial wildlife agencies, and U.S. Fish and Wildlife Service		
<b>DATA USES</b>  Limited use of data by Canadian Wildlife Service, primarily used by U.S. Fish and Wildlife Service		
<b>AVAILABILITY OF DATA</b>  U.S. Fish and Wildlife Service Woodcock Status Report		
<b>ADDITIONAL INFORMATION</b>  Primarily a U.S. Fish and Wildlife Service program with Canadian Wildlife Service involvement		

<b>ACTIVITY/TYPE OF DATA</b> SPECIES COMPOSITION SURVEY		<b>SPONSORING AGENCY</b> Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Age, species, sex, location and time of kill for geese and ducks.			
<b>No. OF STATIONS AND COVERAGE</b>  National	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Hunters are asked to send in wings of all ducks and tails of all geese shot	
<b>USERS OF DATA</b>  Canadian Wildlife Service and provincial wildlife agencies			
<b>DATA USES</b>  To determine species involved in the kill and age and sex ratio in the kill. This gives information on success of breeding season and vulnerability of immature birds.			
<b>AVAILABILITY OF DATA</b>  Progress Notes are distributed to provinces and to many other interested agencies and people.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> BREEDING BIRD SURVEY		<b>SPONSORING AGENCY</b> Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Number of birds sighted or heard (detected) in standardized surveys and prevailing conditions.			
<b>No. OF STATIONS AND COVERAGE</b>  National (only areas with roads)	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Volunteers	
<b>USERS OF DATA</b>  Canadian Wildlife Service, U.S. Fish and Wildlife Service, provincial and international agencies and universities			
<b>DATA USES</b>  Data on the diversity, relative populations, and geographic distribution of species are used to detect year to year changes and trends to see if any species are in trouble. Also to gain insight into relationship between yearly variations and changes in the environment			
<b>AVAILABILITY OF DATA</b>  Data stored on magnetic tape in Washington and Ottawa. Canadian Wildlife Service Progress Notes are distributed annually			
<b>ADDITIONAL INFORMATION</b>  Program carried out jointly with U.S. Fish and Wildlife Service but analysis is separate			



<b>ACTIVITY/TYPE OF DATA</b> WATERFOWL BREEDING PAIR SURVEY		<b>SPONSORING AGENCY</b> Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Spring Survey: counts number of water bodies (ponds), counts and classifications of ducks, pairs, flocks. July Survey: counts renesting pairs and broods but not according to species.			
<b>No. OF STATIONS AND COVERAGE</b> Western and Northern Canada	<b>SAMPLING FREQUENCY</b> Annual (both surveys)	<b>DATA ACQUISITION</b> Aerial and ground surveys to verify results of aerial work	
<b>USERS OF DATA</b> Canadian Wildlife Service, provincial wildlife agencies, and U.S. Fish and Wildlife Service.			
<b>DATA USES</b> To forecast expected number and distribution of birds for each species and the ratio of immature to adult birds.			
<b>AVAILABILITY OF DATA</b> Distributed to all provincial and state authorities concerned with migratory bird regulations.			
<b>ADDITIONAL INFORMATION</b> Primarily a U.S. Fish and Wildlife Service program			

<b>ACTIVITY/TYPE OF DATA</b> MIGRATORY GAME BIRD HARVEST SURVEY		<b>SPONSORING AGENCY</b> Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Number, kind (but not species), location and date of all game birds shot and retrieved.			
<b>No. OF STATIONS AND COVERAGE</b>  National	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Questionnaire sent to a large number of hunters (number may be in the order of 30,000 but varies each year)	
<b>USERS OF DATA</b>  Canadian Wildlife Service and provincial wildlife agencies.			
<b>DATA USES</b>  Setting length of hunting season in future years.			
<b>AVAILABILITY OF DATA</b>  Progress Notes are distributed to provinces and to many other interested agencies and people.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  SAMPLING OF HERRING GULL EGGS		<b>SPONSORING AGENCY</b>  Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada			
<b>PARAMETERS MONITORED</b>  PCB, DDT, Mercury and others as desired					
<b>No. OF STATIONS AND COVERAGE</b>  10 eggs from each of two colonies on the Great Lakes		<b>SAMPLING FREQUENCY</b>  Every two years		<b>DATA ACQUISITION</b>	
<b>USERS OF DATA</b>  Fisheries and Environment Canada, Great Lakes Water Quality Board					
<b>DATA USES</b>  To assess effectiveness of actions taken to reduce emissions of certain chemicals (PCB, DDT, Hg) by following trends in environmental contamination					
<b>AVAILABILITY OF DATA</b>  Published in scientific journals or as manuscript reports of Toxic Chemicals Division (Canadian Wildlife Service)					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b>  CANADIAN CONTRIBUTION TO OECD WILDLIFE SAMPLING PROGRAM		<b>SPONSORING AGENCY</b>  Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  PCB, DDT, Mercury in birds			
<b>No. OF STATIONS AND COVERAGE</b>  3	<b>SAMPLING FREQUENCY</b>  Every 2 years but annual for the past 4 years	<b>DATA ACQUISITION</b>  Ground sites	
<b>USERS OF DATA</b>  Fisheries and Environment Canada, Organization for Economic Cooperation and Development (OECD)			
<b>DATA USES</b>  To assess effectiveness of administrative actions taken by OECD countries to reduce emissions of certain chemicals (PCB, DDT, Hg) by following year- to-year trends in environmental contamination			
<b>AVAILABILITY OF DATA</b>  Publication of a report by OECD on 4-year survey. Data are available for internal management purposes but Canadian data available from Canadian Wildlife Service to other federal government departments			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> CARIBOU POPULATION STUDIES		<b>SPONSORING AGENCY</b> Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Population size, dynamics including mortality and natality			
<b>No. OF STATIONS AND COVERAGE</b> Herds in Northwestern Canada (5 - Porcupine, Bluenose, Bathurst, Beverly Kaminuriak), plus 1 in Quebec and Labrador - Nfld. and Peary caribou on Queen Elizabeth Island.	<b>SAMPLING FREQUENCY</b> Annual		<b>DATA ACQUISITION</b> Tagging, radio tracking, aerial surveys
<b>USERS OF DATA</b> Canadian Wildlife Service and provincial agencies			
<b>DATA USES</b> Data on Northwestern and George River (Que. and Nfld.) herds used mostly for setting hunting quotas - data on Peary caribou and muskoxen used for Arctic pipeline baseline environmental studies. Managed through provincial* management committee using Canadian Wildlife Service in advisory role.  *Province in this context also means Northwest Territories and Yukon Territory			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  POLAR BEAR POPULATION STUDIES		<b>SPONSORING AGENCY</b>  Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada			
<b>PARAMETERS MONITORED</b>  Identification and distribution of sub-populations, denning sites; population size, dynamics including mortality and natality. Surveys to determine impact on polar bear population of offshore drilling and seismic operations.					
<b>No. OF STATIONS AND COVERAGE</b>  Northern Canada		<b>SAMPLING FREQUENCY</b>  Annual		<b>DATA ACQUISITION</b>  Tagging and radio tracking	
<b>USERS OF DATA</b>  Canadian Wildlife Service and provincial wildlife agencies (Technical and Administrative Committee on Polar Bear Research and Management)					
<b>DATA USES</b>  To set zone hunting quotas to maintain sub-populations on a sustained basis					
<b>AVAILABILITY OF DATA</b>					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b> WESTERN BISON HEALTH STATUS		<b>SPONSORING AGENCY</b> Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Health status			
<b>No. OF STATIONS AND COVERAGE</b> Western Canada	<b>SAMPLING FREQUENCY</b> Annual	<b>DATA ACQUISITION</b>	
<b>USERS OF DATA</b> Canadian Wildlife Service			
<b>DATA USES</b> To study the current health status and to study and prevent the spread of anthrax			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  CANADIAN CONTRIBUTION TO OECD WILDLIFE SAMPLING PROGRAM		<b>SPONSORING AGENCY</b>  Canadian Wildlife Service and Fisheries and Marine Service Fisheries and Environment Canada			
<b>PARAMETERS MONITORED</b>  PCB, DDT, Mercury in fish					
<b>No. OF STATIONS AND COVERAGE</b>  4		<b>SAMPLING FREQUENCY</b>  Every 2 years but annual for the past 4 years		<b>DATA ACQUISITION</b>  Ships	
<b>USERS OF DATA</b>  Fisheries and Environment Canada, Organization for Economic Cooperation and Development (OECD)					
<b>DATA USES</b>  To assess the effectiveness of administrative actions taken by OECD countries to reduce emissions of certain chemicals (PCB, DDT, Hg) by following year to year trends in environmental contamination					
<b>AVAILABILITY OF DATA</b>  Publication of a report by OECD on 4-year survey. Data are available for internal management purposes but Canadian data available from Canadian Wildlife Service and Fisheries and Marine Service to other federal government departments.					
<b>ADDITIONAL INFORMATION</b>					



<b>ACTIVITY/TYPE OF DATA</b>  MONITORING OF TERRESTRIAL ECOSYSTEMS		<b>SPONSORING AGENCY</b>  Western and Northern Region Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  1. Chemical residues in species at the end of food chain, in seed eaters, and in food of animals exhibiting high pesticide residues.  2. Measurement of egg and tissues and of populations and productivity of animals which have shown high residues and decreases in population or productivity or both.			
<b>No. OF STATIONS AND COVERAGE</b>  Manitoba, Saskatchewan, Alberta, and Northwest Territories		<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Field surveys
<b>USERS OF DATA</b>  Canadian Wildlife Service, agricultural and environmental agencies of Governments of Manitoba, Saskatchewan, Alberta and Northwest Territories.			
<b>DATA USES</b>  1. To determine changes in toxic chemical residues in terrestrial ecosystems. 2. To determine changes in productivity and populations of top of food chain species. 3. To assess population, age structure, turnover and movements in top of food chain species. 4. To study the effects of persistent residues on reproduction, behaviour and feeding patterns in end of food chain species.			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> ENDANGERED SPECIES SURVEYS AND MANAGEMENT RESEARCH		<b>SPONSORING AGENCY</b> Western and Northern Region Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Populations and habitat requirements of endangered, threatened and sensitive species.			
<b>No. OF STATIONS AND COVERAGE</b> Alberta, Saskatchewan and Manitoba	<b>SAMPLING FREQUENCY</b>	<b>DATA ACQUISITION</b> Standard census techniques and intensive field surveys	
<b>USERS OF DATA</b> Canadian Wildlife Service, Governments of Alberta, Saskatchewan and Manitoba			
<b>DATA USES</b> 1. To determine the status of endangered, threatened, and sensitive species. 2. To establish management guidelines to ensure the survival, maintenance and increase of endangered, potentially threatened and sensitive species.			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> MIGRATORY BIRD INVENTORY IN THE EASTERN ARCTIC		<b>SPONSORING AGENCY</b> Western and Northern Region Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Migratory bird populations			
<b>No. OF STATIONS AND COVERAGE</b>  Eastern Arctic	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Standard census and marking techniques.	
<b>USERS OF DATA</b>  Canadian Wildlife Service, Government of the Northwest Territories, U.S. Fish and Wildlife Service, States on the Central Mississippi, and Atlantic Flyways.			
<b>DATA USES</b> <ol style="list-style-type: none"><li>1. To assess annually migratory bird population levels, habitat, reproductive success, size of fall flight, and migration chronology of Eastern Arctic nesting species.</li><li>2. To propose annual migratory game bird hunting recommendations based upon results of the above.</li><li>3. To test the validity of established waterfowl census techniques and to recommend improved procedures.</li><li>4. To develop co-ordinated approaches to waterfowl management activities.</li></ol>			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> MIGRATORY BIRD INVENTORY IN SASKATCHEWAN		<b>SPONSORING AGENCY</b> Western and Northern Region Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Migratory bird populations			
<b>No. OF STATIONS AND COVERAGE</b>  Saskatchewan	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Standard census and marking techniques	
<b>USERS OF DATA</b> Canadian Wildlife Service, Saskatchewan Department of Tourism and Renewable Resources, U.S. Fish and Wildlife Service, Central Flyway Council Technical Committee, Ducks Unlimited (Canada)			
<b>DATA USES</b> <ol style="list-style-type: none"><li>1. To assess migratory bird population levels, habitat conditions, reproductive success, migration chronology and characteristics of the Saskatchewan harvest.</li><li>2. To test the validity of established migratory bird census techniques and to improve census procedures.</li><li>3. To develop a co-ordinated approach to waterfowl management in Saskatchewan.</li></ol>			
<b>AVAILABILITY OF DATA</b>  Published reports.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> MIGRATORY BIRD INVENTORY IN NORTHWEST TERRITORIES		<b>SPONSORING AGENCY</b> Western and Northern Region Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Migratory bird populations			
<b>No. OF STATIONS AND COVERAGE</b>  Northwest Territories	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Standard census and marking techniques.	
<b>USERS OF DATA</b>  Canadian Wildlife Service, Government of the Northwest Territories, U.S. Fish and Wildlife Service, Canada Department of Indian and Northern Affairs, U.S. Central Flyway States			
<b>DATA USES</b> <ol style="list-style-type: none"><li>1. To annually assess migratory bird population levels, habitat requirements and conditions, reproductive success, migration chronology, and characteristics of the territorial harvest.</li><li>2. To inventory whooping crane populations and habitat.</li><li>3. To evaluate waterfowl survey techniques and to recommend improvements.</li><li>4. To develop a co-ordinated approach to waterfowl management in the Northwest Territories.</li></ol>			
<b>AVAILABILITY OF DATA</b>  Published reports.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> MIGRATORY BIRD INVENTORY IN ALBERTA		<b>SPONSORING AGENCY</b> Western and Northern Region Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Migratory bird populations			
<b>No. OF STATIONS AND COVERAGE</b>  Alberta	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Standard census and marking techniques	
<b>USERS OF DATA</b>  Canadian Wildlife Service, Alberta Department of Parks, Recreation and Wildlife, Canadian Ministry of Transport, U.S. Fish and Wildlife Service, U.S. Central and Pacific Flyway States, Ducks Unlimited (Canada)			
<b>DATA USES</b> <ol style="list-style-type: none"><li>1. To assess annually migratory bird breeding populations, reproductive success, migration chronology and harvest trends.</li><li>2. To monitor habitat conditions and relate population levels to habitat type and quality.</li><li>3. To evaluate established waterfowl survey techniques and to recommend improved methods.</li><li>4. To develop a co-ordinated approach to waterfowl management in Alberta.</li></ol>			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> MIGRATORY BIRD INVENTORY IN MANITOBA		<b>SPONSORING AGENCY</b> Western and Northern Region Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Migratory bird populations			
<b>No. OF STATIONS AND COVERAGE</b>  Manitoba	<b>SAMPLING FREQUENCY</b>  Annual		<b>DATA ACQUISITION</b>  Standard census and marking techniques
<b>USERS OF DATA</b>  Canadian Wildlife Service, Manitoba Department of Renewable Resources and Transportation Services, U.S. Fish and Wildlife Service, States on Mississippi Flyway.			
<b>DATA USES</b> <ol style="list-style-type: none"><li>1. To assess annually migratory bird population levels, habitat, reproductive success, size of fall flight, migration chronology and characteristics of the Manitoba harvest.</li><li>2. To propose annual migratory game bird hunting recommendations based upon results of above.</li><li>3. To test the validity of established waterfowl census techniques and to recommend improved procedures.</li><li>4. To develop co-ordinated approaches to waterfowl management activities in Manitoba</li></ol>			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> SANDHILL CRANE POPULATION DYNAMICS		<b>SPONSORING AGENCY</b> Western and Northern Region Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Numbers, age ratio, and distribution of sandhill cranes			
<b>No. OF STATIONS AND COVERAGE</b>  Prairie provinces		<b>SAMPLING FREQUENCY</b>  Two annual surveys - spring and autumn	<b>DATA ACQUISITION</b>  Surveys by federal and provincial personnel and amateur naturalists. Also questionnaire and field checking of hunters and harvest.
<b>USERS OF DATA</b>  Canadian Wildlife Service, Alberta Department of Parks, Recreation and Wildlife, Saskatchewan Department of Tourism and Renewable Resources, Manitoba Department of Renewable Resources and Transportation Services			
<b>DATA USES</b>  1. To determine quantitative distribution of sandhill cranes in Western Canada in spring and autumn. 2. To determine age ratios in fall migration. 3. To investigate adequacy of harvest survey.			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			



<b>ACTIVITY/TYPE OF DATA</b> REPRODUCTIVE SUCCESS AND LEVELS OF TOXIC SUBSTANCES IN COLONIAL-NESTING, FISH-EATING BIRDS IN THE GREAT LAKES		<b>SPONSORING AGENCY</b> Canadian Wildlife Service Ontario Region Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Number of colonies; number of breeding pairs in colonies; number of nests; number of eggs per nest; percentage of eggs infertile, with embryos dying, and hatching; percentage of chicks dying from various causes; number of young fledged per adult breeding pair. Levels of toxic substances in eggs, chicks and adults.			
<b>No. OF STATIONS AND COVERAGE</b> Canadian Great Lakes, upper St. Lawrence River (to Ontario-Quebec border)	<b>SAMPLING FREQUENCY</b> Annually during the May, June, and July nesting season.	<b>DATA ACQUISITION</b> First-hand visual examination by Canadian Wildlife Service personnel and by contracting biologists. Also by aerial photography of some colonies.	
<b>USERS OF DATA</b> Canadian Wildlife Service Environmental Management Service, Ontario Region International Joint Commission Fisheries and Environment Canada, Environmental Protection Service Ontario Ministry of the Environment, Ministry of Natural Resources			
<b>DATA USES</b> To determine long-term trends in the reproductive success and other aspects of those wildlife populations believed to be affected detrimentally by water-borne toxic substances; to reveal the presence and concentration of known and unknown toxicants in wildlife tissues, to determine the effects of toxicants on wildlife health, to determine the pathways of toxicants from their sources to wildlife.			
<b>AVAILABILITY OF DATA</b> Internal Reports Publication in Departmental reports and scientific journals			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> WATERFOWL BREEDING PAIR SURVEY - SPRING		<b>SPONSORING AGENCY</b> Canadian Wildlife Service Ontario Region Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Numbers of breeding pairs in randomly located quadrats			
<b>No. OF STATIONS AND COVERAGE</b> Southern and eastern Ontario	<b>SAMPLING FREQUENCY</b> Irregular	<b>DATA ACQUISITION</b> Ground surveys	
<b>USERS OF DATA</b> Provinces Canadian Wildlife Service U.S. Fish and Wildlife Service			
<b>DATA USES</b> To determine population densities and distributions of various species of waterfowl			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> SURVEYS OF STAGING, MOULTING, AND MIGRATING WATERFOWL		<b>SPONSORING AGENCY</b> Canadian Wildlife Service Ontario Region Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Number of individuals, number of species, distribution, period of stay			
<b>No. OF STATIONS AND COVERAGE</b> Ontario coasts of James and Hudsons Bays. Ottawa and St. Lawrence Rivers and Great Lakes coastline of southern Ontario	<b>SAMPLING FREQUENCY</b>  Throughout the year, particularly during migration periods		<b>DATA ACQUISITION</b>
<b>USERS OF DATA</b>  Canadian Wildlife Service Provinces U.S. Fish and Wildlife Service			
<b>DATA USES</b>  To evaluate habitat conditions, index population levels, and assess habitat utilization patterns and the pressures upon the birds and their environment			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> SHOREBIRD SURVEYS		<b>SPONSORING AGENCY</b> Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Numbers of all species of shorebirds using selected estuaries			
<b>No. OF STATIONS AND COVERAGE</b>  Approximately 24 Maritime Provinces	<b>SAMPLING FREQUENCY</b>  Yearly since 1974, every two weeks from mid-July to late October		<b>DATA ACQUISITION</b>  Ground surveys
<b>USERS OF DATA</b>  Canadian Wildlife Service Nova Scotia Resources Council			
<b>DATA USES</b>  To evaluate distribution, habitat use, timing of migration and numbers of shorebirds using Maritime estuaries			
<b>AVAILABILITY OF DATA</b>  Canadian Wildlife Service Reports for 1974, 1975 surveys			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> SHOREBIRD SURVEYS		<b>SPONSORING AGENCY</b> Canadian Wildlife Service Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Numbers of individuals, number of species, distribution			
<b>No. OF STATIONS AND COVERAGE</b> 1974 - coastline from Churchill, Man., to Moosonee, Ontario; 1976 - Ontario coast of James Bay and Hudson Bay	<b>SAMPLING FREQUENCY</b> During migration periods 1974 and 1976		<b>DATA ACQUISITION</b> Aerial surveys
<b>USERS OF DATA</b>  Canadian Wildlife Service			
<b>DATA USES</b>  To determine distribution of shorebirds and identify important staging areas			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  NORTHERN LAND USE MAP SERIES		<b>SPONSORING AGENCY</b>  Lands Directorate Environmental Management Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Various land use data, including critical and important wildlife areas, fish resources and fishing, recreation and tourism potential and facilities, hunting and trapping areas, notes on communities, development areas and control zones, location of hydrometric and water quality stations, archaeological and historical sites, proposed IBP reserves, parks and sanctuaries.			
<b>No. OF STATIONS AND COVERAGE</b>  Northern Canada		<b>SAMPLING FREQUENCY</b>	<b>DATA ACQUISITION</b>  Field studies
<b>USERS OF DATA</b>  Federal Government, Territories and private industry			
<b>DATA USES</b>  To provide inventories of land-based renewable resources, and as an aid in regional planning and the assessment of resource development impacts.			
<b>AVAILABILITY OF DATA</b>  Maps published by Lands Directorate			
<b>ADDITIONAL INFORMATION</b>  Carried out in co-operation with Department of Indian and Northern Affairs, Arctic Land Use Research program.			



