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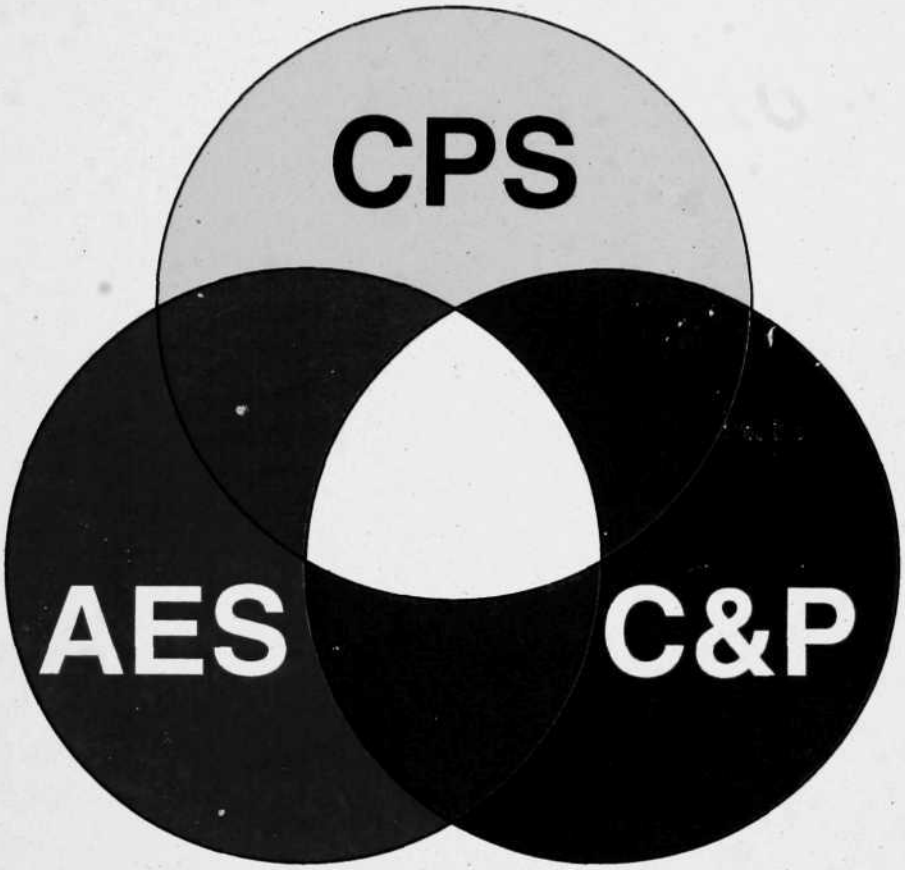
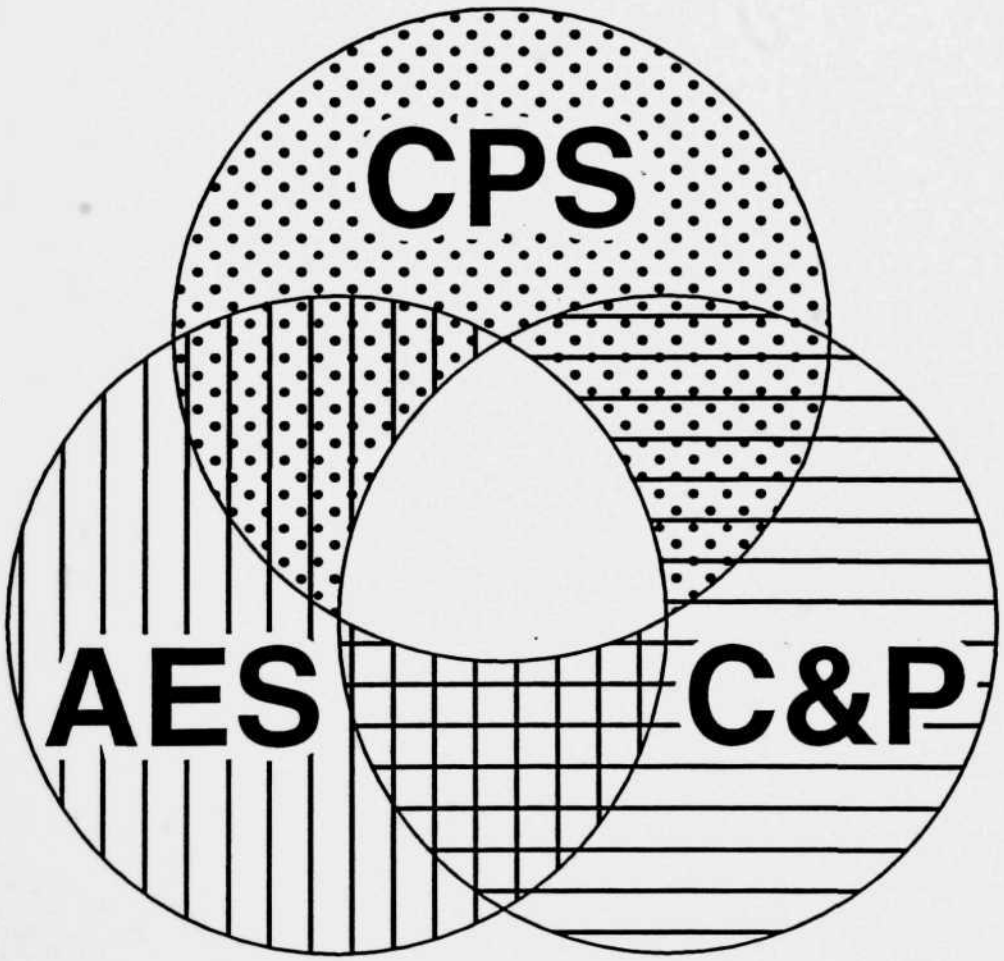
REGIONAL INTEGRATION PILOT PROJECT



Environment Canada

Quebec Region

REGIONAL INTEGRATION PILOT PROJECT
INTRODUCTION



ENVIRONMENT CANADA

QUEBEC REGION

REGIONAL INTEGRATION PILOT PROJECT

Regional Director General's Comment

Environment Canada

Quebec Region

Staff of the Quebec Region have just undergone a unique experience in regional integration that should be documented in spite of the recently announced government restructuring.

Inspired by a sincere desire to find new and better ways of doing our work and of harmonizing our actions with others in order to serve the people of Canada, staff in the region were pleased and proud to contribute to this worthwhile endeavour.

In our opinion the bulk of the recommendations of our pilot-project remain valid for the two remaining Services in the Department. We believe regional integration should continue and that the Quebec pilot-project can serve as a usefull reference for all who are contemplating integration in the future.

I especially want to thank all the staff of the three Services who contributed great amounts of their own time and effort to see this project through.

Jean-Pierre Gauthier
Regional Director General

PROJET PILOTE D'INTÉGRATION RÉGIONALE
List of enclosed documents

Introduction

General framework

Administrative integration

- Finance and Administration
- Communications and Marketing
- Human Resources
- Decision-Making Support and Departmental Affairs Unit

Integration of Operations

- Historic sites, national parks and national wildlife areas
- Atmospheric issues
- Environmental Monitoring
- Law Enforcement
- Managing Environmental Emergencies
- The Informatics Function

Ecosystem integration

- Ecosystems approach to management
- Biodiversity Conservation

Integrated Management

Conclusion

Appendix A : Launching and consultations assessment

Appendix B : Recommended structure

Appendix C : Implementation, planning and scheduling

REGIONAL INTEGRATION PILOT PROJECT

Introduction

Environment Canada

Quebec Region

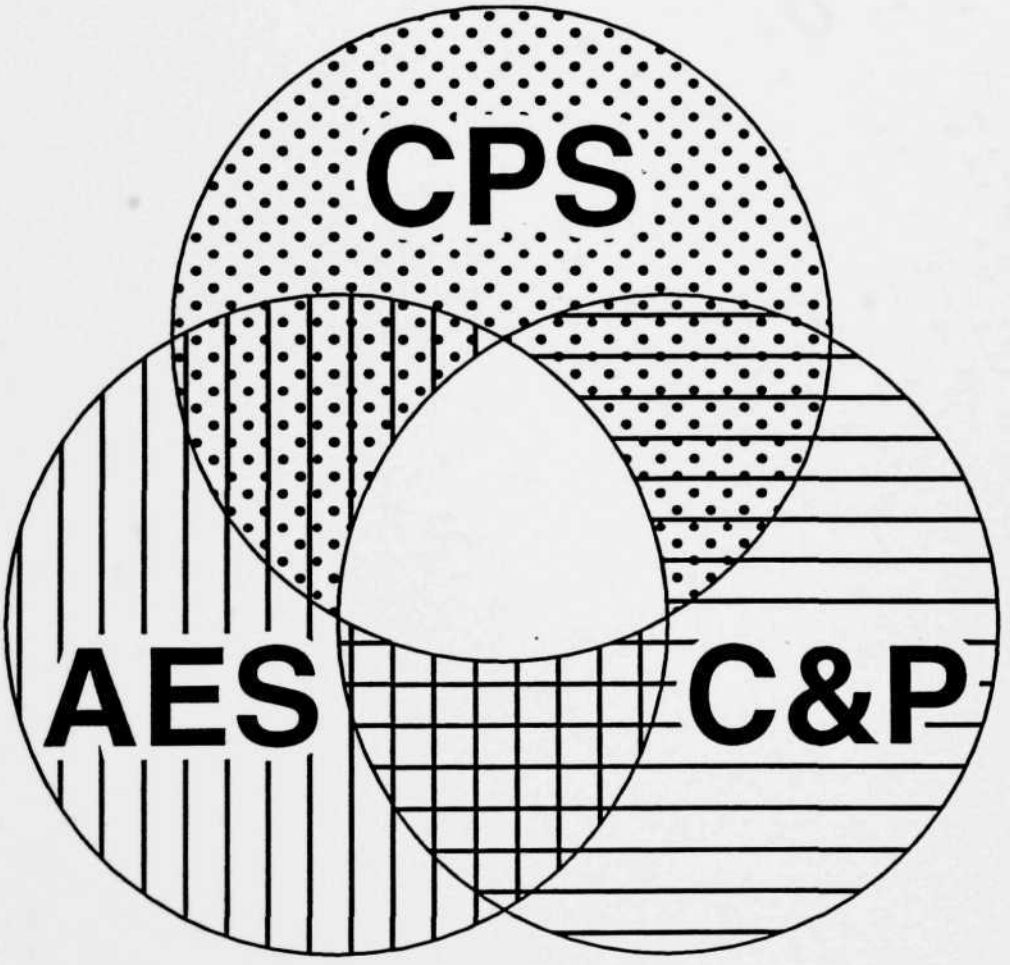
Senior management of the Department has known for some time that integration of its three main Services is an essential step toward the adoption of a comprehensive approach to the management of environmental issues. Such an approach is consistent with the orientations of the Green Plan and Environment Canada's vision.

In December 1992, the Quebec Region was asked to conduct a pilot project for the integration of its main components. Working groups were set up to examine 12 areas of activity that were seen to have a high potential for integration and to prepare a report which set out some options and made recommendations on the option that should be retained.

Following regional and headquarters' consultations on the proposals that were formulated by the 12 working groups, a small group was asked to prepare a consolidated report of the pilot project.

The documents that we are presenting are the product of our collective efforts. Some details have yet to be resolved but the essence of what the Quebec Region is proposing was given approval in principle by the Deputy Minister's Steering Committee.

REGIONAL INTEGRATION PILOT PROJECT
GENERAL FRAMEWORK



ENVIRONMENT CANADA

QUEBEC REGION

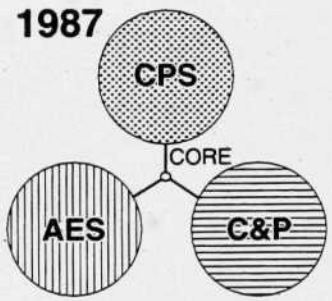
REGIONAL INTEGRATION PILOT PROJECT

Global Concept

Environment Canada — Quebec Region

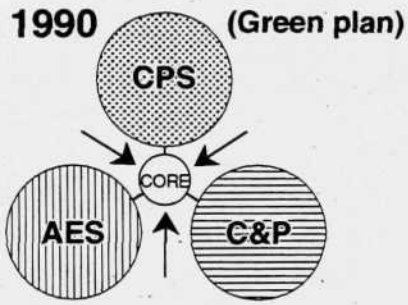
I. INTRODUCTION

This general framework has been developed to bring into perspective all the changes that are being proposed in order to integrate the Department within the Quebec Region.



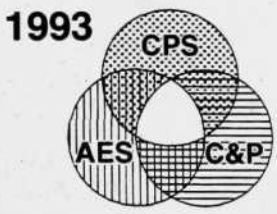
Historically, the job of the federal Department of the Environment (DOE) in the Quebec Region has been to provide the public with services as defined by programs managed by the Department's three main units: Conservation and Protection (C & P), the Canadian Parks Service (CPS) and the Atmospheric Environment Service (AES).

In light of the numerous recommendations made by the United Nations Conference on Environment and Development (Brundtland Commission) and the complex relationships among society, the economy and the environment, Canada decided to adopt a strategic plan leading to achieve sustainable development, namely the Green Plan. The plan came about through a broad national consultation process conducted in large part by regional offices of the Department throughout the country under the auspices of the Committee of Regional Executives (CORE). The Department's major role in developing the Green Plan strengthened interservice ties in the regions.

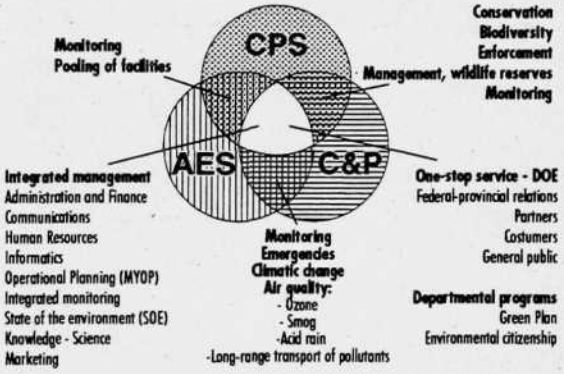


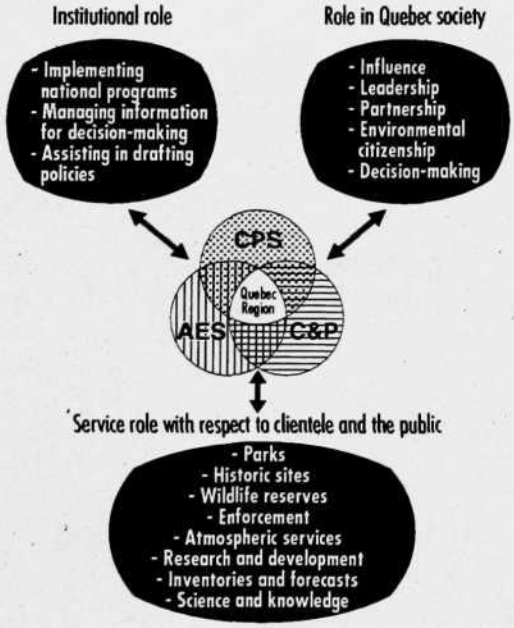
For the Green Plan to be implemented successfully, departmental activities in the region must be integrated more effectively, and environmental issues must be examined from an ecosystem perspective. In this context, information management and decision-making are key elements.

The pilot project to integrate Environment Canada's components stems from the need to adopt a comprehensive approach to managing environmental issues. This is consistent with the orientations of the Green Plan and the Departmental vision.



At first glance, the mandates of the three Services complement one another. However, an examination of their respective functions and activities from an integration perspective





reveals that their similarities range from complementarity to duplication in the case, for instance, of common services such as Communications and Marketing, Finance and Administration and Human Resources.

In the remainder of this document, we will examine the Department's vision and "raison d'être" in the region, the flow of information, products and services, and we will subsequently put forward an organizational concept that should enable us to fulfil our mandate. Lastly, we will briefly discuss the integrated management approach the Quebec Region proposer to take. This approach is vital to making regional integration a success.

II. THE DEPARTMENT'S "RAISON D'ÊTRE" IN THE REGION

One must look outside an organization to find its "raison d'être". The DOE's presence in Quebec can be explained by the various roles it has to play: an institutional role in terms of its relationship with national Headquarters; a societal role with regard to the public and its regional partners; and a service role with respect to all of its clients. The DOE in the region is to Quebec society what the DOE at the national level is to Canadian society as a whole.

The Department plays these various roles in its quest to reach its ultimate goal, namely sustainable development. Currently, each unit of the Department plays these roles separately as it sees fit. Integration must make it possible for these roles to be played in unison by fostering better decision-making and more coherent management of services made available to the public.

A concrete example of the advantages of regional integration is the implementation of Environmental Citizenship. This concept concerns the entire Department, and a comprehensive, integrated action plan is required to implement it effectively. Integration is thus crucial to the success of this initiative.

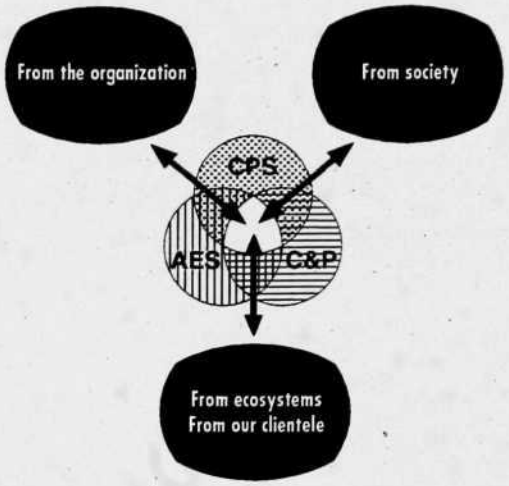
More comprehensive results can be expected from a regionally integrated DOE than from the sum of its component parts. Pooling skills, expertise, information, relationships with the internal and external environment, human and financial resources, space and structures results in added value when the decision makers concerned sit down together and focus on the same major issues. Integration means effectiveness through discussion, sharing and concerted action.

III. INFORMATION: THE RAW MATERIAL OF AN ORGANIZATION

An organization such as Environment Canada receives an enormous amount of information from numerous sources, that is, society, other major institutions, its clientele, the

public, the economy and ecosystems. The challenge is to use this information in a coherent and strategic manner. One thing is certain: such information must be available at the right time, in the right place and in a useable forme so that the best possible decisions can be made.

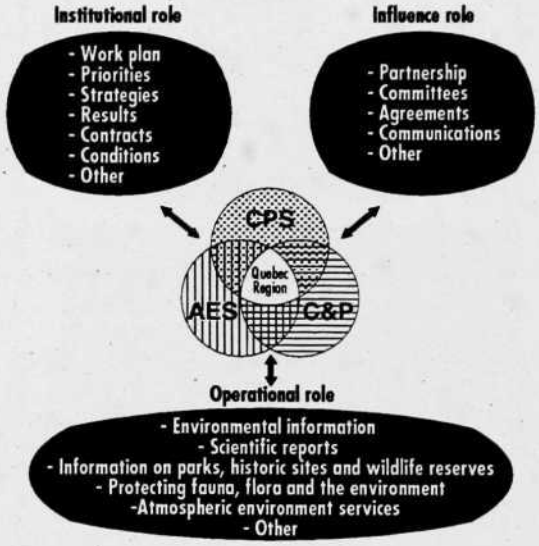
Integration will promote the convergence of coherent information for the Regional Management Table, which should enhance decision- making, departmental handling of major environmental issues in the region and the delivery of services to our regional clientele.



IV. REGIONAL PRODUCTS AND SERVICES

A regional organization makes different kinds of products and services available to the public. Such products and services are designed to meet the expectations and needs of its clientele.

The products associated with its institutional role are essentially information products that make it possible to integrate regional activities with the larger whole, specifically the Department. The products associated with its societal influence role help to make the Department part of a broader regional dynamic that includes governments and other social and economic partners. Client products and services come under its operational role and range from the protection of natural and historic sites to the implementation of protective measures (water, air and soil quality), monitoring and the acquisition and dissemination of scientific, ecosystem and historical knowledge.



Environment Canada is also responsible for enabling Canadians and public and private organizations to make decisions compatible with the principles of sustainable development. This means that we must make useable environmental information available in a timely manner for effective decision-making.

V. INTEGRATED ORGANIZATIONAL CONCEPT

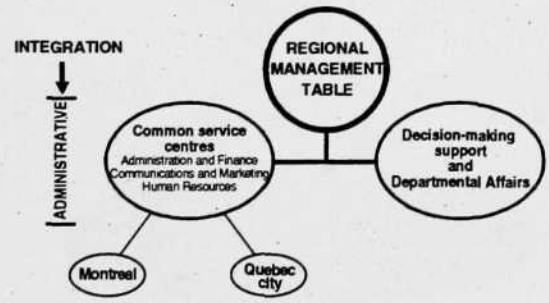
We propose that the regional organization adopt the following operating framework to meet its obligations toward the Department, Quebec society and its traditional customers:

A REGIONAL MANAGEMENT TABLE

The creation of a Regional Management Table is the cornerstone of regional integration. Chaired by the Regional Director General and with the regional directors as its members, the Regional Management Table's chief role is to make the best decisions possible and ensure that the organization acts coherently in dealing with major environmental issues.

The pooling of expertise and sharing of concerns common to all the regional components of the Department are vital to attaining the objectives of the integration pilot project. Identifying and implementing regional priorities and looking for solutions will take on a new dimension as a result of the synergy generated by the new Regional Management Table. In order to function properly, the Regional Management Table will need all relevant strategic, scientific and ecosystem information.

The Regional Management Table will take a proactive approach to following up on key issues and will play a leading role in providing guidance to help attain regional objectives. Its members will jointly shoulder the responsibility for carrying out the Department's regional commitments in a spirit of teamwork and solidarity, instead of competing against one another.



Characteristics of common service centres:

- Geared toward service and not control
- Complete range of specialized and support services on a geographic basis
- Teamwork, interdisciplinary approach and entrepreneurial spirit
- Strive for total quality and ongoing improvement of services
- Pool expertise, knowledge and resources
- Specialized according to customers' needs
- Versatile and complementary entitie
- Bill for services if necessary

ADMINISTRATIVE INTEGRATION

Administrative integration covers both decision-making support activities and departmental support functions (Communications and Marketing, Finance and Administration and Human Resources).

Decision-Making Support Unit

To enable the Regional Management Table to play its decision- making role effectively, a Decision-Making Support Unit will be responsible for processing information made available to it and developing a planning and decision-making process designed to attain tangible environmental results.

In addition, this unit will co-ordinate the gathering of strategic information for the development of departmental policies at Headquarters, manage departmental funding programs (Environmental Citizenship Initiative) and handle departmental correspondence. It will also be responsible for co-ordinating environmental assessments and issues affecting Northern Quebec. Its structure will be simple, and it will rely on all resources in the regional organization to operate. Its philosophy will be based on information sharing.

Service centres

Integrating support functions within the Department hinges on a new concept: service centres.

To ensure that the regional organization operates effectively, Communications and Marketing, Finance and Administration and Human Resources staff will be located in two service centres, one in Montreal, and the other in Quebec City. These three service directorates will have a unit in each service centre, which will be supervised in both locations by a manager.

Within the service centres, the three units will work together to attain a single goal: meeting their customers' needs. The directors of Communications and Marketing, Finance and Administration and Human Resources will sit at the Regional Management Table to provide its members with assistance and advice. They will also be responsible for liaising with Headquarters and co-ordinating services provided by their units in the service centres.

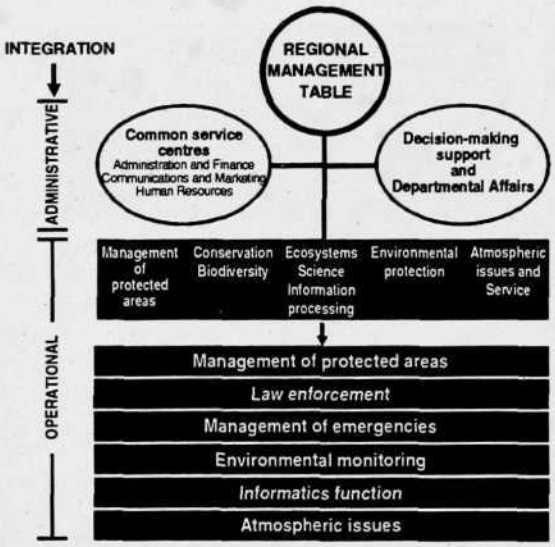
Results of common service centres

- Services closer to customers;
- Better quality at a lower cost;
- Co-operation in an integrated departmental framework;
- Maximum use of expertise and skills.

Much emphasis will be placed on empowering frontline managers, and an auditing approach, as opposed to a control approach, will be adopted.

OPERATIONAL INTEGRATION

The objective of operational integration is to ensure that departmental programs are implemented as effectively and efficiently as possible. To this end, we have to build on and strengthen the interrelationships among the components in the region to enable them to act more coherently on behalf of the Department.



Services made available directly to the public and other departmental initiatives that help preserve and enhance the environment must be adapted to address customers' changing needs and changing environmental issues. In a context where resources are scarce, management by results is vital to operational integration. It means doing everything possible and channelling everyone's energies to achieve measurable environmental results in meeting the Department's priorities.

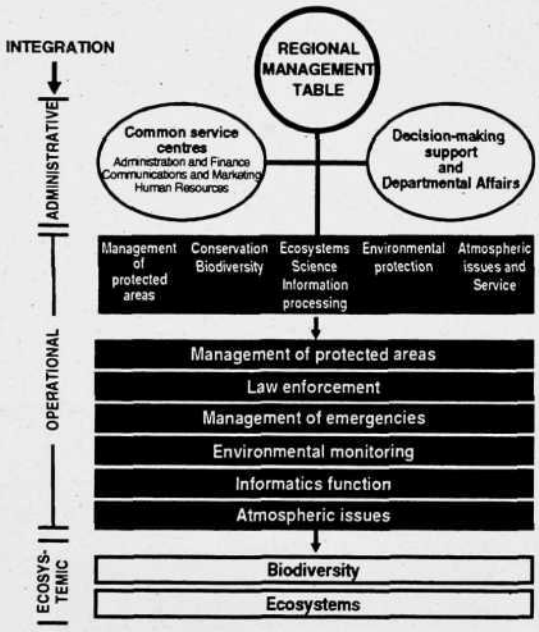
The following conditions must be met in order to integrate the Department's operations effectively create: synergy by pooling employee skills, an open-minded attitude toward all of the Department's concerns, teamwork and the sharing of ideas, expertise and resources in a climate of reciprocity and mutual trust.

The units responsible for implementing programs and delivering services will adopt an operating framework tailored to the integrated organization in accordance with the following principles:

- Activities performed by several directorates that should be the responsibility of a single one because of its particular skills and resources will be transferred to that directorate.
- For areas common to more than one directorate, such as enforcement, monitoring and emergencies, a manager will be placed in charge of co-ordinating the activities of each sector and will report to the Regional Management Table. In the regional planning cycle, the manager will ensure that all activities in his or her sector are integrated into a single action plan. Joint management of these activities

will require that the regional managers work together and operate by consensus.

ECOSYSTEMS INTEGRATION



Ecosystem integration is the last of the three main areas of integration being considered by the Quebec Region. The ecosystem approach to environmental issues has become imperative owing to their interrelationships and their complexity (sustainable development, biodiversity, climatic change, etc). A better understanding of ecosystems cannot but help us better identify the causes and ramifications of environmental change.

Adopting an ecosystem approach will impact not only on the Department's programs but also on the management process. We will have to integrate our activities and consider their interrelationships during the program planning, implementation and follow-up phases. Through ecosystem integration, the Quebec Region is seeking to develop an integrated management approach whose focus is the ecosystem, with a view to helping the Department foster sustainable development and identify objectives and action to help preserve biodiversity.

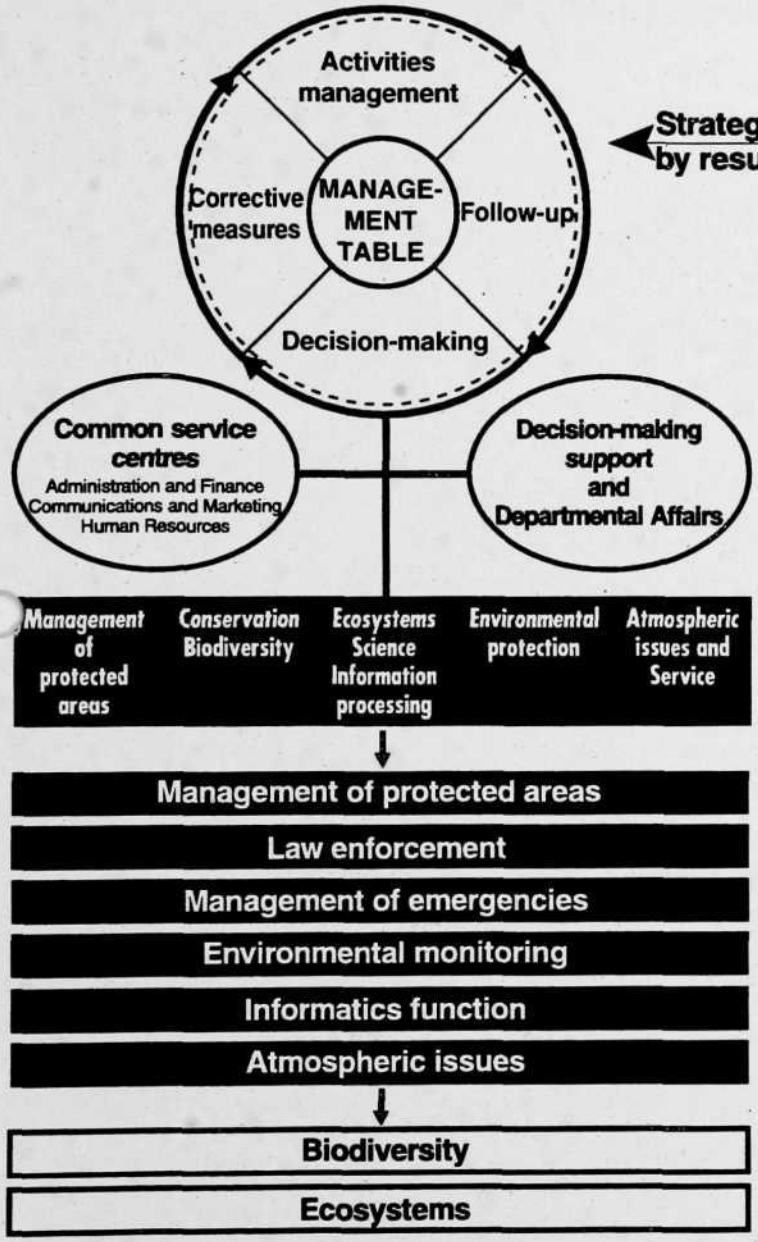
VI. INTEGRATED MANAGEMENT APPROACH

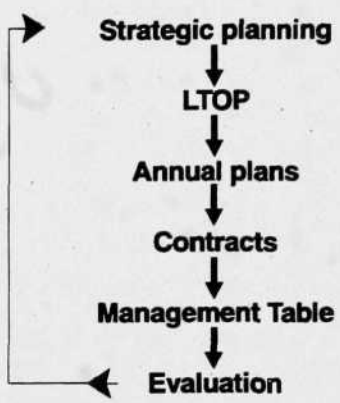
Integrated management is the tool that will be used by the Quebec Region in the regional integration process to meet its client's needs and discharge its environmental responsibilities effectively.

Integrated management is based on a comprehensive approach providing an understanding of the interplay among the many factors that affect decision-making. It differs from an analytical approach, which deals with a complex problem by breaking it down into a series of smaller problems whose solutions are then added together.

Administrative, operational and ecosystems activities will be governed by such an integrated management approach. An integrated strategic planning cycle will help harmonize all these activities, and the Regional Management Table will become the cornerstone of integrated management. Integration committees consisting of experts from the Department's operational units will be responsible for coordinating and conducting activities common to several units. Each committee will produce an annual management contract to be submitted by its chairperson to the Regional Management Table, which will continue to follow up on these issues.

The most significant results of regional integration will stem from the adoption of the integrated management approach in all areas being considered by the Department for integration.





Regional Management Committee (Regional Management Table)

- Biweekly meetings
- Conferences calls between meetings
- Operate according to agenda established during planning process
- Evaluates, directs and revises strategies for obtaining results

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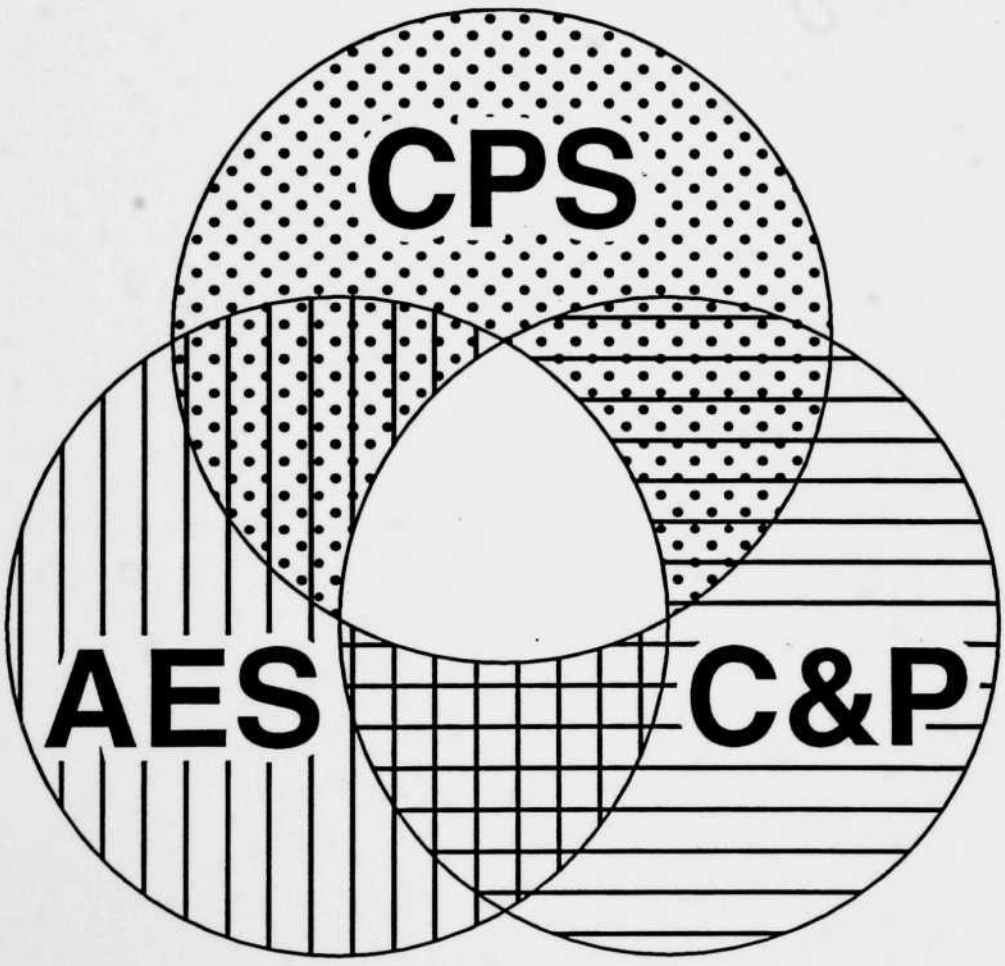
REGIONAL INTEGRATION PILOT PROJECT
ADMINISTRATIVE INTEGRATION



ENVIRONMENT CANADA

QUEBEC REGION

REGIONAL INTEGRATION PILOT PROJECT

Service Centres
Finance and Administration

Environment Canada

Quebec Region

I. FINANCE AND ADMINISTRATION AND THE COMMON SERVICE CENTRE CONCEPT

"The learning organization views change not as a threat to be resisted, but as an opportunity to become more confident, responsive and effective... The learning organization sees itself as part of an interactive partnership with its customers."(1)

The process of integrating Environment Canada's components, which was begun in the Quebec Region, will clearly affect the delivery of services that are essential to the implementation of departmental programs, especially those currently being delivered by Communications, Finance and Administration and Human Resources.

Because integration of departmental programs is the main focus of the changes we are undertaking, it is important that those services support this initiative in order to make it possible for the programs to match Environment Canada's vision and mission more closely.

Integrating the Service directorates promotes the development of Departmental programs.

The Department achieves its vision and its mission.

The new departmental service directorates, which will be restructured into common service centres as described in a separate document, will be accountable for delivering services of consistent quality to all staff. Henceforth, these will act on behalf of the Department as a whole, and not for one of its components.

That will be the context for the people working in the new regional DOE Finance and Administration Directorate. This combination of skills, which will combine the expertise and resources from the three existing Service units, will provide enhanced services through concerted effort.

In Finance and Administration, the challenge is to provide services that will enable the Department to make the best decisions to achieve its objectives efficiently. The new Directorate's operations will also have to be flexible enough to make it possible for our department to evolve, to change its management methods when required, and to anticipate

Departmental Finance and Administration Directorate

Objective

Pooling of expertise and resources

↓

Enhanced customer service: effectiveness, coordination and departmental vision

↓

Improved decision-making in Finance and Administration

↓

Efficient delivery of the Department's programs and activities

rather than react to new trends.

Managers will want to have dependable program management and delivery systems, hence the need for a range of high quality well-rounded services and advice that is suited to their needs. Effectiveness, flexibility and meeting the needs of clients were the things that the Finance and Administration Working Group focused on in determining how the new departmental directorate would operate.

II. EFFECTIVENESS IN AN INTEGRATED ORGANIZATION

We have seen that the rationale for a service depends on the needs of its clients. The direct clients of the new regional Finance and Administration Directorate are "in-house", i.e. Environment Canada personnel. They currently receive management consulting services and finance and administration operational services. Indirectly, however, the people of Canada also benefit from these services, because they expect the government to properly manage the resources for which it is responsible.

In view of the above, and the general principles put forward for implementing the integration project, the working group adopted a number of specific principles to guide its review of its area of activity:

Guidelines for a review of the integration of the finance and administration area

- Simplification and harmonization of existing operations and systems
- Making managers and work teams accountable
- Monitoring rather than control as an operating principle

Simplification and harmonization of existing operations, systems and procedures: A review of these will help to make the delivery of operational services more effective and better suited to client needs.

Making all line managers, even at the lowest levels, accountable, hence the growing need to provide them with appropriate support and advice: The Regional Finance and Administration Directorate should help managers to enhance their decision-making with respect to finance and administration in their everyday activities. The quality of the information and advice supplied is therefore the cornerstone of making managers accountable. Advice is also required on providing them with training on reasonable risk management.

Accountability of work teams within the units

The adoption of monitoring rather than control principles: Personnel working in Finance and Administration service units should recommend to their managers and personnel ways of monitoring the results achieved and abandon forms of control based on strict compliance with policies and procedures. By making these people more accountable for the success of their operations, these new prin-

ciples will ensure that the manner in which they administer and manage will achieve the best possible results. Once again, this is why it is important for Finance and Administration to adopt an approach based on support and advice.

Based on the results of the discussions held by the working groups and the comments that were collected in the first phase of the consultation process, the working group identified the main characteristics that are desirable in any recommendation that meets the needs of the Department and its clients:

- The operating procedure adopted should make it possible for all in-house clients to have equal access to high quality services.

- It is essential that a critical mass of appropriate expertise be located in the service centres to obtain the value added by sharing risks, problems and resources, and by implementing functions in common.

- Client proximity is important. We will have to respond to this concern in a way that satisfies the largest possible number of clients.

- Operating procedures will have to meet planning and decision-making requirements of the Department's Regional Management Table as well as the operational needs of the programs.

Characteristics of desired operating procedures:

- Equal access to high quality services to all clients
- Client proximity
- Maintain enough well-rounded expertise in the service centres
- Meet planning and decision-making as well as operational needs.

III. REVIEW OF CURRENT SITUATION

The Atmospheric Environment Service, the Canadian Parks Service, and Conservation and Protection in the region, each has its own Finance and Administration Directorate, linked functionally to the central Finance and Administration Branch of their Service. It is at this level rather than the regional level that the appropriate link is made with the directorates, which report to the Administration ADM.

Their primary duties consist of the following functions: consulting, the delivery of administration and finance activities, intelligence gathering with respect to resource allocation, and planning support.

The following paragraphs describe a number of the characteristics of the existing Finance and Administration Directorates and the Service that they belong to. The purpose of this description is to highlight the major differences among them, and the scope of their responsibilities.

Total resources administered by the Quebec Region:

- Approximately 950 person-years.
- Annual budget $99.2 million: includes $42 million for salaries, $27.7 million for operations and maintenance, $23.8 million for capital expenditures and $5.7 million for grants and contributions.

Conservation and Protection:

- Over 220 person-years.
- Budget $34 million: $11 million in salaries for 222 PYs., $16 million in other operating costs, $1.5 million in capital expenditures and $5.7 million for grants and contributions.
- Four program branches and three service branches.

Conservation and Protection's Finance and Administration Directorate has approximately 40 employees in two locations: Sainte-Foy and Montreal. The planning activities are coordinated by the Corporate Affairs Unit, with the assistance of Finance and Administration. The latter coordinates the planning of computer activities and manages two mini-computers that support the regional office automation infrastructure. Outside sourcing also generates a significant number of contracts.

Canadian Parks Service:

- 530 person-years.
- Budget $47 million: $20 million in salaries, $6.7 million in operations and maintenance and approximately $20 million in capital expenditures.
- At the regional office: six functional branches, including two program branches. Six districts oversee the national parks, historic sites and heritage canals.

Thirty-eight employees work in the regional office of the Canadian Parks Service in Finance and Administration . It administers computer planning and activities, and also coordinates planning activities that are of special importance in terms of capital investment (because of the size of the budgets and the specific requirements of coordinating with Headquarters). Fifty-five employees perform duties in Finance and Administration in the districts. They also carry out a number of human resource management activities. The regional office Finance and Administration Directorate functionally directs their activities.

Atmospheric Environment Service:

- Over 200 person-years.
- Budget $19 million: includes $11 million for salaries, $5.2 million for operations and maintenance and $2.4 million for capital expenditures.
- Four program branches and two service branches.

There are only 11 employees in this Service's Finance and Administration Directorate, which explains why managers play such a large role in the financial planning of programs and activities. Finance and Administration coordinates the planning exercises. Informatics related activities are supervised by a program branch, the Quebec Forecast Centre, which assigns one member of support personnel to the departmental office technology system. The 17 meteorological offices and stations have their finance and administration needs attended to by a Headquarters manager located in Ville Saint-Laurent.

ANALYSIS OF STRENGHS AND WEAKNESSES IN AN INTEGRATION CONTEXT

We know that the strength of a service unit depends on its ability to effectively meet the needs of the organization it serves. In our department, where services have each developed their own culture, Finance and Administration organize themselves in a way that allows them to give due regard to the requirements of their respective Service, and to the role that the managers wish to play in this area. That is why there are operational differences among the Finance and Administration directorate, with each adapted to the special requirements of its Service.

Until now, the ability to provide tailored services has been one of the Department's strengths. However, given the flexible and integrated structure that the Department is heading towards, there are a number of shortcomings in current operations and practices:

- Dispersal of expertise: critical mass lacking in some instances, duplication, lack of an integrated approach;
- Lack of harmonization in operations;
- Unequal access by program branches to services provided.

At this stage, it is important to note that it is the existing operations, and not the quality of services that they provide, that is the source of these shortcomings.

Current situation and current needs:

- Services tailored to the special requirements of the Services
- Services tailored to the current role of managers in F & A
- Respect for the culture of each entity (Conservation and Protection, Canadian Parks Service, Atmospheric Environment Service)
- Satisfying existing clients

Current situation and the needs of an integrated department:

- Lack of an integrated approach
- Dispersal of expertise
- Duplication
- Unequal access to services
- Lack of genuine interaction between individuals from the services.

In addition, a lack of interdependence between the Services has not thus far encouraged interaction between individuals performing the same functions. Interaction involves more than occasional discussions and meetings; it requires reciprocal action, and a situation in which the individuals want to learn and to make the most of their respective actions. The current situation did not call for such interaction, and personnel in Finance and Administration therefore did nothing to encourage such reciprocal action. In an integrated context, the departmental personality takes precedence over the personalities of its components. The Services have no choice but to adapt to the corporate programs' policies by taking an innovative approach to current ways of delivering services.

IV. RECOMMENDATION

"The learning organization sees change as an opportunity to evolve. It is both proactive and responsive to its milieu... As part of its evolution, the learning organization is also able to "unlearn" or discard obsolete practices."(1)

Recommendation: establishment of one regional departmental directorate with two service centres

Advantages:

- Integrated approach
- Pooling of expertise
- Proximity, equal access of clients to full quality services
- Harmonization of methods and operations
- Economies of scale
- Versatility of regional departmental branch personnel and job enrichment
- Compliance with common service centre philosophy

In view of the factors described in the preceding sections, the working group recommends the establishment of one regional directorate with two service centres.

In addition to complying with the service centre philosophy, this option may make it possible for us to achieve the characteristics identified by the working group in section two.

HOW THE NEW FINANCE AND ADMINISTRATION DIRECTORATE WILL OPERATE

The following general principles will guide the operations of the new directorate.

- Establishment of two service units, one in the Quebec City Region and the other in the Montreal Region.
- The Finance and Administration service unit located in the Montreal Region serves the other service units and the program branches (Saint-Laurent Centre, Environmental Protection Branch, Atmospheric Environment Service branches) located in this region, as well as the Montreal District of the Canadian Parks Service.
- The number of person-years in this region totals approximately 460, and its total budget is approximately $49.9 million.
- The Quebec City Finance and Administration service unit serves the other service units and program branches (Canadian Wildlife Service, Canadian Parks Service regional office), as well as five Canadian Parks Service districts. The Quebec City

Region has approximately 490 person-years, and the branch budgets for this area total $49.3 million.

- Each unit provides integrated administrative and financial operational services, as well as planning and decision-making support services.

- The Finance and Administration Directorate reports to the Regional Director General.

- The Finance and Administration units in the Canadian Parks Service districts will maintain their current delegated powers and functions, under the supervision of the district superintendent. The regional directorate will maintain a functional link with these units.

COMPOSITION AND DUTIES OF THE FINANCE AND ADMINISTRATION DIRECTORATE

- One person is the team leader, and represents the Finance and Administration area at the DOE Regional Management Table.

- One officer supervises each unit in the two service centres.

Functions of the management team:

- Advice to the DOE regional management table and program directorates.

- Maintains functional links with Headquarters.

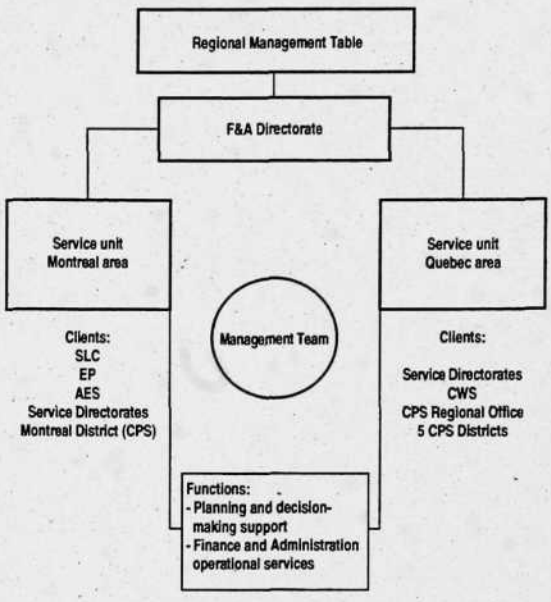
- Coordination and follow-up on operational services delivery.

- Functional management of the Canadian Parks Service District Finance and Administration units.

The overwhelming advantage of this option is that it provides a truly integrated approach for supporting the region's planning and decision-making needs and for helping with program implementation.

Personnel in the service units will acquire a broader knowledge of DOE issues because their work will involve them in delivering a larger number of programs. Moreover, making the work teams accountable will encourage personnel to become more versatile and an appropriate balance will be maintained between such versatility and the specialization needed for certain tasks. Functioning in this manner enriches the work of the personnel and makes it more rewarding by involving them more directly in the delivery of regional programs. In addition, this option would lead to a number of

How the new finance and administration directorate will operate



economies of scale and yet maintain the expertise required at the two service centres. It strikes the best possible balance between the need for proximity and the requirement for harmonizing existing operating methods and practices.

It has been shown that cooperation is the best way to proceed for everyone in any group of individuals doing similar work, and that it yields improved results to the organization. One of the great strengths of an integrated organization is the fact that personnel are well informed and develop new ideas.

V. IMPLEMENTATION PROPOSAL

In any organization, adopting new methods of doing things and new forms of organization does not automatically obtain the approval of personnel because the changes involved are often a source of insecurity. For the pilot integration project, such changes are likely to affect factors that are of direct concern to personnel (workplace, type of function, co-workers, etc.).

The managers involved in implementing the pilot project must therefore devote a great deal of effort to explaining, consulting, and especially giving careful consideration to factors that can lead to insecurity. That is why it is important, in a project like this one, to allow enough time for implementation. Aspects that cannot be dealt with now, and that require more thought and consultation, will be considered in another section.

PLANNING AND DECISION-MAKING SUPPORT FUNCTION

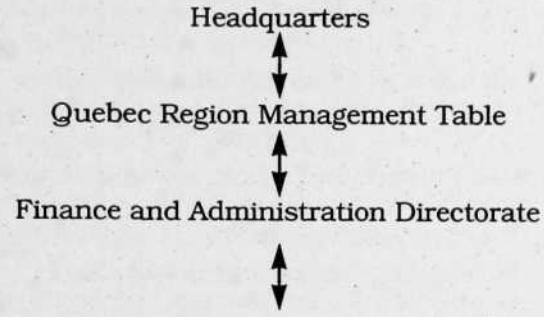
The Finance and Administration Directorate management team will be responsible for integrating financial (resource allocation) and administrative considerations into the decision-making process. Its function will therefore be one of planning and decision-making support. The function includes the following services:

- Resource planning
- Budget allocation
- Regional financial analysis
- Coordination of Treasury Board submissions and involvement in preparing Cabinet memoranda
- Preparation and coordination of operational plans, along with any complementary or ancillary plans.

The program branches and service branches will have a key role to play in the planning and decision-making process. In fact, Finance and Administration will not be able to continu-

ally monitor all the DOE branches in their planning process; in fact if they did so, it would go against the principle of accountability.

Information dissemination: Delivery of planning and decision-making services



The program and service directorates integrate the information and decisions of their components (divisions, districts).

DELIVERY OF FINANCE AND ADMINISTRATION OPERATIONAL SERVICES

General Services

Quebec Region personnel will be able to obtain the operational services they require directly from their own service unit. Canadian Parks Service districts will proceed in the same manner for delegated authorities and functions not performed by their own Finance and Administration unit.