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# ENVIRONMENTAL PROTECTION SERVICE

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<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b>  Environmental Protection Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Ca, Mg, NO <sub>3</sub> , SO <sub>4</sub> , Cl, pH, alkalinity, Cu, Zn, Pb, Fe, As, Hg, Sb, Cd (extr.), PO <sub>4</sub> , TOC, TON, DO, TSS, acidity, humic acid, hardness, CN			
<b>No. OF STATIONS AND COVERAGE</b>  92 New Brunswick and Nova Scotia		<b>SAMPLING FREQUENCY</b>  4 times per year	<b>DATA ACQUISITION</b>  Sampling by trained technicians and analysis in regional laboratories
<b>USERS OF DATA</b>  Fisheries and Environment Canada and provincial environmental departments			
<b>DATA USES</b>			
<b>AVAILABILITY OF DATA</b>  Data reports produced by Environmental Protection Service.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY OF SHELLFISH GROWING AREAS	<b>SPONSORING AGENCY</b> Water Pollution Control Directorate Environmental Protection Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Total and fecal coliforms, pH, salinity and temperature		
<b>No. OF STATIONS AND COVERAGE</b>  Shellfish growing areas of Atlantic, Pacific and Quebec regions	<b>SAMPLING FREQUENCY</b>  Variable	<b>DATA ACQUISITION</b>  Sampling by federal officials and analysis in regional laboratories
<b>USERS OF DATA</b>  Environmental Protection Service, Fisheries and Marine Service and provincial agencies		
<b>DATA USES</b>  - To determine if microbiological quality of growing areas is suitable for direct harvesting of shellfish for human consumption. - To identify and assess impact of pollution sources on coastal water quality. - To effect pollution abatement.		
<b>AVAILABILITY OF DATA</b>  On request from regional offices of Environmental Protection Service and in surveillance reports. Data are also available indirectly from other agencies whose names can be obtained from EPS regional offices.		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b> Water Pollution Control Directorate Environmental Protection Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Physical, chemical and biological parameters			
<b>No. OF STATIONS AND COVERAGE</b>  Zone of influence of selected municipal and industrial outfalls on an intermittent basis	<b>SAMPLING FREQUENCY</b>  Variable	<b>DATA ACQUISITION</b>  Sampling by federal officials and analysis in regional laboratories	
<b>USERS OF DATA</b>  Environmental Protection Service			
<b>DATA USES</b>  To assess environmental response and effectiveness of control measures			
<b>AVAILABILITY OF DATA</b>  On request from regional offices of Environmental Protection Service			
<b>ADDITIONAL INFORMATION</b>  Surveys are similar in nature but are often undertaken at different sites			

<b>ACTIVITY/TYPE OF DATA</b>  INDUSTRIAL EFFLUENTS	<b>SPONSORING AGENCY</b> Water Pollution Control Directorate Environmental Protection Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Variable - depends upon industry being monitored.		
<b>No. OF STATIONS AND COVERAGE</b>  National "end of pipe"	<b>SAMPLING FREQUENCY</b>  Variable	<b>DATA ACQUISITION</b>  Samples taken by federal or provincial officials and analysed in regional laboratories
<b>USERS OF DATA</b>  Federal and provincial agencies		
<b>DATA USES</b>  For the enforcement of effluent regulations and determining effectiveness of control measures.		
<b>AVAILABILITY OF DATA</b>  On request from regional offices of Environmental Protection Service - a computer data storage system, 'WATENIS', is being developed.		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b>  NATIONAL AIR POLLUTION SURVEILLANCE NETWORK (NAPS)		<b>SPONSORING AGENCY</b>  Air Pollution Control Directorate Environmental Protection Service Fisheries and Environment Canada			
<b>PARAMETERS MONITORED</b>  Sulphur dioxide, carbon monoxide, nitrogen dioxide, ozone, coefficient of haze (soiling index), suspended particulates, lead, dustfall, and sulphation rate					
<b>No. OF STATIONS AND COVERAGE</b>  153 (52 cities across Canada)		<b>SAMPLING FREQUENCY</b>  Continuous (except suspended particulate matter - once every 6 days)		<b>DATA ACQUISITION</b>  Automatic equipment	
<b>USERS OF DATA</b>  Federal, provincial and regional governments, companies, institutions, and individuals in the private sector					
<b>DATA USES</b>  Purpose of NAPS is to monitor and assess the quality of ambient air in Canada's populated regions - data used to detect trends in pollution levels over time and with respect to changing industrial activity, population density, to establish control priorities, and to audit the effectiveness of air pollution abatement measures					
<b>AVAILABILITY OF DATA</b>  Monthly reports available to the public					
<b>ADDITIONAL INFORMATION</b>  Carried out in co-operation with the provinces and regional governments, i.e. Montreal Urban Community and Greater Vancouver Regional District					



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## FISHERIES AND MARINE SERVICE

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International Oceanic Monitoring Studies Using Commercial Species	95
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<b>ACTIVITY/TYPE OF DATA</b>  FISHERIES MANAGEMENT: QUALITY PROGRAM		<b>SPONSORING AGENCY</b>  Inspection Branch Fisheries and Marine Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Sanitation, operating methods and fish quality on fishing vessels and in processing plants.			
<b>No. OF STATIONS AND COVERAGE</b>  National		<b>SAMPLING FREQUENCY</b>  Routine	<b>DATA ACQUISITION</b>  Field inspectors
<b>USERS OF DATA</b>  Federal Government, vessel and plant owners and operators			
<b>DATA USES</b>  To ensure compliance with fisheries inspection regulations designed to prevent contamination and to maintain product quality.			
<b>AVAILABILITY OF DATA</b>  Internal reports, vessel and plant owners and operators			
<b>ADDITIONAL INFORMATION</b>			



<b>ACTIVITY/TYPE OF DATA</b> FISHERIES MANAGEMENT: QUALITY PROGRAM		<b>SPONSORING AGENCY</b> Inspection and Technology Branch Fisheries and Marine Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Hazardous materials including mercury, lead, cadmium, arsenic, selenium, PCB's and pesticide residues in domestic and imported fish (including shellfish); paralytic shellfish poison (PSP) in molluscan shellfish			
<b>No. OF STATIONS AND COVERAGE</b> National	<b>SAMPLING FREQUENCY</b> Continuing program	<b>DATA ACQUISITION</b> Samples analysed in field inspection laboratories in Canada; PSP bio-assays by NHW on extracts prepared by Fish Inspection labs	
<b>USERS OF DATA</b> Fisheries and Marine Service, National Health and Welfare, and provincial governments			
<b>DATA USES</b> To ensure that fish and shellfish are safe for human consumption and to determine the increase or decrease in background levels of contaminants. Recommendations are made to provinces re: the closing of fisheries; and both domestic and imported fish found to exceed safe levels are rejected for marketing in Canada; in the case of PSP in shellfish, closure of shellfish areas as required and public warnings.			
<b>AVAILABILITY OF DATA</b> Mainly internal reports, data are confidential in some cases; annual PSP reports in manuscript form in limited numbers			
<b>ADDITIONAL INFORMATION</b> Some samples are collected by the provinces; in the case of PSP in Quebec provincial officials prepare extracts and manage closures and public warnings			

<b>ACTIVITY/TYPE OF DATA</b> FISHERIES MANAGEMENT: QUALITY PROGRAM		<b>SPONSORING AGENCY</b> Inspection and Technology Branch Fisheries and Marine Service Fisheries and Environment Canada			
<b>PARAMETERS MONITORED</b> Quality, weight, product identity, and labelling practices for all domestic and imported fish products					
<b>No. OF STATIONS AND COVERAGE</b> National - all processing plants - all fish importers		<b>SAMPLING FREQUENCY</b> Continuous		<b>DATA ACQUISITION</b> Field inspectors and laboratories	
<b>USERS OF DATA</b> Federal Government, producers, importers					
<b>DATA USES</b> To ensure compliance with regulations designed to ensure that products are of good quality, properly identified, and not in any way fraudulent; certification of domestic products for export					
<b>AVAILABILITY OF DATA</b> Internal reports, importers, producers					
<b>ADDITIONAL INFORMATION</b> Major importers make letters of credit subject to product acceptance on inspection at entry by Inspection and Technology Branch					

<b>ACTIVITY/TYPE OF DATA</b> FISHERIES MANAGEMENT: QUALITY PROGRAM		<b>SPONSORING AGENCY</b> Inspection and Technology Branch Fisheries and Marine Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Bacteriological quality of fish and shellfish			
<b>No. OF STATIONS AND COVERAGE</b> National	<b>SAMPLING FREQUENCY</b> Continuous for fish; before and during harvest season for molluscan shellfish	<b>DATA ACQUISITION</b> Samples analysed in field inspection laboratories across Canada	
<b>USERS OF DATA</b> Federal Government, industry			
<b>DATA USES</b> To ensure the safety (microbiological) of fish and shellfish entering the market; and to monitor in-plant sanitation practices			
<b>AVAILABILITY OF DATA</b> Internal reports, plant operators			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> FISHERIES MANAGEMENT		<b>SPONSORING AGENCY</b> Fisheries and Marine Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Number and ages of fishermen, type of catch, location of catch, age, species and size of fish, and type of products made from various species.			
<b>No. OF STATIONS AND COVERAGE</b> East and West Coasts	<b>SAMPLING FREQUENCY</b>		<b>DATA ACQUISITION</b> Some data collected universally, other by sampling
<b>USERS OF DATA</b>  Federal and provincial governments, industry.			
<b>DATA USES</b>			
<b>AVAILABILITY OF DATA</b>  Published in government news releases; also available on computer data storage and retrieval system. No interpretation of data provided.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  FISHERIES MANAGEMENT		<b>SPONSORING AGENCY</b>  Fisheries and Marine Service Fisheries and Environment Canada			
<b>PARAMETERS MONITORED</b>  Size, type, and location of catch for each species in various areas					
<b>No. OF STATIONS AND COVERAGE</b>  East and West coasts, inland waters		<b>SAMPLING FREQUENCY</b>  Routine		<b>DATA ACQUISITION</b>  Processing plant purchase slips, and ships' log books and estimates of direct sales. Estimates made by local fishery officer.	
<b>USERS OF DATA</b>  Fisheries and Marine Service, other federal departments, industry, international agencies, researchers.					
<b>DATA USES</b>  For the management of the fishery resource and industry, and for preparation of weekly quota reports.					
<b>AVAILABILITY OF DATA</b>  Monthly summaries are sent out, which include data on the amount of fish caught during the past month and the cumulative totals for each quota.  Other information concerning fish landings, numbers and types of boats, fishermen, plants, prices, etc., are published in various annual reports by ICNAF, FAO, and Statistics Canada.					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b> FISH STOCK ASSESSMENT		<b>SPONSORING AGENCY</b> Fisheries and Marine Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Age and size, location and time of catch of all types of fin and shellfish			
<b>No. OF STATIONS AND COVERAGE</b>  East and West Coasts	<b>SAMPLING FREQUENCY</b>  Several times per year	<b>DATA ACQUISITION</b>  Sampling of commercial catches and independent resource surveys	
<b>USERS OF DATA</b>  International Commission for the Northwest Atlantic Fishery (ICNAF) and fisheries and fish processors, provincial governments, private consultants, international governments and commissions and other federal departments			
<b>DATA USES</b>  Data are combined with data from other countries to establish quotas on numbers of fish which each country can harvest in predetermined areas. Other uses of size and species			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> INTERNATIONAL OCEANIC MONITORING STUDIES USING COMMERCIAL SPECIES		<b>SPONSORING AGENCY</b> Inspection and Technology Branch Fisheries and Marine Service Fisheries and Environment Canada			
<b>PARAMETERS MONITORED</b>  As, Hg, Pb, Cu, Zn, Se, Cd, PCB's, DDT, HCB, Mirex, PBB					
<b>No. OF STATIONS AND COVERAGE</b>  West Atlantic		<b>SAMPLING FREQUENCY</b>  Once/year		<b>DATA ACQUISITION</b>  Sampling and analysis of commercial fish species	
<b>USERS OF DATA</b>  Federal Government, International Council for Exploration of the Sea (ICES)					
<b>DATA USES</b>  For assessment of pollutant levels and changes in levels in (1) ocean areas; (2) human foodstuffs; (3) areas to be checked for biological effects					
<b>AVAILABILITY OF DATA</b>  Annual Report for the International Council for Exploration of the Sea (ICES)					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b>  BIOLOGICAL OCEANOGRAPHY		<b>SPONSORING AGENCY</b>  Fisheries and Marine Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Phytoplankton, zooplankton, and primary productivity			
<b>No. OF STATIONS AND COVERAGE</b>  East and West Coasts	<b>SAMPLING FREQUENCY</b>  Weekly	<b>DATA ACQUISITION</b>  Field personnel	
<b>USERS OF DATA</b>  Fisheries and Marine Service, universities			
<b>DATA USES</b>  Research			
<b>AVAILABILITY OF DATA</b>  Scientific journals and manuscript reports			
<b>ADDITIONAL INFORMATION</b>  In Quebec, program is carried out in co-operation with provincial government and universities, but will be transferred wholly to Fisheries and Marine Service by April 1978			





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## OCEAN AND AQUATIC SCIENCES

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<b>ACTIVITY/TYPE OF DATA</b>  HYDROMETRIC		<b>SPONSORING AGENCY</b>  Ocean and Aquatic Sciences Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Water levels			
<b>No. OF STATIONS AND COVERAGE</b>  2 West Coast		<b>SAMPLING FREQUENCY</b>  Continuous	<b>DATA ACQUISITION</b>  Tsunami gauges
<b>USERS OF DATA</b>  International Tsunami Warning System			
<b>DATA USES</b>  Tsunami warnings			
<b>AVAILABILITY OF DATA</b>  Manuscript reports and public tsunami warnings			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> WAVE CLIMATE STUDIES		<b>SPONSORING AGENCY</b> Ocean and Aquatic Sciences Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b> Wind-wave spectrum			
<b>No. OF STATIONS AND COVERAGE</b> ~20 locations per year National	<b>SAMPLING FREQUENCY</b> Every 3 hours during ice-free part of year	<b>DATA ACQUISITION</b> Automatic wave gauges	
<b>USERS OF DATA</b> Fisheries and Environment Canada, Department of Public Works, National Research Council, Ministry of Transport			
<b>DATA USES</b> For navigation purposes and impact studies of proposed harbours and various other marine situations			
<b>AVAILABILITY OF DATA</b> Stored on magnetic tape in Ottawa			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY (IN CONNECTION WITH OCEAN DUMPING)		<b>SPONSORING AGENCY</b> Ocean and Aquatic Sciences and Environmental Protection Service Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Various			
<b>No. OF STATIONS AND COVERAGE</b>  East and West Coasts and Central region	<b>SAMPLING FREQUENCY</b>  Site specific	<b>DATA ACQUISITION</b>  Various, depending on dumped material	
<b>USERS OF DATA</b>  Federal Government			
<b>DATA USES</b>  To support Ocean Dumping Control Act			
<b>AVAILABILITY OF DATA</b>  Manuscript reports			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b>  Ocean and Aquatic Sciences Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Temperature			
<b>No. OF STATIONS AND COVERAGE</b>  Gulf of St. Lawrence	<b>SAMPLING FREQUENCY</b>  1/year (November)	<b>DATA ACQUISITION</b>  Ships of opportunity and research vessels.	
<b>USERS OF DATA</b>  Ocean and Aquatic Sciences, Ministry of Transport			
<b>DATA USES</b>  To determine if and when the occurrence of ice in the Gulf of St. Lawrence can be forecast accurately. Also used for shipping in the Gulf.			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> SURFACE SEAWATER PROPERTIES		<b>SPONSORING AGENCY</b> Fisheries and Environment Canada Ocean and Aquatic Sciences			
<b>PARAMETERS MONITORED</b>  Temperature, salinity					
<b>No. OF STATIONS AND COVERAGE</b> 16 - B.C. Coast (14 lighthouses, 1 weather station, 1 Fisheries and Environment Canada biological station)		<b>SAMPLING FREQUENCY</b>  Daily		<b>DATA ACQUISITION</b>	
<b>USERS OF DATA</b> Fisheries and Environment Canada - Ocean and Aquatic Sciences, Fisheries Management, International Pacific Salmon Fisheries Commission (IPSFC), National Marine Fisheries Service (U.S.A.), National Oceanic and Atmospheric Administration, Southwest Fisheries Centre.					
<b>DATA USES</b>  Ocean research, fishery studies					
<b>AVAILABILITY OF DATA</b>  Available upon request from: Coastal Zone Oceanography Institute of Ocean Sciences 1230 Government Street, Victoria, B.C. V8W 1Y4					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b>  INTEGRATED GLOBAL OCEAN STATIONS SYSTEM (IGOSS)		<b>SPONSORING AGENCY</b>  Ocean and Aquatic Sciences Fisheries and Environment Canada	
<b>PARAMETERS MONITORED</b>  Bathythermograph, TESAC (temperature, salinity, conductivity)			
<b>No. OF STATIONS AND COVERAGE</b>	<b>SAMPLING FREQUENCY</b>  Daily	<b>DATA ACQUISITION</b> Ships of opportunity and Canadian research vessels. Data transmitted over Global Telecommunications System (GTS)	
<b>USERS OF DATA</b>  Atmospheric Environment Service, Ocean and Aquatic Sciences, and World Meteorological Organization international data centres.			
<b>DATA USES</b>			
<b>AVAILABILITY OF DATA</b>  Available daily to members of World Meteorological Organization and Intergovernmental Oceanographic Commission via GTS			
<b>ADDITIONAL INFORMATION</b>			



<b>ACTIVITY/TYPE OF DATA</b> INTEGRATED GLOBAL OCEAN STATIONS SYSTEM (IGOSS) - MARINE POLLUTION MONITORING PILOT PROJECTS		<b>SPONSORING AGENCY</b> Ocean and Aquatic Sciences Fisheries and Environment Canada			
<b>PARAMETERS MONITORED</b>  Marine pollution by petroleum products					
<b>No. OF STATIONS AND COVERAGE</b>		<b>SAMPLING FREQUENCY</b>  Daily		<b>DATA ACQUISITION</b> Ships of opportunity and Canadian research vessels. Data transmitted over Global Telecommunications System (GTS)	
<b>USERS OF DATA</b>  Ocean and Aquatic Sciences and members of Intergovernmental Oceanographic Commission					
<b>DATA USES</b>					
<b>AVAILABILITY OF DATA</b>  Available daily to members of Intergovernmental Oceanographic Commission via GTS					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b>  STUDY OF CO <sub>2</sub> CYCLE IN THE MARINE ENVIRONMENT		<b>SPONSORING AGENCY</b>  Ocean and Aquatic Sciences Fisheries and Environment Canada			
<b>PARAMETERS MONITORED</b>  CO <sub>2</sub> in the following aspects: (1) the marine air CO <sub>2</sub> increase; (2) the role of the ocean in absorbing CO <sub>2</sub> by: (a) Air-sea CO <sub>2</sub> exchange by continuous air CO <sub>2</sub> and partial pressure of CO <sub>2</sub> in sea water (pCO <sub>2</sub> ) measurements; (b) Radiocarbon studies; and (c) Carbonate chemistry of surface sea water.					
<b>No. OF STATIONS AND COVERAGE</b>  1 Ocean Station P		<b>SAMPLING FREQUENCY</b>  (1) weekly (2a) continuous (2b) weekly (2c) weekly		<b>DATA ACQUISITION</b>	
<b>USERS OF DATA</b>  Ocean and Aquatic Sciences, Scripps Institute of Oceanography					
<b>DATA USES</b>  Ocean research studies					
<b>AVAILABILITY OF DATA</b>  Available upon request from: Ocean Chemistry Division Institute of Ocean Sciences 1230 Government Street Victoria, B.C. V8W 1Y4					
<b>ADDITIONAL INFORMATION</b>					



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# HEALTH AND WELFARE CANADA

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Radiological Surveillance (Reactors - Drinking Water)	105
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Radiological Surveillance (Reactors - Milk)	107
Radiological Surveillance (Reactors - Biota)	108
Radiological Surveillance (Fallout - Surface Air, Precipitation)	109
Radiological Surveillance (Fallout - Milk)	110