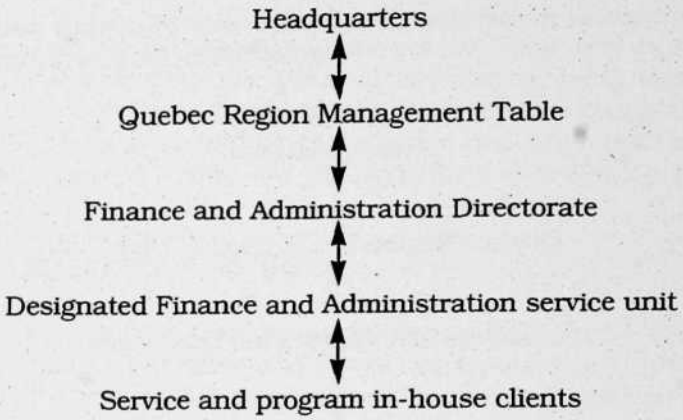
Responsibility for areas of activity will be assigned to one or the other of the service units. These will be responsible on a regional basis for all matters having to do with legislation, policy, guidelines and interpretation. They will also be responsible for relations with Headquarters, with Canadian Parks Service districts (information dissemination and functional responsibilities) and with partners outside the Department.

Special Services

As we mentioned in the preceding section, the service units will encourage personnel to be versatile, and, at the same time, to maintain a sound balance between such versatility and the requirement for specialists in a number of fields or activities.

In fact, for these fields or activities, the specialization criterion will take precedence over proximity to a service unit, and implementation assigned to a single unit. The same procedure will be followed for functions wherein one or the other of the geographical areas, there is an inadequate volume of activities.

Information dissemination: Delivery of operational services



List of principal operational services supplied by the services units

Financial:

- Budgetary allocations;
- Budget inputs and subsequent changes;
- Operation of the Automated Financial Management System (AFMAS) and of the Person-year and Salary Forecasting System (PYSFS); input, queries and reports;
- Financial systems control;
- Revenue and expenditure control;
- Reconciliation reports and preparation of public accounts;
- Employee services (pay cheques, advances, travel claims, etc.);
- Commitment of funds;
- Payment authorizations (account verification and requisitions).

Administration:

- Telecommunications and photocopying services;
- Records management;

- Administration of applications under the Access to Information Act;
- Management of library services and coordination of the program branch documentation centres;
- Real estate management;
- Coordination of facilities planning and procurement from Public Works Canada;
- Coordination of the implementation of the government's security policy;
- Acquisition of services and acquisition, reception, storage and distribution of supplies and equipment;
- Regional administration of the vehicle fleet;
- Inventory management and control, including the disposal of surplus equipment;
- Service contract and construction contract management; expertise in project planning, preparing terms of reference and negotiating specialized or complex contracts;
- Coordination in processing litigation and claims for or against the Crown.

VI. POINTS FOR FURTHER STUDY

The pilot project should be implemented without interfering with the study and analysis that are essential if personnel are to become involved and the enterprise to get off on the right foot. Some aspects require further thought before they can be spelled out, and others need to be discussed with Headquarters personnel. There are therefore questions that need to be dealt with before the integration project can be launched.

With special reference to Finance and Administration, here are the main questions that we will have to address in the coming weeks:

1. Further details are needed about the composition and operations of the service units; this review will concern the assignment of areas of activity to the service units, as well as the scope of delegated authorities or functions performed by the Canadian Parks Service district units.

   We will also review the assignment of responsibility for the 17 meteorological stations and offices of the

Atmospheric Environment Service to the Montreal services unit.

2. Informatics services are currently being reviewed and proposals for its method of operation will soon be submitted to the Regional Management Table.

3. A detailed inventory of the human resources required to meet the needs of the service units will be completed, and a training strategy developed to deliver quality services.

4. Relations with Headquarters need to be defined more clearly.

5. An implementation plan and a detailed analysis of the costs involved need to be carried out.

(1) From the Auditor General's Report for 1992, Environment Canada section.

REGIONAL INTEGRATION PILOT PROJECT

Service Centres
Communications and Marketing

Environment Canada

Quebec Region

I. COMMON OBJECTIVES, COORDINATED ACTION

Environment Canada has traditionally delivered services to the public, developed products, and implemented programs through its three Services: Atmospheric Environment Service, Canadian Parks Service and Conservation and Protection. In the past few years, major changes have led the public to adopt a comprehensive view of environmental problems.

The federal government, after re-examining its approach to environmental problems, established the Green Plan, a genuine action plan that sets forth a set of objectives designed to guide and coordinate government action in environmental matters in the years to come. The government intends to harmonize its activities in all environment-related areas of jurisdiction (legislation, programs and policies).

Consequently, the Department plans to integrate the activities of its three key Services with a view to adjusting resources, programs, services and decision making to the objectives of the Green Plan and treating major environmental issues jointly.

SERVICE CENTRES

With this new outlook, the common service centre concept is fully consistent with the coordination objective associated with the service integration concept, as it rests essentially on delivery of common services.

Concrete results of common service centres include improved service quality and client-oriented cooperative action. The interdisciplinary approach paves the way for consistent policies and decisions in all areas that affect the environment.

In light of the overall picture described above, the regional Communications Directorate will now have to take departmental objectives into account and reflect the operating

methods established for the service centres. Integrated management will encourage the setting of regional priorities, which in turn will have a direct impact on how resources are used.

In addition, as with the Department's programs, communications functions performed independently within the Department must, wherever possible, be integrated with a view to upgrading service delivery. This is why we are recommending the consolidation of the communications, marketing and public consultation functions within a single regional unit.

Integrated management

- improves service to internal and external clients
- increases efficiency and effectiveness of our communications
- optimizes human resource use and the development of existing functions

The Canadian Parks Service currently possesses recognized and well-structured expertise in marketing and public consultation; in the other services, development is at an earlier stage. It has been established that, because of the Department's considerable requirements for this type of function, it is essential to develop them on a departmental basis within the framework of a program consistent with Regional Management Table priorities.

The integration of communications, marketing and public consultation in a service centre would create a critical mass of skilled resources. Integration of the three functions would have a positive impact on our organization's image and improve our ability to respond to the Regional Management Table requirements and key departmental issues.

II. IN TRANSITION

In the preceding section we saw that the integration of communications, marketing and public consultation functions would enable the Regional Management Table to meet its objectives and enhance the Department's image of excellence.

Implementation of the Green Plan and the St. Lawrence Action Plan demonstrate the government's desire for public participation in protecting the environment. As a further step, the public is now invited to take part in preparing and implementing projects in the context of a public consultation process. Consultation and partnership are becoming increasingly important.

INTEGRATED PUBLIC CONSULTATION

Public consultation heightens understanding of the areas where action is to be taken and of the project-related issues.

This interactive process of change encourages people to put their ideas forward, and takes them seriously. It gives them an opportunity to play a part in the decision-making process used to establish a vision, to draft policies, programs and

legislation, to solve problems and to deliver government services.

The federal government has undertaken, specifically with the Green Plan, to work jointly, through regular consultation and exchange of information, with all the individuals and groups concerned. These changes to the way the government operates encourage the public to shoulder some responsibility for environmental issues.

It is to our organization's advantage to manage public consultation effectively so that we may anticipate the environmental movements that guide the Department toward its objectives and ensure the soundness and credibility of decisions. In addition, consistent and effective public consultation programs will enhance the Department's image of excellence.

Public consultation is one of the responsibilities of the Public Service.

COMMUNICATIONS - COORDINATED ACTION

Canadians are entitled to complete, objective and timely information about our organization. At the same time, it is the duty of departmental staff to inform the public about the Department's policies, programs and services. The public and decision-makers must be provided with quality information on which to base enlightened environment-related decisions. Improved dissemination of knowledge can only heighten understanding of key environmental issues.

The mission of the Communications Branch is to provide communications-related advice and support to the Minister and the entire Department, to develop and implement the regional aspect of national communication strategies and programs, to inform the public about these policies and programs, and to foster environmental protection measures by the public.

More integrated management of departmental programs and services will strengthen the Department's identity. The Communications Branch must develop new expertise if it is to play a more strategic role and implement Management Table priorities. As a result, it must improve its ability to analyze the public mood, develop an approach that is more oriented towards departmental issues, and identify issues about which the public must be informed on a regular basis.

MARKETING - A COMMON MISSION

Our organization's products and services exist to meet the needs of our clients. Marketing makes these products ans services known but it also has a mandate related to the Department's mission and national issues, i.e. to explain the corporate mission to the various clients, to supply environmental information and to increase public involvement in environmental decision making.

Clients are our main concern. The Department's image and accomplishments must be heightened.

Implementation of programs such as the Green Plan, the Environmental Citizenship Initiative and the St. Lawrence Action Plan brings the Department closer to its clients. If the public is to play a more important role in these programs, messages must be created for a variety of target populations and delivered to them by means of proven promotion methods. The bottom line is that the image of the Department and what it does needs to be reinforced.

The marketing function must be broadened to include the entire Department by adjusting strategic variables (product, price, location, promotion). It is also imperative to define considerations essential to the creation of "media-message" strategies for the organization as a whole. And, of course, we must learn to optimize the promotion of products and messages.

An integrated marketing unit will improve comprehension of market segments (select, listen, understand needs), heighten client satisfaction and project a cohesive image of the Department.

Furthermore, as the public looks at the quality/price ratio for products and services delivered, profit from the Department's products and services must give value for money, taking competition into account.

We must optimize use of our information network and offer clients one-stop service.

Finally, we shall attempt to deliver product information and services effectively and consistently by accurately defining target populations.

III. CURRENT SITUATION

The current situation no longer meets the requirements of key departmental issues. In this section, we shall explain why this is so.

COMMUNICATIONS BRANCH

Under the current Communications Branch structure, one officer is assigned to each of the three Services and another to departmental projects.

The officers assigned to the services devote 85 per cent of their efforts exclusively to those services, and their relationship to the Director of Communications is merely functional.

The Communications Directorate also operates a specialized information service for the production and publication of communication tools, a service which meets the needs of both the Services and the Department. The group also handles requests for information from the public.

The fact that the Department currently has to cope with steadily-growing public demand has an impact on resource

use by the Communications Directorate. As mentioned above, integration will enable managers to set the overall regional priorities that Communications will deal with.

It seems obvious that the existing structure and operations (officers working exclusively for the services, a unit devoted nearly entirely to publications) are poorly adapted to the new requirements. It is difficult to coordinate communications, a crucial area for the organization, without pooling everyone's expertise, especially since the communications officers are to play a key role in conveying the departmental vision.

MARKETING

The marketing function is decentralized in each region of the Department. Its aim is to bring the Department closer to its clients and increase penetration of the various markets.

In the Quebec Region, the Canadian Parks Service with its staff of four has the only organized marketing function. Their duties include planning, preparing and implementing marketing strategies for the regional network, for each park and for specific activities, on the basis of clearly defined market segments.

More specifically, the functions exercised by the Canadian Parks Service marketing group involve:

- determining and assessing factors and trends (political, economic and sociological) that may influence markets and target populations;
- negotiating and finalizing partnership agreements on exchanges of services and financial resources with a view to heightening public awareness of the mission of the Canadian Parks Service;
- designing and producing publications in line with current directives;
- taking part in promotional exhibits;
- coordinating and implementing specific advertising activities and
- supporting and advising managers on all related matters.

This group obviously works to develop an image that reflects the Canadian Parks Service mandate and communication objectives.

As we have seen, marketing requirements exist in other departmental services. In addition, closer coordination of promotional material aimed at the general public should

focus on a single image, that of Environment Canada, Quebec Region.

The current structure makes joint marketing action difficult without first defining common mandates and objectives. For this reason, it is essential to integrate the marketing function on a departmental basis.

PUBLIC CONSULTATION

There is currently no integrated public consultation approach within the Department. Action in this area is individual and variable. All three Services hold consultations, and the range of areas covered is broad. Decisions about whether or not consultations are to be held are not automatic: in most cases such decisions are made by individual managers.

In other words, there is no uniform framework for action (code of ethics), nor any regional body responsible for providing consultation advice and support to the Services. The situation deprives the Region of exchanges of expertise among the Services, makes optimum cohesive action impossible, and makes access to complete, centralized information difficult.

The Department, if it is to meet the objectives of the Green Plan and deal with current key departmental issues, must coordinate public consultation and establish a departmental framework as a guideline for the action it takes.

IV. RECOMMENDATIONS

Analysis of the current situation leads us to believe that program and service integration requires consolidation of the communications, marketing and public consultation functions.

These functions must now be exercised within a single departmental unit and serve departmental objectives that meet regional priorities. That is why we are recommending that the service centre method of operation be adopted and introduced in Montreal and Quebec City. The reorganization will improve overall service to all departmental clients.

COMMUNICATIONS: ADVANTAGES

For the communications function, clients will have access to a broad range of services on a departmental scale: the services are to be made available on a geographical basis in each service centre.

Where required, it will be possible to share tasks or exchange services or resources between service units, more specifically with regard to the support required for a visit by the Minister

or a Deputy minister and communications activities tied to departmental priorities.

This option brings the communication function closer to the client. In fact public access to information services will be enhanced by the greater visibility of the Department in the region.

In the area of operations, the recommendation has a number of advantages. The Department will have available, on a geographical basis, a critical mass of resources, expertise and skills for responding to overall needs. Productivity will rise, and teamwork and team spirit will be fostered.

Critical mass in communications

- productivity
- teamwork
- exchange of knowledge and expertise

The sharing of knowledge and expertise required in such a context will encourage employees to become more versatile and more accountable for their own work.

INTAGRATED MARKETING: ADVANTAGES

The main advantage of this option is that it introduces one-stop access to Environment Canada products and services in the Quebec Region. It also makes the Department more adaptable to different markets and new products.

Existing marketing expertise will be broadened and made available to the entire Department. The integrated approach to clients will give the Department continuity in its dealings with partners.

A more broadly-based marketing function, focused in part on promoting departmental programs (e.g. Environmental Citizenship, Green Plan, sustainable development) will make it easier for the Department to achieve its objectives.

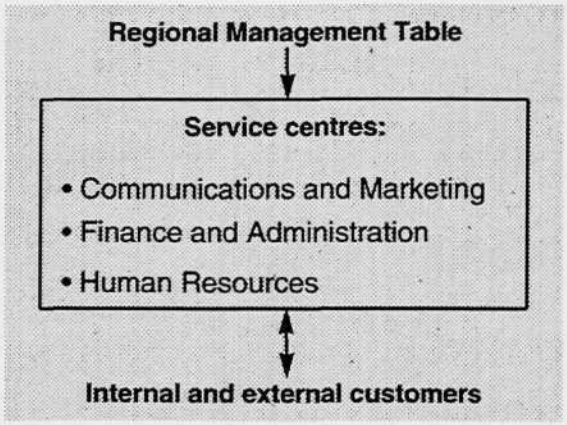
PUBLIC CONSULTATION: ADVANTAGES

The aim of integrating public consultation functions is to ensure consistency and coordination. Expertise will be available to everyone and consultation will be carried out in close cooperation with the project manager.

This option will contribute to establishing major directions for consultation, as well as a departmental program that meets the needs of the Regional Management Table. With the exchange of knowledge and data being essential, the option can accommodate a central databank where information about the public consulted and the areas for action can be compiled and built up.

It would be advisable to draft a departmental code (code of ethics) setting out principles of intervention for public consultation and to include monitoring provisions as well.

V. INTEGRATION IMPLEMENTATION



We will now take a closer look at the actions resulting from the recommendations.

The manager responsible for the Communications and Marketing Services Directorate will sit at the Regional Management Table. Each service centre unit will have a senior officer responsible for smooth unit operation, on the basis of an interdisciplinary approach.

The Regional Management Table will set priorities for communications, marketing and public consultation. It will inform service unit managers of the objectives that will guide program implementation.

Communications: The activities are to be integrated in areas as specific as media relations, visits by senior departmental officials, press conferences, advertisements, special events, communications strategies, spokesperson training and communications management in emergency situations.

Marketing: The service centres will offer a full range of marketing advice and support. Specific areas include marketing, promotion, advertising, representation, participation in promotional exhibitions and sponsor searches.

Public consultation: In matters related to parks, the atmospheric environment and environmental conservation, the service centres will provide the required advice and also contribute to the implementation of consistent and productive public consultations, with due regard for the principles established (code of ethics) and key departmental objectives. This option will have many logistical benefits (pooling of databanks, research and expertise in the field of public consultation).

VI. FUTURE DECISIONS

The proposal must take into account subsequent management decisions that could modify its contents.

It is important to point out that the Regional Director, Communications, will be responsible to the Regional Director General, and that transferring communications resources to the latter will make it easier to respond to the needs arising from integrated management of services and programs.

The strategic aspect of communications must be further developed and applied in the region. This will make it essential to clearly establish the roles and responsibilities of communications officers and to transfer specific tasks to the Communications and Marketing service units.

A sub-group should be set up to do an in-depth study of the entire question of an integrated public information service.

A great deal remains to be done.

Decisions remain to be made on office accomodation, computerization (DOTS network), records and the human resources inventory.

Project cost must be assessed and an implementation plan prepared.

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REGIONAL INTEGRATION PILOT PROJECT

Service Centres
Human Resources

Environment Canada

Quebec Region

I. THE DEPARTMENT IN TRANSITION

Environment Canada has traditionally delivered services to the public, developed products, and implemented programs through its three Services: Atmospheric Environment Service, Canadian Parks Service and Conservation and Protection. In the past few years, major changes have led the public to adopt a comprehensive view of environmental problems.

The federal government, after re-examining its approach to environmental problems, established the Green Plan, a genuine action plan that sets forth a set of objectives designed to guide and coordinate government action in environmental matters in the years to come. The government intends to harmonize its activities in all environment-related areas of jurisdiction (legislation, programs and policies).

Human Resource Coordination

- resources
- programs
- services

Consequently, the Department plans to integrate the activities of its three key Services with a view to adjusting resources, programs, services and decision making to the objectives of the Green Plan and treating major environmental issues jointly.

Common Service Centres

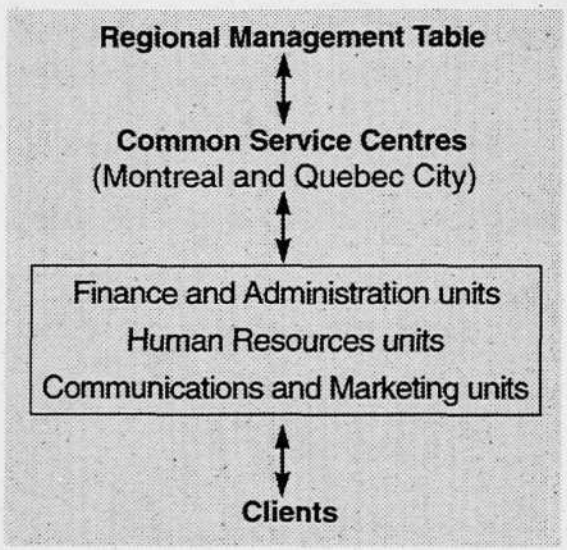
With this new outlook, the common service centre concept is fully consistent with the coordination objective associated with the service integration concept, as it rests essentially on delivery of common services.

Concrete results of common service centres include improved service quality and client-oriented cooperative action. The interdisciplinary approach paves the way for consistent policies and decisions in all areas that affect the environment.

Common Service Centres

- consistency
- service quality
- cooperation
- interdisciplinary approach

In light of the above considerations, integrating the human resource management functions of the three Services is an essential aspect of this initiative. Human Resources service units, consolidated into common service centres, will provide managers and all employees with harmonized services of



uniform quality that will be enriched by their very consolidation. The quality of service to the public will thus inevitably improve.

Furthermore, as the mandates of the three Human Resource branches are virtually the same, duplication of functions can be eliminated. A number of fields of activity show interesting potential for integration, a process which will facilitate the attainment of major departmental objectives and the resolution of key issues. These include human resource planning, training and development, and the total quality concept, to name but a few.

More specifically, integrating existing Human Resource branches into common service centres will consolidate a critical mass of skilled individuals and create synergy. The versatility of staff members will enrich routine tasks. A higher level of staff accountability will have a snowball effect, creating the dynamics essential to the success of an enterprise of this kind. An interdisciplinary approach to work will be encouraged, as will the pooling of expertise and knowledge between the two Human Resource Services Units. A complete range of human resource services can be provided to all clients on a geographical basis.

II. HUMAN RESOURCES: ORGANIZATIONAL STRENGHT

HUMAN RESOURCE INTEGRATION WILL FACILIATE ATTAINMENT OF OBJECTIVES AND MEET NEW NEEDS.

Human Resource Services Units

- versatility
- exchange of expertise
- steady improvement
- client proximity

In the three existing Services, the Human Resources branches provide internal clients with a range of services (e.g. advice on human resource management, staffing, classification, labour relations, pay, fringe benefits and job security). In an integrated unit, all these services would be provided on a departmental basis to the Quebec Region. Staff members would be versatile enough to handle several tasks, and the exchange of expertise would benefit the organization. The aim is to increase the accountability of employees at the bottom of the ladder by fostering an interdisciplinary approach and entrepreneurship. The target is total quality for products and services. Through integrated management, Human Resources is equipping itself with the means and the tools it needs to reach the defined objectives. In the long run, the public can only benefit from such a positive and dynamic approach.

Institutional role

- management support
- strategic information role

The role of the Human Resource units will be to support management, assist in decision making and take part in establishing consistent policies and programs in response to major departmental issues. The units will also offer support services essential to regional staff if they are to attain total quality in delivering services to the public.

Continuous learning occurs more naturally within groups

that cooperate in the performance of common tasks. This concept defines a new management method in which the objective-setting exercise factors in organizational movement and change. Human Resource integration will make staff more versatile, make functions more complementary and encourage the exchange of expertise, knowledge and resources.

Organizations must adjust to the changes going on around them. A Human Resources unit in a local common service centre will bring services and clients closer together and heighten awareness of ongoing changes.

Influence role

- regional dynamics
- client proximity

Learning and change are ongoing processes. In this new context, the Human Resources unit will play a part in the steady improvement of services.

A Human Resources unit within a common service centre will obviously play an important strategic role. It will supply information to the Human Resource managers sitting at the Regional Management Table, and share this information with the other service centre.

Service role

- steady improvement in services
- total quality of products and services

It is only through integration that Human Resources and the Department as a whole will be able to help meet objectives linked to major departmental issues.

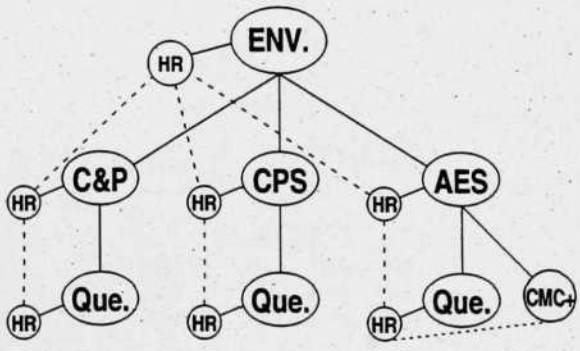
III. THE EXISTING SITUATION

WHY DOES THE EXISTING SITUATION FAIL TO MEET THE REQUIREMENTS OF THE MAJOR DEPARTEMENTAL ISSUES?

Under the existing structure, each regional service (AES, CPS, C&P) has its own Human Resources Branch, which in turn has a functional relationship to the national Human Resources Branch. Although there are virtually no relations between the Services, the structure met the Department's needs, and was fully consistent with its objectives.

Now the Department must respond to the steadily growing demands of the public, deal with a complex and ever-growing list of matters that have environmental impact at the regional, national and even international level, give due regard to heightened public awareness, and deliver services based on the linear structure described above. This method of service delivery no longer satisfactorily meets public expectations.

Existing situation



In light of the evident need to work together on major departmental issues such as the Green Plan and sustainable development, the existing structure is no longer consistent with either the defined objectives or the consolidation of the efforts of all the services towards a common goal.

The following is a list of some of the shortcomings of the current structure as they apply to Human Resources:

- inflexibility;
- no sharing of expertise between the three Services;
- little harmonization of action;
- lack of Human Resources research;
- no knowledge sharing among the three Services;
- inter-service links virtually nonexistent;
- duplication of work;
- structure does little to promote employee versatility;
- structure makes adjusting to new clients difficult;
- structure poorly suited to changes within the Department.

On the other hand, the structure does contribute to maintaining Service identity and a feeling of belonging among the employees of each individual Service.

The current situation is no longer consistent with the objectives of the Department's integration project.

IV. INTEGRATED MANAGEMENT: A RENEWAL

AN INTEGRATED HUMAN RESOURCES UNIT WILL MAKE A VALUABLE CONTRIBUTION TO THE ORGANIZATION

With the introduction of an integrated Human Resources unit, the clients, rather than being split among three Services, will deal with one consolidated unit, i.e. Environment Canada, Quebec Region. Under this method of operation, the manager or employee will contact a single Human Resources unit for the services required.

Inter-service relations will be organized to ensure continuity of service to individual managers.

The new approach will have a definite impact on the corporate culture of the Department in the region. The method of operation will affect attitudes and behaviour, because it entails regular teamwork and systematic coordination, and requires adjusting to new clients and new needs.

The proposed changes provide an excellent opportunity for employees to upgrade their knowledge in a number of organizational areas, as well as in matters specific to Human Resources, and to benefit from a broadly enriching experience. The impact of the change on how employees perceive their work will be reflected throughout the organization.

By helping Human Resources employees develop a better understanding of clients, the new approach will ensure that services are tailored to client needs.