<b>ACTIVITY/TYPE OF DATA</b> RADIOLOGICAL SURVEILLANCE (REACTORS - DRINKING WATER)		<b>SPONSORING AGENCY</b> Radiation Protection Bureau Department of National Health & Welfare	
<b>PARAMETERS MONITORED</b> Strontium-89, strontium-90 and cesium-137 at water intakes			
<b>No. OF STATIONS AND COVERAGE</b> 2 Douglas Point (Lake Huron) 3 Pickering (Lk. Ontario) 3 Whiteshell (Winnipeg R) 5 NPD & CRNL (Ottawa R) 3 Gentilly (St. Lawrence R)	<b>SAMPLING FREQUENCY</b> Daily sampling for monthly composites		<b>DATA ACQUISITION</b> Sampling by regional municipalities and provincial governments. Analysis by Radiation Protection Bureau
<b>USERS OF DATA</b> Radiation Protection Bureau, International Joint Commission			
<b>DATA USES</b> To protect public health by monitoring radioactivity in drinking water			
<b>AVAILABILITY OF DATA</b> Report by Radiation Protection Bureau and also in Great Lakes Water Quality Board Report			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> RADIOLOGICAL SURVEILLANCE (REACTORS - ATMOSPHERIC WATER VAPOUR)		<b>SPONSORING AGENCY</b> Radiation Protection Bureau Department of National Health & Welfare	
<b>PARAMETERS MONITORED</b> Tritium			
<b>No. OF STATIONS AND COVERAGE</b> 6 - Douglas Point 7 - Pickering 6 - Gentilly		<b>SAMPLING FREQUENCY</b> Continuous	<b>DATA ACQUISITION</b> Sampling by provincial governments, utilities and private citizens. Monthly analysis of molecular sieves by Radiation Protection Bureau
<b>USERS OF DATA</b> Radiation Protection Bureau			
<b>DATA USES</b> To protect public health by monitoring tritium near nuclear reactors			
<b>AVAILABILITY OF DATA</b> On request from Radiation Protection Bureau			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> RADIOLOGICAL SURVEILLANCE (REACTORS - MILK)		<b>SPONSORING AGENCY</b> Radiation Protection Bureau Department of National Health & Welfare	
<b>PARAMETERS MONITORED</b> Cesium-137, iodine-131 and potassium			
<b>No. OF STATIONS AND COVERAGE</b> 2 - groups of farms (Whiteshell) 2 - farms (Douglas Point)		<b>SAMPLING FREQUENCY</b> Weekly	<b>DATA ACQUISITION</b> Sampling by local dairy and milk producers and analysis by Radiation Protection Bureau
<b>USERS OF DATA</b> Radiation Protection Bureau			
<b>DATA USES</b> To protect public health by monitoring radionuclides in milk near nuclear reactors			
<b>AVAILABILITY OF DATA</b> On request from Radiation Protection Bureau			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> RADIOLOGICAL SURVEILLANCE (REACTORS - BIOTA)		<b>SPONSORING AGENCY</b> Radiation Protection Bureau Department of National Health & Welfare	
<b>PARAMETERS MONITORED</b> Cesium-137 and strontium-90, calcium and potassium			
<b>No. OF STATIONS AND COVERAGE</b> NPD and CRNL (Ottawa River)	<b>SAMPLING FREQUENCY</b> Semi-annually	<b>DATA ACQUISITION</b> Sampling by provincial government and analysis by Radiation Protection Bureau	
<b>USERS OF DATA</b> Radiation Protection Bureau			
<b>DATA USES</b> To evaluate population dose from consumption of fish from water systems receiving effluent discharge from nuclear reactors			
<b>AVAILABILITY OF DATA</b> On request from Radiation Protection Bureau			
<b>ADDITIONAL INFORMATION</b>			



<b>ACTIVITY/TYPE OF DATA</b> RADIOLOGICAL SURVEILLANCE (FALLOUT - SURFACE AIR, PRECIPITATION)		<b>SPONSORING AGENCY</b> Radiation Protection Bureau Department of National Health & Welfare	
<b>PARAMETERS MONITORED</b>  Gross beta activity			
<b>No. OF STATIONS AND COVERAGE</b>  24 weather stations at airports across Canada	<b>SAMPLING FREQUENCY</b>  Continuous	<b>DATA ACQUISITION</b> Sampling by Fisheries and Environment Canada; Hi-vol samplers - weekly analysis by Radiation Protection Bureau; Catch pots - month- ly analysis by Radiation Protection Bureau	
<b>USERS OF DATA</b>  Radiation Protection Bureau			
<b>DATA USES</b>  To evaluate the population dose from fallout radioactivity			
<b>AVAILABILITY OF DATA</b>  On request from Radiation Protection Bureau			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> RADIOLOGICAL SURVEILLANCE (FALLOUT - MILK)		<b>SPONSORING AGENCY</b> Radiation Protection Bureau Department of National Health & Welfare
<b>PARAMETERS MONITORED</b>  Strontium-89, strontium-90, cesium-137, calcium and potassium, and after recent surface nuclear tests, iodine-131		
<b>No. OF STATIONS AND COVERAGE</b>  16 cities	<b>SAMPLING FREQUENCY</b>  Weekly	<b>DATA ACQUISITION</b> Composite milk samples obtained by Department of Agriculture. Analysed by Radiation Protection Bureau for: Cs-137, K - monthly composite Sr-89, -90, Ca - quarterly composite
<b>USERS OF DATA</b>  Radiation Protection Bureau		
<b>DATA USES</b>  To evaluate the population dose from fallout radioactivity in milk		
<b>AVAILABILITY OF DATA</b>  On request from Radiation Protection Bureau		
<b>ADDITIONAL INFORMATION</b>		



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# ENERGY, MINES AND RESOURCES CANADA

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<b>ACTIVITY/TYPE OF DATA</b>  SATELLITE DATA		<b>SPONSORING AGENCY</b>  Canada Centre for Remote Sensing Energy, Mines and Resources Canada	
<b>PARAMETERS MONITORED</b>  Visible, near infrared and thermal infrared spectral data of the earth's surface			
<b>No. OF STATIONS AND COVERAGE</b>  2 - National	<b>SAMPLING FREQUENCY</b>  Twice per day to one per 18 days	<b>DATA ACQUISITION</b>  Imagery and Digital Data on Computer Tapes	
<b>USERS OF DATA</b>  Federal government, provincial governments, and private sector			
<b>DATA USES</b> <ul style="list-style-type: none"><li>- Agriculture</li><li>- Forestry</li><li>- Land Use</li><li>- Urban Monitoring</li><li>- Water Resources</li><li>- Ocean Management</li><li>- Sea Ice Surveillance</li></ul>			
<b>AVAILABILITY OF DATA</b>  Available from Energy, Mines and Resources, Canada Centre for Remote Sensing, 2464 Sheffield Road, Ottawa, Ontario. K1A 0Y7			
<b>ADDITIONAL INFORMATION</b>  Canada Centre for Remote Sensing Technical Information Service 717 Belfast Road, Ottawa, Ontario.  Telephone: 995-1210 (AC-613)			

<b>ACTIVITY/TYPE OF DATA</b> AIRBORNE DATA		<b>SPONSORING AGENCY</b> Canada Centre for Remote Sensing Energy, Mines and Resources Canada	
<b>PARAMETERS MONITORED</b> Visible, near infrared and thermal infrared spectral data of the earth's surface			
<b>No. OF STATIONS AND COVERAGE</b> National	<b>SAMPLING FREQUENCY</b> As required	<b>DATA ACQUISITION</b> Imagery and Digital Data on computer tapes	
<b>USERS OF DATA</b> Federal government, provincial governments, and the private sector			
<b>DATA USES</b> <ul style="list-style-type: none"><li>- Agriculture</li><li>- Forestry</li><li>- Land Use</li><li>- Urban Monitoring</li><li>- Water Resources</li><li>- Ocean Management</li><li>- Sea Ice Surveillance</li></ul>			
<b>AVAILABILITY OF DATA</b>  Available from Energy, Mines and Resources, Canada Centre for Remote Sensing, 2464 Sheffield Road, Ottawa, Ontario. K1A 0Y7			
<b>ADDITIONAL INFORMATION</b>  Canada Centre for Remote Sensing Technical Information Service 717 Belfast Road, Ottawa, Ontario. K1A 0Y7  Telephone: 995-1210 (AC-613)			

<b>ACTIVITY/TYPE OF DATA</b> EXTENT AND NATURE OF PERMAFROST		<b>SPONSORING AGENCY</b> Division of Seismology and Geothermal Studies, Energy, Mines and Resources Canada	
<b>PARAMETERS MONITORED</b> Temperature, thermal conductivities, radiogenic heat production of rocks			
<b>No. OF STATIONS AND COVERAGE</b> 90 sites in Mackenzie Delta and Arctic regions	<b>SAMPLING FREQUENCY</b>		<b>DATA ACQUISITION</b> Oil exploration wells
<b>USERS OF DATA</b> Exploration and development companies, design engineers, regulatory agencies and earth scientists			
<b>DATA USES</b> Evaluation of permafrost, its distribution both laterally and with depth and factors which affect it			
<b>AVAILABILITY OF DATA</b> Available from the Division of Seismology and Geothermal Studies, Earth Physics Branch, Energy, Mines and Resources Canada.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> SEISMICITY		<b>SPONSORING AGENCY</b> Division of Seismology and Geothermal Studies Energy, Mines and Resources Canada	
<b>PARAMETERS MONITORED</b> Seismic ground motion			
<b>No. OF STATIONS AND COVERAGE</b> 38 stations of the National Seismograph Network located throughout Canada		<b>SAMPLING FREQUENCY</b> Continuous	<b>DATA ACQUISITION</b>
<b>USERS OF DATA</b> Seismologists in Canada and abroad			
<b>DATA USES</b> Information concerning natural and induced earthquakes, and seismic risk and hazards, for the use of earth scientists, civil engineers, the resource development industry, the public and governments.			
<b>AVAILABILITY OF DATA</b> Available from the Division of Seismology and Geothermal Studies, Earth Physics Branch, Energy, Mines and Resources Canada			
<b>ADDITIONAL INFORMATION</b>			



<b>ACTIVITY/TYPE OF DATA</b> PLUME DISPERSION		<b>SPONSORING AGENCY</b> Energy, Mines and Resources Canada	
<b>PARAMETERS MONITORED</b> Effluent distribution			
<b>No. OF STATIONS AND COVERAGE</b> Local	<b>SAMPLING FREQUENCY</b>	<b>DATA ACQUISITION</b> Short time air sampling	
<b>USERS OF DATA</b> Industry			
<b>DATA USES</b> Design of smoke stacks and similar uses			
<b>AVAILABILITY OF DATA</b> Available from Canada Centre for Mineral and Energy Technology (CANMET), Energy, Mines and Resources Canada			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> MEASUREMENT OF EMISSIONS FROM DIESEL ENGINES		<b>SPONSORING AGENCY</b> Canada Centre for Mineral and Energy Technology Energy, Mines and Resources Canada	
<b>PARAMETERS MONITORED</b> Emissions of NO <sub>x</sub> , SO <sub>x</sub> , CO, CO <sub>2</sub> , O <sub>2</sub> , H <sub>2</sub> O and soot (vs instantaneous fuel consumption and exhaust temperature)			
<b>No. OF STATIONS AND COVERAGE</b> Local		<b>SAMPLING FREQUENCY</b>	<b>DATA ACQUISITION</b>
<b>USERS OF DATA</b> Industry and provincial authorities			
<b>DATA USES</b> Environmental control relevant to underground mining			
<b>AVAILABILITY OF DATA</b> Available from Canada Centre for Mineral and Energy Technology (CANMET), Energy, Mines and Resources Canada			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> RADON AND RADON DAUGHTER EMISSIONS		<b>SPONSORING AGENCY</b> Canada Centre for Mineral and Energy Technology Energy, Mines and Resources Canada	
<b>PARAMETERS MONITORED</b>  Radon and radon daughter emissions associated with uranium mines			
<b>No. OF STATIONS AND COVERAGE</b>  Local	<b>SAMPLING FREQUENCY</b>		<b>DATA ACQUISITION</b>  Alpha particle counts by KUSNETZ method and others
<b>USERS OF DATA</b>  Internal and mining industry			
<b>DATA USES</b>  Improved measurement (and control) methods			
<b>AVAILABILITY OF DATA</b>  Available from Canada Centre for Mineral and Energy Technology (CANMET), Energy, Mines and Resources Canada			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> SEA ICE RECONNAISSANCE		<b>SPONSORING AGENCY</b> Polar Continental Shelf Project Energy, Mines and Resources Canada	
<b>PARAMETERS MONITORED</b> Presence of ice, age (by colour), roughness (by visual observation)			
<b>No. OF STATIONS AND COVERAGE</b> Arctic Archipelago	<b>SAMPLING FREQUENCY</b> 8 times/year	<b>DATA ACQUISITION</b> Air reconnaissance	
<b>USERS OF DATA</b> Atmospheric Environment Service, oil companies, transportation companies, insurance companies, ship builders			
<b>DATA USES</b> To determine the extent of first year and multi-year ice freeze-up and break-up time, roughness and orientation of ridges			
<b>AVAILABILITY OF DATA</b> Sea Ice Atlas available through Government book stores or Polar Continental Shelf Project, Energy, Mines and Resources Canada			
<b>ADDITIONAL INFORMATION</b>			

BRITISH COLUMBIA

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# PROVINCE OF BRITISH COLUMBIA

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Ambient Air - Air Emissions	119
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<b>ACTIVITY/TYPE OF DATA</b> AMBIENT AIR AIR EMISSIONS		<b>SPONSORING AGENCY</b> Pollution Control Branch Environmental Protection Service B.C. Department of the Environment			
<b>PARAMETERS MONITORED</b>  94 air and air emission parameters including metals, common organics, particulates, common ions, nitrogen oxides, opacity, oxidants, meteorological data, various acids and various sulphur containing compounds. Selection of parameters is site specific.					
<b>No. OF STATIONS AND COVERAGE</b>  Air emissions - 2448 Ambient air - 648  British Columbia		<b>SAMPLING FREQUENCY</b>  Various frequencies, hourly to annual. Selection of frequency is site specific		<b>DATA ACQUISITION</b>  Government data collected and analysed by trained technicians. Data collected by permit holders or their agents also on file	
<b>USERS OF DATA</b>  Federal, provincial and municipal agencies; universities and consulting firms					
<b>DATA USES</b>  Primary use: enforcement and upgrading of Pollution Control permits for discharges of air emissions in British Columbia  Secondary uses: environmental studies and other resource management activities					
<b>AVAILABILITY OF DATA</b>  Most data stored in computer data files and readily retrievable in selection of various formats. Available from: Pollution Control Branch, 1106 Cook Street, Victoria, B.C. V8V 4S5. There may be a charge towards the cost of any retrievals.					
<b>ADDITIONAL INFORMATION</b>  No data stored for dates prior to 1965; most data collected after 1971.					

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY EFFLUENTS BIOLOGICAL		<b>SPONSORING AGENCY</b> Pollution Control Branch Environmental Protection Service B.C. Department of the Environment	
<b>PARAMETERS MONITORED</b>  135 water quality and effluent parameters including DO, pH, nutrients, metals, common ions, residues, colour, coliforms. Also biological data such as taxonomic information and metal content. Selection of parameters is site specific.			
<b>No. OF STATIONS AND COVERAGE</b> Streams - 1892 Lakes - 1214 Groundwater - 1492 Marine - 388 Effluents - 1995 British Columbia		<b>SAMPLING FREQUENCY</b> Various frequencies, hourly to annual. Selection of frequency is site specific.	<b>DATA ACQUISITION</b> Government data collected and analysed by trained technicians. Data collect- ed by permit holders or their agents also on file
<b>USERS OF DATA</b>  Federal, provincial and municipal agencies; universities and consulting firms			
<b>DATA USES</b>  Primary use: enforcement and upgrading of Pollution Control permits for discharges of effluents in British Columbia.  Secondary uses: environmental studies and other resource management activities.			
<b>AVAILABILITY OF DATA</b>  Most data stored in computer data files and readily retrievable in selection of various formats. Available from: Pollution Control Branch, 1106 Cook Street, Victoria, B.C. V8V 4S5. There may be a charge towards the cost of any retrievals.			
<b>ADDITIONAL INFORMATION</b>  No data stored for dates prior to 1965; most data collected after 1971.			



<b>ACTIVITY/TYPE OF DATA</b>  PESTICIDES IN BIRDS, MAMMALS, PLANTS, INVERTEBRATES, FISH		<b>SPONSORING AGENCY</b>  British Columbia Fish and Wildlife Branch	
<b>PARAMETERS MONITORED</b>  opDDT, ppDDT, DDE, DDD, total DDT, Heptachlor Epoxide, Dieldrin, Mercury			
<b>No. OF STATIONS AND COVERAGE</b>  Numerous British Columbia	<b>SAMPLING FREQUENCY</b>  Periodic since 1966		<b>DATA ACQUISITION</b>  Samples obtained by B.C. Fish and Wildlife and analysed at B.C. Dept. of Agriculture Pesticide Laboratory
<b>USERS OF DATA</b>  B.C. Fish and Wildlife Branch			
<b>DATA USES</b>  To provide an indication of levels of environmental contamination, investigations of suspicious deaths of fish and wildlife (e.g. following a spraying operation), determinations of safety of fish and wildlife for human consumption, investigations of adverse effects of high pesticide levels.			
<b>AVAILABILITY OF DATA</b>  Raw data published in Wildlife Management Reports by British Columbia Fish and Wildlife Branch			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> ENVIRONMENTAL SURVEYS		<b>SPONSORING AGENCY</b> Environment and Land Use Committee Secretariat B.C. Department of the Environment	
<b>PARAMETERS MONITORED</b>  Soil survey, surficial geology/terrain analysis inventory, vegetation inventory, climate inventory, aquatic system inventory			
<b>No. OF STATIONS AND COVERAGE</b>  British Columbia	<b>SAMPLING FREQUENCY</b>	<b>DATA ACQUISITION</b>	
<b>USERS OF DATA</b>  Provincial resource management agencies			
<b>DATA USES</b>  Data are basic to decisions affecting resource management			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			



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# PROVINCE OF ALBERTA

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<b>ACTIVITY/TYPE OF DATA</b>  AIR QUALITY		<b>SPONSORING AGENCY</b>  Air Quality Control Branch Alberta Environment	
<b>PARAMETERS MONITORED</b>  1. Suspended Particulates 2. Coefficient of Haze 3. Oxidants/Ozone 4. Carbon Monoxide 5. Nitrogen Oxides 6. Hydrocarbons 7. Sulphur Dioxide 8. Hydrogen Sulphide 9. Static exposure stations			
<b>No. OF STATIONS AND COVERAGE</b>  11 Major sites 25 (Selected parameters) 200 Static exposure stations  Alberta		<b>SAMPLING FREQUENCY</b>  Continuous	
<b>DATA ACQUISITION</b>  Automatic recorders			
<b>USERS OF DATA</b>  Alberta Environment, Pollution Control Division, Fisheries and Environment Canada, Environmental Protection Service.			
<b>DATA USES</b>  To determine and assess the quality of air, relative to the Alberta Maximum Level Regulations, to detect trends in pollution levels and to analyze the effects of specific control strategies			
<b>AVAILABILITY OF DATA</b>  Quarterly summaries Summary of data published annually			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> SNOW SURVEYS	<b>SPONSORING AGENCY</b> Technical Services Division Alberta Environment	
<b>PARAMETERS MONITORED</b>  Snow depth, water equivalent, air temperature		
<b>No. OF STATIONS AND COVERAGE</b> 93 snow courses 12 snow pillows Alberta	<b>SAMPLING FREQUENCY</b>  Annual - winter	<b>DATA ACQUISITION</b>  Technologists run snow surveys and visit snow pillows
<b>USERS OF DATA</b>  Alberta Environment staff, consultants, public		
<b>DATA USES</b>  To provide data for the flood forecasting and the water supply outlook		
<b>AVAILABILITY OF DATA</b>  Data is contributed to Water Survey of Canada for publication. Summary of data collected is available upon request.		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b> LAKES		<b>SPONSORING AGENCY</b> Technical Services Division Alberta Environment	
<b>PARAMETERS MONITORED</b> Water depths, water levels, bottom contours, surface areas, lake volumes			
<b>No. OF STATIONS AND COVERAGE</b> 185 lakes Alberta	<b>SAMPLING FREQUENCY</b> Seasonal - maybe daily, weekly or quarterly		<b>DATA ACQUISITION</b> Technologists visit gauging sites. Some park wardens, local residents submit gauge readings
<b>USERS OF DATA</b> Alberta Environment staff, consultants, public			
<b>DATA USES</b> To provide data which indicates seasonal and annual variations in lake levels in Alberta. Also, provide bathymetric maps that show lake contours			
<b>AVAILABILITY OF DATA</b> Summary of data collected and maps are available upon request			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> CREST - STAGE GAUGES		<b>SPONSORING AGENCY</b> Technical Services Division Alberta Environment	
<b>PARAMETERS MONITORED</b>  Peak flows, water levels, water velocities, cross-sectional areas, air and water temperatures			
<b>No. OF STATIONS AND COVERAGE</b>  70 active stations 110 discontinued stations in Alberta	<b>SAMPLING FREQUENCY</b>  Seasonal, open water		<b>DATA ACQUISITION</b>  Technologists visit gauge sites
<b>USERS OF DATA</b>  Alberta Environment, other government agencies, consultants, public			
<b>DATA USES</b>  To develop frequency distribution for peak flow conditions			
<b>AVAILABILITY OF DATA</b>  Summary of data collected is available upon request			
<b>ADDITIONAL INFORMATION</b>			