Society is changing rapidly; corporate culture is following suit. The role selected by Human Resources will be its contribution to the process of change. The option is effective and efficient: it promotes a common and consistent vision of goals and the means by which to achieve them.

The public is our organization's raison d'être. These changes will have a positive impact on the quality of the services and products provided to that public.

RECOMMENDATION

From an organizational point of view, the following proposal - the **geographical option** - is most consistent with the established principles.

The geographical option suggests two access points for service, to be called common service centres, one in Montreal and the other in Quebec City.

Each common service centre is to consist of three service units (Finance and Administration, Communications and Marketing and Human Resources).

The regional Human Resources manager sits at the Regional Management Table and each Human Resources Service Unit reports to a senior service unit officer.

The Human Resources service units will consolidate a critical mass of skilled individuals and will aim at versatility and at an interdisciplinary approach to the tasks at hand, an approach that fosters staff accountability for individual work.

The services are to be delivered on the basis of geographic location from two common service centres; one in Montreal and the other in Quebec City. However, those Canadian Parks Service districts that have human resource services will keep those services; to ensure maximum consistency in human resource management, procedures must be established to maintain close links with the common service centres.

A NEW CLIENT

This option adds a dimension not found in the existing situation: a new client, the Regional Management Table itself. Furthermore a Human Resources integrated management team is to meet the needs of the Table, and its work will depend on the priorities set by this new client.

Regional Management Table

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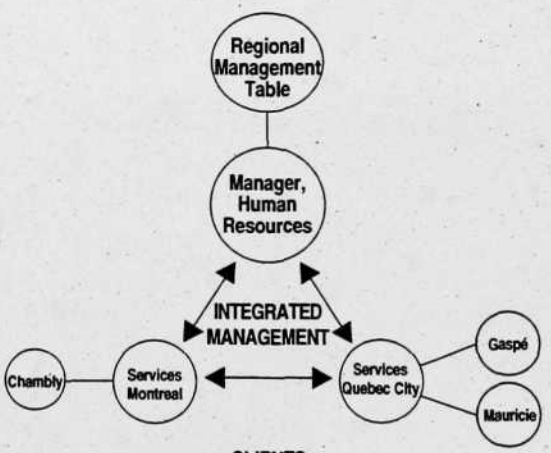
Integrated Management Team

- Human Resources Manager (1)
- Senior service unit officers (2)

Human Resources Branch



CLIENTS

AES	210	Parks	705
C&P	155	C&P	105
Chambly	235	Com.	15
Total	600	Total	825

It is immediately obvious that the new organization will be better suited to the needs of Department integration in the Region.

V. IMPLEMENTATION OF HUMAN RESOURCE INTEGRATION

We shall now take a closer look at this new approach to determine the concrete results of the proposal.

Integrated functions:

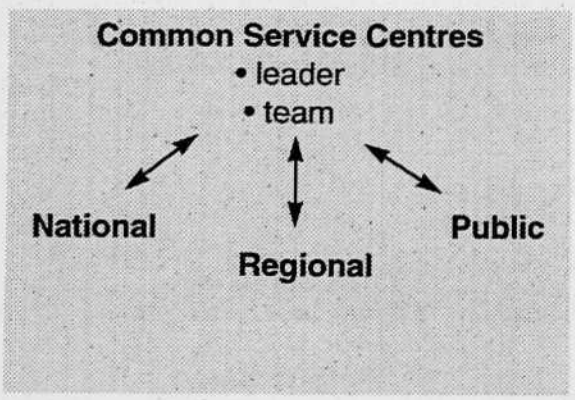
The Human Resources manager for the region, mandated by the Regional Management Table, would be primarily responsible for integrating dossiers. In addition, the integrated management team, consisting of the Human Resources manager and the two service unit senior officers, would analyze the cases and make decisions on the most satisfactory way of responding to each one. Depending on the nature of the requirements, the team could also assign dossiers to working groups or individuals, on a temporary or permanent basis. The Services would continue to act in a management advisory capacity through the service unit senior officers.

The Human Resources team would also be responsible for establishing and maintaining a functional relationship with the national Human Resources branches.

To meet the requirements of an organization in transition and ensure steady improvement of Human Resource services, it is essential to create a unit to conduct Human Resource research and development.

Regular activities:

Regular activities would follow a similar procedure, and include the following elements:



- Responsibility for a Human Resources area would be assumed by an officer in one of the service centres for the region. The responsibility would be regional (e.g. on matters of legislation, policy, direction). The person responsible would provide links to central agencies, departmental Human Resource branches and external agencies, and handle the transmission of information.

- Creation of working groups for specific projects on the basis of priorities strengthens the collegial approach.

- Broadening the skills of Human Resource advisers enhances versatility.

- Requirements expressed by clients are used to set priorities for areas of intervention.

- Use of communication methods must be optimized.

The preceding is an outline of the main steps to be followed in implementing the integration of Human Resources in the Quebec Region.

VI. FUTURE DECISIONS

The proposal must give due regard to future management decisions that may modify its contents.

A great deal remains to be done. Decisions are required on office location, computerization (DOTS network), records, and the human resources inventory.

A strategy for meeting requirements and redefining relationships with Headquarters needs to be developed.

Costs have to be evaluated and an implementation plan drawn up.

REGIONAL INTEGRATION PILOT PROJECT

Decision-Making Support and Departemental Affairs Unit

Environment Canada

Quebec Region

I. MAIN ELEMENTS OF A DECISION-MAKING SUPPORT AND DEPARTMENTAL AFFAIRS UNIT

"True success ... lies in greater staff awareness of the real value of the Department's knowledge base, its potential to improve the decision-making process (if applied in an integrated way) and its importance in strengthening the Department's credibility with its public."(1)

The regional project to integrate Environment Canada's components, an initiative intended to improve our management practices and ensure greater conformity with the vision and mission of the Department, has led us to review the way we use information, a valuable resource on which all strategic action is based. The Department's internal and external clientele deserves access to the very best information to help them attain their objectives.

Integration of departmental programs requires an appropriate decision-making process. In order to make strategic and judicious decisions in an integrated department, managers must make optimal use of information adapted to their needs.

However, the departmental vision which we are seeking will also influence our activities, some of which will be taken on using a coordinated departmental approach. Implementation and coordination of these activities requires the adoption of a new management approach on the part of the managers in charge.

To support the work of the Regional Management Table, the Quebec Region is recommending the creation of a Decision-Making Support and Departmental Affairs Unit.

The unit will be mandated to gather, validate and process information from its organizational environment and transform it into relevant, concise and strategic material.

The information will be used for decision-making by Environment Canada's Quebec Regional Management Table

Basic principles

- Optimal use of information
- Strategic and judicious decisions
- Departmental management approach
- More effective contribution to the Department's vision and mission

and could be used by the entire organization. In addition, the unit will assume a leading role in carrying out and coordinating departmental activities.

THE NEEDS OF AN INTEGRATED AND STRATEGIC ORGANIZATION

Decision-making support

By integrating the activities of its components, Environment Canada is using joint action to attain greater cohesion and fulfill its mission more effectively and efficiently. The new organizational strength and the added value which result from working as a team toward common goals will make the Department even more effective than the sum of its parts.

In addition, by reinforcing the planning and internal auditing in the decision-making process, the Department is taking a pro-active position and becoming an innovative organization, able to face the environmental issues of the future. Such action will enable it to strengthen its role as an environmental leader.

The Regional Management Table will be responsible for the strategic and coordinated management of departmental activities in the Quebec Region, and will make optimal use of information received from its organizational environment, particularly by all the departmental components.

It will be able to help managers make more enlightened decisions, avoid duplication and useless expense, and promote the integration and coordination of staff effort to attain common objectives in relation to the Department's major environmental concerns in the Quebec Region.

This is a major challenge, and the Regional Management Table will have to rely on the support of a group whose members are professional and versatile. This will be the role of the Decision-Making Support and Departmental Affairs Unit, which will carry out the following decision-making support functions:

- Assist the Regional Management Table in identifying regional questions and their issues; the Regional Management Table will then be able to prioritize these issues and plan for a management-by-results approach to the desired objectives. This preliminary exercise will serve as a basis for discussion in strategic and operational planning by the Department in the Quebec Region.

- Develop and apply management contract monitoring methods which promote the adjustment of decision-making to departmental commitments, if the need arises. Facilitate organizational training by super-

vising and managing information arising from events which impact negatively or positively on regional issues.

- Increase the Department's ability to adjust to unforeseen events by proposing to the Regional Management Table, after appropriate analysis, contingency plans aimed at optimal reorientation of activities or programs.

- Prepare effective methods of auditing progress toward expected results of management contracts. This auditing, based on management indicators and empowerment of individuals, will enable all departmental staff to be better informed about project development. Consequently, individuals will feel more involved and will participate in the implementation of measures aimed at ensuring the attainment of results.

- Develop a new and effective approach in dealing with the offices of the Minister and of the Deputy Ministers.

- Coordinate the dynamic and constructive contribution of the Quebec Region to the development of departmental orientations and policies and strengthen the emphasis on regional issues and special characteristics. This contribution will be facilitated by a broad understanding of regional concerns, making top quality information and preparation analysis important for strategic planning (see above).

- Promote the emergence and maintenance of a corporate culture reflecting the management values and principles of the Department, as stated in its vision and mission. Dynamic strategies which create feelings of belonging should be developed in the Quebec Region in order to make the positive aspects of these values and principles clear to our staff. Creating a feeling of belonging in our staff through the judicious use of internal communications is one of the essential conditions of their empowerment with regard to departmental objectives.

Departmental Affairs

In addition to its essential role in terms of decision-making support, a second challenge faces the Decision-Making Support and Departmental Affairs Unit. This is the active participation in activities which concern the entire Department and thus require departmental expertise and monitoring.

These activities, the results of which concern the Department as a whole, cannot be carried out effectively by one or another of its parts. They require the added value which results from the teamwork of the Decision-Making Support and Departmental Affairs Unit, situated strategically with regard to the Regional Management Table. Unit members will reinforce their skills in the areas of partnership management, negotiations, strategic collection of information and departmental analysis through their access to a mass of strategic information and the varied expertise of their colleagues.

They will thus be better able to contribute to the accomplishment of departmental activities, particularly:

- Management and implementation of departmental programs which call for the participation of all components (for example, Environmental Citizenship).

- Development and maintenance of effective and productive relations with strategic partners such as the Quebec government, other federal departments and certain non-government organizations which can contribute to the development of dossiers of strategic importance to the region.

Coordination

Other than the accomplishment of departmental activities, the Decision-Making Support and Departmental Affairs Unit will coordinate activities calling for concerted intervention by a number of departmental components. We expect that these activities will increase as the organization optimizes participation by all parties in the accomplishment of its mandate. In short, the principles of systemic management will be implemented.

The Decision-Making Support and Departmental Affairs Unit will assist the Regional Management Table in ensuring effective departmental coordination of these issues, consideration of all pertinent elements and participation by all components concerned. Most of the time, responsibility for the dossiers will be handled by an operational component in the Region, based on its expertise or accountability for the area or the type of action required.

SPECIAL MANDATE OF THE DECISION-MAKING SUPPORT AND DEPARTMENTAL AFFAIRS UNIT

Analysis of the strategic decision-making, departmental activities and coordination needs of an integrated organization indicated that the contribution of the Decision-Making Support and Departmental Affairs Unit is essential.

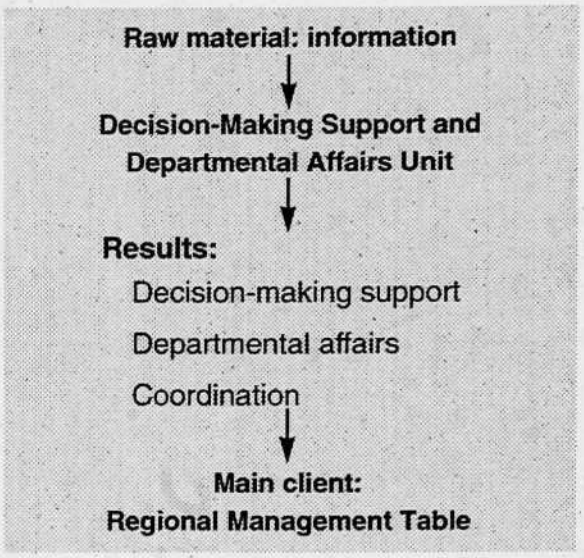
The priority of this Unit is to support the Regional Management Table in its functions by providing it with the

elements required to make effective and efficient decisions.

It will also be the preferred medium for information exchange with the Corporate Policy Group, which will be both a receiver and a sender. As a receiver, it will draw the information required for understanding the issues and characteristics of the Region in order to help orient the Department's national programs and policies. As a transmitter, it will provide the Region with the elements essential to the vision and mission of the Department, which should underlie all regional operations.

The Decision-Making Support and Departmental Affairs Unit should be complementary to common service centres and operational units in responding to specific needs which the latter are unable to fulfill. Its products and services are destined for a priority client, the Regional Management Table, and are essentially departmental in nature. The raw material of this unit will be information, a resource which it should constantly monitor, enrich, organize and adapt to the needs of its clients.

In conclusion, effective interaction and operation of all the Department's components will improve its ability to meet priorities and, ultimately, to fulfill it's mission.



II. INTEGRATION OF DEPARTMENTAL AFFAIRS, AN OPPORTUNITY TO IMPROVE REGIONAL MANAGEMENT

As we have shown in the previous section, the purpose of a departmental affairs unit is to monitor the Department as it moves in new directions and facilitate the attainment of its objectives in accordance with its vision and its mission. In concrete terms, this means facilitating strategic decision-making, implementing departmental strategic activities and co-ordinating the contribution of all components to matters of concern to the Department as a whole. Delivery of services will be the responsibility of the Decision-Making Support and Departmental Affairs Unit, an integrated version of the branches which currently carry out similar functions in the Quebec Region.

The extent of these services and the optimal means of delivery in an integrated context has been the subject of this section. This will lead us, in the next section, to review our present way of doing things in accordance with the necessary observations.

DECISION-MAKING SUPPORT

We now know that the role of Decision-Making Support is essential to the new Regional Management Table. Consequently, we believe that the following elements should be considered in the proposition prepared by the Quebec Region:

Objectives:

Decision-making support

- Monitoring of strategic information;
- Knowledge of issues, priority setting and preparation of management contracts;
- Real-time monitoring of management contracts;
- Auditing of the quality of products and services.

1. An operating system which promotes the methodical organization of work so as to tackle and deal effectively with priority departmental issues.

2. A planning system which enables us to acquire an accurate knowledge of the real issues in the region, to prioritize them in an integrated context and to translate them into work plans and management contracts.

3. A system for monitoring management contracts in real time in order to implement the management-by-results approach for priority cases. This management system will enable the Regional Management Table to identify the problems in these cases and to provide timely strategic orientations.

4. An auditing mechanism to evaluate both the quality of services in accordance with expectations and the degree of efficiency with which they are provided.

5. A system for the supervision of internal and external strategic information on the major environmental, social, political and economic issues in the Quebec Region. This information will be used in the decision-making process.

In addition to its main client, the Regional Management Table, the Unit will in future collaborate more closely with Headquarters (Corporate Policy Group, Policy Branch, Minister and Deputy Minister's offices) to develop national policies and programs. The new unit and its organization methods will enable the Quebec Region to provide its clients with integrated information which brings together the views and positions of the entire organization on matters of departmental scope.

All these characteristics of an integrated departmental unit, added to a management-by-results approach and a strategic vision of the major environmental, social, economic and political issues, will enable the Department to take concrete action on the most important issues and to provide the public with the products and services expected of Environment Canada.

DEPARTMENTAL AFFAIRS

Over the past few years, the Department has tackled the major environmental issues with which we are confronted in an increasingly systemic way. The main outcome of this new approach was the implementation of the Green Plan, launched in 1990.

According to the philosophy of this new orientation, future departmental programs and initiatives will require a coordinated implementation approach (for example, the Environmental Citizenship Initiative, the State of the Environment, the Environmental Action Plan, etc). Only through department-wide action and not the activities of individual components can the objectives inherent in these departmental programs and initiatives be attained. Nevertheless, it is essential to reflect the image of an organized and integrated department in the eyes of external departmental clientele (the Canadian public), which expects us to produce results.

Objectives:

Departmental affairs

- Integrated management of departmental programs and activities;
- Concerted, strategic approach vis-à-vis our partners;
- Image of Department as effective and coherent.

The systemic approach sought through the integration of departmental components will facilitate our relations with partners, contributing to the accomplishment of our mandate. Such an approach involves bringing together in one location the information which enables us to make the most of our discussions with these partners, government and others, and managing this information strategically. The Department could benefit from departmental representation with these partners and provide them with a single forum for the discussion of regional issues.

COORDINATION

The integration of departmental components will alter implementation of activities involving more than one component. Integrated coordination needs will thus be greater than in the past.

Objectives:

Coordination

- Participation and contribution of all components;
- Departmental management by directors concerned;
- Follow-up by Regional Management Table.

Coordination should be carried out in such a way that all branches of the Department concerned by a particular question or activity contribute to its implementation.

The coordination structure adopted by the Region for these issues must be efficient and, above all, adapted to the needs and nature of the resulting activities. We will seek, as far as possible, to leave responsibility for these issues in the hands of one operations branch, giving it the mandate to coordinate participation by the other branches involved.

In this context, it is essential that the region obtain "departmental" coordination expertise in order to develop appropriate operating and monitoring methods. This monitoring will be used to keep the Regional Management Table adequately informed, so that it will be in a better position to ensure conformity with departmental vision in implementing these activities. In some cases, when issues are essentially departmental in nature, their coordination should be handled entirely by a body which exercises departmental functions.

Current situation:

1. Decision-making support

- Three management tables, three management approaches;
- Corporate affairs directorates for C&P and CPS;
- Lack of cohesion and coordinated action;
- Decision-making not well adapted to departmental issues.

2. Departmental affairs

In general:

- Three Services, three approaches;
- Lack of coordinated action on strategic issues;
- Departmental affairs not considered a priority.

Vis-à-vis our partners

- Separate approaches, little cohesion;
- Strategic position and image of Department not cohesive;
- Contacts not optimized, failure to take advantage of opportunities;
- No one-stop service centre;
- Information on these partners is scattered.

3. Coordination

- Departmental coordination of CORE issues;
- Other issues: lack of concerted action and cohesive management;
- All components are not contributing in an optimal manner;
- Results are not optimal.

III. CURRENT SITUATION

In the light of the concerns expressed in the previous section, we will analyse the characteristics of the current situation which should be considered in choosing an optimal operating method for the departmental support unit.

DECISION-MAKING SUPPORT

The regional integration of Environment Canada's components will lead to the centralization of management information for the needs of a decision-making body: The Regional Management Table.

Currently, the three Services (Conservation and Protection, Canadian Parks Service and Atmospheric Environment Service) each have a management table which operates in its own way. Conservation and Protection (C&P) and the Canadian Parks Service (CPS) have established a Corporate Affairs Branch which supports the decision-making process in their respective services. The Atmospheric Environment Service (AES) has almost no management support.

The Committee of Regional Executives (CORE) also has its support body, the CORE Secretariat. However, owing to the very nature of CORE, which is a mechanism for coordination rather than for departmental decision-making, the CORE Secretariat does not have the mandate to provide decision-making support services.

With regard specifically to planning activities, a great number of different administrative procedures now exist which require intervention from individuals in a variety of components or directorates (Finance and Administration, Corporate Affairs, directorate managers and staff, etc).

All in all, these isolated ways of doing things do not permit a global vision of regional decision-making and planning priorities, and are even less conducive to coming up with new priorities which would respond better to the integration of departmental programs.

Moreover, with regard to the development of departmental programs and policies, the Department is unable to rely on genuine regional cooperation which would improve the quality of participation from the regions in these important activities. The participation of the Quebec Region is carried out through the intermediary of each of the Services, with the exception of dossiers coordinated by CORE, and these are not the majority.

Lastly, the same deficiencies are found with regard to the strategic information provided for the offices of the Minister, Deputy Minister and the Associate Deputy Minister through the departmental correspondence and information system.

Conservation and Protection and the Canadian Parks Service have concentrated these activities in their Corporate Affairs sections, while the Atmospheric Environment Service, which does not have such a section, counts on the availability of staff to carry out this task. As for the CORE Secretariat, it receives requests for information which are not specific to any one service, or which concern them all. Its role thus involves coordination, information integration and production of information.

This situation fails to prevent duplication of requests (to each Service and to CORE for distribution to Services), and does not permit each request to be tackled with a department-wide vision, using a coherent and coordinated approach (and not from the viewpoint of one Service) or use the skills of everyone to produce departmental documents. In addition, Headquarters has to consolidate the information received from each Service, even though this work should be carried out in the Region. We would thus be able to provide a complete product and better respond to the needs of the Minister and Deputy Ministers.

In conclusion, in the decision-making support sector, we feel that none of the current ways of operating provide the Quebec Region with a departmental decision-making mechanism which responds to the needs of regional and Headquarters' internal clientele. This deficiency should be remedied though better regional management of information.

DEPARTMENTAL AFFAIRS

The management of departmental affairs is presently the job of all regional Services, based on distinct approaches and methods.

One example of a departmental activity with high regional visibility which suffers from a lack of integrated management is the Environmental Citizenship Initiative. Financial assistance programs under this Initiative are the responsibility of the CORE Secretariat, which provides one-stop service for Quebec Region clientele receiving these programs. However, the Secretariat tries, for better or for worse, to coordinate the "awareness" component of this initiative, which calls for the participation of all Services. Many components of the program are coordinated by Headquarters, which deals directly with regional Services, creating a lack of regional coordination in this important program. The concrete participation of regional Services is limited owing to the lack of official delegation of responsibilities by Headquarters and the lack of a strong departmental unit in the Region which would take on these responsibilities and ensure that the Services participate.

Environmental assessments are another important area of departmental activities, and are a legal obligation under the

Federal Environmental Assessment and Review Process (FEARP). As an organization responsible, each Service meets the Process requirements based on approaches which are not always uniform even within the Department itself. There is thus a lack of regional cohesion which, together with the upcoming entry into force of Bill C-13 (which makes the Federal Process more binding), runs the risk of placing the Department in delicate situations. In addition, as the consulting department in this area, our expertise is regularly called upon and we need to act in a coherent way with those requiring our services.

Currently, the Environment Assessment and Northern Affairs Branch (Conservation and Protection) oversees coordination of the participation of departmental components. The current method of operating is, in general, acceptable, but with the increasing demand for expertise related to the need to comply with the new legal provisions, we must manage our ability to respond adequately to all departmental requests.

Lastly, with regard to the question of partnership, the current situation makes it extremely difficult to carry out any type of coordinated action on a regional scale. Each Service has developed and maintained relations based on its own needs with organizations and individuals outside the Department. Frequently, more than one Service has a relationship with the same partner for different activities and objectives.

This is the case with the Quebec Department of the Environment, the Quebec Department of Recreation, Fish and Game and some non-government organizations with which our three Services deal individually, in a non-coordinated way.

This way of dealing with our partners places the Department at a disadvantage in terms of its ability to maximize its negotiating power and adopt a clear and strategic position. In addition, the credibility of the Department suffers though the lack of coherence and coordination with regard to our interlocutors, not to mention the fact that they may find this situation cumbersome, complicated, and contrary to the principles of one-stop service.

This situation also has an impact on our ability to respond to requests for information from Headquarters concerning our partners, since the components are not familiar with each other's dealings with them.

COORDINATION

In our Region, only the CORE Secretariat really assumes the role of departmental coordination. This responsibility is, however, currently carried out in a rather particular context,

in which the region is structured by Services, enormously reducing opportunities for interservice collaboration and the benefits that would ensue.

Projects coordinated by the CORE Secretariat are those implemented by CORE. For example, in the field of integrated monitoring, the production of a regional business plan shows what kind of results regional coordination can produce in some areas. Other examples of interservice projects launched by CORE concern human resources, informatics and science/knowledge.

Other cases, such as the Biodome and the Biosphere, have also called for a type of regional coordination, assumed by the entities responsible (CORE and the Canadian Parks Service).

The best example of the need for more effective and concerted regional coordination is without doubt in the areas of consultation and implementation of the Green Plan, coordination of which has been given to CORE. All regional components were called upon to work together for the success of this process. However, the existence of a body with sufficient resources skilled in interaction would enable the region to benefit more from the opportunities offered by the Green Plan.

In this case as in those of the other projects which require departmental coordination, regional managers cannot gain the maximum advantage by acting in isolation. In addition, when dossiers are complex, there is no mechanism to enable them to work together on monitoring their development and making coordinated decisions.

CONCLUSION

Analysis of the current regional situation highlights the following:

- In the area of **decision-making**, current structure and ways of operating are not adapted to the needs of a Regional Management Table, which must be able to rely on an organized and complete support team in order to carry out its responsibilities.

- In the area of **departmental affairs**, departmental activities such as the Environmental Citizenship initiative will be increasing in scope and the region must be able to carry out and coordinate these activities efficiently. The CORE Secretariat, which is currently responsible for this, does not have the critical mass required to deal with the growing demand which the integrated context will create.

- With regard to **coordination**, currently carried out by the CORE Secretariat, regional integration will produce opportunities for collaboration and will thus create a greater need for regional coordination and concertation. From all evidence, the existing structure cannot, in its present form, meet these new requirements.

IV. RECOMMENDATIONS

Recommendations

- Set up a Decision-Making Support and Departmental Affairs Unit, situated strategically with regard to the Regional Management Table;
- Give the Unit priority functions for supporting the Regional Management Table:

Decision-making support: recommendations 1 through 4;
Departmental affairs: recommendations 5 through 8;
Coordination: recommendation 9.

After analysing the anticipated organizational requirements and the findings from a review of the current situation, the new Regional Management Table must choose an organizational structure and means which will enable it to fulfill its management responsibilities effectively.

Hence, we recommend that a decision-making support and departmental affairs unit be set up in accordance with the basic principles outlined in the first section of this document. This recommendation should be implemented as soon as possible so that the Regional Management Table can, from the outset, perform its role more effectively.

More specifically, for each function described earlier, our recommendations are as follows:

DECISION-MAKING SUPPORT

First recommendation

Give the Decision-Making Support and Departmental Affairs Unit the mandate to support the new Regional Management Table in all its activities by enabling it to perform the following functions:

- Developing and implementing an effective operating method for the unit;
- Developing a uniform planning mechanism for identifying strategic issues and related priorities; these issues should translate into measurable objectives that are consistent with a management-by-results approach and set out in work plans and management contracts;
- Providing the coordination necessary for integrating the planning activities of the Service branches (Communications and Marketing; Finance and Administration; Human Resources);
- Developing a mechanism for following up on regional results so the Regional Management Table can participate actively in identifying strategies for implementation and for the resolution of problems related to implementation;

- Instituting ways of verifying whether results are being attained and allowing regional entities to participate in the process of formulating ideas for their continued development;

- Seeking and implementing any internal communications initiative fostering the development of a regional corporate culture compatible with departmental management principles.

Second recommendation

To optimize active regional participation in the development of departmental policies, programs and strategies, we recommend that the unit be identified as a one-stop service organization by the Headquarters branches responsible for these activities. The branches will assist the unit in coordinating regional participation, as required.

Third recommendation

All regional activities linked to relations with the offices of the Minister and Deputy Ministers should be carried out by the regional Decision-Making Support and Departmental Affairs Unit, and this Unit should become the sole regional forum for these activities. Its role will be to boost the current capacity for handling enquiries by using the required regional expertise according to the issues involved.

Fourth recommendation

In a context of sustainable development where economic and social aspects have to be integrated into the decision-making process, we recommend that regional expertise in the area of socio-economic analysis be grouped within the Decision-Making Support and Departmental Affairs Unit to better serve the Regional Management Table.

DEPARTMENTAL AFFAIRS:

Fifth recommendation

All the departmental programs currently implemented by the CORE Secretariat (including the Environmental Citizenship Initiative) should be integrated into the Decision-Making Support and Departmental Affairs Unit. We recommend furthermore that the awareness and funding programs be administered by the unit in an integrated manner, since they often address the same clientele.

As for the Environmental Citizenship Initiative more specifically, a regional coordinating committee should be set up for the initiative and the Regional Management Table should participate in establishing its broad directions and priorities. This regional committee will foster the active involvement of Quebec Region branches.

Other highlights of the recommendations:

- Centralized regional strategic planning;
- Implementation of a management-by-results approach;
- More effective contribution by the region to the development of national policies and programs;
- Transfer of responsibility for activities related to environmental assessments and socio-economic research to the Decision-Making Support and Departmental Affairs Unit
- Coherent management of all financial contributions and non-funded programs
- Strategic relations with our partners
- Centralization of responsibility for organizing departmental events and producing information for the Minister and deputy ministers.

Sixth recommendation

With regard to financial decisions (including discretionary decisions) concerning non-governmental organizations, we suggest that they be coordinated by the Decision-Making Support and Departmental Affairs Unit.

This will enable us to allocate in a more equitable, cost-effective manner the resources for the many NGOs and to implement coherent measures, and avoid contradictory decisions. We will be able to answer their requests based on a department-wide vision and we will have a better idea of the value of their contributions to environmental causes.

Seventh recommendation

Owing to the departmental dimension of environmental assessments and their importance in regional decision-making, it is recommended that the Environmental Assessment and Northern Quebec Branch (EANQB) be integrated with the Decision-Making Support and Departmental Affairs Unit.

We believe that this integration will help to strengthen the co-ordinating role of the EANQB. This Branch, situated strategically with regard to the Regional Management Table, could support the Department's position as an advisor on environmental assessments. In the case of issues which concern more than one component of the Department, the components' respective actions or positions could be coordinated more effectively.

It should be noted that this recommendation is not aimed at relieving regional components of their legal responsibilities where they are the organization responsible. They will remain responsible for carrying out environmental impact assessments where required in accordance with the regulations.

Eighth recommendation

To capitalize on the advantages of partnership, the Quebec Region needs to adopt means enabling it to sign cooperation agreements in an integrated manner. To achieve this, the matter of partnership needs to be discussed regularly at meetings of the Regional Management Table. The Table is responsible for promoting partnership and the department's vision in this regard.

The Decision-Making Support and Departmental Affairs Unit will also be required to provide the Regional Management Table with up-to-date information so it can take stock of issues and put forth strategies and action plans. Likewise, in its own activities and those of the Table, the Unit will apply the operating principles concerning partnership.

COORDINATION:

Ninth recommendation

Finally, we recommend that the Decision-Making Support and Departmental Affairs Unit see to the effective coordination of departmental activities in the region.

Where a project relates to the expertise or field of a given component, that component should be made responsible for departmental coordination of the project and be mandated to ensure the participation of all the components concerned. The unit will make sure that it carries out this responsibility in an optimal manner on behalf of the Department. For projects that do not concern any specific component, but rather the entire Department, the unit itself will handle overall coordination.

The coordinating role of the Decision-Making Support and Departmental Affairs Unit consists in supervising all these activities to give the Regional Management Table an overview of the situation. In large part, this coordination will involve bringing together regional authorities so that Headquarters has an integrated position on certain issues, where such a position is required.

V. IMPLEMENTATION PROPOSAL

Once a final decision has been made regarding the mandate of the Regional Management Table, immediate action will be taken to set up the Decision-Making Support and Departmental Affairs Unit. As mentioned in the previous section, this Unit will enable the Regional Management Table to perform its role effectively right from the start.

The main workplace of the Decision-Making Support and Departmental Affairs Unit will be the Quebec City area specifically, the location chosen for the Department's Regional Headquarters.

The Decision-Making Support and Departmental Affairs Unit will be headed by a person with the status of a regional director who will serve on the Regional Management Table.

HUMAN RESOURCES

By integrating the functions currently performed by the so-called corporate units, the required human resources can be utilized in an optimal manner. Duplication of efforts will be avoided and pooling of skilled resources at a given location will promote discussion and effective organization of the workload.

Hence, we believe that fewer resources will be required to fulfill the Unit's mandate, despite the new responsibilities for

planning, managing, carrying out and coordinating departmental activities.

With the creation of the Decision-Making Support and Departmental Affairs Unit, many of the activities carried out by the corporate affairs branches will no longer have to be handled within the Services. For example, departmental relations and part of the activities related to coordinating planning fall into this category.

We estimate the new Unit's human resource requirements at about 30 person-years. However, this will have to be clarified. At present, nearly 47 person-years are devoted to departmental functions among the different components.

We suggest that the resources of the Decision-Making Support and Departmental Affairs Unit be drawn from the CORE Secretariat--a departmental entity at present--and from the components whose activities are to be handled by the Unit henceforth: Environmental Assessment and Northern Affairs Branch, policy and research section (socio-economic studies) and the team working on the Environmental Citizenship Initiative.

The other person-years would come mainly from the corporate affairs directorates of Conservation and Protection and the Canadian Parks Service, and would be earmarked exclusively for the new unit.

All of these persons will be integrated into the new Unit where their duties will be similar to their current ones. In addition, consideration will be given to the possibility of assigning them new duties better suited to their career objectives where this is to the advantage of both parties.

Some of the human resources not absorbed into the new regional Unit could act as intermediaries in departmental affairs within the other components. These intermediaries would facilitate and optimize the many exchanges among the components and the Decision-Making Support and Departmental Affairs Unit, as well as relations with common service centres.

Finally, some of the positions in the Unit could be filled through appointments from the other departmental components in the Region. This would give other people who have not worked within "departmental" units a chance to familiarize themselves with departmental functions and build their expertise in supporting the regional management and decision-making process.

All these human resource questions remain unresolved and must be discussed further.

RELATIONS WITH HEADQUARTERS

The following units or people will serve as special "interlocutors" for the new regional Unit:

The Assistant Deputy Minister, Finance and Administration, regarding all matters related to planning, formulating and following up on work plans and management contracts.

The Assistant Deputy Minister, Corporate Policy Group, with regard to regional participation in formulating the Department's policies and strategies, preparing memoranda to Cabinet, coordinating certain major departmental issues in the region, and managing the Environmental Citizenship Initiative.

The assistant deputy ministers of the Services, with regard to regional participation in the development of programs and policies related to the Services.

The offices of the Minister and the Deputy Ministers and their information units, with regard to inquiries addressed to the Region and support for organizing certain events (eg, visits).

The Federal Environmental Assessment and Review Office, with regard to all matters related to environmental assessments.

The other national components of the Department, as needed, regarding departmental activities entailing the Quebec Region's participation, coordination of any issue concerning the whole Department and their support for regional and departmental decision-making.

VI. ELEMENTS TO BE EXAMINED FURTHER

Once the new unit has been set up, we will review all departmental activities currently being carried out by the Services to make sure there is no overlapping of functions, particularly in the areas of planning and departmental affairs.

As the new unit and the Regional Management Table evolve, we will have a more precise picture of the complementary role that regional components should play in these areas.

As well, we will have to assess more precisely the number of person-years required and clarify the nature of the functions involved. Considerable effort will be devoted to planning the organizational structure of the new unit.

Elements to be examined further

- Detailed review of departmental activities carried out within the Services
- Clarify the complementary role to be played by regional components;
- Specify the resources required.

(1) Excerpt from: Environment Canada in Transition, Report • Year One, September 20, 1991.

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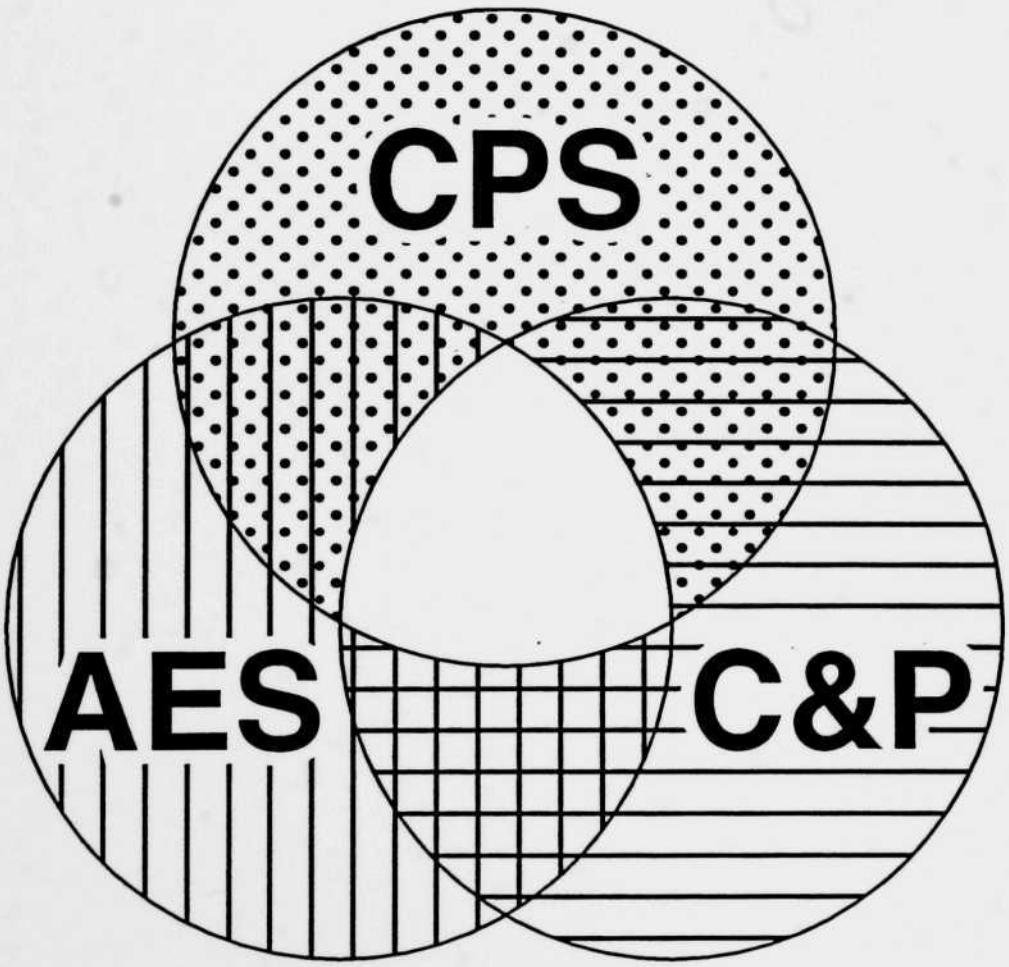
REGIONAL INTEGRATION PILOT PROJECT
INTEGRATION OF OPERATIONS



ENVIRONMENT CANADA

QUEBEC REGION

REGIONAL INTEGRATION PILOT PROJECT

Integration of Operations Historic sites, national parks and national wildlife areas

Environment Canada

Quebec Region

I. INTRODUCTION

Faced with the growing complexity of environmental issues and the increasing demands of Canadians, Environment Canada must respond to their immediate needs and the right of future generations for a healthy environment.

In order to keep pace with those changing needs, Environment Canada's vision and mission have gone through a rapid evolution in recent years. We have assumed a leadership role in the development and implementation of Canada's Green Plan and have been given an important role in ensuring that Canada meets its national and international obligations under the Rio Biodiversity Convention. These are important aspects of the environmental component of the sustainable development equation which also includes social and an economic component.

This new focus on sustainable development shaped the departmental vision and has prompted us to re-examine departmental policies and programs and the services we offer. Concurrently, Government restraint is forcing the Department to adopt increasingly efficient and effective ways of serving Canadians.

The Canadian Parks Service (CPS) and the Canadian Wildlife Service CWS deliver products that contribute to the need for protected spaces and species, one of the cornerstones of the Biodiversity Convention. Both of these programs must be adapted to respond to the broader sustainable development objectives to which they contribute without loosing sight of the particular responsibilities that have been conferred to them by legislation. For example, research must be increasingly oriented toward the better understanding of ecosystems, so that species and spaces can be protected in ways which take account of the ecosystems within which they exist. Selection and planning of National Parks and Wildlife Reserves and Sanctuaries will be increasingly influenced by ecological considerations and the need to conserve biological diversity, as we seek to complete Canada's network

of protected areas. Services offered in protected areas, especially interpretive services, will increasingly reflect the role of protected areas in our pursuit of sustainable development and the need for environmentally responsible decision-making on the part of all Canadians if the promise of sustainable development is to become a reality.

Integrated management of several aspects of the work of these two Services will increase efficiency and will help both go beyond their respective legal mandates to make a greater contribution to the broad environmental challenges facing the Department.

As a result, protected areas will become more supportive of sustainable development and biological diversity objectives. They will foster environmentally responsible decision-making among visitors to national parks, historic sites and canals, and wildlife areas, as well as among the Canadian people at large. Their integrated management will also facilitate the planning of protected areas with our provincial colleagues whose actions must be made to contribute to the same broad objectives.

II. MANDATE OF THE WORKING GROUP

Mandate of working group:

To analyze areas for potential integration between the CPS and the CWS with respect to the management of national parks, historic sites, wildlife reserves and migratory bird sanctuaries.

With this departmental perspective as a background, the working group on sites, parks and reserves examined management-related activities in these protected areas in order to identify realms where co-operation is possible. Its specific mandate was to analyze areas where integration would be possible between the CPS and the CWS with respect to national parks, national historic sites, wildlife reserves and migratory bird sanctuaries.

Broadly speaking, there are five components to management:

- research
- protection
- planning
- presentation
- field operations

The working group began by more precisely defining the nature of the issue. It agreed unanimously that management went far beyond the provision of services in the field, that is current activities. Hence the term "management" includes the following components, which are inseparable from one another. They are:

- research
- protection
- planning
- presentation
- field operations

Moreover, some fields of activity that could have been considered by the above-mentioned working group were studied in greater depth by other groups as part of specific projects under the Regional Integration Project. These areas include law enforcement and everything to do with environmental emergencies. Other specific activities of the CPS and the

CWS were analyzed by means of a table in which all the activities carried out by the two services were included under the five main management headings: research, protection, planning, presentation and service delivery.

Three levels were set for evaluating the integration potential of each of these activities: information or technology exchange, institutional co-operation, and extensive integration involving a merger of structures, work plans and administrative procedures.

Three levels have been identified for the evaluation of the integration potential for each of the activities:

- information or technology exchange
- institutional co-operation
- extensive integration

III. CURRENT SITUATION

THE RATIONALE OF THE CANADIAN PARKS SERVICE

The Canadian Parks Service (CPS) rationale is to protect and enhance a network of parks, canals and historic sites that are representative of Canada's natural and cultural heritage for educational and recreational purposes, and to make the public aware of this heritage.

Human activity and the environment have always been intrinsically linked. Our historical heritage, which we must protect, is representative of past relations between man and nature. People have always turned towards natural resources for their material well-being. Their activities have transformed the natural landscape. We have only to think of railways, canals and cities, all of which represent links between people and their environment. Cultural and natural heritage form a single unit whose parts are inseparable (World Heritage Convention, UNESCO).

What the CPS primarily provides to its current and future visitors is a network of protected areas, which people are invited to visit; in these areas, a range of services enables them to appreciate the natural and cultural attractions on display.

The responsibilities of the CPS are set forth in the National Parks Act, the Historic Sites and Monuments Act and the Heritage Railway Station Protection Act.

In order to perform all the activities required to manage this vast network of protected areas, the Quebec Region decided to gather the parks, sites and canals together in six geographical districts. The network thus includes the Mauricie National Park, Forillon National Park, the Mingan Archipelago National Park Reserve, and the Saguenay Marine Park. There are also five canals located in the Montreal district, and 21 historic sites, concentrated primarily in the Montreal and Quebec City districts.

The Quebec Region CPS is located in 6 districts, 3 national parks, one marine park, 21 historic sites and 5 heritage canals:

- Montreal district
- Mauricie district
- Quebec City district
- Gaspé district
- Mingan district
- Saguenay Marine Park

The district offices handle the administrative requirements of operating and maintaining the parks, canals and historic sites in their respective areas. The districts are responsible

for day-to-day management of their sites. The regional office provides support to certain specialized activities that would not justify the hiring of resources in each district. Examples of this include the identification of heritage to be protected, the feasibility of a variety of projects, public consultation and updating exhibitions.

RATIONALE OF THE CANADIAN WILDLIFE SERVICE

The rationale of the Canadian Wildlife Service (CWS) is to protect wildlife species (animal and plant) and their habitats throughout Quebec.

Its services focus on three main areas of activity:

- Management of migratory bird populations;
- conservation and management of threatened habitats and species;
- ecosystem research

Services to the public are related to the relatively rare expertise of the CWS in these areas of activity. Its clientele is extremely varied.

The CWS's activities are not restricted to the protected land areas, although these provide excellent natural laboratories and are used as such. Research may include wildlife in the Far North, as well as in the St. Lawrence Valley or the forests of Southern Quebec.

Two acts provide a framework for its activities: the Migratory Birds Convention Act and the Canada Wildlife Act. Two regulations give it jurisdiction over conservation in wildlife areas: the Migratory Birds Sanctuary Regulations, which accompany the Migratory Birds Convention Act, and the National Wildlife Sanctuary Regulations, which stem from the Wildlife Act.

The Quebec Region CWS manages 8 national wildlife areas along the St. Lawrence and in the Gulf.

It also manages 39 migratory bird sanctuaries and staging areas located in 4 major regions:

- Southwestern Quebec
- the St. Lawrence estuary
- the North Shore
- the Gulf of St. Lawrence

The CWS manages eight national wildlife areas along the St. Lawrence and in the Gulf. Three of these areas are recognized by the Ramsar International Convention as having international importance as wetlands: cap Tourmente, Isle-Verte Bay and Lake Saint-François. Canada, which played a leading role in the Convention, therefore has the obligation to keep these lands in optimal condition and to preserve their use in the long term by wetlands species.

The CWS also manages 39 migratory bird sanctuaries and staging areas in four major regions (Southwestern Quebec, the St. Lawrence Estuary, the North Shore, and the Gulf of St. Lawrence).

DESCRIPTION OF CURRENT STATUS OF THE FIVE MANAGEMENT COMPONENTS

Research

Canadian Parks Service (CPS) research helps to protect and enhance park management, and to collect the source data required for the planning exercises required in such management. Its vision of the ecosystem involves an integrated understanding of current and historical relations between man and nature. It covers natural, cultural and socio-economic spheres, and some of the research is carried out by the government, some is contracted out, and some is performed under agreements with other departments, services and universities. Examples include research into basic inventories of natural components of park ecosystems, thematic historical studies and auxiliary studies, as well as studies to develop a profile of users, as well as of their needs and aspirations.

Canadian Wildlife Service (CWS) research aims at documenting problems and at monitoring wildlife populations, solving habitat problems, and managing the land areas for optimal production. It is also used to develop management and restoration techniques that can be applied elsewhere, to develop integrated wildlife-agriculture management approaches and to study ecosystems harbouring outstanding species.

Research is carried out by the CWS, and often by outside partners or other agencies. Whenever possible, the reserves are used as natural laboratories, and as experimental and demonstration sites.

Protection

At the CPS, protection includes a host of activities designed to maintain the integrity of heritage resources. From the standpoint of nature, this includes the analysis of park tolerance levels and potential, the rehabilitation of habitats, and the development of measures to solve land degradation problems. From the cultural standpoint, archaeological activities are designed to inventory and assess the potential of archeological resources and to prepare inventories of collections, and restore and protect them.

At the CWS, protection includes activities that are relatively similar to those carried out by the CPS with respect to nature, but the objectives to be achieved are different. At the CWS, there is a law enforcement section responsible for surveillance of protected lands. This mobile team works throughout Quebec, depending on requirements. Only the cap Tourmente reserve has the resources to carry out surveillance and public safety activities in its area. To perform surveillance operations on other reserves, officers of the mi-

nistère du Loisir, de la Chasse et de la Pêche du Québec are delegated to certain areas to enforce regulations. Protection is also provided by non-government agency (NGO) partners, who provide a constant local presence and keep us informed about problems.

Planning

At the CPS, parks and historic sites planning consolidates a variety of research activity components on the one hand , and on the other, projects a vision in time and space of park and historic site development, as well as of protection, presentation and recreation activities which are held there.

The management plans approved by the Department depend on mutual understanding among the various Services to deliver a product to the public.

Some aspects of network planning involve activities shared between Headquarters and the Regional Office.

The planning approach encourages close co-operation among the Services in the regional office and those in charge in the field. The management plan is the result of planning expertise. It is approved by the Minister and is used as a guide by the District Director for implementing and managing the park or site in question.

Several other planning exercises in addition to the management plans themselves are designed to define more precisely the sorts of actions that are required in the various park operation areas: conservation, interpretation, services.

At the CWS, wildlife areas are mostly managed on the basis of action plans approved by CWS Headquarters some years ago. Regulation concerning areas is very restrictive; these management plans serve essentially to present the resources that are being protected, to describe those activities that may be authorized on each area, and as a rationale for choices made.

This basic planning provides a satisfactory framework for managing wildlife areas to which the public does not have access. For the other areas, activity management is reviewed each year as part of a regular exercise (e.g.: the controlled hunting program) based on resource and new land availability criteria.

The CWS works with NGOs in the areas, and it is obvious that the annual planning of activities and of area management is done together with these NGOs in true partnership style.

Presentation

At the CPS, presentation activities include preparing the interpretation and services plans to ensure consistent quality in the provision and delivery of products to parks customers. Reception and interpretation activities operated by partners are similarly oriented.

The physical development of interpretation exhibitions, and the refurbishing of these exhibitions as required constitute a specific product for users/visitors.

At the CPS, marketing strategies and plans are prepared and implemented, as well as specific activities for parks and historic sites. Promotional brochures are also designed and edited, and sponsors are sought after.

At the CWS, presentation is not a specific mandate for the national wildlife areas, and thus does not have a regular budget.

The CWS refurbished the cap Tourmente exhibition a few years ago with a special budget (pilot CWS-CPS project). Under the St. Lawrence Action Plan, the CWS built a mobile stand that can be moved from one national wildlife area to another. The CWS also designed a few explanatory brochures, and took part in various nature and outdoors shows.

The marketing function is not very active at the CWS owing to a lack of human and financial resources.

Field Operations

At the CPS, making parks and historic sites accessible to the public is in itself an important task in view of the scale of the infrastructures and services that need to be managed, as well as the high levels of public attendance, which varies from one location to another. The services provided include public reception and information, accommodation on campsites, on-site interpretation, surveillance of park areas and resources, public safety, maintenance, refurbishing of exhibits, etc.

At the CWS, the national wildlife areas, unlike the parks, are not managed regularly with respect to providing services to the public. CWS's mission is related to conserving essential habitats and species: developing access to the public is not mandatory but depends on a variety of factors, principally the repercussions of such access on the resources being protected.

The only exception is cap Tourmente, where public access is allowed because there are no repercussions on the resources.