<b>ACTIVITY/TYPE OF DATA</b> EVAPORATION AND PRECIPITATION		<b>SPONSORING AGENCY</b> Technical Services Division Alberta Environment	
<b>PARAMETERS MONITORED</b> Precipitation, latent evaporation			
<b>No. OF STATIONS AND COVERAGE</b> 40 Alberta	<b>SAMPLING FREQUENCY</b> Seasonal		<b>DATA ACQUISITION</b> Technologists visit sites; Forest rangers and local residents submit readings
<b>USERS OF DATA</b> Alberta Environment staff, consultants, public			
<b>DATA USES</b> To provide rough estimates of evaporation to be used in water balance studies. Information is also used for agricultural purposes.			
<b>AVAILABILITY OF DATA</b> Summary of data collected is available on request			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  GROUNDWATER LEVELS	<b>SPONSORING AGENCY</b>  Groundwater Division Alberta Research Council	
<b>PARAMETERS MONITORED</b>  Water level		
<b>No. OF STATIONS AND COVERAGE</b>  73 Alberta	<b>SAMPLING FREQUENCY</b>	<b>DATA ACQUISITION</b>
<b>USERS OF DATA</b>		
<b>DATA USES</b>		
<b>AVAILABILITY OF DATA</b>		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b>  LAKE SURVEYS		<b>SPONSORING AGENCY</b>  Alberta Environment	
<b>PARAMETERS MONITORED</b>  Physical, chemical, biological and bacteriological water quality parameters			
<b>No. OF STATIONS AND COVERAGE</b>  Alberta	<b>SAMPLING FREQUENCY</b>  Monthly	<b>DATA ACQUISITION</b>  Technicians	
<b>USERS OF DATA</b>  Federal and provincial agencies Public			
<b>DATA USES</b>  For lake management purposes			
<b>AVAILABILITY OF DATA</b>  Published reports			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> RIVER WATER QUALITY SURVEYS		<b>SPONSORING AGENCY</b> Alberta Environment	
<b>PARAMETERS MONITORED</b> Chemical, physical, biological and bacteriological water quality parameters			
<b>No. OF STATIONS AND COVERAGE</b> Alberta	<b>SAMPLING FREQUENCY</b> Monthly	<b>DATA ACQUISITION</b> Technicians Robot Monitors	
<b>USERS OF DATA</b> Federal and provincial agencies, industries, universities and the public			
<b>DATA USES</b> For management purposes			
<b>AVAILABILITY OF DATA</b> Available in NAQUADAT file and reports			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> INDUSTRIAL EFFLUENT SURVEY		<b>SPONSORING AGENCY</b> Alberta Environment	
<b>PARAMETERS MONITORED</b> Physical, chemical and biological parameters			
<b>No. OF STATIONS AND COVERAGE</b> Alberta	<b>SAMPLING FREQUENCY</b> Annual	<b>DATA ACQUISITION</b> Technicians	
<b>USERS OF DATA</b> Federal and provincial agencies			
<b>DATA USES</b> License compliance			
<b>AVAILABILITY OF DATA</b> Reports and Department files			
<b>ADDITIONAL INFORMATION</b>			



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# PROVINCE OF SASKATCHEWAN

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<b>ACTIVITY/TYPE OF DATA</b> HYDROMETRIC		<b>SPONSORING AGENCY</b> Hydrology Branch Saskatchewan Department of the Environment	
<b>PARAMETERS MONITORED</b>  Lake levels			
<b>No. OF STATIONS AND COVERAGE</b>  62 All Saskatchewan		<b>SAMPLING FREQUENCY</b>  Weekly during open water season	<b>DATA ACQUISITION</b>  Field personnel
<b>USERS OF DATA</b>  Government agencies, general public			
<b>DATA USES</b>			
<b>AVAILABILITY OF DATA</b>  Paper files, published periodically.			
<b>ADDITIONAL INFORMATION</b>			



<b>ACTIVITY/TYPE OF DATA</b>  HYDROMETRIC		<b>SPONSORING AGENCY</b>  Hydrology Branch Saskatchewan Department of the Environment	
<b>PARAMETERS MONITORED</b>  Snow depth and density			
<b>No. OF STATIONS AND COVERAGE</b>  87 Southern Saskatchewan	<b>SAMPLING FREQUENCY</b>  4 per year in February and March		<b>DATA ACQUISITION</b>  Field personnel
<b>USERS OF DATA</b>  Saskatchewan Department of the Environment			
<b>DATA USES</b>  Runoff forecasting			
<b>AVAILABILITY OF DATA</b>  Stored on paper files			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> AIR QUALITY		<b>SPONSORING AGENCY</b> Air Pollution Control Branch Environment Saskatchewan			
<b>PARAMETERS MONITORED</b> 1. Suspended Particulates 2. Sulphur Dioxide 3. Carbon Monoxide 4. Coefficient of Haze					
<b>No. OF STATIONS AND COVERAGE</b> 1. 13 - all cities 2. 4 - major cities 3. 2 - major cities 4. 6 - major cities		<b>SAMPLING FREQUENCY</b> 1. One 24-hr period every 6 days. 2.) 3.) Continuously 4.)		<b>DATA ACQUISITION</b> Automatic recorders serviced by staff of Air Pollution Control Branch, Department of Health and other volunteers	
<b>USERS OF DATA</b> Air Pollution Control Branch, Fisheries and Environment Canada, public					
<b>DATA USES</b> Air Pollution Control Branch for trend analysis, to determine problem areas and for special studies.  Fisheries and Environment Canada - trend analysis  Public - information					
<b>AVAILABILITY OF DATA</b> - Air Pollution Control Branch Urban Air Monitoring Reports published yearly - Fisheries and Environment Canada Monthly Publications - Data stored in files					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b>  AIR QUALITY		<b>SPONSORING AGENCY</b>  Air Pollution Control Branch Environment Saskatchewan	
<b>PARAMETERS MONITORED</b>  Sulphur trioxide			
<b>No. OF STATIONS AND COVERAGE</b>  6 - industrial sources	<b>SAMPLING FREQUENCY</b>  Continuous - monthly analysis	<b>DATA ACQUISITION</b>  Sulphation plates serviced by Air Pollution Control Branch staff	
<b>USERS OF DATA</b>  Air Pollution Control Branch			
<b>DATA USES</b>  To determine compliance with Provincial Ambient Air Quality Standards			
<b>AVAILABILITY OF DATA</b>  Data stored in files			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  AIR QUALITY	<b>SPONSORING AGENCY</b>  Air Pollution Control Branch Environment Saskatchewan	
<b>PARAMETERS MONITORED</b>  Suspended Particulates		
<b>No. OF STATIONS AND COVERAGE</b>  5 - Major industrial sources	<b>SAMPLING FREQUENCY</b>  One 24-hour period every 3 days	<b>DATA ACQUISITION</b>  Automatic recorders serviced by Air Pollution Control Branch staff
<b>USERS OF DATA</b>  Air Pollution Control Branch		
<b>DATA USES</b>  To determine compliance with Provincial Ambient Air Quality Standards		
<b>AVAILABILITY OF DATA</b>  Reports published by Air Pollution Control Branch		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b>  AIR QUALITY		<b>SPONSORING AGENCY</b>  Air Pollution Control Branch Environment Saskatchewan	
<b>PARAMETERS MONITORED</b>  Particulate KCl			
<b>No. OF STATIONS AND COVERAGE</b>  138 - All 10 potash mines and 2 salt processing plants	<b>SAMPLING FREQUENCY</b>  Continuous - monthly analysis	<b>DATA ACQUISITION</b>  Dustfall jars serviced by Air Pollution Control Branch staff	
<b>USERS OF DATA</b>  Air Pollution Control Branch			
<b>DATA USES</b>  To determine compliance with Provincial Ambient Air Quality Standards			
<b>AVAILABILITY OF DATA</b>  Data stored in files			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> TERRESTRIAL HABITAT ASSESSMENT		<b>SPONSORING AGENCY</b> Fisheries and Wildlife Branch Saskatchewan Department of Tourism and Renewable Resources	
<b>PARAMETERS MONITORED</b>  Biological			
<b>No. OF STATIONS AND COVERAGE</b>  Saskatchewan (mainly in agricultural south)	<b>SAMPLING FREQUENCY</b>  Continuous	<b>DATA ACQUISITION</b>  Intensive surveys by Fisheries and Wildlife Branch staff	
<b>USERS OF DATA</b>  Department of Tourism and Renewable Resources			
<b>DATA USES</b>  To assess wildlife habitat and to prepare development and management plans for preservation of wildlife habitat.			
<b>AVAILABILITY OF DATA</b>  Department of Tourism and Renewable Resources maintains current files and maps on present and potential future land development.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> WETLANDS HABITAT ASSESSMENT		<b>SPONSORING AGENCY</b> Fisheries and Wildlife Branch Saskatchewan Department of Tourism and Renewable Resources	
<b>PARAMETERS MONITORED</b>  Biological			
<b>No. OF STATIONS AND COVERAGE</b>  Saskatchewan wetlands (mainly in agricultural south)	<b>SAMPLING FREQUENCY</b>  Continuous	<b>DATA ACQUISITION</b>  Intensive field surveys by Fisheries and Wildlife Branch staff	
<b>USERS OF DATA</b>  Department of Tourism and Renewable Resources			
<b>DATA USES</b>  To determine the wildlife values of wetlands areas and to evaluate the effects of various wetland management practices on wildlife			
<b>AVAILABILITY OF DATA</b>  Publications and files of Department of Tourism and Renewable Resources			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  ELK ECOLOGY		<b>SPONSORING AGENCY</b>  Fisheries and Wildlife Branch Saskatchewan Department of Tourism and Renewable Resources	
<b>PARAMETERS MONITORED</b>  Population densities and yearly variations of elk			
<b>No. OF STATIONS AND COVERAGE</b>  Elk range in forested northern area of Saskatchewan	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Field surveys by Fisheries and Wildlife Branch staff	
<b>USERS OF DATA</b>  Department of Tourism and Renewable Resources			
<b>DATA USES</b>  To determine the relation of the population dynamics of elk to current hunting seasons			
<b>AVAILABILITY OF DATA</b>  Files of Department of Tourism and Renewable Resources			
<b>ADDITIONAL INFORMATION</b>			



<b>ACTIVITY/TYPE OF DATA</b> MOOSE ECOLOGY		<b>SPONSORING AGENCY</b> Fisheries and Wildlife Branch Saskatchewan Department of Tourism and Renewable Resources	
<b>PARAMETERS MONITORED</b>  Population densities and yearly variations of moose			
<b>No. OF STATIONS AND COVERAGE</b>  Moose range in forested northern area of Saskatchewan	<b>SAMPLING FREQUENCY</b>  Annual		<b>DATA ACQUISITION</b>  Field surveys by Fisheries and Wildlife Branch staff
<b>USERS OF DATA</b>  Department of Tourism and Renewable Resources			
<b>DATA USES</b>  To determine major causes of periodic moose population fluctuations in Saskatchewan			
<b>AVAILABILITY OF DATA</b>  Files of Department of Tourism and Renewable Resources			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> WHITE-TAILED DEER ECOLOGY		<b>SPONSORING AGENCY</b> Fisheries and Wildlife Branch Saskatchewan Department of Tourism and Renewable Resources	
<b>PARAMETERS MONITORED</b>  Population of white-tailed deer			
<b>No. OF STATIONS AND COVERAGE</b>  Saskatchewan	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Field surveys by Fisheries and Wildlife Branch staff	
<b>USERS OF DATA</b>  Department of Tourism and Renewable Resources			
<b>DATA USES</b>  To determine annual population performance of white-tailed deer			
<b>AVAILABILITY OF DATA</b>  Files of Department of Tourism and Renewable Resources			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  GAME BIRD SURVEYS		<b>SPONSORING AGENCY</b>  Fisheries and Wildlife Branch Saskatchewan Department of Tourism and Renewable Resources	
<b>PARAMETERS MONITORED</b>  Populations, age and sex ratios of sharp-tailed grouse, Hungarian partridge and waterfowl.			
<b>No. OF STATIONS AND COVERAGE</b>  Saskatchewan	<b>SAMPLING FREQUENCY</b>  Annual		<b>DATA ACQUISITION</b>  Ground counts by Fisheries and Wildlife Branch staff and wing and tail surveys
<b>USERS OF DATA</b>  Department of Tourism and Renewable Resources			
<b>DATA USES</b>  To establish hunting seasons, to determine necessity of hunting restrictions. Spring counts are also a good indication of long-term changes in habitat.			
<b>AVAILABILITY OF DATA</b>  Files of Department of Tourism and Renewable Resources			
<b>ADDITIONAL INFORMATION</b>  Since waterfowl are a federal responsibility under the Migratory Birds Convention Act there is close co-operation with the federal government in carrying out this program			

<b>ACTIVITY/TYPE OF DATA</b>  BIG GAME SURVEY		<b>SPONSORING AGENCY</b>  Fisheries and Wildlife Branch Saskatchewan Department of Tourism and Renewable Resources	
<b>PARAMETERS MONITORED</b>  Populations, age structure, location of kill, hunting success and pressure, reproduction potential for moose, white-tailed deer, mule deer, antelope, elk, caribou. Also deer winter mortalities and browse measurements.			
<b>No. OF STATIONS AND COVERAGE</b>  Saskatchewan	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Aerial and field surveys by Fisheries and Wildlife Branch staff	
<b>USERS OF DATA</b>  Department of Tourism and Renewable Resources			
<b>DATA USES</b>  To establish hunting seasons and to assess the well-being of animal populations			
<b>AVAILABILITY OF DATA</b>  Files of Department of Tourism and Renewable Resources			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> CLIMATOLOGICAL		<b>SPONSORING AGENCY</b> Regional Services Saskatchewan Department of Tourism and Renewable Resources	
<b>PARAMETERS MONITORED</b>  Precipitation, temperature, wind speed and direction			
<b>No. OF STATIONS AND COVERAGE</b>  Most provincial parks in Saskatchewan	<b>SAMPLING FREQUENCY</b>		<b>DATA ACQUISITION</b>  - Department staff - Contract
<b>USERS OF DATA</b>  Department of Tourism and Renewable Resources			
<b>DATA USES</b>			
<b>AVAILABILITY OF DATA</b>  Files of Department of Tourism and Renewable Resources			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  MERCURY IN FISH		<b>SPONSORING AGENCY</b>  Fisheries and Wildlife Branch Saskatchewan Department of Tourism and Renewable Resources	
<b>PARAMETERS MONITORED</b>  Mercury levels in game fish			
<b>No. OF STATIONS AND COVERAGE</b>  Saskatchewan		<b>SAMPLING FREQUENCY</b>  Continuous	<b>DATA ACQUISITION</b>  Sampling by Fisheries and Wildlife Branch staff and analysis in Department's lab.
<b>USERS OF DATA</b>  Department of Tourism and Renewable Resources, Department of Public Health, and various federal departments			
<b>DATA USES</b>  To advise the public concerning the condition of sport fish, and for regulation re: commercial fish production and management. Data also give indication possible sources of mercury contamination.			
<b>AVAILABILITY OF DATA</b>  Files of Department of Tourism and Renewable Resources			
<b>ADDITIONAL INFORMATION</b>			



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# PROVINCE OF MANITOBA

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<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b>  Water Pollution Control Environmental Control Branch Manitoba Department of Mines, Resources and Environmental Management			
<b>PARAMETERS MONITORED</b>  (a) Dissolved oxygen, BOD, pH, major ions, nutrients, total filterable and non-filterable residue, specific conductance, total organic carbon, total inorganic carbon, colour, turbidity, total and fecal coliform.  (b) Trace metals, Cu, Zn, As, Pb, Cd, Hg.					
<b>No. OF STATIONS AND COVERAGE</b>  258 stations covering 11 of 19 major drainage basins in Manitoba		<b>SAMPLING FREQUENCY</b>  Various: weekly, monthly, 8 per year, quarterly, annual		<b>DATA ACQUISITION</b>  Lay collectors and trained technicians	
<b>USERS OF DATA</b>  Provincial and municipal agencies, federal government, universities, consulting firms, associations, private groups.					
<b>DATA USES</b>  - To determine water quality trends on a provincial or regional basis. - To design water treatment plants. - To recommend limits for discharge of pollutants. - To manage water resources.					
<b>AVAILABILITY OF DATA</b>  Data from 1973 is available in files. A data storage system especially designed to handle Manitoba water quality data is in the process of implementation.					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b>  MONITORING OF DRINKING WATER		<b>SPONSORING AGENCY</b>  Inspection Services Environmental Control Branch Manitoba Department of Mines, Resources, and Environmental Management			
<b>PARAMETERS MONITORED</b>  (a) Bacteriological analysis - Standard Methods (b) As, Cd, CN, Ni, Pb, Se, Tl (c) B, Zn, Cu (d) Routine Chemical (e) Artificially added fluoride					
<b>No. OF STATIONS AND COVERAGE</b>  (a), (b), (c), (d): 110 (e): 40  Manitoba		<b>SAMPLING FREQUENCY</b>  (a) as per Canada Drinking Water Standards (b), (d): Annual (c): 1/3 years (e): Bi-weekly		<b>DATA ACQUISITION</b>  Sampling and analysis by trained technicians	
<b>USERS OF DATA</b>  Manitoba Government					
<b>DATA USES</b>  To identify possible public health problems and to provide a data bank.					
<b>AVAILABILITY OF DATA</b>  Available from Water Pollution Control (Environmental Control Branch) files.					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b>  INDUSTRIAL AND MUNICIPAL EFFLUENTS	<b>SPONSORING AGENCY</b>  Water Pollution Control Environmental Control Branch Manitoba Department of Mines, Resources, and Environmental Management	
<b>PARAMETERS MONITORED</b>  Municipal: primarily BOD, SS, chlorine residual, total and fecal coliform bacteria.  Industrial: as prescribed by Clean Environment Commission Order.		
<b>No. OF STATIONS AND COVERAGE</b>  Approximately 225 point source discharges in Manitoba	<b>SAMPLING FREQUENCY</b>  Established by WPC after Order is issued - normally 2 per year	<b>DATA ACQUISITION</b>  Sampling and analysis by trained technicians (responsibility of the discharger in some cases)
<b>USERS OF DATA</b>  Provincial and municipal agencies, federal government, consultants.		
<b>DATA USES</b> <ul style="list-style-type: none"><li>- To determine whether compliance with prescribed standards is being achieved.</li><li>- Prosecution purposes.</li></ul>		
<b>AVAILABILITY OF DATA</b>  Available in Water Pollution Control files.		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b>  STREAM INVENTORY	<b>SPONSORING AGENCY</b>  Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b>  Physical, chemical and biological parameters of streams		
<b>No. OF STATIONS AND COVERAGE</b>  Selected stocked streams primarily in western region	<b>SAMPLING FREQUENCY</b>  Bi-annually	<b>DATA ACQUISITION</b>  Students and technicians
<b>USERS OF DATA</b>  Provincial agencies		
<b>DATA USES</b>  For management purposes; pre- and post-survey of stocked streams		
<b>AVAILABILITY OF DATA</b>  Available to public through microfilm and published form		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b>  LAKE SURVEYS		<b>SPONSORING AGENCY</b>  Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b>  Re: Fisheries Relative abundance of species, composition, water chemistry, dissolved oxygen, temperature, pH, turbidity, conductivity.			
<b>No. OF STATIONS AND COVERAGE</b>  Selected sport and commercial fish lakes	<b>SAMPLING FREQUENCY</b>  Annual		<b>DATA ACQUISITION</b>  Summer students and technicians
<b>USERS OF DATA</b>  (1) Provincial agencies (2) Public			
<b>DATA USES</b>  (1) For management and administration of fisheries (2) Extension purpose			
<b>AVAILABILITY OF DATA</b>  Available to any interested party: microfilm files, published data at map sales office			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> COMMERCIAL FISH SURVEYS		<b>SPONSORING AGENCY</b> Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b> Age, maturity, growth, relative abundance, populations, movements of fish, index fishing (forecast of fishing)			
<b>No. OF STATIONS AND COVERAGE</b> Approximately 20 lakes	<b>SAMPLING FREQUENCY</b> Annual on major lakes, less often on smaller lakes		<b>DATA ACQUISITION</b> Technicians and summer students
<b>USERS OF DATA</b> Provincial agencies			
<b>DATA USES</b> For management and administration			
<b>AVAILABILITY OF DATA</b> Available in published reports in departmental library			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  CREEL CENSUS		<b>SPONSORING AGENCY</b>  Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b>  Total harvest of sports species Angler success rate (CUE) Species composition of catch Socio-economic profile of anglers			
<b>No. OF STATIONS AND COVERAGE</b>  Selected lake and river systems		<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Students and technicians
<b>USERS OF DATA</b>  Provincial agencies			
<b>DATA USES</b>  For management and extension purpose			
<b>AVAILABILITY OF DATA</b>  Available to public through microfilm and published form			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  BIOPHYSICAL LAND CLASSIFICATION		<b>SPONSORING AGENCY</b>  Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b>  Delineation of homogeneous patterns of land units based upon soil, surficial deposits, permafrost, vegetation, drainage and landforms.			
<b>No. OF STATIONS AND COVERAGE</b>  Boreal portion of Manitoba		<b>SAMPLING FREQUENCY</b>  Once over	<b>DATA ACQUISITION</b>  Air photo interpretation and field survey
<b>USERS OF DATA</b>  Land use planners			
<b>DATA USES</b>  For determining environmental sensitivity to human activity, for determining capability of land for recreation, wildlife and forestry and for determining location for infrastructure			
<b>AVAILABILITY OF DATA</b>  Maps and guides available			
<b>ADDITIONAL INFORMATION</b>			