Results of Analysis:

- Research and protection - cultural component: co-operation of experts is desired
- Research and protection - nature component: institutional co-operation may be envisaged for a variety of special projects.
- Presentation: integration and co-operation are essential for the sharing of expertise and the combining of messages.
- Planning: extensive integration is desirable for the network of protected sites, which would contribute to the goal of protecting 12 per cent of Canada's land area, and to the imperative of conserving biodiversity. There is also considerable scope for integration in the preparation of the management, service and interpretation plans.
- Field operations: considerable integration potential.
- Contribution of other Services and Branches: co-operation between Services is desirable.

On land reserves, public access is encouraged, but because the CWS does not have on-site resources, it has developed alliances with NGOs and a relatively restricted segment of the population is allowed entry. The whole system deserves to be improved, but it is unlikely that it would be desirable to install large facilities on the reserves.

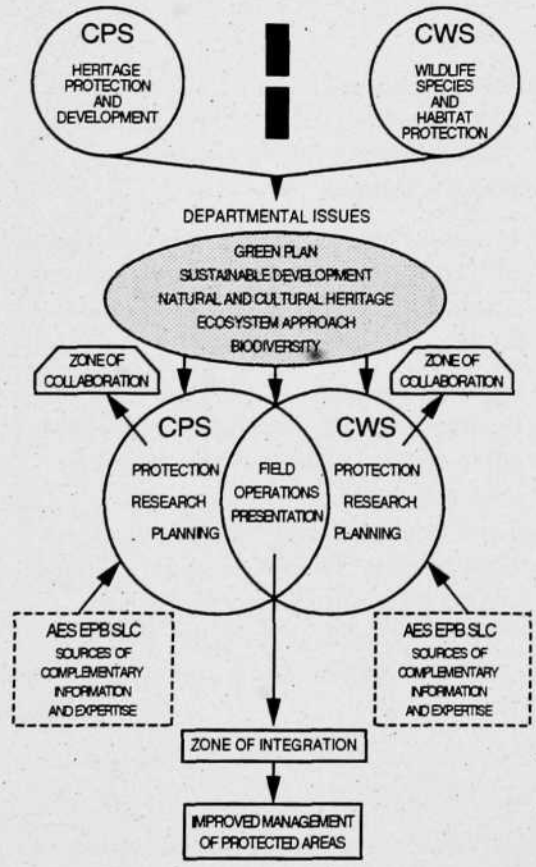
Island reserves are more difficult to develop for public access because bird populations are dense during the mating season (summer), with the exception of the islands in the Estuary.

Services also include maintaining facilities and trails, public safety, environmental emergencies, equipment management, maintaining the coastal habitat, etc.

IV. RESULTS OF THE ANALYSIS

Following the analysis of the current situation, it is now possible to determine those spheres that should be integrated, or where institutional co-operation or exchanges are possible.

RESEARCH AND PROTECTION - CULTURAL COMPONENT



The CPS has exclusive expertise in this area. The co-operation of experts is desirable in the study of the cultural resources of the sites managed by the CWS, as well as for the various thematic historical and other research that is needed to adjust the reserve management plans with a view to the conservation and the presentation of the cultural resources they contain. Whenever a situation calls for it, (the recent experience at cap Tourmente) the potential for institutional co-operation is very high. Each case will have to be studied on its own merits, and based on the importance of the resources to be protected.

RESEARCH AND PROTECTION - NATURE COMPONENT

In research, institutional co-operation can be envisaged for various special projects on the study of ecosystems and biodiversity in the protected sites. An example of this is the integrated research program on the La Mauricie National Park ecosystems that was presented recently. Exchanges and co-operation could be effected as required in integrated management areas of ecosystems, restoration, and the computer processing of geographical data, as well as for help in solving a variety of management problems that require prior research, and for which expertise is shared by the two Services. Interservice communication during the development of projects and research proposals would foster joint effort. CWS researchers could take advantage of research opportunities in parks and use parks as environmental monitoring stations.

In protection, exchanges are desirable in several activities, because each Service would benefit from the experience of the other (e.g.: co-operation between the CPS and NGOs, and controlled burning between the CWS and NGOs, where a high level of institutional co-operation is possible).

PLANNING

Extensive integration is possible for the protected sites network plan, under which the natural parks and wildlife reserves could contribute to the national conservation objective of 12 per cent of Canada's land area and to the conservation of biodiversity. The implementation of the management, service and interpretation plans represents desirable potential for integration in view of the CPS's expertise and the need to enhance the profile of the wildlife reserves. These plans should become standardized in both Services.

PRESENTATION

This vast area presents interesting possibilities for integration and co-operation. In fact the interpretation, awareness and exhibition programs lend themselves to the sharing of expertise and to the combining of messages to project a consolidated departmental image. Marketing (where appropriate) of all the departments protected areas should be done concurrently in an integrated fashion. Expensive interpretive exhibits should be used in as many protected areas as possible and perhaps even outside of these where the potential for direct contact with Canadians is high. CPS expertise in interpretation and visitor services management should be made available to all components of the department which have "education" objectives.

FIELD OPERATIONS

These activities (reception, interpretation, information and communication) are intimately linked to "presentation" and also have considerable potential for integration. There is a vast range of possibilities for ways to disseminate information about the services provided by the two organizations through their respective networks. The CPS operates a number of district offices, parks and sites throughout the region, as well as a regional office. Each of these has its own pool of material and expertise and is capable of providing services that the CWS requires on reserves and sanctuaries in terms of supervision of activities, maintenance and recapitalization of minor works.

On the other hand, the CWS has established many productive relationships with NGO's for the provision of services and the management of activities. The CPS should learn from these experiences as it embarks on a similar strategy for increasing local involvement in the management of Parks

and Sites as part of its 2010 Vision of Protected Areas Management.

CONTRIBUTION OF OTHER SERVICES AND BRANCHES

Inter-service co-operation is desirable; certain areas of specialized expertise could be used as venues for exchanges and co-operation. The Atmospheric Environment Service (AES) could contribute its technology and expertise to meteorological and environmental monitoring of the reserves. It has already become involved in the CPS fire management program. The AES regional presence can also contribute to helping the Department project an integrated image of its activities.

The Environmental Protection Branch can co-operate in decontaminating contaminated sites, in identifying problems related to policies and action plans (e.g.: PAH, beluga whales, Saguenay Marine Park), and in environmental emergencies. Exchanges can also be effected with respect to the partnership agreements, relations with NGOs and the integration of certain types of environmental data.

The CPS in the Quebec Region has recently begun to manage the new Saguenay Marine Park. Managing marine ecosystems is very different from managing land ecosystems, and the co-operation of marine experts is essential. That being the case, the St. Lawrence Centre can become an important partner in acquiring knowledge about the status of marine ecosystems.

V. OPTIONS CONSIDERED

STATUS QUO

The Canadian Wildlife Service remains fully responsible for the management of wildlife reserves. However, it will delegate to CPS the responsibility for a number of activities in order to be able to manage them in such a way as to enhance CWS's role in making the public more aware of these activities and providing them with information.

The working group unanimously rejects this option because the results obtained in the analysis of activities show clearly that the CPS and the CWS would benefit considerably from co-operating. The exercise allowed the two Services to get to know one another better and to identify areas for possible exchanges, co-operation and even integration (e.g. cap Tourmente); this Service decompartmentalization exercise should lead to more inter-service agreements and to more exchanges of information, knowledge, experience and methods.

INSTITUTIONAL CO-OPERATION

A detailed analysis of activities made it possible for the working group to identify several interesting areas for potential co-operation. Some similar or complementary activities would benefit from forms of institutional co-operation that could eventually lead to joint projects. Similarly, a Service that has developed specific expertise could, when the need

arises, provide services under previously defined arrangements (e.g. cap Tourmente).

EXTENSIVE INTEGRATION

The analysis shows that extensive integration is desirable for presentation and the delivery service. The physical presence of the CPS in its district offices would enable it to provide services to the national wildlife areas with respect to access, interpretation, maintenance and refurbishment, in accordance with a geographical distribution that remains to be defined, and in compliance with approved management plans.

VI. RECOMMENDATION

We propose a form of integrated management of protected areas that does not alter the legal mandate, the existing accountabilities nor the fundamental roles of the Canadian Wildlife Service and the Canadian Parks Service.

Specifically, we propose that the responsibilities of the Services be shared as follows :

The Canadian Wildlife Service

The CWS remains responsible for all work related to :

- The management of migratory birds and other wildlife species of national interest;
- habitat restoration, rehabilitation of threatened and endangered species both within and outside wildlife areas;
- resource planning and management of wildlife and plant life resources in and out of wilflife areas;
- planning the network of wildlife areas;
- management of migratory birds, sanctuaries and staging areas;
- the establishment of standards and objectives for wildlife management programs in wildlife areas.

The Canadian Parks Service

CWS delegates all activities associated with the delivery of services to the public on and in national wildlife areas to the CPS including :

- The preparation of management plans;
- visitor services;
- interpretive and awareness raising activities;
- facility maintenance and recapitalization activities;

- day to day management of hunting and other exploration activity;
- day to day relations with third parties involved in wildlife area operations;
- leasehold management;
- planning of joint presentation and development activities so as to meet the fundamental mandate of the reserves.

This allows the CWS to remain in full control of its program and yet take full advantage of the expertise that the CPS has at its regional and district offices throughout the region. The two Services can draw mutual benefit from their respective efforts to understand and manage habitat, species, and ecosystems.

Implementation plans for these recommendations have yet to be developed but they will address all the human and financial resource implications that they raise as well as the many institutional, administrative and structural changes that they will require.

VII. CONCLUSION

If environmental imperatives are to be met, integrated management of parks, historic sites and wildlife reserves with respect to the provision of services to the public is both possible and desirable within the fundamental mandates and roles of the CWS and the CPS. Developing such forms of integrated management would enhance the delivery of services to the public as well as the development of wildlife reserves.

Thus protected areas could strengthen their contribution to sustainable development and to the maintenance of biodiversity. Their role as areas for research, awareness and education concerning the value of our heritage would be strengthened. This form of co-operation would make it possible for the Department to project a more consistent image with respect to the planning of a network of protected areas, and make it easier for the Department to deal with its provincial partners in integrating the development of a Quebec network of protected areas, which is an essential component in achieving our protection objectives.

REGIONAL INTEGRATION PILOT PROJECT

Integration of Operations
Atmospheric Issues

Environment Canada

Quebec Region

I. A MAJOR CONCERN

Everything in the environmental field is new. In only a few years, we have learned to perceive and understand the signals that our senses had been sending to us for decades, but which we had failed to clearly identify as stemming from environmental problems.

Now that collective perception is attuned to the infinite risks involved in human activities, particularly those related to industrialization, antibodies such as departments of the Environment, have been established throughout the world.

Beginning in the early 1970s, such departments, including Environment Canada, have gone from being service agencies to centres specialized in regulatory measures, research, and public awareness.

THE LATEST DIMENSION

The visible and literally down-to-earth aspect of pollution, including causes and effects, were the first priorities.

Through its tangible impact on living organisms, the invisible spectre of pollution then attracted the attention of scientists and the public. Although environmental issues, whose common denominator is the emission and presence of pollutants in the atmosphere, were not the first factors to be in the spotlight, they have nevertheless become the "stars" of today.

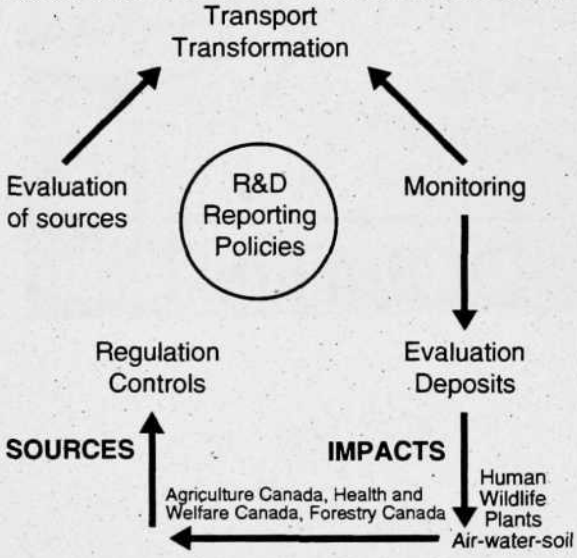
The atmosphere is both an essential source of air for humanity, and a unique natural filter that protects the planet from solar radiation.

Because quality of life and the environment depend directly on the condition of the atmosphere, and because its status depends principally on human activities, the worries expressed about atmospheric pollution have been growing apace with the damage it has been causing.

Motivational factors

- Increased public awareness of current atmospheric problems
- Effects of pollution on health of ecosystems
- Complexity of phenomena
- Variations in levels of scientific knowledge
- Greater effectiveness in searching for solutions
- Consistent approach to partners

Atmospheric life cycle (Simplified model)



Topics covered (See annex A)

- Airborne toxic substances
- NO_x-VOC management plan
- Climate changes
- Acid rain and aerosols
- High-level ozone and UVB
- R&D in atmospheric science
- Reporting
- Policies

OUR CURRENT REALITY

The approach that is advocated responds to six major factors: increasing public awareness of atmospheric problems, effects of pollution on the health of ecosystems, the complexity of phenomena, the lack of consistency in scientific data, the need for greater effectiveness in our search for solutions and the need to adopt a coherent approach in dealing with partners.

A HOLISTIC APPROACH

With a view to enhancing regional effectiveness and efficiency in dealing with current and future atmospheric issues, members of the working group have proposed a holistic approach.

Members believe that management of these issues should be based on the atmospheric life cycle of each of the pollutants in the atmosphere.

Thus the members of the group agree that: "*An integrated department in the region should approach all current or future atmospheric issues on the basis of the concept of atmospheric life cycle, including the following elements:*

- evaluation of sources
- transport and transformation
- monitoring
- repercussions
- regulation and control strategies,

while giving due regard in each of these elements to research and development, the on-going distribution and dissemination of information related to the issue, as well as concerted efforts to develop policies designed to solve the environmental problem."

This therefore involves airborne toxic substances, components of the smog management plan (NO_x-VOC), elements contained in acid rain and aerosols, products that can contribute to the destruction of high-level ozone, an increase in UVB radiation and climate changes.

II. A PARTIAL RESPONSE

The strengths and weaknesses of the response to atmospheric issues vary depending on the nature, background, political weight and role each person has to play in our regional Branches.

A POWERFUL FORCE

The major strength is clearly the drive that has resulted from the willingness to cooperate among members of all the

Services, and from the emergence, internally, of an interdisciplinary team, that involves different Services and performs different functions.

The team consists of experts from the Environmental Protection Directorate, the Canadian Wildlife Service, the Canadian Parks Service, the St. Lawrence Center and the Atmospheric Environment Service.

The public, as well as environmental groups and the media, have also shown a marked and sustained interest in atmospheric issues. They are highly visible.

It is a new area in which we have the opportunity to innovate in all kinds of different ways, whether by setting standards or creating appropriate structures.

We possess the expertise and the basic information needed to create both the form and the substance.

Current situation: Strengths

- team spirit
- multifunction interdisciplinary team
- expertise
- public interest
- very high visibility
- new niche
- key methods

AN ANEMIC CONTEXT

It is paradoxical to note that the weak points in our response to atmospheric issues result from the fact that the Department's human and financial resources are dispersed, thus making it difficult to take concerted action, at a time when public interest and the interest of environmental groups has reached a new peak.

This makes it very difficult to analyze the impact of government measures designed to reduce the presence of atmospheric pollutants, and equally difficult to monitor the environment as a whole.

In addition, the absence of the Government of Quebec from the CCME (Canadian Council of Ministers of the Environment) has had a significant impact on the regional capacity to respond satisfactorily to atmospheric issues. An integrated region would surely have responded more effectively to Quebec's absence.

Current situation: Weaknesses

- not much integration, lack of concerted action
- human and financial resources dispersed
- difficult to analyze impact of government measures to reduce presence of atmospheric pollutants
- difficult to monitor the status of the environment as a whole

IMPONDERABLES

The fact that resources are too few for each Service to be able to handle everything, clearly indicates the context in which the regional environmental issues team has to carry out its mandate.

At the regional level, for example, the actions taken under the NO_X-VOC management plan are too numerous for a single Service to be able to deal with all of them effectively.

National actions do have a direct impact on regional operations, but it is difficult for us to take part in them effectively.

Potential problems

- too many components to administer
- little participation at national level
- lack of national policy
- lack of control over the implementation of certain regional programs

In addition to the fact that there is no national program for certain issues, it is sometimes difficult to convince our partners that it is essential to measure pollutants to provide better guidelines for the control programs, as well as to evaluate and report on progress being made.

III. INTEGRATION OPTIONS - RECOMMENDATION

During its deliberations, the working group put forward three scenarios, each of which involved a different level of effort, resources and solutions to Quebec's atmospheric problems. Here is a description of the essentials of each scenario:

Scenario 1 - "Improved status quo"

This option consists of formalizing the existing and proposed agreements between the Services (Environmental Protection Directorate, St. Lawrence Center, Atmospheric Environment Service).

The advantages of the solid cooperation that has existed for the past few years between the EPD, SLC and the AES in several atmospheric areas (toxicity, NO_X-VOC management plan) would be maintained, and strengthened by the ecological expertise of the Canadian Wildlife Service and the Canadian Parks Service.

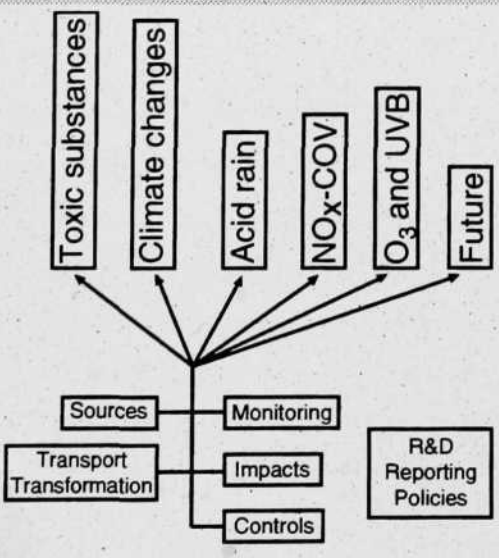
Advantages:

- Easy to implement; continues recent cooperative efforts;
- personnel working on atmospheric issues are comfortable with such arrangements.

Disadvantages:

- Does not have the clear commitment of the organisation; only a slight improvement in the profile of atmospheric issues;
- scenario depends on incumbents; it can therefore vary over time.

Scenario 2: Integration through diversity



Scenario 2 - "Integration through diversity"

An atmospheric issues coordinator would report to the Regional Management Table. Each atmospheric issue would be treated in accordance with the atmospheric life cycle approach.

For each existing and future issue, the elements of the life cycle would be integrated in order to obtain varied expertise and make the achievement of the best results possible. This scenario requires the active involvement of all Services working in the atmospheric field, and it presupposes the total accountability of the managers responsible.

The presence of the coordinator at the Regional Management Table would keep the Department's action in all atmospheric issues consistent, both in terms of scientific and technical methods used, and in the development of specific policies in the Quebec Region.

Advantages:

- Highly effective (cohesive);
- departmental consistency in all issues;
- strengthens accountability of managers in the Services;
- programs are less disjointed;
- experts become versatile because they sit on multi-disciplinary committees.

Disadvantages:

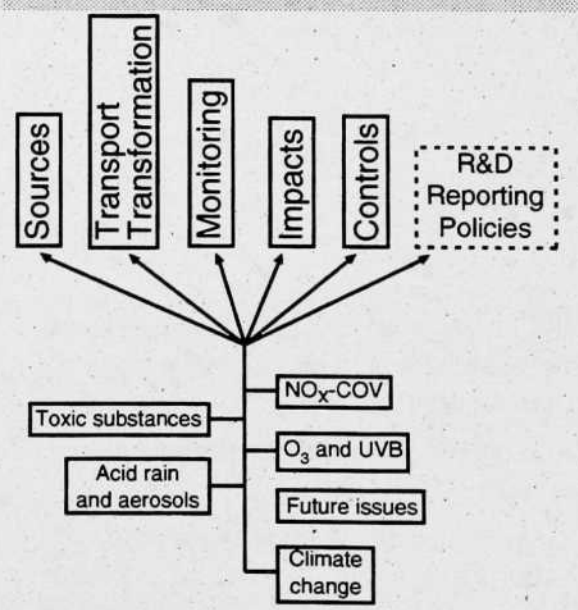
- How the life cycle is handled may vary from one issue to another;
- risk of delegation may prevent the various issues from being treated consistently;
- risk of creating tensions in interpersonal relations;
- priorities among the issues may vary over time; this would require a reorientation of effort and cause morale on the teams to decline.

Scenario 3 - "Integration through specialization"

A coordinator of atmospheric issues reports to the Regional Management Table. All of the issues are integrated in the atmospheric life cycle.

This approach, which is more effective in terms of results, requires that the coordinator be much more watchful, because it will be necessary to communicate with specialists who possess a great deal of expertise. The coordinator will therefore have to make sure that no one loses sight of the specific problems involved in a given atmospheric issue.

Scenario 3: Integration through specialization



Advantages:

- Extensive scientific and technical expertise;
- readily adaptable to deal with the priority issues of the moment;
- results-based approach.

Disadvantages:

- Because of the special expertise held by specialists, the various functions may experience problems in communicating;

- less versatility (less interaction with other disciplines);
- the coordinator will have to pay closer attention to ensuring that results are consistent with one another;
- greater pressure on personnel: expertise used to deal with several different matters.

Recommendation:

Adopt scenario 2, **integration through diversity**, which recommends that the atmospheric life cycle be integrated into each current and future issue.

Advantages:

- greater effectiveness
- departmental consistency
- strengthening of accountability
- increased versatility of specialists

Disadvantages:

- inconsistent application of life cycle principle (depending on issue)
- risk of tension in relations among individuals
- issue priorities may vary over time

Implementation strategy

- establishment of one working group per issue
- development of a 1994-1996 work plan
- submission of global strategy (early 1994)
- preparation of management contracts binding all issue managers

RECOMMENDATION:

The working group on atmospheric issues recommends the option described in scenario 2, i.e. integration through diversity. This scenario proposes that the atmospheric life cycle be used as the basis for our examination of each current and future issue.

The working group also believes that atmospheric issues present the best opportunity for concretely applying concepts inherent to "ecosystem management".

IV. INNOVATION

The "integration through diversity" option clearly falls under the heading of versatility. It suggests the establishment of five teams, one per unit, and the appointment of the Associate Regional Director General, Atmospheric Environment Service as regional coordinator responsible for reporting on all atmospheric issues to the Regional Management Table.

Each of the teams, which would be identified by the five major national priorities: airborne toxic substances, the NO_x-VOC management plan, acid rain and aerosols, high-level ozone and UVBs, and climate changes, would administer its own areas within the same framework.

For each pollutant, the point of origin, trajectory, chemical transformation, continuous observation and environmental impact would be taken into consideration.

This approach includes regulation, control strategy, research and development, as well as a steady stream of information; concerted analysis related to the development of appropriate policies would accompany the whole process.

V. IMPLEMENTATION OF THE INTEGRATION PROCESS

The working group recommends three major implementation phases for its integration proposal:

1) Establishment of one working group per issue; each group would develop an integrated working plan for the 1994-1996 period by the fall of 1993, including expected results, deadlines and resources required.

2) Submission to the Regional Management Table (early 1994) of a comprehensive and consistent regional strategy for all issues, in order to identify respective priorities and resources.

3) Preparation of management contracts between the issues coordinator, managers and experts for each of the life cycle elements; these contracts would clearly specify to each individual involved what results are expected, as well as the deadlines and the resources needed to achieve the desired results.

VI. FUTURE DECISIONS

By adopting this approach, there should be a gradual trend towards the creation of action groups for each issue, and the joint establishment of an integrated work plan.

For a period of several weeks and perhaps even several months, then, all personnel in the region involved in these issues will be given the opportunity to state their points of view and agree to an effective management concept for atmospheric issues, which, as far as we can see, fits in well with the conclusions drawn by the ecosystem management working group.

It must be realized, however, that such an approach will have significant consequences on human resource management, allocating priorities and budgets related to the issues, on linkages with the Regional Management Table, and on the accountability of specialists working for the action groups.

Integration of Operations
Atmospheric Issues
ANNEX A: Topics Covered: Present Situation

AIRBORNE TOXIC SUBSTANCES

	AES	EPD	SLC
Products to be delivered	• List of sources of toxic substances • Research and education	• CEPA support • Support from Pesticides Act • Green Plan strategic options (e.g. aluminum plants) • Education	• Evaluation of sources • CEPA support
Structures used	• Permanent or mobile measurement stations	• National research - evaluation of toxicity • Monitoring and inventories • Socioeconomic studies • Publications and presentations	• Monitoring • Research to estimate St. Lawrence balance
Resources required (variable)	• 1.2 PY 65K (AES-SLC) (1992-1993)	• 2.0 PY 150K (1992-1993)	• 1.4 PY 75K (AES-SLC) (1992-1993)
Accountability	• Science	• National evaluation of PAH • Control sources	• Science
Partnership relations	• Effective cooperation with EPD & SLC	• Primarely with AES and MENVIQ	• Cooperation with EPD & SLC
National relations	• Good relations with AES (Downsview) and EPD (Ottawa) concerning expertise and financial resources	• Very good support from River Road	• NWRI (Inland Waters - Burlington)

NO_x/VOC MANAGEMENT PLAN

	AES	EPD	SLC
Products to be delivered	• Management plan (science and controls) • Smog warnings	• Federal-provincial agreement • Implementation of NO_x-VOC management plan	NIL
Structures used	• National committees • Research projects • National, provincial and municipal networks	• Multipartite committee • Research projects •Measurement networks •Development of methods to control NO_x-VOC	NIL
Resources required	• 1.5 PY, 35K (1992-1993)	• 0.5 PY, 60K (1992-1993)	NIL
Accountability	• Science • Ozone warnings	• Federal-provincial agreement - improvement of knowledge on sources and controls	NIL
Partnership relations	• Effective cooperation with EPD	• MENVIQ • NGOs • Industry • AES	NIL
National relations	• Good relations with AES (Downsview) and EPD (Ottawa) with respect to expertise and financial resources	• . Excellent relations with NO_x-VOC office and River Road	NIL

CLIMATE CHANGE

	AES	EPD	SLC/CWS/CPS
Products to be delivered	• Identification of Quebec trends • Socioeconomic impacts study	• National Action Strategy • Negotiations with province concerning greenhouse effect gases • Monitor control of sources	• Minimal; particularly tied to impacts, biodiversity conservation and ecological integration
Structures used	• Climatology network • Scientific reports	• Scientific reports	• Loose
Resources required	• 0.2 PY (1992-1993)	• NIL (1992-1993)	• NIL (1992-1993)
Accountability	• Climatology surveillance	• National Action Strategy	• Reporting • Convention on biodiversity
Partnership relations	• Associations, provinces, industries, universities	• primarily MENVIQ	• For the moment, relatively weak
National relations	• Good relations with AES (Downsview)	• Headquarters - link with National Action Strategy	• Headquarters

ACID RAIN AND AEROSOLS

	AES	EPD	SLC
Products to be delivered	• Knowledge of current status • Canadian reduction program • pH bulletin	• Federal/ provincial agreement • Measurement of $SO2/NO_x/SO4$ in cities • Impact measurement • Monitor source controls	• Monitor situation after action taken under CAN-US agreement
Structures used	• CATMON network • Scientific reports	• NAPS network • National report on the evaluation of federal/ provincial agreements • Federal/ provincial committee	• Provincial networks • Lake monitoring
Resources required	• 1.5 PY, 150K (1992-1993)	• 0.1 PY, 11K (1992-1993)	• 3 PY, 220K (1992-1993)
Accountability	• Meteorological monitoring	• Administration and negotiation of agreements	• Reporting • Control monitoring
Partnership relations	NIL	• MENVIQ	• MENVIQ
National relations	• Good relations with AES (Downsview)	• Headquarters - Persons responsible for federal-provincial agreements and sources	• EPD - Ottawa

HIGH-LEVEL OZONE AND UVB

	AES	EPD	SLC
Products to be delivered	• Ozone information • UVB information	• ODS control under CEPA • Information about ODS substitutes	• Monitor evaluation of substances harmful to ozone layer
Structures used	• Canadian Detection Network • Regional Network (UVB) • Media	• Inspection under CEPA • Service to customers/callers	• CAN-QUE SLAP harmonization committee
Resources required	• 0.25 PY, (1992-1993)	• 1.0 PY, 15K (1992-1993)	• 0.2 PY, 20K (1992-1993)
Accountability	• Monitoring and reporting	• CFC controls	• Science
Partnership relations	• Effective cooperation with EPD	• AES and MENVIQ	• MENVIQ
National relations	• Good relations with AES (Downsview)	• Very good relations with Commercial Chemicals Branch (Ottawa)	• EPD - Industrial Programs Branch (Ottawa)

REGIONAL INTEGRATION PILOT PROJECT

Integration of Operations Environmental Monitoring

Environment Canada

Quebec Region

I. ENVIRONMENTAL PRIORITIES AND THE INTEGRATION OF MONITORING

"We live in a complex and integrated environment. All creatures, including humans, interact with and depend on each other. In the past, responses to environmental problems paid very little attention to these important inter-relationships. Today, the increasing number and complexity of environmental issues demand that we adopt a more integrated approach."[1]

THE MONITORING CHALLENGE: CHANGES IN ENVIRONMENTAL ISSUES AND SUSTAINABLE DEVELOPMENT

The 1990s can be characterized as a time of change in our overall view of ecological resources. Managing these resources and protecting the environment, although still priorities, must now be approached within a conceptual framework of sustainable development. The changes in attitude are largely a direct result of the growing awareness that our ecological resources are truly limited, and clearly threatened.

At the same time, a heightened awareness of the interrelation and growing complexity of environmental questions has become essential. A new systemic approach is called for.

If we are to deal with such issues as biodiversity conservation, climate change and destruction of the ozone layer, and if we are to focus on sustainable development and the decisions this focus entails, then it is essential to co-ordinate monitoring activities.

The new approach inevitably requires a reassessment of current approaches to environmental monitoring.

Ideally, integrating the Department's monitoring activities will contribute to establishing the causes and determining the ecological impact of environmental change.

The challenges of monitoring integration:

- Consider the correlation of environmental matters: systemic approach
- Support the public in reaching sound environment-related decisions
- Through co-ordination, improve the effectiveness and efficiency of activities in a context of rationalization
- Contribute to regional and national priorities

[1] Canada's Green Plan, 1990, p. 18.

Definitions

Monitoring (or **environmental surveillance**) is a process that entails carrying out repeated measurement or observation of environmental parameters on the basis of comparable standards and in accordance with a pre-established plan specifying site and time.

Monitoring activities serve a number of purposes, more specifically:

- Developing and validating models;
- Establishing trends;
- Improving knowledge to be used in developing policies;
- Supporting operational decision-making;
- Detecting new environmental problems; and
- Establishing and maintaining resource inventories.

In situ fixed collector:

A measuring instrument permanently installed in the area where measurements are taken, as distinguished from a remote sensing device (e.g. radar, satellite) and from sampling procedures in which no permanently installed instrument is used (e.g. water sampling station).

THE NEEDS OF CANADIANS

Environment Canada is mandated to provide decision-makers and the general public with the environmental information they need to make decisions that are compatible with the principles of sustainable development.

Canadians are very much aware of the quality of their environment. Monitoring can contribute to better informing the public and empowering citizens to make sound decisions.

WORKING TOGETHER IN TIMES OF RATIONALIZATION

The effectiveness of monitoring is being upgraded in the general context of rationalization. In such a context, and in accordance with the principles of sustainable development, it is imperative to conduct a joint integration exercise to optimize the Department's monitoring operations.

Regional integration aims to contribute effectively and efficiently to regional and national monitoring objectives, while continuing to deliver quality service to our clients. It is here that the impact of co-ordination can be truly significant: working as a team, we can accomplish more with less. The goal is to reduce overlap and duplication, while at the same time strengthening inter-service co-ordination and co-operation with partners.

The preceding paragraphs demonstrate that changes in monitoring activities must keep pace with changing environmental issues. The regional integration process will improve our ability to work as a team and enhance the corporate culture by stressing the values, mission and management principles underlying Environment Canada's vision.

II. ANALYSIS OF CURRENT SITUATION

CONTEXT

Studies done in the mid-eighties indicated that Environment Canada's monitoring activities were very costly, and suggested taking a closer look at their administration and organization. Close to 22 per cent of Environment Canada's total budget is allocated to monitoring, with virtually all the funding going to sector-specific programs. More exhaustive monitoring and research activities are conducted at only a few sites. Combining the results of the exhaustive work with the results of sector-specific activities will give us a clearer picture of ecosystems and ecosystem trends and enhance our understanding of environmental change.

The Department's senior management, reacting to the monitoring cost situation, made the following proposal:

Greater stress should be placed on integrating resource management and taking a multidisciplinary approach to scientific

activity and data interpretation; also ecosystem monitoring should be more exhaustive.

Pursuant to this proposal, Environment Canada has conducted an in-depth study of its monitoring activities. Integrated monitoring was designated a Transition project, with the twofold objective of improving effectiveness and efficiency, and evaluating and enhancing an ecosystem-based approach.

FROM DEPARTMENTAL PLAN TO INTEGRATION PILOT PROJECT

In September of 1991, pursuant to the conclusions reached in the discussions on optimizing monitoring, the Department's senior management asked the Associate Deputy Ministers to submit an exhaustive action plan for a national integration program, including plans for individual regions.

In December 1992, the Quebec Region published a draft departmental plan on monitoring, entitled **"Environmental Monitoring: a reflection on rationalization and integration in the region"**. The plan includes an analysis of the monitoring networks used by Environment Canada in Quebec and identifies the monitoring priorities.

One of the most important results of the draft plan was that it brought together all the individuals involved in monitoring in Quebec and gave them the opportunity to share their knowledge and express their concerns in an effort to reach regional consensus on priorities for action in the coming years.

Several weeks later, when the Regional Integration Pilot Project was announced, the working group on monitoring was mandated to develop an integration implementation plan.

INTERGOVERNMENTAL CO-OPERATION

The ministère de l'Environnement du Québec (MENVIQ) which, like Environment Canada, has been exploring possibilities for integrating and rationalizing its monitoring activities, formally requested Environment Canada's co-operation in the joint planning of changes to the Quebec networks. The Quebec government, in relatively close co-operation with Environment Canada, carries out a number of important monitoring activities (e.g. hydrometry network, climatology network, air and water quality networks).

The Deputy Minister of MENVIQ expressed an interest in reviewing current agreements with Environment Canada to bring them up-to-date. The two agencies intend to develop a master agreement for managing the monitoring networks (see Section III).

Background

Observation: The Department's monitoring activities are costly

↓

Senior management proposal:

- Integrated resource management and a multidisciplinary approach
- More comprehensive ecosystem monitoring

↓

Project - Transition

↓

National action plan for integration of monitoring (including the departmental plan for the Quebec Region)

Regional Integration Pilot Project: integrate monitoring

- The Quebec government is also studying monitoring
- **The two agencies (Environment Canada, MENVIQ) have agreed to co-ordinate their monitoring activities more closely**
- A master agreement to be developed on monitoring will be complemented by sector-specific agreements
- We are planning a true partnership in Quebec with regard to environmental knowledge

Members of the working group on monitoring have already held discussions with MENVIQ; even closer co-operation can be expected in the near future.

REGIONAL MONITORING PRIORITIES

Regional priorities (monitoring)

- Toxic substances
- Safety of Canadians
- Protection of Biodiversity
- Understanding Ecosystems

Four major departmental monitoring priorities for the Quebec Region emerged from the discussions on implementing the departmental plan: toxic substances, the safety of Canadians, the protection of biodiversity and understanding ecosystems.

Regional integration of monitoring was examined with a view to contributing to the achievement of the regional priorities. The priorities related to the protection of biodiversity and understanding ecosystems have been covered by other working groups. The results will provide a clearer picture of the role to be played by monitoring.

Toxic Substances

People and ecosystems need to be protected from the harmful effects of a steadily growing array of toxic substances. There is a vital need for more knowledge about the presence, transportation, and transformation processes and real impact of these substances on humans and the environment.

An inter-service working group has already been set up to develop a co-ordinated regional approach to the problem of toxic substances, with due regard to the complete life cycle of these substances in the environment.

The Safety of Canadians

Canadians must be safeguarded against natural and human-induced dangerous environmental conditions. It is the mission of Environment Canada to warn the public of environmental conditions that can affect health and safety.

The Department currently plays this role in a number of areas, for example the system for producing and broadcasting weather warnings, and shellfish water quality protection.

In the field of meteorology, a significant proportion of the Department's monitoring activities are essential to the provision of adequate response during environmental emergencies and enhanced understanding of global scientific issues such as climate change, thinning of the ozone layer and long range transport of air pollutants.

Protecting Biodiversity

The Department hopes to contribute to an global biodiversity protection strategy aimed at fostering the development of animal and plant species. The approach to be taken targets

the understanding, protection, development and monitoring of ecosystems, species and genes. When the working group's recommendations on the protection of biodiversity have been submitted, we will have a clearer idea of the monitoring priorities for the Quebec Region.

Understanding Ecosystems

The Department, with the goal of improving environmental decision-making, plans to acquire a better understanding of the working of ecosystems with special emphasis on the St. Lawrence, the boreal forest and, at a later date, the Montreal urban area. Sources of environmental stress are to be identified and the ability of these areas to withstand various types of use assessed.

A number of monitoring sites could be used for this purpose. When the recommendations of the working group on the ecosystem-based approach are available, some of the monitoring priorities for the Quebec Region can be defined.

In the following sections, the working group describes its analysis of the potential for the integration of monitoring, taking into account the needs of the population, established regional priorities and national objectives.

III. GENERAL RECOMMENDATIONS

The working group has identified the improvements in effectiveness and efficiency that will result from greater inter-service co-ordination.

It seems obvious that the benefits to be derived from integration of monitoring at the regional level will stem mainly from increased co-operation and co-ordination among the operators of the various networks, including Department networks and those operated by external partners. As additional benefits, results not directly related to sector-specific rationalization will also improve (e.g. increased volume of data on Northern Quebec, creation of air quality networks, etc.).

The working group recommends that co-ordination be formalized by the creation of a standing committee on monitoring for Environment Canada, Quebec Region. The committee is to be chaired by the Associate Regional Director General, Atmospheric Environment Service, who will report to the Department's Regional Management Table.

Each Service is to be represented at the committee by a manager familiar with the monitoring needs and activities of his or her organization and empowered to make monitoring-related decisions.The committee's mandate will specifically include:

- Identifying and analysing monitoring activities of interest to the Department in the Quebec Region;

Recommendation - Environment Canada:

- Create a standing committee on monitoring for Environment Canada, Quebec Region
- Chairperson: Associate Regional Director General, Atmospheric Environment Service

Mandate:

- Identify and analyze the activities of interest to the Quebec Region
- Assist regional managers (planning)
- Evaluate the efficiency and effectiveness of activities in relation to the results targeted by the Department
- Support the chairperson as Departmental representative
- Develop an annual plan
- Submit recommendations to the Regional Management Table

- assisting regional managers in planning their monitoring activities;
- evaluating the efficiency and effectiveness of these activities in achieving results for Environment Canada in Quebec;
- supporting the chairperson as the Department's regional representative for monitoring;
- producing an annual plan as part of the regional planning process; and
- making recommendations to the Regional Management Table to ensure that monitoring-related activities play an optimum role in achieving targeted regional results.

PARTNERS

Recommendation - Partners

- In Quebec, the integration of monitoring activities produces truly significant results only when provincial activities, more specifically the activities of the MENVIQ, are taken into account.
- Working group proposal: Consider the creation of a Round Table to bring together, in addition to members of Environment Canada, representatives of MENVIQ and other organizations actively involved in monitoring in Quebec.

Analysis of the departmental plan for monitoring in the Region, and of the integration exercise itself, indicate that, in Quebec, integration of monitoring activities will not produce significant results unless provincial activities, more specifically the activities of the ministère de l'Environnement du Québec (MENVIQ), are taken into account. On this point, we would like to stress the importance of the offer made by the Deputy Minister of MENVIQ concerning the establishment of a real partnership for those programs linked to an understanding of the environment in Quebec.

A Round Table could be established to bring together, in addition to members from Environment Canada, representatives of MENVIQ and of other organizations actively engaged in monitoring in Quebec. This "Quebec table" would be mandated to integrate and co-ordinate monitoring activities throughout Quebec.

In the coming year, a master agreement on monitoring networks is to be developed jointly with MENVIQ; this will be followed by revised and improved sectoral agreements. The project will facilitate co-operation with MENVIQ and contribute to keeping those results most significant for Quebec. The other major organizations concerned (e.g. ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec, ministère des Forêts du Québec, Hydro-Quebec, ALCAN, Montreal Urbain Community) will be invited to join the discussions on monitoring in Quebec.

NETWORKS AND STEPS OF MONITORING

With respect to monitoring-related operations, the working group looked into the possibility of integrating monitoring network operations and monitoring steps. Section IV sets out and analyzes the specific recommendations made in these two subject areas.

The working group wishes to stress that its analysis does not cover improvements related to sector rationalization, an aspect dealt with in the departmental plan for monitoring in the Region. Nonetheless, concurrent with the regional integration process, the concerned units within the Department are currently engaged in co-ordinated, more or less sweeping, sector-specific rationalizations of the various monitoring networks.

IV. NETWORKS AND STEPS OF MONITORING - SPECIFIC RECOMMENDATIONS

INTEGRATION OF ACTIVITIES RELATED TO MONITORING NETWORKS

For the purpose of evaluating areas where integration could be beneficial to the Department, the monitoring networks used by Environment Canada have been divided into three groups. The first group covers the networks that use in situ fixed collectors (e.g. hydrometry stations, weather stations); the second covers sampling networks with no in situ fixed collectors; and the third covers all other networks.

Type A) In Situ Fixed Collector Networks

Meteorology / Climatology

- Aerology
- Surface
- Climatology

Air Quality

- NAPS - National Air Pollution Surveillance Network
- Airborne toxic substances
- NOx/COV/O_3 (smog)
- CAPMON - Canadian Air and Precipitation Monitoring Network

Hydrometry (surface water)

- Hydrometry

Type B) Sampling Networks - Laboratory Analysis

Water Quality

- LRTAP - Long Range Transport of Air Pollutants
- St. Lawrence River network
- SWQP- Shellfish Water Quality Protection

Note: The following water quality networks are not covered in this study as they are currently inactive and under review: **Transboundary**, **New Quebec** and **Pesticides**.

Type C) Other Networks

- Weather Radar
- Avifauna
- NRMP - Natural Resource Management Program
- Weather Watch - analysis and broadcasting

Note: The following networks are not operated by the Department. As their sole purpose is to support the application of specific regulations in force, they are not covered in this study:

Emissions - water

- Mining and metallurgy effluents
- Refineries
- Pulp and paper
- Saltwater immersion

Emissions - air

- Asbestos
- Lead foundries

Type A) In Situ Fixed Collector Stations

Meteorology - Surface

There is a potential for integration in the field at all sites where the Department operates an in situ fixed collector station. Such factors as geographic location, suitability for collector installation and proximity of other stations must be taken into account.

Apart from the networks operated by or for the Atmospheric Environment Service (AES), only two networks are currently suitable for integration with the surface networks: NAPS and hydrometry.

Integration with the hydrometry stations is of particular interest because of the access to Northern Quebec, an area for which weather and climate data are all too scarce, that would result. A working group recently identified all stations in the hydrometry network of meteorological or climatological interest. Negotiations with the ministère de l'Environnement du Québec are being conducted with a view to developing this potential, and a formal working group has been established for the same purpose.

Integration with the NAPS network shows little promise. Most of the network's stations are located in urban areas near AES stations.

Climatology

The situation is similar to that for the weather stations: there is a possibility of field integration wherever the Department operates an in situ fixed collector station.

In light of the geographic density sought for the climatology network, integration with the NAPS stations shows promise. Within the framework of ongoing discussions between the Environmental Protection

Branch (EP) and MENVIQ, a working group is to look into the climatological potential of these stations.

The hydrometry stations selected for collection of meteorological data also produce climatological data. Some hydrometry stations could collect climatological data only.

Hydrometry (Surface water)

This network is divided into three sub-networks: the tidal monitoring stations operated by the St. Lawrence Centre for Fisheries and Oceans Canada (DFO), the hydrometry stations operated by the St. Lawrence Centre and the hydrometry (with or without climatology) stations operated by MENVIQ (federal and federal/provincial stations) in the context of the Federal-Provincial Agreement on Hydrometry Networks.

Because DFO has expressed a wish to take over tidal monitoring station operations, the latter are not included in the analysis.

As explained above, a working group has determined wich hydrometry stations may be used for climatological or meteorological monitoring. Analysis will now focus on sharing responsibility for such matters as station maintenance and data communication and storage.

Airborne Toxic Substances

Since 1991, the EP, the St. Lawrence Centre and the Atmospheric Environment Service have pooled their efforts and resources to jointly operate an airborne toxic substance station near the Villeroy weather radar station. The EP has also operated a number of polycyclic aromatic hydrocarbon (PAH) measurement stations since 1989. The joint operation referred to above is a good example of the life-cycle approach, often called for by the nature of the issue. Departmental integration of the Villeroy station is a fait accompli.

The goal of the fledgling network could be said to be research rather than monitoring. Few stations are to be established for measuring long-term trends. The focus is to be on stations that will produce data to be used in evaluating the impact of toxic substances, developing and implementing prevention and control strategies and evaluating the impact of the measures taken.

NOx/COV/O_3 (Smog)

The network was formed in 1989 when the EP added two VOC detectors to the NAPS stations within the boundaries of the Montreal Urban Community (MUC), which already monitored NOx and O_3. Two other stations within the MUC and the Villeroy station were added in 1992.

Over the past year, the EP and the AES have been working jointly to ensure that the Windsor-Quebec City corridor, an area sensitive to ground-level ozone is equiped with adequate monitoring facilities. The aim is to determine the incidence of ozone precursors in order to ensure adequate planning of pollution control and reduction programs.

Two activities specified in the Green Plan and the NOx/VOC Management Plan - validation of atmospheric models and preparation of air quality advisories - require that air quality data be available in real time. The AES (with the co-operation of the EP) is currently negotiating with MENVIQ for access in real time to NAPS network data as well as data produced by other monitoring stations operated by MENVIQ

(REMPAFAQ network). The data from the NAPS stations located within the MUC are currently available in real time.

National Air Pollution Surveillance Network (NAPS)

This network is wholly operated by MENVIQ with the participation of the EP (Region and Headquarters branches), which provides the technical expertise and most of the measuring instruments. Although there is no formal agreement, it appears that the network has always operated satisfactorily.

The EP and MENVIQ have undertaken a joint review of the NAPS network and their recommendations are to be implemented this year. A number of changes are planned: the goal is to reflect new atmospheric issues and reduce the number of stations operated solely to establish historical trends.

Meteorology - Aerology

The Atmospheric Environment Service operates this type of station independently and is the Department's only direct client. The data produced by the network are essential to high priority regional and international atmospheric issues. In light of the network's operational restrictions and the geographic distribution of the stations, no potential for integration has been identified.

Canadian Air and Precipitation Monitoring Network (CAPMON)

The Canadian Air and Precipitation Monitoring Network is a national network that operates four stations in Quebec, one of which (Montmorency Forest) is closely linked to the Long Range Transport of Air Pollutants Network (LRTAP). Because sampling is frequent and distances are considerable, the network cannot be more closely integrated with LRTAP.

Because the Montmorency Forest CAPMON/LRTAP site may be designated an "Ecowatch" monitoring site, its potential contribution to our approach to biodiversity conservation and ecosystem management must be evaluated.

Type B) Sampling Networks - Laboratory Analysis

The working group identified no significant direct benefit related to integrating the operation or management of these networks.

The networks have no permanent fixed equipment. Rather, they consist of a series of sites where water samples are taken for subsequent laboratory analysis. These are:

- St. Lawrence River network: the St. Lawrence River
- SWQP network- Shellfish Water Quality Protection: the estuary
- LRTAP network - Long Range Transport of Air Pollutants: the lakes in the Canadian Shield north of the St. Lawrence

These networks cover different territories and meet specific needs. No field duplication has been identified and chemical analysis is conducted in Department laboratories.

Type C) Other Networks

Natural Resource Management Program (NRMP)

The Natural Resource Management Program (NRMP), which covers the national parks, historic sites and canals within Quebec, is a process that inventories and analyses data on ecosystems and their components. The process documents conservation problems, enunciates ecosystem management objectives and defines measures that must be taken to maintain the ecological integrity of the parks.

The Canadian Parks Service has made a number of joint agreements with other Services; other avenues for co-operative action are currently under study (e.g. avifauna, ecosystem studies, climate, etc.). The national parks in Quebec offer ideal sites for a variety of monitoring activities. The working group recommends Mauricie Park as a site of particular interest. The park, which has been designated a potential "Ecowatch" site, is currently the subject of a regional proposal for an integrated research project on its ecosystems.

For some time we have been working jointly with provincial and private authorities toward further regional integration of natural resource management. Since two of the Region's monitoring priorities are the protection of biodiversity and understanding ecosystems, the potential of this park should be examined in depth.

Weather Watch

For the purposes of this paper, Weather Watch covers Atmospheric Environment Service (AES) monitoring activities other than data collection and transmission. It includes the analysis and interpretation activities carried out by the Quebec Weather Centre (QWC) and the information reporting activities carried out by the eleven weather offices in Quebec.

Statistics show that the eleven AES weather offices provide excellent access to the Quebec market. Many Departmental programs would probably benefit from more extensive use of this powerful reporting tool, which has already been successfully used in the Environmental Citizenship Initiative.

The working group sees no significant potential for integrating the QWC's activities.

Weather Radar Network

No opportunity for integration has been identified. Within the Department, only the AES operates weather radar.

Avifauna

This network essentially monitors four species of game birds in Quebec, as part of Canada's contribution to the North American Waterfowl Management Program. The Canadian Wildlife Service and its American counterpart are planning a joint study of potential cost-reduction avenues. No similar activity can be integrated with this type of monitoring in Quebec. Changing current Avifauna programs and broadening their mandate in selected national parks would involve technical problems and raise costs.

INTEGRATING THE STEPS INVOLVED IN MONITORING ACTIVITIES

The monitoring process is not limited to station operation. The analysis of the possibilities for integration also covers the following aspects:

- network planning and co-ordination;
- in situ collection, processing, storage and management of data;
- laboratory analysis of samples;
- analysis and interpretation of data;
- reporting data and results;
- managing monitoring agreements.

Network Planning and Co-ordination

The current objectives of network planning are sector-specific and the actual planning is done by the individual Services. Integration of monitoring should produce two major results: alignment of monitoring activities with regional priorities; and more efficient use of the resources allocated to monitoring.

The expected results could be achieved without substantial change to existing structures if more formal co-ordination were introduced. For example, a manager planning a new sampling project or a new monitoring station would first discuss the matter with the Departmental Round Table on Monitoring, thus avoiding duplication and optimizing performance.