<b>ACTIVITY/TYPE OF DATA</b>  FOREST INVENTORY		<b>SPONSORING AGENCY</b>  Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b>  Forest stand area and volume by species by forest management unit.			
<b>No. OF STATIONS AND COVERAGE</b>  Wooded portion of the province	<b>SAMPLING FREQUENCY</b>  Every 10-15 years		<b>DATA ACQUISITION</b>  Air photo interpretation and field survey
<b>USERS OF DATA</b>  (1) Departmental foresters (2) Manitoba Hydro, Department of Tourism and Recreation, private wood operations companies, etc.			
<b>DATA USES</b>  (1) For purposes of determining allowable cut and determining forest allocation. (2) For planning purposes.			
<b>AVAILABILITY OF DATA</b>  Maps and reports available			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> SHARP TAILED AND RUFFED GROUSE SURVEY		<b>SPONSORING AGENCY</b> Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b> Male population size			
<b>No. OF STATIONS AND COVERAGE</b> Southern Manitoba	<b>SAMPLING FREQUENCY</b> Annual	<b>DATA ACQUISITION</b> Visual and audio observation	
<b>USERS OF DATA</b> Department staff			
<b>DATA USES</b> For setting annual hunting seasons			
<b>AVAILABILITY OF DATA</b> On a restricted basis			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> WATERFOWL SURVEY		<b>SPONSORING AGENCY</b> Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b> Staging population size and species composition			
<b>No. OF STATIONS AND COVERAGE</b> Delta Marsh	<b>SAMPLING FREQUENCY</b> Annual	<b>DATA ACQUISITION</b> Direct aerial observation	
<b>USERS OF DATA</b> Department staff			
<b>DATA USES</b> For estimating intensity of depredation, availability for harvest and as an indication of marsh productivity for management purposes.			
<b>AVAILABILITY OF DATA</b> On a restricted basis.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  BARREN GROUND CARIBOU SURVEY		<b>SPONSORING AGENCY</b>  Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b>  Calf production			
<b>No. OF STATIONS AND COVERAGE</b>  Caribou range in northern Manitoba		<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Direct aerial observation
<b>USERS OF DATA</b>  Department staff and North West Territories and Saskatchewan			
<b>DATA USES</b>  To monitor population change and recommend harvest quotas			
<b>AVAILABILITY OF DATA</b>  On a restricted basis			
<b>ADDITIONAL INFORMATION</b>  In co-operation with Northwest Territories and Saskatchewan			

<b>ACTIVITY/TYPE OF DATA</b>  WINTER SEVERITY INDEX		<b>SPONSORING AGENCY</b>  Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b>  Snow depth primarily			
<b>No. OF STATIONS AND COVERAGE</b>  Throughout white tailed deer range	<b>SAMPLING FREQUENCY</b>  Annual throughout winter	<b>DATA ACQUISITION</b>  Direct measurement	
<b>USERS OF DATA</b>  Department staff			
<b>DATA USES</b>  To measure environmental stress on the white tailed deer herd			
<b>AVAILABILITY OF DATA</b>  On a restricted basis			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  ELK SURVEY		<b>SPONSORING AGENCY</b>  Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b>  Sex and age of elk herd			
<b>No. OF STATIONS AND COVERAGE</b>  Duck Mountain	<b>SAMPLING FREQUENCY</b>  Every 3rd year	<b>DATA ACQUISITION</b>  (Direct) Visual aerial survey	
<b>USERS OF DATA</b>  Department staff			
<b>DATA USES</b>  To determine annual hunting season			
<b>AVAILABILITY OF DATA</b>  On a restricted basis			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> MOOSE SURVEY		<b>SPONSORING AGENCY</b> Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b> Herd population size based on samples			
<b>No. OF STATIONS AND COVERAGE</b> Boreal region of Manitoba	<b>SAMPLING FREQUENCY</b> Annual	<b>DATA ACQUISITION</b> (Direct) Visual aerial survey	
<b>USERS OF DATA</b> Department staff			
<b>DATA USES</b> For purpose of setting annual hunting season			
<b>AVAILABILITY OF DATA</b> On a restricted basis			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  WHITE-TAILED DEER SURVEY		<b>SPONSORING AGENCY</b>  Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b>  Herd population size based on samples			
<b>No. OF STATIONS AND COVERAGE</b>  Southern Manitoba		<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  (Direct) Visual aerial survey (Indirect) Pellet group counts
<b>USERS OF DATA</b>  Department staff			
<b>DATA USES</b>  For purpose of setting annual hunting season			
<b>AVAILABILITY OF DATA</b>  On a restricted basis			
<b>ADDITIONAL INFORMATION</b>			



<b>ACTIVITY/TYPE OF DATA</b> POLAR BEAR DENNING SURVEY		<b>SPONSORING AGENCY</b> Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b> Reproduction rate			
<b>No. OF STATIONS AND COVERAGE</b> Hudson Bay Coastline	<b>SAMPLING FREQUENCY</b> Annual	<b>DATA ACQUISITION</b> (Direct) Visual aerial survey	
<b>USERS OF DATA</b> Department in co-operation with Canadian Wildlife Service			
<b>DATA USES</b> For management purposes			
<b>AVAILABILITY OF DATA</b> On a restricted basis			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  MUSKRAT AND BEAVER SURVEY		<b>SPONSORING AGENCY</b>  Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b>  Population size			
<b>No. OF STATIONS AND COVERAGE</b>  Southern Manitoba	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Direct observation	
<b>USERS OF DATA</b>  Department			
<b>DATA USES</b>  For recommending harvest quotas			
<b>AVAILABILITY OF DATA</b>  On a restricted basis			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  GARTER SNAKES SURVEY		<b>SPONSORING AGENCY</b>  Manitoba Department of Renewable Resources and Transportation Services	
<b>PARAMETERS MONITORED</b>  Population size and mortality rate			
<b>No. OF STATIONS AND COVERAGE</b>  Selected denning areas of southern Manitoba	<b>SAMPLING FREQUENCY</b>  Annual	<b>DATA ACQUISITION</b>  Tagging	
<b>USERS OF DATA</b>  Department			
<b>DATA USES</b>  For setting harvest quotas			
<b>AVAILABILITY OF DATA</b>  Available			
<b>ADDITIONAL INFORMATION</b>			



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# PROVINCE OF ONTARIO

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<b>ACTIVITY/TYPE OF DATA</b> AIR QUALITY		<b>SPONSORING AGENCY</b> Air Resources Branch Ontario Ministry of the Environment	
<b>PARAMETERS MONITORED</b> Sulphur dioxide (66 stn.), carbon monoxide (17 stn.), total hydrocarbons (16 stn.), oxides of nitrogen (18 stn.), oxidants (20 stn.), coefficient of haze (61 stn.), hydrogen sulphide (7 stn.), total particulate (136 stn.), dustfall (300 stn.), fluoride (126 stn.)			
<b>No. OF STATIONS AND COVERAGE</b> Ontario	<b>SAMPLING FREQUENCY</b> Hourly except total particulate (daily), dustfall (monthly), fluoride (monthly)	<b>DATA ACQUISITION</b> Automatic recorders; in areas with publicized air pollution index data are telemetered in real-time to central stations; all others recorded on analogue charts	
<b>USERS OF DATA</b> Ministry of the Environment, Federal Government, utilities, consultants, universities, general public.			
<b>DATA USES</b> <ol style="list-style-type: none"> <li>1. To determine the levels of pollutant concentrations across the province.</li> <li>2. To determine the relationship of emissions into the atmosphere and meteorological parameters to air quality.</li> <li>3. To add to the current knowledge on the effects of air pollutants.</li> <li>4. To determine the extent of pollution from a particular source or group of sources.</li> <li>5. To determine trends of air quality and the effects of abatement measures.</li> <li>6. To operate an air pollution warning system.</li> </ol>			
<b>AVAILABILITY OF DATA</b> Statistical summary published annually by the Ministry of the Environment in "Air Quality Monitoring Report". Air pollution indices are widely publicized. Data also available upon request.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> METEOROLOGICAL		<b>SPONSORING AGENCY</b> Air Resources Branch Ontario Ministry of the Environment	
<b>PARAMETERS MONITORED</b> Windspeed (20 stn.), wind direction (20 stn.), temperature (15 stn.)			
<b>No. OF STATIONS AND COVERAGE</b> Ontario	<b>SAMPLING FREQUENCY</b> Hourly	<b>DATA ACQUISITION</b> Automatic recorders	
<b>USERS OF DATA</b> Ministry of the Environment, Federal Government, utilities, consultants, universities.			
<b>DATA USES</b> <ol style="list-style-type: none"><li>1. To assist in determining the relationship of emissions into the atmosphere and meteorological parameters to air quality.</li><li>2. As input to an air pollution warning system.</li></ol>			
<b>AVAILABILITY OF DATA</b> On request.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>		<b>SPONSORING AGENCY</b>	
WATER QUALITY		Water Resources Branch Ontario Ministry of the Environment	
<b>PARAMETERS MONITORED</b> Total and fecal coliform, fecal streptococci, biochemical oxygen demand, total and soluble phosphorus, free ammonia, Kjeldahl nitrogen, nitrate and nitrite, turbidity, conductivity, chlorides, acidity, alkalinity, hardness, total and dissolved iron, pH, colour, phenols, fluoride, silica, total and suspended solids, sulphate, potassium, sodium, total and organic carbon, chemical oxygen demand, aluminum, arsenic, calcium, chromium, copper, cyanide, cadmium, lead, magnesium, manganese, nickel and zinc.			
<b>No. OF STATIONS AND COVERAGE</b>	<b>SAMPLING FREQUENCY</b>	<b>DATA ACQUISITION</b>	
637 Rivers and Inland Lakes of Ontario	Various	Sampling by Ministries of Environment, Health, Natural Resources and by Conservation Authorities; analysis in MOE lab.	
<b>USERS OF DATA</b>			
Ministry of the Environment, Ministry of Health, Ministry of Natural Resources, Conservation Authorities, Federal Government, consultants, industry, universities, general public, International Joint Commission.			
<b>DATA USES</b>			
The MOE uses the data to maintain surveillance over water quality and to support the analysis and prediction of water quality for planning and other purposes; Ministry of Health uses bacteriological data to monitor potential public health dangers; Ministry of Natural Resources uses data in conjunction with resource management programs (e.g. fishery management); other uses include research and environmental impact assessment.			
<b>AVAILABILITY OF DATA</b>			
Data are published by the Ministry of the Environment in "Water Quality Data". Most recent publication is for 1973, but publication schedule is being improved so that "Water Quality Data" will be distributed 6 months after year-end. Data are also available upon request.			
<b>ADDITIONAL INFORMATION</b> Sampling station locations are selected to meet at least one of the following requirements: (1) to measure quantitatively and qualitatively, the materials discharged from tributary streams to the terminal basins; (2) to monitor the effects of wastewater discharges upon a watercourse; (3) to provide data that can be considered generally representative of water quality conditions in a certain area.			



<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b>  Water Resources Branch Ontario Ministry of the Environment			
<b>PARAMETERS MONITORED</b> Temperature, pH, alkalinity, dissolved oxygen, secchi disc, turbidity, specific conductivity, total and soluble phosphorus as P, total Kjeldahl nitrogen as N, ammonia, nitrate, nitrite, dissolved silica, chloride, sulphate, sulphite, total iron, phenols, total organic carbon, chlorophyll <u>a</u> and <u>b</u> , total and fecal coliform, fecal streptococci, and total plate count. Periodically cyanide, ether solubles, total, suspended and dissolved solids at selected stations.					
<b>No. OF STATIONS AND COVERAGE</b>  58 St. Lawrence River (Ontario Section)		<b>SAMPLING FREQUENCY</b>  3 consecutive times during each of 4 annual surveys		<b>DATA ACQUISITION</b>  Sampling by field personnel and analysis in MOE lab	
<b>USERS OF DATA</b>  Ministry of the Environment, International Joint Commission, industry, re- searchers, consulting firms, and other groups.					
<b>DATA USES</b>  To assess compliance with Ministry of Environment and International Joint Commission water quality objectives, to provide basic information relevant to the need for and response to remedial and preventative waste management programs, trans-boundary movement and distribution of pollutants, water use suitability and supporting information necessary for assessment of localized water use problems.					
<b>AVAILABILITY OF DATA</b>  Data are stored on magnetic tape and are available in computer printout format within 6 to 8 weeks after sampling.					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b>  Water Resources Branch Ontario Ministry of the Environment	
<b>PARAMETERS MONITORED</b> Temperature, pH, alkalinity, dissolved oxygen, secchi disc, turbidity, specific conductivity, total and soluble phosphorus as P, total Kjeldahl nitrogen as N, ammonia, nitrate, nitrite, dissolved silica, chloride, sulphate, sulphite, total iron, phenols, total organic carbon, chlorophyll <u>a</u> and <u>b</u> , total and fecal coliform, fecal streptococci, and total plate count. For some samples also total, dissolved and suspended solids, fluoride, potassium, calcium, sodium and magnesium.			
<b>No. OF STATIONS AND COVERAGE</b>  82 Lake Ontario		<b>SAMPLING FREQUENCY</b>  3 consecutive times during each of 4-6 annual surveys	<b>DATA ACQUISITION</b>  Sampling by field personnel and analysis by MOE lab.
<b>USERS OF DATA</b>  Ministry of the Environment, International Joint Commission, industry, researchers, consulting firms, and other groups.			
<b>DATA USES</b>  To assess compliance with Ministry of Environment and International Joint Commission water quality objectives, to provide basic information relevant to the need for and response to remedial and preventative waste management programs, trans-boundary movement and distribution of pollutants, water use suitability and supporting information necessary for assessment of localized water use problems.			
<b>AVAILABILITY OF DATA</b>  Data are stored on magnetic tape and are available in computer printout format within 6 to 8 weeks after sampling.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b>  Water Resources Branch Ontario Ministry of the Environment	
<b>PARAMETERS MONITORED</b> Temperature, pH, alkalinity, dissolved oxygen, secchi disc, turbidity, specific conductivity, total and soluble phosphorus as P, total Kjeldahl nitrogen as N, ammonia, nitrate, nitrite, dissolved silica, chloride, sulphate, sulphite, total iron, phenols, total organic carbon, chlorophyll <u>a</u> and <u>b</u> , total and fecal coliform, fecal streptococci, and total plate count. For some samples also total, dissolved and suspended solids, fluoride, potassium, calcium, sodium and magnesium.			
<b>No. OF STATIONS AND COVERAGE</b>  24 Bay of Quinte		<b>SAMPLING FREQUENCY</b>  3 consecutive times during each of 8 annual surveys	<b>DATA ACQUISITION</b>  Sampling by field personnel and analysis by MOE lab
<b>USERS OF DATA</b>  Ministry of the Environment, International Joint Commission, industry, researchers, consulting firms, and other groups.			
<b>DATA USES</b>  To assess compliance with Ministry of Environment and International Joint Commission water quality objectives, to provide basic information relevant to the need for and response to remedial and preventative waste management programs, trans-boundary movement and distribution of pollutants, water use suitability and supporting information necessary for assessment of localized water use problems.			
<b>AVAILABILITY OF DATA</b>  Data are stored on magnetic tape and are available in computer printout format within 6 to 8 weeks after sampling.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b>  Water Resources Branch Ontario Ministry of the Environment			
<b>PARAMETERS MONITORED</b> Temperature, pH, alkalinity, dissolved oxygen, secchi disc, turbidity, specific conductivity, total and soluble phosphorus as P, total Kjeldahl nitrogen as N, ammonia, nitrate, nitrite, dissolved silica, chloride, sulphate, sulphite, total iron, phenols, total organic carbon, chlorophyll <u>a</u> and <u>b</u> , total and fecal coliform, fecal streptococci, and total plate count. Periodically cyanide, ether solubles, total, suspended and dissolved solids at selected stations.					
<b>No. OF STATIONS AND COVERAGE</b>  37 Niagara River		<b>SAMPLING FREQUENCY</b>  3 consecutive times during each of 6 annual surveys		<b>DATA ACQUISITION</b>  Sampling by field personnel and analysis in MOE lab.	
<b>USERS OF DATA</b> Ministry of the Environment, International Joint Commission, industry, researchers, consulting firms, and other groups.					
<b>DATA USES</b> To assess compliance with Ministry of Environment and International Joint Commission water quality objectives, to provide basic information relevant to the need for and response to remedial and preventative waste management programs, trans-boundary movement and distribution of pollutants, water use suitability and supporting information necessary for assessment of localized water use problems.					
<b>AVAILABILITY OF DATA</b>  Data are stored on magnetic tape and are available in computer printout format within 6 to 8 weeks after sampling.					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b>  Water Resources Branch Ontario Ministry of the Environment	
<b>PARAMETERS MONITORED</b> Temperature, pH, alkalinity, dissolved oxygen, secchi disc, turbidity, specific conductivity, total and soluble phosphorus as P, total Kjeldahl nitrogen as N, ammonia, nitrate, nitrite, dissolved silica, chloride, sulphate, sulphite, total iron, phenols, total organic carbon, chlorophyll <u>a</u> and <u>b</u> , total and fecal coliform, fecal streptococci, and total plate count. For some samples also total, dissolved and suspended solids, fluoride, potassium, calcium, sodium and magnesium.			
<b>No. OF STATIONS AND COVERAGE</b>  108 Lake Erie		<b>SAMPLING FREQUENCY</b>  3 consecutive times during each of 6 annual surveys	<b>DATA ACQUISITION</b>  Sampling by field personnel and analysis by MOE lab.
<b>USERS OF DATA</b>  Ministry of the Environment, International Joint Commission, industry, researchers, consulting firms, and other groups.			
<b>DATA USES</b>  To assess compliance with Ministry of Environment and International Joint Commission water quality objectives, to provide basic information relevant to the need for and response to remedial and preventative waste management programs, trans-boundary movement and distribution of pollutants, water use suitability and supporting information necessary for assessment of localized water use problems.			
<b>AVAILABILITY OF DATA</b>  Data are stored on magnetic tape and are available in computer printout format within 6 to 8 weeks after sampling.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b>  Water Resources Branch Ontario Ministry of the Environment	
<b>PARAMETERS MONITORED</b> Temperature, pH, alkalinity, dissolved oxygen, secchi disc, turbidity, specific conductivity, total and soluble phosphorus as P, total Kjeldahl nitrogen as N, ammonia, nitrate, nitrite, dissolved silica, chloride, sulphate, sulphite, total iron, phenols, total organic carbon, chlorophyll <u>a</u> and <u>b</u> , total and fecal coliform, fecal streptococci, and total plate count. Periodically cyanide, ether solubles, total, suspended and dissolved solids at selected stations.			
<b>No. OF STATIONS AND COVERAGE</b>  60 Detroit River		<b>SAMPLING FREQUENCY</b>  3 consecutive times during each of 4-6 annual surveys	<b>DATA ACQUISITION</b>  Sampling by field personnel and analysis in MOE lab.
<b>USERS OF DATA</b>  Ministry of the Environment, International Joint Commission, industry, researchers, consulting firms, and other groups.			
<b>DATA USES</b>  To assess compliance with Ministry of Environment and International Joint Commission water quality objectives, to provide basic information relevant to the need for and response to remedial and preventative waste management programs, trans-boundary movement and distribution of pollutants, water use suitability and supporting information necessary for assessment of localized water use problems.			
<b>AVAILABILITY OF DATA</b>  Data are stored on magnetic tape and are available in computer printout format within 6 to 8 weeks after sampling.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b>  Water Resources Branch Ontario Ministry of the Environment			
<b>PARAMETERS MONITORED</b>  Temperature, pH, alkalinity, dissolved oxygen, secchi disc, turbidity, specific conductivity, dissolved solids, total and soluble phosphorus as P, total Kjeldahl nitrogen as N, ammonia, nitrate, nitrite, dissolved silica, chloride, sulphate, total iron, phenols, chlorophyll <u>a</u> and <u>b</u> , total and fecal coliform and fecal streptococci.					
<b>No. OF STATIONS AND COVERAGE</b>  12 Lake St. Clair (Shipping Channel)		<b>SAMPLING FREQUENCY</b>  8 times/year		<b>DATA ACQUISITION</b>  Sampling by field personnel and analysis in MOE lab.	
<b>USERS OF DATA</b>  Ministry of the Environment, International Joint Commission, industry, researchers, consulting firms, and other groups.					
<b>DATA USES</b>  To assess compliance with Ministry of Environment and International Joint Commission water quality objectives, to provide basic information relevant to the need for and response to remedial and preventative waste management programs, trans-boundary movement and distribution of pollutants, water use suitability and supporting information necessary for assessment of localized water use problems.					
<b>AVAILABILITY OF DATA</b>  Data are stored on magnetic tape and are available in computer printout format within 6 to 8 weeks after sampling.					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b>  Water Resources Branch Ontario Ministry of the Environment			
<b>PARAMETERS MONITORED</b> Temperature, pH, alkalinity, dissolved oxygen, secchi disc, turbidity, specific conductivity, total and soluble phosphorus as P, total Kjeldahl nitrogen as N, ammonia, nitrate, nitrite, dissolved silica, chloride, sulphate, sulphite, total iron, phenols, total organic carbon, chlorophyll <u>a</u> and <u>b</u> , total and fecal coliform, fecal streptococci, and total plate count. Periodically cyanide, ether solubles, total, suspended and dissolved solids at selected stations.					
<b>No. OF STATIONS AND COVERAGE</b>  42 St. Clair River		<b>SAMPLING FREQUENCY</b>  3 consecutive times during each of 4-6 annual surveys		<b>DATA ACQUISITION</b>  Sampling by field personnel and analysis by MOE lab.	
<b>USERS OF DATA</b>  Ministry of the Environment, International Joint Commission, industry, researchers, consulting firms, and other groups.					
<b>DATA USES</b>  To assess compliance with Ministry of Environment and International Joint Commission water quality objectives, to provide basic information relevant to the need for and response to remedial and preventative waste management programs, trans-boundary movement and distribution of pollutants, water use suitability and supporting information necessary for assessment of localized water use problems.					
<b>AVAILABILITY OF DATA</b>  Data are stored on magnetic tape and are available in computer printout format within 6 to 8 weeks after sampling.					
<b>ADDITIONAL INFORMATION</b>					



<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY		<b>SPONSORING AGENCY</b> Water Resources Branch Ontario Ministry of the Environment	
<b>PARAMETERS MONITORED</b> Temperature, pH, alkalinity, dissolved oxygen, secchi disc, turbidity, specific conductivity, dissolved solids, total and soluble phosphorus as P, total Kjeldahl nitrogen as N, ammonia, nitrate, nitrite, dissolved silica, chloride, sulphate, total iron, phenols, chlorophyll <u>a</u> and <u>b</u> , total and fecal coliform and fecal streptococci.			
<b>No. OF STATIONS AND COVERAGE</b>  52 Lake Huron	<b>SAMPLING FREQUENCY</b>  3 times/year		<b>DATA ACQUISITION</b>  Sampling by field personnel and analysis in MOE lab.
<b>USERS OF DATA</b>  Ministry of the Environment, International Joint Commission, industry, researchers, consulting firms, and other groups.			
<b>DATA USES</b>  To assess compliance with Ministry of Environment and International Joint Commission water quality objectives, to provide basic information relevant to the need for and response to remedial and preventative waste management programs, trans-boundary movement and distribution of pollutants, water use suitability and supporting information necessary for assessment of localized water use problems.			
<b>AVAILABILITY OF DATA</b>  Data are stored on magnetic tape and are available in computer printout format within 6 to 8 weeks after sampling.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY		<b>SPONSORING AGENCY</b> Water Resources Branch Ontario Ministry of the Environment			
<b>PARAMETERS MONITORED</b> Temperature, pH, alkalinity, dissolved oxygen, secchi disc, turbidity, specific conductivity, dissolved solids, total and soluble phosphorus as P, total Kjeldahl nitrogen as N, ammonia, nitrate, nitrite, dissolved silica, chloride, sulphate, total iron, phenols, chlorophyll <u>a</u> and <u>b</u> , total and fecal coliform and fecal streptococci.					
<b>No. OF STATIONS AND COVERAGE</b> 99 Georgian Bay		<b>SAMPLING FREQUENCY</b> 87 stations - 9 times/year 12 stations - 3 times/year		<b>DATA ACQUISITION</b> Sampling by field personnel and analysis in MOE lab.	
<b>USERS OF DATA</b> Ministry of the Environment, International Joint Commission, industry, researchers, consulting firms, and other groups.					
<b>DATA USES</b> To assess compliance with Ministry of Environment and International Joint Commission water quality objectives, to provide basic information relevant to the need for and response to remedial and preventative waste management programs, trans-boundary movement and distribution of pollutants, water use suitability and supporting information necessary for assessment of localized water use problems.					
<b>AVAILABILITY OF DATA</b> Data are stored on magnetic tape and are available in computer printout format within 6 to 8 weeks after sampling.					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY		<b>SPONSORING AGENCY</b> Water Resources Branch Ontario Ministry of the Environment	
<b>PARAMETERS MONITORED</b> Temperature, pH, alkalinity, dissolved oxygen, secchi disc, turbidity, specific conductivity, dissolved solids, total and soluble phosphorus as P, total Kjeldahl nitrogen as N, ammonia, nitrate, nitrite, dissolved silica, chloride, sulphate, total iron, phenols, chlorophyll <u>a</u> and <u>b</u> , total and fecal coliform and fecal streptococci.			
<b>No. OF STATIONS AND COVERAGE</b> 26 Lake Huron (North Channel)		<b>SAMPLING FREQUENCY</b> 3 times/year	<b>DATA ACQUISITION</b> Sampling by field personnel and analysis in MOE lab.
<b>USERS OF DATA</b> Ministry of the Environment, International Joint Commission, industry, researchers, consulting firms, and other groups.			
<b>DATA USES</b> To assess compliance with Ministry of Environment and International Joint Commission water quality objectives, to provide basic information relevant to the need for and response to remedial and preventative waste management programs, trans-boundary movement and distribution of pollutants, water use suitability and supporting information necessary for assessment of localized water use problems.			
<b>AVAILABILITY OF DATA</b> Data are stored on magnetic tape and are available in computer printout format within 6 to 8 weeks after sampling.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY		<b>SPONSORING AGENCY</b> Water Resources Branch Ontario Ministry of the Environment	
<b>PARAMETERS MONITORED</b> Temperature, pH, alkalinity, dissolved oxygen, secchi disc, turbidity, specific conductivity, dissolved solids, total and soluble phosphorus as P, total Kjeldahl nitrogen as N, ammonia, nitrate, dissolved silica, chloride, sulphate, total iron, phenols, chlorophyll <u>a</u> and <u>b</u> , total and fecal coliform and fecal streptococci.			
<b>No. OF STATIONS AND COVERAGE</b> 59 St. Mary's River	<b>SAMPLING FREQUENCY</b> 4 times/year		<b>DATA ACQUISITION</b> Sampling by field personnel and analysis in MOE lab.
<b>USERS OF DATA</b> Ministry of the Environment, International Joint Commission, industry, researchers, consulting firms, and other groups.			
<b>DATA USES</b> To assess compliance with Ministry of Environment and International Joint Commission water quality objectives, to provide basic information relevant to the need for and response to remedial and preventative waste management programs, trans-boundary movement and distribution of pollutants, water use suitability and supporting information necessary for assessment of localized water use problems.			
<b>AVAILABILITY OF DATA</b> Data are stored on magnetic tape and are available in computer printout format within 6 to 8 weeks after sampling.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY		<b>SPONSORING AGENCY</b> Water Resources Branch Ontario Ministry of the Environment	
<b>PARAMETERS MONITORED</b> Temperature, pH, alkalinity, dissolved oxygen, secchi disc, turbidity, specific conductivity, dissolved solids, total and soluble phosphorus as P, total Kjeldahl nitrogen as N, ammonia, nitrate, dissolved silica, chloride, sulphate, total iron, phenols, chlorophyll <u>a</u> and <u>b</u> , total and fecal coliform and fecal streptococci.			
<b>No. OF STATIONS AND COVERAGE</b> 67 Lake Superior		<b>SAMPLING FREQUENCY</b> 3 times/year	<b>DATA ACQUISITION</b> Sampling by field personnel and analysis in MOE lab.
<b>USERS OF DATA</b> Ministry of the Environment, International Joint Commission, industry, researchers, consulting firms, and other groups.			
<b>DATA USES</b> To assess compliance with Ministry of Environment and International Joint Commission water quality objectives, to provide basic information relevant to the need for and response to remedial and preventative waste management programs, trans-boundary movement and distribution of pollutants, water use suitability and supporting information necessary for assessment of localized water use problems.			
<b>AVAILABILITY OF DATA</b> Data are stored on magnetic tape and are available in computer printout format within 6 to 8 weeks after sampling.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> PHYTOPLANKTON		<b>SPONSORING AGENCY</b> Ontario Ministry of the Environment	
<b>PARAMETERS MONITORED</b> Species, biomass			
<b>No. OF STATIONS AND COVERAGE</b> Inshore Canadian waters of the Great Lakes	<b>SAMPLING FREQUENCY</b>		<b>DATA ACQUISITION</b> Samples taken at water treatment facilities and analysed in MOE lab
<b>USERS OF DATA</b> Ministry of the Environment, International Joint Commission			
<b>DATA USES</b> To determine species composition and phytoplankton and to assess long term changes in trophic status and associated water quality			
<b>AVAILABILITY OF DATA</b> Technical papers, International Joint Commission reports			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  PHYTOPLANKTON		<b>SPONSORING AGENCY</b>  Ontario Ministry of the Environment			
<b>PARAMETERS MONITORED</b>  Species, biomass					
<b>No. OF STATIONS AND COVERAGE</b>  9 Nanticoke area of Lake Erie		<b>SAMPLING FREQUENCY</b>  Bi-weekly		<b>DATA ACQUISITION</b>  Field personnel	
<b>USERS OF DATA</b>  Ministry of the Environment					
<b>DATA USES</b>  To determine over the long term the species composition and biomass of phytoplankton					
<b>AVAILABILITY OF DATA</b>  Bi-annual report of the Nanticoke Environmental Committee					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b> CONTAMINANTS IN FISH		<b>SPONSORING AGENCY</b> Ontario Ministry of Natural Resources	
<b>PARAMETERS MONITORED</b> Mercury and other heavy metals, PCB's, the DDT group and other pesticides, Mirex			
<b>No. OF STATIONS AND COVERAGE</b> Approximately 10,000 samples per year Ontario	<b>SAMPLING FREQUENCY</b> Annually in a few selected areas; other areas once only or on a multi-year cycle		<b>DATA ACQUISITION</b> Sampling by MNR field staff and analysis in Provincial labs.
<b>USERS OF DATA</b> General public, Ministry of Natural Resources, Ministry of the Environment, Ministry of Labour, Federal Government.			
<b>DATA USES</b> Public health advisories, fishery management, detect trends in contaminant levels, assess the health of the fish population.			
<b>AVAILABILITY OF DATA</b> Public information - news releases. Commercial fish data usually internal only. Data needs of consultants and other groups are met by answering specific requests.			
<b>ADDITIONAL INFORMATION</b> A new public information package is to be issued in the near future.			



<b>ACTIVITY/TYPE OF DATA</b>  RADIOLOGICAL MONITORING - NUCLEAR INSTALLATIONS		<b>SPONSORING AGENCY</b>  Ontario Ministry of Health	
<b>PARAMETERS MONITORED</b>  Gross alpha, gross beta, dissolved uranium, dissolved Radium-226, solids.			
<b>No. OF STATIONS AND COVERAGE</b>  All Canadian nuclear installations on the Great Lakes	<b>SAMPLING FREQUENCY</b>  Weekly or less frequent		<b>DATA ACQUISITION</b>  Samples taken from plant effluent, effluent zone of influence, and nearby drinking water supplies. Analysis in Radiation Protection Branch Lab.
<b>USERS OF DATA</b>  Ministry of Health, Ministry of the Environment, Health and Welfare Canada, Atomic Energy Control Board, International Joint Commission			
<b>DATA USES</b>  To determine impact of emissions from operating nuclear power stations on levels of radionuclides in Great Lakes.			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			



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# PROVINCE OF QUEBEC

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<b>ACTIVITY/TYPE OF DATA</b>  METEOROLOGY		<b>SPONSORING AGENCY</b>  Quebec Ministry of Natural Resources	
<b>PARAMETERS MONITORED</b>  Precipitation (567 stn.), snow and ice (300 stn.), temperature (509 stn.), evaporation (35 stn.), windspeed and direction (69 stn.), rate of precipitation (180 stn.), humidity (273 stn.), ground temperature (67 stn.), solar radiation (108 stn.)			
<b>No. OF STATIONS AND COVERAGE</b>  800 (seasonal and permanent)		<b>SAMPLING FREQUENCY</b>  At least 2 per day	<b>DATA ACQUISITION</b>  Various types of recorders
<b>USERS OF DATA</b>  Federal, provincial and municipal agencies, universities, industry and consultants			
<b>DATA USES</b>  Planning of agricultural operations (harvest, insecticide spraying, irrigation), forestry operations (fire protection), design of weirs, culverts, stormwater systems, selection of locations for airports, tourist facilities, river basin studies.			
<b>AVAILABILITY OF DATA</b>  Published in "Bulletin meteorologique" and also stored on magnetic tape.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  HYDROMETRIC	<b>SPONSORING AGENCY</b>  Quebec Ministry of Natural Resources	
<b>PARAMETERS MONITORED</b>  Water flow, depth		
<b>No. OF STATIONS AND COVERAGE</b>  388 Quebec	<b>SAMPLING FREQUENCY</b>  Continuous	<b>DATA ACQUISITION</b>  Automatic recorders
<b>USERS OF DATA</b>  Federal, provincial and municipal governments, industries, Hydro Quebec, universities, consultants.		
<b>DATA USES</b>  Environmental impact assessment, flood control and forecasting, water supply, power development requirements, irrigation, navigation, and fisheries programs.		
<b>AVAILABILITY OF DATA</b>  Published annually in "l'Annuaire Hydrologique" and also stored on magnetic tape.		
<b>ADDITIONAL INFORMATION</b>  Industrial organizations such as Alcan and Hydro Quebec operate 228 additional stations.		

<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b>  Quebec Ministry of Natural Resources	
<b>PARAMETERS MONITORED</b>  (a) Major ions: Si, Ca, Mg, Na, K, SO <sub>4</sub> , Cl, NO <sub>3</sub> , NO <sub>2</sub> ; conductivity, and temperature.  (b) Nutrients, primary productivity, turbidity, dissolved oxygen, and trace metals.			
<b>No. OF STATIONS AND COVERAGE</b>  68 across Quebec measure (a) 36 on Yamaska and St. Francis Rivers measure (a) and (b)		<b>SAMPLING FREQUENCY</b>  Weekly	<b>DATA ACQUISITION</b>  Field personnel and analysis in regional laboratories
<b>USERS OF DATA</b>  Federal, provincial, and municipal governments, industries, universities, consultants			
<b>DATA USES</b>  To determine pollution trends, to measure the effectiveness of remedial measures to control pollution, and to understand better the pathways, behaviour and fate of pollutants in the environment and their effect on physical, chemical and biological systems, and to contribute to improved water resources program planning and implementation.			
<b>AVAILABILITY OF DATA</b>  Published in "l'Annuaire de la Qualite des Eaux" and also stored on magnetic tape.			
<b>ADDITIONAL INFORMATION</b>			



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# PROVINCE OF NEW BRUNSWICK

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Groundwater Levels	190
Water Quality	191
A. Lake Study Program	
B. River Study Program	



<b>ACTIVITY/TYPE OF DATA</b> AIR QUALITY AND METEOROLOGY		<b>SPONSORING AGENCY</b> Air Quality Section Pollution Control Branch Environment New Brunswick	
<b>PARAMETERS MONITORED</b> Sulphur dioxide, soiling index, suspended particulate, dustfall, sulphation rate, rainfall, temperature, humidity, windspeed and direction			
<b>No. OF STATIONS AND COVERAGE</b> 24 Saint John area	<b>SAMPLING FREQUENCY</b> Hourly		<b>DATA ACQUISITION</b> Automatic recorders
<b>USERS OF DATA</b> Environment New Brunswick, Federal Government, utilities, consultants, universities, general public			
<b>DATA USES</b> <ol style="list-style-type: none"><li>1. To determine the levels of pollutant concentrations.</li><li>2. To determine the relationship of emissions into the atmosphere and meteorological conditions to air quality.</li><li>3. To add to the current knowledge on the effects of air pollutants.</li><li>4. To determine the extent of pollution from a particular source or group of sources</li><li>5. To determine trends in air quality and the effects of abatement measures.</li><li>6. To operate an air pollution warning system.</li></ol>			
<b>AVAILABILITY OF DATA</b> Monthly summaries are published.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> GROUNDWATER LEVELS		<b>SPONSORING AGENCY</b> Environment New Brunswick and Fisheries and Environment Canada (Water Survey of Canada)	
<b>PARAMETERS MONITORED</b>  Seasonal and daily water level variations in unpumped observation wells			
<b>No. OF STATIONS AND COVERAGE</b> 6 selected sites in New Brunswick - considerable expansion will occur over next 1-2 years	<b>SAMPLING FREQUENCY</b>  Continuous	<b>DATA ACQUISITION</b>  Automatic recorder (paper charts)	
<b>USERS OF DATA</b>  Environment New Brunswick, local water departments, consulting firms, researchers			
<b>DATA USES</b>  To determine seasonal and long term changes in groundwater levels under natural conditions.  To determine effects of pumping of municipal wells on regional water levels.			
<b>AVAILABILITY OF DATA</b>  Available in part from Water Survey of Canada - Halifax and Fredericton  Available in part from Water Resources Branch, Environment New Brunswick, Fredericton			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY A. LAKE STUDY PROGRAM B. RIVER STUDY PROGRAM		<b>SPONSORING AGENCY</b> Field Services Section Environmental Services Environment New Brunswick			
<b>PARAMETERS MONITORED</b> A. Benthic fauna, total Kjeldahl nitrogen, total phosphorus, total organic carbon, total inorganic carbon, pH, alkalinity, conductivity, secchi disc, dissolved oxygen, temperature, hardness, buffer index, NO <sub>3</sub> -NO <sub>2</sub> , chlorophyll <u>a</u> , colour. B. Total Kjeldahl nitrogen, total phosphorus, total organic carbon, total inorganic carbon, pH, conductivity, alkalinity, dissolved oxygen, temperature, hardness, fecal/total coliform, benthic fauna.					
<b>No. OF STATIONS AND COVERAGE</b> A. 127 B. 120		<b>SAMPLING FREQUENCY</b> A. 4 - 6 times each year 123 - 6 times in one year 123 - July one year B. 90 - twice only (June/ Aug) 30 - monthly (summer)		<b>DATA ACQUISITION</b>	
<b>USERS OF DATA</b> Federal Government, New Brunswick, consultants					
<b>DATA USES</b> Land use planning, impact assessment, public information, data bank					
<b>AVAILABILITY OF DATA</b> - Raw data in NAQUADAT - Published in reports (20 percent)					
<b>ADDITIONAL INFORMATION</b>					



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# PROVINCE OF NOVA SCOTIA

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<b>ACTIVITY/TYPE OF DATA</b> AIR QUALITY		<b>SPONSORING AGENCY</b> Inspection and Monitoring Division Nova Scotia Department of the Environment	
<b>PARAMETERS MONITORED</b>  Total suspended particulates, sulphur dioxide, hydrogen sulphide, dustfall			
<b>No. OF STATIONS AND COVERAGE</b> 5 - Strait of Canso area 4 - Sydney area 1 - New Glasgow		<b>SAMPLING FREQUENCY</b>  Continuous	<b>DATA ACQUISITION</b>  Automatic recorders
<b>USERS OF DATA</b> Nova Scotia Department of the Environment, Fisheries and Environment Canada			
<b>DATA USES</b>  To determine the quality of air in industrialized areas of the province, to detect trends in pollution levels, and to provide data for assessment of future industrial growth.			
<b>AVAILABILITY OF DATA</b>  Monthly summaries. Summary of data published annually.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> MUNICIPAL AND INDUSTRIAL EFFLUENTS		<b>SPONSORING AGENCY</b> Inspection and Monitoring Division Nova Scotia Department of the Environment	
<b>PARAMETERS MONITORED</b> Municipal: BOD or ODI, SS, chlorine residual, total and fecal coliform bacteria. Industrial: pH, BOD, COD, SS, heavy metals.			
<b>No. OF STATIONS AND COVERAGE</b> 75 municipal treatment plants 56 industrial effluents Nova Scotia		<b>SAMPLING FREQUENCY</b> Once/year (municipal and industrial)	<b>DATA ACQUISITION</b> Sampling and analysis by trained technicians
<b>USERS OF DATA</b> Federal, provincial and municipal agencies			
<b>DATA USES</b> <ul style="list-style-type: none"><li>- To determine treatment efficiencies</li><li>- To determine compliance with prescribed standards</li></ul>			
<b>AVAILABILITY OF DATA</b> <ul style="list-style-type: none"><li>- Department files</li><li>- Fisheries and Environment Canada data bank</li></ul>			
<b>ADDITIONAL INFORMATION</b>			





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## PROVINCE OF PRINCE EDWARD ISLAND

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<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY		<b>SPONSORING AGENCY</b> Water Resources Branch P.E.I. Environment			
<b>PARAMETERS MONITORED</b> Chlorides					
<b>No. OF STATIONS AND COVERAGE</b> 7 Summerside, Georgetown, Montague		<b>SAMPLING FREQUENCY</b> Summerside: bi-weekly; Georgetown) monthly Montague )		<b>DATA ACQUISITION</b> Samples collected by Provincial officials and analysed in Provincial laboratories	
<b>USERS OF DATA</b> Provincial and local agencies					
<b>DATA USES</b> For the control of salt water intrusion					
<b>AVAILABILITY OF DATA</b> On request from P.E.I. Department of Environment, Water Resources Branch					
<b>ADDITIONAL INFORMATION</b> Some information available from NAQUADAT					

<b>ACTIVITY/TYPE OF DATA</b> COMMUNITY WATER SUPPLY - QUALITY		<b>SPONSORING AGENCY</b> Water Resources Branch P.E.I. Environment	
<b>PARAMETERS MONITORED</b> a) Major ions; Ca, Mg, NO <sub>2</sub> , NO <sub>3</sub> , Cl, K, HCO <sub>3</sub> , pH, alkalinity, hardness, b) Pb, Zn, Cu, Fe			
<b>No. OF STATIONS AND COVERAGE</b> 12 across the Province	<b>SAMPLING FREQUENCY</b> Yearly		<b>DATA ACQUISITION</b> Samples collected by Provincial officials and analysed in Provincial laboratories
<b>USERS OF DATA</b> Provincial and local agencies			
<b>DATA USES</b> For drinking water quality control			
<b>AVAILABILITY OF DATA</b> On request from P.E.I. Department of Environment, Water Resources Branch			
<b>ADDITIONAL INFORMATION</b> Some information available from NAQUADAT			

<b>ACTIVITY/TYPE OF DATA</b> MUNICIPAL AND INDUSTRIAL EFFLUENTS		<b>SPONSORING AGENCY</b> Environmental Protection Service P.E.I. Department of Environment	
<b>PARAMETERS MONITORED</b> BOD, SS, pH, Chlorine, Grease, depending on the type of treatment			
<b>No. OF STATIONS AND COVERAGE</b> Varies; 10-25	<b>SAMPLING FREQUENCY</b> Variable usually bi-weekly	<b>DATA ACQUISITION</b> Samples collected by Provincial officials and analysed in Provincial laboratories	
<b>USERS OF DATA</b> Provincial and Municipal agencies			
<b>DATA USES</b> For effluent control - treatment plant operation			
<b>AVAILABILITY OF DATA</b> From P.E.I. Department of Environment			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> GROUNDWATER - WATER TABLE AND PIEZOMETRIC LEVELS		<b>SPONSORING AGENCY</b> Water Resources Branch P.E.I. Environment	
<b>PARAMETERS MONITORED</b> Depth to water level			
<b>No. OF STATIONS AND COVERAGE</b> 9 Summerside Georgetown	<b>SAMPLING FREQUENCY</b> Continuous		<b>DATA ACQUISITION</b> Recorders maintained by Provincial officials
<b>USERS OF DATA</b> Provincial agencies			
<b>DATA USES</b> Quantitative evaluation of groundwater			
<b>AVAILABILITY OF DATA</b> On request from P.E.I. Department of Environment, Water Resources Branch			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> GROUNDWATER - QUALITY WASTE DISPOSAL SITES		<b>SPONSORING AGENCY</b> Water Resources Branch P.E.I. Environment	
<b>PARAMETERS MONITORED</b>  Variable - depends upon waste sites being monitored			
<b>No. OF STATIONS AND COVERAGE</b>  16 Province-wide	<b>SAMPLING FREQUENCY</b>  Variable, from monthly to quarterly	<b>DATA ACQUISITION</b>  Samples taken by Provincial officials and analysed in Provincial laboratories	
<b>USERS OF DATA</b>  Provincial agencies			
<b>DATA USES</b>  For the control of leachate			
<b>AVAILABILITY OF DATA</b>  On request from P.E.I. Department of Environment, Water Resources Branch			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> ESTUARIAN SAMPLING		<b>SPONSORING AGENCY</b> P.E.I. Department of Environment Environmental Conservation Services	
<b>PARAMETERS MONITORED</b> Bacteria, sediment, nutrient, organic			
<b>No. OF STATIONS AND COVERAGE</b> Variable	<b>SAMPLING FREQUENCY</b> Periodic	<b>DATA ACQUISITION</b> Field personnel	
<b>USERS OF DATA</b> Federal and Provincial agencies			
<b>DATA USES</b> Water quality assessment, detection of environmental problems			
<b>AVAILABILITY OF DATA</b> Unpublished working documents, available on request from P.E.I. Environmental Conservation Services			
<b>ADDITIONAL INFORMATION</b> Sampling directed primarily at point and non-point pollution sources			





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# PROVINCE OF NEWFOUNDLAND

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Sewage Treatment Plant Effluents	207

<b>ACTIVITY/TYPE OF DATA</b> --AIR QUALITY		<b>SPONSORING AGENCY</b> Department of Consumer Affairs and Environment, Air and Industry Province of Newfoundland			
<b>PARAMETERS MONITORED</b>  Sulphur dioxide, sulphation rate, nitration rate					
<b>No. OF STATIONS AND COVERAGE</b> Insular Newfoundland 4 SO <sub>2</sub> 80 sulphation 30 nitration		<b>SAMPLING FREQUENCY</b>  Continuous		<b>DATA ACQUISITION</b>  Automatic recorders	
<b>USERS OF DATA</b> Department of Consumer Affairs and Environment, Fisheries and Environment Canada (EPS), various industries					
<b>DATA USES</b>  To determine changes in air quality					
<b>AVAILABILITY OF DATA</b>  On request					
<b>ADDITIONAL INFORMATION</b> SO <sub>2</sub> monitors in St. John's, Grand Falls, Corner Brook Nitration in Seal Cove Sulphation in Grand Falls, Corner Brook, St. John's, Seal Cove					

<b>ACTIVITY/TYPE OF DATA</b> AIR QUALITY - SOURCE RELATED		<b>SPONSORING AGENCY</b> Department of Consumer Affairs and Environment, Air and Industry Province of Newfoundland	
<b>PARAMETERS MONITORED</b> Total suspended solids, fluoride, sulphides			
<b>No. OF STATIONS AND COVERAGE</b> 20 Newfoundland and Labrador	<b>SAMPLING FREQUENCY</b> Seasonal	<b>DATA ACQUISITION</b> Various	
<b>USERS OF DATA</b> Department of Consumer Affairs and Environment, Fisheries and Environment Canada (EPS), industry			
<b>DATA USES</b> Assessing effects of pollution abatement programs			
<b>AVAILABILITY OF DATA</b> Restricted			
<b>ADDITIONAL INFORMATION</b> Surveys completed at Labrador City, Buchans, Long Harbour, Stephenville and Come by Chance.			

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY		<b>SPONSORING AGENCY</b> Department of Consumer Affairs and Environment Province of Newfoundland	
<b>PARAMETERS MONITORED</b> Physical: suspended and dissolved solids, temperature, pH, turbidity; Chemical: BOD, D.O., Kjeldahl, Phosphorus, alkalinity, chloride, sodium, potassium, magnesium, sulphate, arsenic, iron, copper, lead, zinc; Microbiological: total coliform, fecal coliform.			
<b>No. OF STATIONS AND COVERAGE</b> Ten stations, network will be gradually expanded.	<b>SAMPLING FREQUENCY</b> Variable, weekly to monthly.		<b>DATA ACQUISITION</b> Sampling and analysis by Department's staff
<b>USERS OF DATA</b> Provincial government, municipalities and consultants.			
<b>DATA USES</b> Municipal and industrial requirements, environmental impact assessment, hydrologic systems analysis, fisheries.			
<b>AVAILABILITY OF DATA</b> Sampling program will start this year. Data will be available from the Department of Consumer Affairs and Environment, St. John's.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY		<b>SPONSORING AGENCY</b> Environmental Management and Control Division, Department of Consumer Affairs and Environment Province of Newfoundland	
<b>PARAMETERS MONITORED</b>  Total and fecal coliform, total dissolved solids, total suspended solids, BOD <sub>5</sub> , nitrates, Kjeldahl nitrogen, total phosphates, chlorine residual			
<b>No. OF STATIONS AND COVERAGE</b>  12 Rocky Pond-Colinet River, Whitbourne	<b>SAMPLING FREQUENCY</b>  Periodically 3 times per year, intense investiga- tion once in 1976.		<b>DATA ACQUISITION</b>  Sampled by field personnel and analysis by General Hospital and MUN Water Analysis Laboratories
<b>USERS OF DATA</b>  Newfoundland Department of Consumer Affairs and Environment			
<b>DATA USES</b>  Monitor effect of sewage treatment plant and lift station problems on water quality of Rocky Pond and Colinet River drainage pattern.			
<b>AVAILABILITY OF DATA</b>  Files of the Newfoundland Department of Consumer Affairs and Environment.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY		<b>SPONSORING AGENCY</b> Environmental Management and Control Division, Department of Consumers Affairs and Environment Province of Newfoundland	
<b>PARAMETERS MONITORED</b> Total and fecal coliforms			
<b>No. OF STATIONS AND COVERAGE</b> 23 Little Wabush Lake, Labrador	<b>SAMPLING FREQUENCY</b> Annually		<b>DATA ACQUISITION</b> Sampled by field person- nel and analyses by General Hospital, St. John's
<b>USERS OF DATA</b> Department of Consumer Affairs and Environment			
<b>DATA USES</b> To assess bacterial counts in waters receiving primary and secondary sewage treatment plant effluent. Little Wabush Lake is subject to an increasing number of outfalls from treatment facilities			
<b>AVAILABILITY OF DATA</b> Files of Department of Consumer Affairs and Environment			
<b>ADDITIONAL INFORMATION</b> It is intended to carry out bacteriological and selective chemical analyses of Little Wabush Lake in late summer 1977.			

<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b>  Environmental Management and Control Division, Department of Consumer Affairs and Environment Province of Newfoundland			
<b>PARAMETERS MONITORED</b>  Total coliform and fecal coliform. Physical inspection of the area by field staff for developments and assessment of possible future compatible development.					
<b>No. OF STATIONS AND COVERAGE</b>  10 Peter's Pond (Botwood Watershed)		<b>SAMPLING FREQUENCY</b>  Semi-annually to monthly		<b>DATA ACQUISITION</b>  Sampled by field personnel and analyses by General Hospital Sanitary Bacteri- ology Lab and MUN Water Analysis Laboratory	
<b>USERS OF DATA</b>  Newfoundland Department of Consumer Affairs and Environment. Newfoundland Department of Health, Public Health Inspection Services Division.					
<b>DATA USES</b>  To assess bacteriological quality in protected watershed area due to existing and proposed development in the area. A sampling and survey of the area was conducted at the request of Council in the area due to a pollution threat.					
<b>AVAILABILITY OF DATA</b>  Files of Newfoundland Department of Consumer Affairs and Environment, Environmental Management and Control Division.					
<b>ADDITIONAL INFORMATION</b>  Action was taken to monitor the water pollution threat of an agricultural enterprise which is suspected does not meet with present environmental control policies.					

<b>ACTIVITY/TYPE OF DATA</b> WATER MONITORING		<b>SPONSORING AGENCY</b> Department of Consumer Affairs and Environment, Air and Industry Province of Newfoundland	
<b>PARAMETERS MONITORED</b>  BOD <sub>5</sub> , total suspended solids, pH, colour, sulphate, total phosphorus, etc.			
<b>No. OF STATIONS AND COVERAGE</b>  14 Grand Falls Corner Brook Foxtrap		<b>SAMPLING FREQUENCY</b>  Seasonal	<b>DATA ACQUISITION</b>
<b>USERS OF DATA</b>  Department of Consumer Affairs and Environment, Fisheries and Environment Canada (EPS), industry.			
<b>DATA USES</b>  Assessing effects of water pollution abatement programs on receiving water quality.			
<b>AVAILABILITY OF DATA</b>  On request			
<b>ADDITIONAL INFORMATION</b>			



<b>ACTIVITY/TYPE OF DATA</b> SEWAGE TREATMENT PLANT EFFLUENTS		<b>SPONSORING AGENCY</b> Environmental Management and Control Division, Department of Consumer Affairs and Environment Province of Newfoundland
<b>PARAMETERS MONITORED</b> Total coliform, fecal coliform, nitrates, Kjeldahl nitrogen, pH, total suspended solids, total dissolved solids, total phosphates, BOD <sub>5</sub> , chlorine residual. Occasionally complete chemical analysis.		
<b>No. OF STATIONS AND COVERAGE</b> 50 priority stations throughout Newfoundland. Approximately 40-50 ad- ditional infrequently throughout Newfoundland	<b>SAMPLING FREQUENCY</b> 3-4 times per year	<b>DATA ACQUISITION</b> Field personnel of department and analysis by General Hospital and MUN Water Analysis Laboratories
<b>USERS OF DATA</b> Newfoundland Department of Consumer Affairs and Environment		
<b>DATA USES</b> To assess efficiency of sewage treatment facilities in Newfoundland. Through water analysis of plant effluents and operator training, it is intended to have owners comply with effluent regulations under this Department's legislation.		
<b>AVAILABILITY OF DATA</b> Files of Newfoundland Department of Consumer Affairs and Environment		
<b>ADDITIONAL INFORMATION</b> This is a continuing activity and is being increased in frequency as staffing allows. In addition, focused attention is being made towards operation training through a Certification Level I Program. Presently, 33/55 have successfully completed the training program. Approximately 100 plants exist.		



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## MUNICIPALITIES

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<b>ACTIVITY/TYPE OF DATA</b>  AIR QUALITY		<b>SPONSORING AGENCY</b>  Montreal Urban Community Air Purification and Food Inspection Department	
<b>PARAMETERS MONITORED</b>  SO <sub>2</sub> , sulphation rate, suspended particulate (concentrations and sizes), soiling index, Pb, SO <sub>4</sub> , nitrates, chlorides, fluorides, NH <sub>4</sub> , H <sub>2</sub> SO <sub>4</sub> , metals, dustfall, CO, O <sub>3</sub> , NO, NO <sub>2</sub> , H <sub>2</sub> S			
<b>No. OF STATIONS AND COVERAGE</b>  43 (selected parameters) Montreal Urban Community	<b>SAMPLING FREQUENCY</b>  Continuous		<b>DATA ACQUISITION</b>  Automatic recorders and telemetry (same stations)
<b>USERS OF DATA</b>  Montreal Urban Community (MUC)			
<b>DATA USES</b>  To determine the quality of air in the MUC and whether acceptable conditions exist for the maintenance of public health, to determine the effects of emissions from particular industries, and to determine the effectiveness of emission control factors.			
<b>AVAILABILITY OF DATA</b>  Summary of data published annually by MUC in "Rapport de Qualite d'Air"			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  WATER QUALITY		<b>SPONSORING AGENCY</b>  City of Winnipeg			
<b>PARAMETERS MONITORED</b>  Dissolved oxygen, total and non-filterable residue, turbidity, total organic carbon, total phosphorous, total kjeldahl nitrogen, NO <sub>2</sub> -NO <sub>3</sub> -N, NH <sub>3</sub> , total coliform.					
<b>No. OF STATIONS AND COVERAGE</b>  9 City of Winnipeg		<b>SAMPLING FREQUENCY</b>  26 times/year		<b>DATA ACQUISITION</b>  Trained technicians	
<b>USERS OF DATA</b>  Provincial and municipal agencies, federal government, universities, consulting firms, associations, private groups.					
<b>DATA USES</b>  - To determine water quality trends - To design water treatment plants - To recommend limits for discharge of pollutants - To manage water resources					
<b>AVAILABILITY OF DATA</b>  Data available from 1975 in files					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b> AIR QUALITY		<b>SPONSORING AGENCY</b> Greater Vancouver Regional District	
<b>PARAMETERS MONITORED</b> SO <sub>2</sub> , dust, particulates, NO/NO <sub>x</sub> , hydrocarbons, CO, O <sub>3</sub> , coefficient of haze, wind speed and direction at 8 stations and temperature at 1 station			
<b>No. OF STATIONS AND COVERAGE</b> 4 (expanding to 10) Greater Vancouver Regional District	<b>SAMPLING FREQUENCY</b> Continuous	<b>DATA ACQUISITION</b> Semi-real time computer based system with strip chart recorder back-up	
<b>USERS OF DATA</b> Greater Vancouver Regional District, Province of British Columbia, Fisheries and Environment Canada			
<b>DATA USES</b> Data are used as baseline information			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

# UTILITIES

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## UTILITIES

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<b>ACTIVITY/TYPE OF DATA</b> AIR QUALITY MONITORING		<b>SPONSORING AGENCY</b> B.C. Hydro			
<b>PARAMETERS MONITORED</b> NO, NO <sub>2</sub> , O <sub>3</sub> , SO <sub>2</sub> , CO, visibility, wind speed and direction, temperature and relative humidity and miscellaneous meteorological parameters.					
<b>No. OF STATIONS AND COVERAGE</b> 1 with all parameters 2 stations with SO <sub>2</sub> and meteorological parameters		<b>SAMPLING FREQUENCY</b> Continuous		<b>DATA ACQUISITION</b> Remote data logger compiling 5 minute average for storage on magnetic tape. Adaptable to real time.	
<b>USERS OF DATA</b> B.C. Hydro and consultants					
<b>DATA USES</b> Initially - prior to development - Environmental Impact Assessment. Eventually - Incorporated into monitoring scheme for a coal-fired power station.					
<b>AVAILABILITY OF DATA</b> Not public					
<b>ADDITIONAL INFORMATION</b>					

<b>ACTIVITY/TYPE OF DATA</b> AIR QUALITY MONITORING		<b>SPONSORING AGENCY</b> B.C. Hydro	
<b>PARAMETERS MONITORED</b> Total suspended particulate			
<b>No. OF STATIONS AND COVERAGE</b> 4 stations surrounding proposed development	<b>SAMPLING FREQUENCY</b> Every 6 days		<b>DATA ACQUISITION</b> Manual
<b>USERS OF DATA</b> B.C. Hydro and consultants			
<b>DATA USES</b> Environmental impact assessment and process monitoring			
<b>AVAILABILITY OF DATA</b> Data is not public			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> RESOURCE MONITORING IN BURRARD INLET		<b>SPONSORING AGENCY</b> B.C. Hydro	
<b>PARAMETERS MONITORED</b> Temperature, salinity, dissolved oxygen, benthic macro-invertebrates			
<b>No. OF STATIONS AND COVERAGE</b> 3 sites near plant cooling water discharge	<b>SAMPLING FREQUENCY</b> Annual		<b>DATA ACQUISITION</b> Manual
<b>USERS OF DATA</b> B.C. Hydro			
<b>DATA USES</b> Internal reference and preparation for regulatory permit applications			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> MEASUREMENT OF SNOW COURSES, LAKE LEVELS		<b>SPONSORING AGENCY</b> B.C. Hydro	
<b>PARAMETERS MONITORED</b>  Snow depth, lake levels			
<b>No. OF STATIONS AND COVERAGE</b>  12 - B.C.	<b>SAMPLING FREQUENCY</b>  3/day	<b>DATA ACQUISITION</b>  Automatic recorders- semi-real time system	
<b>USERS OF DATA</b>  B.C. Hydro			
<b>DATA USES</b>  Predictions of runoff and flow as a guide for management of B.C. Hydro reservoirs			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> ANALYSIS OF SEWAGE TREATMENT PLANT EFFLUENT		<b>SPONSORING AGENCY</b> B.C. Hydro	
<b>PARAMETERS MONITORED</b>  Coliform, pH, solids and BOD			
<b>No. OF STATIONS AND COVERAGE</b>  5 Sewage Treatment Plants operated by B.C. Hydro	<b>SAMPLING FREQUENCY</b>  4 times annually		<b>DATA ACQUISITION</b>  Manual sampling
<b>USERS OF DATA</b>  B.C. Hydro, B.C. Department of Environment (Pollution Control Branch)			
<b>DATA USES</b>  Data are required to satisfy Sewage Treatment Plant licensing requirements of B.C. Pollution Control Branch			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> AIR QUALITY		<b>SPONSORING AGENCY</b> Ontario Hydro	
<b>PARAMETERS MONITORED</b> SO <sub>2</sub> and H <sub>2</sub> S in air			
<b>No. OF STATIONS AND COVERAGE</b> 5 stations in environs of Bruce Nuclear Power Development (Tiverton)	<b>SAMPLING FREQUENCY</b> Continuous	<b>DATA ACQUISITION</b> Automatic recorders	
<b>USERS OF DATA</b> Ontario Hydro and Ministry of the Environment			
<b>DATA USES</b> To assess air quality in a local area potentially affected by operations of the Bruce Heavy Water Plant and the Bruce Steam Plant			
<b>AVAILABILITY OF DATA</b> Data summaries on request from: Ontario Hydro Radioactivity Management and Environmental Protection Department 700 University Avenue, Toronto, Ontario.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY		<b>SPONSORING AGENCY</b> Ontario Hydro	
<b>PARAMETERS MONITORED</b> Dissolved solids, suspended solids and pH in influent and effluent water			
<b>No. OF STATIONS AND COVERAGE</b> NPD NGS (Rolphton) Douglas Point NGS (Tiverton) Bruce Heavy Water Plant (Tiverton)		<b>SAMPLING FREQUENCY</b> Daily	<b>DATA ACQUISITION</b> Composited on a weekly basis
<b>USERS OF DATA</b> Ontario Hydro and Ministry of the Environment			
<b>DATA USES</b> Trend analysis			
<b>AVAILABILITY OF DATA</b> Data summaries on request from: Ontario Hydro Radioactivity Management and Environmental Protection Department 700 University Avenue Toronto, Ontario.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> THERMAL EFFLUENT MONITORING		<b>SPONSORING AGENCY</b> Ontario Hydro
<b>PARAMETERS MONITORED</b> Influent and effluent temperature of cooling water		
<b>No. OF STATIONS AND COVERAGE</b> See Additional Information	<b>SAMPLING FREQUENCY</b> Continuous	<b>DATA ACQUISITION</b> Manual data acquisition is being replaced by automatic temperature recorders at all sites
<b>USERS OF DATA</b> Ontario Hydro and Ministry of the Environment		
<b>DATA USES</b> <ul style="list-style-type: none"><li>- To demonstrate compliance with the Ministry of the Environment water quality objectives</li><li>- Trend analysis</li></ul>		
<b>AVAILABILITY OF DATA</b>  Data summaries on request from: Ontario Hydro Radioactivity Management and Environmental Protection Department 700 University Avenue Toronto, Ontario.		
<b>ADDITIONAL INFORMATION</b> Nuclear Power Demonstration NGS (Rolphton) Pickering NGS A (Pickering) Douglas Point NGS (Tiverton) Bruce Heavy Water Plant A (Tiverton) Bruce NGS A (Tiverton)		



<b>ACTIVITY/TYPE OF DATA</b> HYDROGEN SULPHIDE EMISSION TO WATER		<b>SPONSORING AGENCY</b> Ontario Hydro	
<b>PARAMETERS MONITORED</b> Hydrogen sulphide concentration			
<b>No. OF STATIONS AND COVERAGE</b> Bruce Heavy Water Plant effluent	<b>SAMPLING FREQUENCY</b> Continuous	<b>DATA ACQUISITION</b> Automatic recorder	
<b>USERS OF DATA</b> Ontario Hydro and Ministry of the Environment			
<b>DATA USES</b> To demonstrate compliance with the Ministry of the Environment water quality objectives. Trend analysis.			
<b>AVAILABILITY OF DATA</b> Data summaries on request from: Ontario Hydro Radioactivity Management and Environmental Protection Department 700 University Avenue Toronto, Ontario.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> RADIOACTIVE EMISSION MONITORING - AIR		<b>SPONSORING AGENCY</b> Ontario Hydro
<b>PARAMETERS MONITORED</b> Tritium, noble gases, iodine-131, particulates		
<b>No. OF STATIONS AND COVERAGE</b> NPD NGS (Rolphton) Douglas Point NGS (Tiverton) Pickering NGS-A (Pickering) Bruce NGS-A (Tiverton)	<b>SAMPLING FREQUENCY</b> Continuous	<b>DATA ACQUISITION</b> Tritium sampler is analysed daily. Iodine and particulate cartridges are counted weekly. Noble gas activity is recorded daily.
<b>USERS OF DATA</b> Ontario Hydro and Atomic Energy Control Board		
<b>DATA USES</b> - To demonstrate compliance with Atomic Energy Control Board regulatory emission limits - Trend analysis		
<b>AVAILABILITY OF DATA</b> Data summaries on request from: Ontario Hydro Radioactivity Management and Environmental Protection Department 700 University Avenue, Toronto, Ontario.		
<b>ADDITIONAL INFORMATION</b>		

<b>ACTIVITY/TYPE OF DATA</b> RADIOACTIVE EMISSION MONITORING - WATER		<b>SPONSORING AGENCY</b> Ontario Hydro	
<b>PARAMETERS MONITORED</b>  Tritium, gross beta-gamma.			
<b>No. OF STATIONS AND COVERAGE</b> NPD NGS (Rolphton) Douglas Point NGS (Tiverton) Pickering NGS-A (Pickering) Bruce NGS-A (Tiverton)		<b>SAMPLING FREQUENCY</b>  Continuous	
<b>DATA ACQUISITION</b>  See Additional Information			
<b>USERS OF DATA</b>  Ontario Hydro and Atomic Energy Control Board			
<b>DATA USES</b>  - To demonstrate compliance with Atomic Energy Control Board regulatory emission limits. - Trend analysis.			
<b>AVAILABILITY OF DATA</b>  Data summaries on request from: Ontario Hydro Radioactivity Management and Environmental Protection Department 700 University Avenue, Toronto, Ontario.			
<b>ADDITIONAL INFORMATION</b>  - Proportional samples of cooling water streams are analysed weekly for tritium and gross beta-gamma. - Liquids originating in potentially contaminated areas are collected in tanks and analysed for tritium and gross gamma before discharge. - Gamma scans of grab samples from the liquid storage tanks are done on a monthly basis.			

<b>ACTIVITY/TYPE OF DATA</b> ENVIRONMENTAL RADIOACTIVITY MONITORING - AIR		<b>SPONSORING AGENCY</b> Ontario Hydro	
<b>PARAMETERS MONITORED</b>  External gamma dose, tritium, radioiodine, particulates			
<b>No. OF STATIONS AND COVERAGE</b> 4 NPD NGS (Rolphton) plus 1 Reference Site 4 Pickering NGS (Pickering) plus 1 Reference Site 8 Bruce Nuclear Power Development (Tiverton) plus 1 Reference Site	<b>SAMPLING FREQUENCY</b>  Continuous	<b>DATA ACQUISITION</b>  See Additional Information	
<b>USERS OF DATA</b>  Ontario Hydro and Atomic Energy Control Board			
<b>DATA USES</b>  Trend analysis. Calculation of potential dose to members of the public.			
<b>AVAILABILITY OF DATA</b>  Data summaries on request from: Ontario Hydro Radioactivity Management and Environmental Protection Department 700 University Avenue, Toronto, Ontario.			
<b>ADDITIONAL INFORMATION</b>  - Molecular sieves (for tritium) are collected and analysed monthly. - Thermoluminescent dosimeters (external gamma dose) are collected and analysed quarterly. - Particulate pre-filters are collected and analysed monthly. - Charcoal cartridges (for iodine) are changed quarterly and one located downwind from the generating station is scanned.			

<b>ACTIVITY/TYPE OF DATA</b> ENVIRONMENTAL RADIOACTIVITY MONITORING - MILK		<b>SPONSORING AGENCY</b> Ontario Hydro	
<b>PARAMETERS MONITORED</b> Radioiodine and tritium in raw milk			
<b>No. OF STATIONS AND COVERAGE</b> See Additional Information	<b>SAMPLING FREQUENCY</b> Monthly, during the summer months (May-October)		<b>DATA ACQUISITION</b> Individual milk samples are analysed for tritium, and composite samples from each site are analysed for iodine.
<b>USERS OF DATA</b> Ontario Hydro and Atomic Energy Control Board			
<b>DATA USES</b> Trend analysis. Calculation of potential dose to members of the public.			
<b>AVAILABILITY OF DATA</b> Data summaries on request from: Ontario Hydro Radioactivity Management and Environmental Protection Department 700 University Avenue Toronto, Ontario.			
<b>ADDITIONAL INFORMATION</b> Samples are collected from up to three farms within a 10-20 Kilometre radius of generating stations. Pickering NGS-A (Pickering) and Bruce Nuclear Power Development (Tiverton)			

<b>ACTIVITY/TYPE OF DATA</b> ENVIRONMENTAL RADIOACTIVITY MONITORING - FISH		<b>SPONSORING AGENCY</b> Ontario Hydro	
<b>PARAMETERS MONITORED</b> Tritium and all gamma emitting nuclides			
<b>No. OF STATIONS AND COVERAGE</b> The vicinity of station cooling water discharges. - Bruce NGS-A (Tiverton) - Douglas Point NGS (Tiverton) - Pickering NGS-A (Pickering)	<b>SAMPLING FREQUENCY</b> Twice per year		<b>DATA ACQUISITION</b> Fish flesh from available species are gamma scanned and analysed for tritium.
<b>USERS OF DATA</b> Ontario Hydro and Atomic Energy Control Board			
<b>DATA USES</b> Trend analysis. Calculation of potential dose to members of the public.			
<b>AVAILABILITY OF DATA</b> Data summaries on request from: Ontario Hydro Radioactivity Management and Environmental Protection Department 700 University Avenue, Toronto, Ontario.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> ENVIRONMENTAL RADIOACTIVITY MONITORING - PRECIPITATION		<b>SPONSORING AGENCY</b> Ontario Hydro	
<b>PARAMETERS MONITORED</b> Tritium and gross beta activity, with occasional gamma scans.			
<b>No. OF STATIONS AND COVERAGE</b> 4 NPD NGS (Rolphton) plus 1 Reference Site 4 Pickering NGS (Pickering) plus 1 Reference Site 8 Bruce Nuclear Power Development (Tiverton) plus 1 Reference Site	<b>SAMPLING FREQUENCY</b> Continuous		<b>DATA ACQUISITION</b> A composite of monthly rainfall collections is analysed quarterly.
<b>USERS OF DATA</b> Ontario Hydro and Atomic Energy Control Board.			
<b>DATA USES</b> Trend analysis.			
<b>AVAILABILITY OF DATA</b> Data summaries on request from: Ontario Hydro Radioactivity Management and Environmental Protection Department 700 University Avenue Toronto, Ontario.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> ENVIRONMENTAL RADIOACTIVITY MONITORING - DRINKING WATER		<b>SPONSORING AGENCY</b> Ontario Hydro	
<b>PARAMETERS MONITORED</b> Tritium and gross beta activity			
<b>No. OF STATIONS AND COVERAGE</b> See Additional Information	<b>SAMPLING FREQUENCY</b> Weekly	<b>DATA ACQUISITION</b> Weekly samples are com- posited on a quarterly basis and analysed.	
<b>USERS OF DATA</b> Ontario Hydro and Atomic Energy Control Board			
<b>DATA USES</b> Trend analysis			
<b>AVAILABILITY OF DATA</b> Data summaries on request from: Ontario Hydro Radioactivity Management and Environmental Protection Department 700 University Avenue Toronto, Ontario.			
<b>ADDITIONAL INFORMATION</b> Sources of drinking water: <ul style="list-style-type: none"><li>- Pickering Township water at Pickering NGS</li><li>- Bruce Nuclear Power Development Administration Building</li><li>- Bruce Nuclear Power Development Training Centre Well</li></ul>			



<b>ACTIVITY/TYPE OF DATA</b> AMBIENT AIR QUALITY		<b>SPONSORING AGENCY</b> Ontario Hydro Environmental Protection Department Thermal Generation Division	
<b>PARAMETERS MONITORED</b> SO <sub>2</sub> (45 stations), wind speed and direction (10 stations), particulate (1 station), temperature (1 station) and dew temperature (1 station)			
<b>No. OF STATIONS AND COVERAGE</b> See additional information	<b>SAMPLING FREQUENCY</b> Continuous; values reported as hourly averages	<b>DATA ACQUISITION</b> All data recorded on analogue charts. As well, SO <sub>2</sub> data is simultaneously recorded on magnetic tapes. SO <sub>2</sub> at Lakeview GS is telemetered to Lakeview and to Ontario Hydro's Head Office	
<b>USERS OF DATA</b> Ontario Ministry of the Environment, Lambton Industrial Society, Detroit Edison and Ontario Hydro			
<b>DATA USES</b> <ol style="list-style-type: none"> <li>1. Assess the impact of Ontario Hydro Thermal Generating stations on air quality.</li> <li>2. Determine trends in air quality and the effects of abatement measures.</li> </ol>			
<b>AVAILABILITY OF DATA</b> Statistical summaries are published monthly and annually for each generating station. Information is also available on request.			
<b>ADDITIONAL INFORMATION</b> J.C. Keith GS SO <sub>2</sub> (5) Wind (2); R.L. Hearn GS SO <sub>2</sub> (3) Wind (1); Lakeview GS SO <sub>2</sub> (6) Wind (2); Lambton GS SO <sub>2</sub> (5) Wind (1); Thunder Bay GS SO <sub>2</sub> (5) Wind (1); Nanticoke GS SO <sub>2</sub> (16) Wind (3 levels) Temperature (2 levels) Dew temperature; Lennox GS SO <sub>2</sub> (5) Wind (2)			

<b>ACTIVITY/TYPE OF DATA</b> WATER QUALITY		<b>SPONSORING AGENCY</b> Ontario Hydro Environmental Protection Department Thermal Generation	
<b>PARAMETERS MONITORED</b> Intake temperature - temperature condenser cooling water before frazil ice control. Outfall temperature - discharge temperature as it enters the receiving waters. Suspended and Dissolved Solids, pH (weekly) and condenser cooling water flow, impinged fish count. Chemical Consumption and Chemically Laden Wastes (phosphorous, hydrazine, ammonia, morpholine, chlorine, sulphuric acid and caustic)			
<b>No. OF STATIONS AND COVERAGE</b> Temperature: R.L. Hearn GS (1) J.C. Keith GS (1) Thunder Bay GS (1) Lakeview GS (1) Lambton GS (1) Nanticoke GS (1) Lennox GS (1)	<b>SAMPLING FREQUENCY</b> Temperature - some are monitored continuously but all are reported hourly. Chemical - daily, weekly or monthly, dependent upon parameter sampled.	<b>DATA ACQUISITION</b> Temperature - magnetic tape automatically recorded by station computer and transferred to data cards. Chemical - chemical summary reports.	
<b>USERS OF DATA</b>  Ontario Hydro, Ontario Ministry of the Environment			
<b>DATA USES</b>  1. Control and maintain the outfall temperature and the temperature rise across the station below the target temperatures applicable to the generating station. A performance index (TEEPP) is indicative of the deviation from the target and its potential harm to aquatic life.  2. To determine the potential chemical stress to which the water surrounding a station is subjected.			
<b>AVAILABILITY OF DATA</b>  Statistical summary is published monthly by the Environmental Protection Department for distribution to the stations and the Ontario Ministry of the Environment			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b> GENERATING STATION NOISE EMISSIONS		<b>SPONSORING AGENCY</b> Ontario Hydro Environmental Protection Department Thermal Generation Division	
<b>PARAMETERS MONITORED</b> Measurement of the Leq, L10, L50 values. These values are noise descriptors describing the noise level around the stations. In addition, the background noise is monitored by counting traffic volume, e.g. cars, trucks, etc.			
<b>No. OF STATIONS AND COVERAGE</b> J.C. Keith GS ) R.L. Hearn GS ) Lakeview GS ) Thunder Bay GS ) 7 Lambton GS ) Stations Nanticoke GS ) Lennox GS )		<b>SAMPLING FREQUENCY</b> Once or twice per month one will be in daytime, one will be in nighttime	
<b>DATA ACQUISITION</b> Data measured by a sound level meter B & K type 4230 with A, B and C Weighting network			
<b>USERS OF DATA</b> Environmental Protection Department and all Thermal Generating Stations			
<b>DATA USES</b> A monthly report is sent to the stations. A Noise Environmental Protection Performance (NEPP) index is generated from these noise data to measure the noise performance of each of the stations. The noise performance index is accumulated to give an overall yearly performance.			
<b>AVAILABILITY OF DATA</b> Monthly submissions from stations are documented.			
<b>ADDITIONAL INFORMATION</b>			



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## INDUSTRIAL ASSOCIATIONS

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<b>ACTIVITY/TYPE OF DATA</b> AIR QUALITY		<b>SPONSORING AGENCY</b> Lambton Industrial Society	
<b>PARAMETERS MONITORED</b> Sulphur dioxide, hydrogen sulphide, ozone, nitric oxide, nitrogen dioxide, non-methane hydrocarbon, total hydrocarbons, ethylene, total suspended particulates, total aerosol particulates, wind speed and direction.			
<b>No. OF STATIONS AND COVERAGE</b> 5 Sarnia and district		<b>SAMPLING FREQUENCY</b> Continuous	<b>DATA ACQUISITION</b> Automatic recorders
<b>USERS OF DATA</b> Lambton Industrial Society members, regulatory authorities, and interested observers.			
<b>DATA USES</b> To qualitatively assess the effect of both local and more remote pollutant sources upon air quality in the Sarnia area.			
<b>AVAILABILITY OF DATA</b> Monthly reports and an annual report are distributed to Lambton Industrial Society members, regulatory authorities and interested observers.			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  AIR QUALITY		<b>SPONSORING AGENCY</b>  Varennes Industrial Association Varennes, Quebec	
<b>PARAMETERS MONITORED</b>  SO <sub>2</sub> , sulphation rate, sulphate, fluoridation rate, gaseous and particulate fluorides, dustfall, soiling index, particulate matter, wind speed and direction			
<b>No. OF STATIONS AND COVERAGE</b>  8 Local	<b>SAMPLING FREQUENCY</b>  Continuous		<b>DATA ACQUISITION</b>  Automatic recorders
<b>USERS OF DATA</b>  Varennes Industrial Association			
<b>DATA USES</b>  To assess air quality in a local area affected by several industrial sources			
<b>AVAILABILITY OF DATA</b>  Upon request from:           Varennes Industrial Association P.O. Box 521 Varennes, Quebec.       JOL 2P0			
<b>ADDITIONAL INFORMATION</b>			

<b>ACTIVITY/TYPE OF DATA</b>  AIR QUALITY		<b>SPONSORING AGENCY</b>  Laval Industrial Association 5715 Metropolitan Blvd. East, St. Leonard, P.Q.	
<b>PARAMETERS MONITORED</b>  SO <sub>2</sub> , H <sub>2</sub> S, soiling index, dustfall, particulates, fluoride, hydrocarbons.			
<b>No. OF STATIONS AND COVERAGE</b>  5 - Local	<b>SAMPLING FREQUENCY</b>  Continuous (hydrocarbons - periodic)		<b>DATA ACQUISITION</b>  Automatic recorders at ground sites
<b>USERS OF DATA</b>  Laval Industrial Association			
<b>DATA USES</b>			
<b>AVAILABILITY OF DATA</b>			
<b>ADDITIONAL INFORMATION</b>			



<b>ACTIVITY/TYPE OF DATA</b> AIR AND WATER QUALITY		<b>SPONSORING AGENCY</b> St. Maurice Industrial Association Shawinigan, Quebec	
<b>PARAMETERS MONITORED</b> Air: SO <sub>2</sub> , sulphates, suspended particulate matter. Water: pH, soluble salts of alkaline metals and alkaline earth metals, arsenic, boron, selenium, fluoride, other heavy metals.			
<b>No. OF STATIONS AND COVERAGE</b> 20 Local		<b>SAMPLING FREQUENCY</b>	<b>DATA ACQUISITION</b>
<b>USERS OF DATA</b>			
<b>DATA USES</b>			
<b>AVAILABILITY OF DATA</b>			
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**APPENDIX A**  
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**(BY PARAMETER)**

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