One of the main obstacles to the integration of monitoring activities is unfamiliarity with the monitoring activities currently being conducted in Quebec. The Department must make this information available in a practical form.

In Situ Collection, Processing, Storage and Management of Station Data

It is in this area that integration of the monitoring conducted by the Department promises the most interesting results; some concrete action has already been taken (e.g. airborne toxic substances, hydrometry/climatology merger).

All the stations in a network should diversify and meet more than one need wherever appropriate and feasible (technically and scientifically). In addition, the Department should target optimum performance from working jointly with its partners. Managers who negotiate with the ministère de l'Environnement du Québec (MENVIQ) and other partners must be aware of the Department's real or potential contributions: this information must be made available.

The Department already has a vast modern communication network that covers all of Quebec. The marginal cost of using this network for additional data is low, especially for data transmitted by fixed satellite. This measure should be seriously considered by all those who transmit environmental data in Quebec. This will be discussed with MENVIQ in the near future.

Two extremely important aspects of monitoring are quality control of data collected and final validation of data before publication. The effectiveness and efficiency of these essential activities must be optimized.

Reporting Data and Results

The Department's many methods of reporting the information it produces have been studied by other working groups.

However, the potential of the eleven Weather offices is not widely known, and therefore under-used. These offices are well equipped (e.g. Weatherradio, Weathercopy) and the personnel have excellent contacts with the media, decision makers, and the general public. For example, the offices could be used to announce the opening and closing of mussel and clam harvesting areas, water levels at high tide, or water quality indicators for beaches along the St. Lawrence.

The national parks in Quebec (more specifically their interpretation centres and programs) also offer excellent opportunities for informing the public and raising general awareness of global and national environmental issues and the most significant results produced by the monitoring networks.

Managing Agreements

A number of formal agreements with the ministère de l'Environnement du Québec are currently in force, including agreements on the hydrometry, climatology and water quality networks. Although there is no formal agreement covering the joint NAPS network, it appears that co-operation over the years has been quite satisfactory.

The contributions of some of the major private sector partners (e.g. Hydro-Quebec, ALCAN) are not subject to formal agreements.

Creation of the Round Table should improve co-ordination within the Department and allow for a more consistent approach to our partners.

Laboratory Analysis of Samples

In this area, integration would have no significant direct benefit. Chemical analysis of water, sediments and biota is carried out mainly at the St. Lawrence Centre laboratories and, on a smaller scale, in Burlington. The more complex analyses (e.g. toxic substances) are done either in Burlington or at the River Road Laboratory. The program concerned with the tissue of animals other than those referred to above is co-ordinated nationally by the Canadian Wildlife Service.

Analysis and Interpretation of Data

No significant integration measure has been identified for analysis and interpretation. The Air Quality Advisory Program's operating methods are not yet finalized. Some air quality monitoring avenues may be worth exploring with Environmental Protection.

IMPLEMENTATION: PROGRAM FOR THE COMING MONTHS

In the next few months, implementation of the integration process, with due regard for regional monitoring priorities, will get under way. The concrete actions to be taken include:

- Develop a master agreement on monitoring in Quebec, with the ministère de l'Environnement du Québec (MENVIQ); start work on new sectoral agreements pursuant to the master agreement;

- Negotiate with MENVIQ:
  - the 1993-1994 version of the agreement on the hydrometry network, covering substantial reduction in the number of stations; if possible, discuss automation and communication systems;
  - obtain real-time air quality (smog) data;
  - obtain data from the Acid Rain Monitoring Network for the upcoming Canada-United States report;
  - 1993-1994 version of the agreement on the climate reference network including the introduction of new ways of automating the network, transmitting and validating data;
- Integrate monitoring of water quality and water volume quantity;
- Integrate weather monitoring and climate monitoring into the hydrometry and air quality networks;
- Take part in optimizing the NAPS network;
- Take part in optimizing the Acid Rain Monitoring Network in Quebec;
- Pursue implementation of the network that identifies and defines airborne toxic substances;
- Draw up a five-year plan for changes to the atmospheric networks; and
- Take part in setting up ecological monitoring projects (i.e. Ecowatch) in Quebec.

V. CONCLUSION

The integration of monitoring in Quebec is well under way, largely as the result of this project, which has brought various Services together and given individuals the opportunity to get to know one another.

The discussions held to date are only the beginning. If the proposals are to be implemented, a permanent co-ordination mechanism is essential.

Two factors - the changes to the Department in Quebec (Regional Integration Pilot Project) and the proposal by the ministère de l'Environnement du Québec on strengthening co-operation - bode well for continuing good monitoring results in Quebec, in spite of the difficult times in which we live.

REGIONAL INTEGRATION PILOT PROJECT

Integration of Operations
Law Enforcement

Environment Canada

Quebec Region

I. LAW ENFORCEMENT IN AN INTEGRATED MANAGEMENT CONTEXT

"Legislation and regulation are only as good as their enforcement. Canadians must be assured that polluters, poachers and other offenders will be prosecuted. Firm, fair and consistent enforcement also ensures that good environmental citizens are not penalized by the environmentally abusive acts of others."[1]

By enforcing laws firmly, equitably and consistently, the government will make sure that responsible environmental citizens are not penalized by the environmentally abusive acts of others

At the consultations held as Canada's Green Plan was being formulated, citizens expressed their desire to see their environment and resources protected for their benefit and for the benefit of future generations. This protection of our natural and cultural heritage is, moreover, included in our department's mission. A variety of alternatives are available to comply with the desire expressed by the people. Enforcement, which is the responsibility of the Department of the Environment, is one such alternative.

In addition to this coercive approach to protecting the environment, public awareness and education are also important.

Although environmental protection goes beyond enforcement, the integration of Services that has been recommended affects this coercive facet of mandates and activities: inspections, investigations, warnings, arraignments, and prosecution.

In his 1990 report, the Auditor General lamented the sluggishness with which our department enforced the Canadian Environmental Protection Act. By integrating the activities performed by its Services, the Quebec Region aspires to manage more effectively and efficiently personnel assigned to enforcement; this will facilitate the improved enforcement of those laws for which Environment Canada is responsible.

[1] Canada's Green Plan, 1990, p. 156.

ENVIRONMENT CANADA'S ENFORCEMENT OF ENVIRONMENTAL LAWS

Environmental Protection Directorate

- Canadian Environmental Protection Act (CEPA)
- Fisheries Act
- Transportation of Dangerous Goods Act
- Department of the Environment Act

Canadian Wildlife Service

- Migratory Birds Convention Act (MBCA)
- Canadian Wildlife Act
- The Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act
- Export and Import Permits Act

Canadian Parks Service

- National Parks Act
- Heritage Canals Regulations (Department of Transport Act)

II. CURRENT SITUATION

Owing to its mandate, the Atmospheric Environment Service is not responsible for law enforcement on the same basis as is Conservation and Protection or the Canadian Parks Service (CPS). Integration in this area, therefore, only affects the other two Services. Moreover, within Conservation and Protection, only the Environmental Protection Directorate (EPD) and the Canadian Wildlife Service (CWS) are involved.

There has, of course, for some years been a degree of co-operation between the CPS and the CWS because of their related mandates. This co-operation occurs on an occasional basis.

ENVIRONMENTAL PROTECTION DIRECTORATE

EPD's mandate stems from the Canadian Environmental Protection Act (CEPA), the Fisheries Act, the Transportation of Dangerous Goods Act and the Department of the Environment Act. The EPD is also responsible for enforcing CEPA policy.

To ensure that all these acts and their attendant regulations are complied with, eleven inspectors check a variety of operations for compliance; they also ensure that preventive measures are taken. After collecting information during inspections, three investigators conduct the investigation and, if necessary, issue warnings or fines. In extreme cases, they can lay charges and prosecute offenders.

The EPD's partners are the Department of Fisheries and Oceans, Transport Canada, Industry, Science and Technology Canada, Customs and Excise, the Royal Canadian Mounted Police, the ministère de l'Environnement du Québec (MENVIQ), the ministère du Loisir, de la Chasse et de la Pêche (MLCP), the ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec (MAPAQ), the U.S. Environmental Protection Agency, industry associations, and non- government organizations. When investigations lead to the filing of complaints and legal action, the EPD receives the co-operation of the federal Department of Justice.

CANADIAN WILDLIFE SERVICE

The Canadian Wildlife Service is responsible for enforcing the Migratory Birds Convention Act (MBCA), the Canada Wildlife Act, the Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act and the Export and Import Permits Act which the CWS uses to enforce the preceding Act, for which the regulations have not yet been passed. Under that Act, Canada fulfils it obligations under the Convention on Trade in Endangered Species, which it signed, along with 117 other countries, and ratified in 1974.

Six co-ordinators, investigators and inspectors, as well as six conservation officers hired on a seasonal basis, are responsible for enforcing this legislation throughout the Quebec Region: in national wildlife areas, migratory bird sanctuaries, Canadian entry points and other areas where offences may be identified. They are also responsible for issuing permits (aviculture, taxidermy, etc.) under the MBCA. There is also a supervisor assigned solely to the Cap Tourmente National Wildlife Area.

Although few in number, these officers have the co-operation of the Canadian Parks Service, the Royal Canadian Mounted Police, Customs and Excise Canada, Fisheries and Oceans Canada, Agriculture Canada, the ministère du Loisir, de la Chasse et de la Pêche, and the Society for the Prevention of Cruelty to Animals. When investigations require the laying of complaints and prosecution, the CWS has the co-operation of the federal Department of Justice.

CANADIAN PARKS SERVICE

The Canadian Parks Service is responsible for enforcing the National Parks Act and the heritage canals regulations passed under the Department of Transport Act.

The 40 Parks Service wardens spend an average of 30 per cent of their time enforcing the National Parks Act; the rest of the time is devoted to resource conservation activities. Their mandate consists of maintaining the ecological integrity of parks, assuring resource management and securing public safety. In each of the three national parks (Forillon, la Mauricie, Mingan) there is also a project officer to keep records up-to-date and to carry out investigations.

The Canadian Parks Service has the co-operation of the Canadian Wildlife Service, the Royal Canadian Mounted Police, Transport Canada, the ministère du Loisir, de la Chasse et de la Pêche, and of the Sûreté du Québec.

ADVANTAGES OF THE EXISTING SYSTEM

The existing system makes it possible for each of the Services to have personnel that is specialized in the enforcement of specific laws.

There is already some co-operation between the CWS and the CPS for the exchange of personnel on specific operations.

Advantages of current system

- Each Service has personnel specialized in the enforcement of specific laws
- Co-operation between the CWS and the CPS: exchanges of personnel for ad hoc operations

DISADVANTAGES OF EXISTING SYSTEM

Although the shortage of personnel is not the direct result of the existing system, the fact remains that the consultations brought the situation to light. Because of the short supply of human resources it is impossible to enforce laws as effectively as one would like. While different facilities could help to

Disadvantages of current system

- Inadequate human resources: surveillance of remote regions limited and few blitz operations
- Personnel not very versatile because of high level of specialization
- Lack of a concerted approach among partners
- Aboriginal people dealt with separately by each Service
- Communications: lack of a single departmental image

reduce the impact of a shortage of human resources, the existing system does not allow for optimum use of personnel. As a result, there is limited monitoring of remote areas and few blitz operations are conducted.

To this situation can be added the fact that employees are not very versatile because they are so specialized.

The Royal Canadian Mounted Police (RCMP) partners the Services, but each Service asks for RCMP assistance on an individual basis. If all the services were to solicit RCMP co-operation together, it could improve the level of co-operation, which is already covered by a national MOU. The Services should also co-ordinate their requests for the co-operation of Customs and Excise, Fisheries and Oceans Canada, and the ministère du Loisir, de la Chasse et de la Pêche. The current procedures do not appear to be as effective as they might be.

The Services deal in an isolated manner with Aboriginal people when they come into contact with the same bands and reserves. It would be useful for the Services to exchange information to improve their knowledge of those involved.

The current system also has disadvantages with respect to communications, because at the moment, each Service is promoted separately from the overall departmental image.

Where the Emphasis Should Be Placed

1. Distinct Legal Mandates

   Recommendation: that the legal mandates of the EPD, the CWS and the CPS not be integrated

2. Integration of operations

   Recommendation: that specific operations be integrated

3. Legal service

   Recommendation: that a legal service be located in the Region

III. WHERE THE EMPHASIS SHOULD BE PLACED

Three major points were identified as important in improving law enforcement.

DISTINCT LEGAL MANDATES

Recommendation: That the legal mandates of the EPD, the CWS and the CPS not be integrated.

This means that it would not be necessary to amend the legislation for which each of the Services has responsibility. In addition, the Services will have to have the specialized personnel required, and that is why the status quo in this respect is desirable.

INTEGRATION OF OPERATIONS

Recommendation: That specific operations be integrated.

Such integration can be effected in different areas:

- **Equipment:** Transportation, communications and other specialized equipment will be shared among the Services. This will help to enhance effectiveness.
- **Training:** Basic training sessions will be given to personnel of the Services concerned; the Services

themselves will be responsible for the specialized legal training.

The Region, therefore, aims to make its employees versatile and to develop a common legal approach.

- **Current operations:** The Services will be called upon to contribute to specific operations. The Service responsible for the operation will supervise such activities and the other Services will report to the Service in charge.
- **Special operations (blitzes):** Place more teams specialized in enforcement at the disposal of the Services when such operations are carried out.

It is during specific current and special operations that co-operation between the Services will be focused and more visible. Such co-operation will improve the manner in which the laws for which the Department of the Environment is responsible can be enforced, without any additional resources; the availability of resources will, however, increase. Improved human resource management should make it possible for us to enhance the effectiveness of operations and the versatility of the teams.

Some problems are anticipated. For example, the powers of the CPS peace officers under the National Parks Act are limited to the territories covered by the national parks themselves. On the other hand, the power to enforce the Act, when associated with other laws, may be conferred upon park wardens in accordance with the provisions of the latter. The technical aspects of the laws in question will have to be examined in greater detail to determine the extent to which park wardens may under these provisions be able to enforce such legislation outside of the park boundaries.

- **Communications:** A single consolidated image of the Department will be promoted in internal and external communications.

ESTABLISHMENT OF A REGIONAL LEGAL SERVICE

Recommendation: That a legal service be located in the Region.

Legal services are currently available from a team at Headquarters. The presence of lawyers in the Region has been suggested to make it possible for them to provide legal services and advice in areas of administration, contracts, trade and the environment.

This new structure should provide the Region with a more accessible and rapid service. We believe that our legal advisors would thus be able to better understand legal issues in Quebec. It would also make continuity possible.

Strengthen enforcement mechanisms

- Integration will not lead to any radical changes in procedures
- Integration will be effected through co-operation in the field for specific operations
- Effectiveness, a consistent approach and a single consolidated departmental image should guide managers in selecting areas for the development of future co-operation
- Each Service will retain its units and its human resources
- Personnel assignments and exchanges between Services will be encouraged
- Headquarters will maintain its links with each Service
- Matters having to do with communications and integrated training will be examined for gradual integration on a project-by-project basis

IV. STRENGTHENING ENFORCEMENT

The implementation of the recommendations for enforcement in the Quebec Region involve strengthening without any need for the Services concerned to radically change their procedures. Adjustments are really all that is required.

Each Service will, in effect, remain responsible for its legal mandate, and each will retain its units and its human resources. Integration will occur by means of co-operation in the field during specific operations. Considerations of effectiveness, a consistent approach and a single departmental image will guide the Services managers in selecting areas for the development of future co-operation.

The human resources assigned to enforcement on behalf of the EPD, the CWS and the CPS will be maintained at their current levels although they will exchange equivalent services in terms of resources. Thus exchanges of personnel and personnel assignments between Services will be encouraged, particularly between the CWS and the CPS officers on the Lower North Shore. The basic requirements for officer positions at the CWS and the CPS will also be reviewed to see if it is possible to standardize them.

Our department's operations could thus be increased and made more effective, and we would better be able to meet the expectations of Canadians.

Headquarters would maintain its link with each Service, which would continue, once the integrated management procedures are in force, to adjust their priorities to the national enforcement plan proposed by Headquarters.

The working group recommends the immediate implementation of a number of the proposed integration projects:

- Areas affecting the shared use of equipment;
- A number of current joint operations; and
- Special operations.

The issues surrounding integrated communications and training must be studied in light of the resources and operating methods to be introduced. Gradual integration by project is recommended.

STANDING COMMITTE ON ENFORCEMENT CO-ORDINATION

The establishment of a standing co-ordination committee is recommended. It would consist of one representative from each of the Services and would be chaired by the Director of Environmental Protection, who would report to the Regional Management Table.

The committee's mandate would be to determine which resources and activities involved in enforcement ought to be combined for blitzes or for special activities, as well as which current activities are deemed to be desirable for specified areas of integration. The committee would also design common training programs.

The committee would be responsible for making sure that the regional work plan for each Service would include a contribution to joint enforcement operations and projects. Each Service's annual report would describe joint accomplishments.

Initially, the committee would prepare the list of special operations that could call for the mobilization of resources from several Services.

Standing Committee on Enforcement

Composition: one representative from each Service

Supervisor: Director of Environmental Protection

Mandate:

- To determine which enforcement resources and activities should be combined in conducting blitzes or special activities
- Identify which current activities could profitably be integrated in the areas under consideration
- Design common training programs
- Ensure that the regional work plan for each Service provides for making a contribution to joint enforcement operations and projects

SPECIFIC RECOMMENDATIONS

The integration of current operations is planned. More specifically, this involves the following action:

- The CPS and the CWS will occasionally attend inspections carried out by the EPD with respect to permits issued for dredging operations. They are also responsible for reporting any illegal activities observed. The geographic proximity of the CPS to the dredging locations makes such co-operation desirable.
- The CWS has a storage facility at Dorval. The EPD will also use this facility to store incriminating objects, and will pay for the storage area used.
- CPS and CWS patrols are occasionally carried out jointly within the boundaries of the Mingan Archipelago National Park Reserve and the Watshishou Sanctuary. This co-operation will extend to the Saguenay Marine Park and to the Estuary Islands National Wildlife Area once the logistical problems have been dealt with.
- Co-operation between the EPD and the CWS is planned for a number of the CWS surveillance operations in Montreal, and for some animal shipments. In addition, the CWS could also support the EPD when, for example, investigators need to collect evidence in Quebec City. Such co-operation is anticipated because of the location of the EPD in Montreal, with most CWS personnel located in Quebec City.
- Each Service will thus become "the eyes of the others" during any operation.

An action plan will be implemented as soon as the approach has been approved by the Deputy Minister's steering committee.

V. REMAINING DECISIONS

Some items still need to be discussed in the Region.

REGIONAL LEGAL SERVICE

A more detailed analysis is required to determine whether there are any economic advantages to such a service in the Region, which would be the responsibility of the Department of Justice. We will also have to make sure that all the specialist skills required by our activities are accessible in the Region.

HUMAN RESOURCES

Questions concerning human resources will be examined later.

REGIONAL INTEGRATION PILOT PROJECT

Integration of Operations
Managing Environmental Emergencies

Environment Canada

Quebec Region

I. THE REGIONAL INTEGRATION CONCEPT AND THE MANAGEMENT OF ENVIRONMENTAL EMERGENCIES

"Environmental emergencies involve many partners who have to co-operate. For this reason, the emergencies break down the structures that normally govern the routine operations of organizations."[1]

This statement substantiates the fact that the planned regional integration of Environment Canada's components is perfectly suited to the very nature of emergencies management. It is in fact an area that offers considerable potential for integration, and which, to a degree, already benefits from the pooling of the Department's resources in the Region.

SERVING THE PUBLIC OUR WATCHWORDS

Providing high quality service to users is one of the essential values that has been put forward in recent years by all efficient organizations. Environment Canada is no exception to the rule, because providing quality service to the public is the reason why so many changes have been set in motion within the Department.

Because Canadians have become so much more aware of and concerned about health and environmental risks, the management of environmental emergencies has become uniquely oriented towards providing an effective response to situations that present a threat to the people of Canada. We believe that Environment Canada's Regional Integration Project will make it possible to consolidate the progress that has been made in partnerships between the Services, making it possible to respond rapidly, efficiently and effectively throughout Quebec.

In a context of scarce resources and high expectations, Environment Canada must find methods that will achieve the best possible results with the available resources. Mindful of this, the Quebec Region plans to continue with

1 Denis, Hélène, Gérer les catastrophes, L'incertitude à apprivoiser, coll. Intervenir, Les Presses de l'Université de Montréal, 1993.

By pooling the acquired experience and expertise of specialists from all the Department's Services in Quebec, resources will be used optimally and a consolidated departmental approach to emergency management will result.

CURRENT STATUS

Environmental Protection Directorate

- Co-ordination of emergency response for the Department in the Region
- Lead agency: when DOE takes charge of cleaning up and decontamination (marine spills for which no polluter has been identified, or land spills on federal lands)
- Resource agency: federal co-ordinator under the supervision of the local commanding officer or the lead agency

Canadian Parks Service

- Lead agency as field manager
- In other cases: resource agency

St. Lawrence Centre
Canadian Wildlife Service
Atmospheric Environment Service

- Resource agencies, depending on their respective areas of expertise

existing partnerships and to extend them to new activities and projects.

By pooling experience and expertise that has been developed by specialists from all the Department's Services in Quebec, resources will be used optimally and a consistent departmental approach to emergency management will result.

II. CURRENT STATUS

We shall begin by describing how the Department of the Environment (DOE) provides an integrated response to environmental emergencies, and then put forward new avenues for integration that are designed to improve our services and better protect the environment.

Five components of the Department, the St. Lawrence Centre (SLC), the Canadian Wildlife Service (CWS), the Canadian Parks Service (CPS), the Atmospheric Environment Service (AES) and the Communications Branch currently share with the Environmental Protection Directorate (EPD) the mandate of protecting the environment and keeping the public properly informed about potentially threatening conditions.

The EPD co-ordinates the Department's response to emergencies in the region by making use of the knowledge possessed by the experts working in the various components. Depending on the circumstances, the EPD is called upon to act as the **lead agency** when the DOE assumes responsibility for clean up and decontamination following a marine spill for which no polluter is identified, and for land spills on federal lands; the EPD may also act as a **resource agency**, as the federal co-ordinator, under the direction of the local commanding officer or the lead agency.

The CPS may also act as lead agency, as field manager and as a resource agency. The SLC, the CWS and the AES contribute to emergencies as resource agencies depending on the respective areas of expertise. The following is a summary of the responsibilities assumed by each Service and Branch, as well as the sharing of resources:

C&P - EPD (lead agency and resource agency)

- Six person-years, and 4 person-years on an ad hoc basis;
- Federal departmental response co-ordinator on **intervention** following a warning;
- Provision of environmental advice;
- Lead agency, direct operations;
- Encourage **preventive** measures to prevent spills;
- Ensure **preparedness** for enhanced response; and

- co-ordinate internal communications and communications with the public.

C&P - SLC (resource agency)

- Two person-years on an ad hoc basis;
- Provide sampling and analysis services;
- Contribute to decision-making using the hydrocarbon dispersion model;
- Evaluate decontamination decisions and give appropriate advice;
- Transportation prevention program; and
- Assist the EPD in communications.

C&P - CWS (resource agency)

- Eight person-years on an ad hoc basis;
- Provide information about wildlife and wildlife habitat;
- co-ordinate wildlife rescue, sorting and decontamination; and
- Assist the EPD with communications.

AES (resource agency)

- One person-year on an ad hoc basis;
- Provide meteorological forecasts;
- Help with decision-making using atmospheric dispersion models;
- Acquire local meteorological data (mobile station); and
- Assist the EPD with communications.

CPS (lead agency - area management - resource agency)

- Seven person-years, and 33 person-years on an ad hoc basis.

Environmental Emergencies

- As the regional area manager, assume responsibility for prevention, preparedness and response;
- Act as the lead agency when the emergency is first reported, or as the resource agency when required; and
- Manage internal and public communications.

Fire management

- Assume responsibility for fire prevention, preparedness and response in the area for which it has jurisdiction;

- Manage controlled burning operations; and
- Manage internal and public communications.

There has been co-operation between the Services for some years now, and the partnership tradition is well established in emergency management. Such co-operation was encouraged to a great extent by the need for the various Services to call upon experts to improve their decision-making in the event of emergencies. Likewise, the expertise developed by the AES and the SLC in the use of dispersion models, and the availability of the CPS resources in the regions, helped to enhance the partnership relations between the Department's partners in Quebec.

III. RECOMMENDATIONS

TOWARDS AN EXTENSION OF FUNCTIONAL INTEGRATION

Within the extended functional integration, we propose maintaining existing partnerships, and broadening them to other activities and to new projects, so as to make the most of the strengths of each of the organization's components. Enhanced integration in terms of co-operation between Services will have a beneficial impact on DOE's profile in the Region because all communications would be effected on behalf of a single agency: Canada's Department of the Environment. The single image for Environment Canada in the Region would thus be strengthened.

The regional working group also recommends maintaining existing structures because they are considered to be highly effective in fostering the development of the specialist expertise required for taking enlightened decisions in protecting the environment during environmental emergencies. Developing expertise is in fact the key to better emergency management; the creation of a single multidisciplinary emergency response group could give rise to the very opposite of the desired effect and lead to a dilution of expertise and thus to a decline in effectiveness.

The establishment of an internal standing co-ordination committee is further recommended. This committee would consist of a representative from each of the Services and be chaired by the Director of Environmental Protection, who would report to the Regional Management Table. The chairperson's role would include preparing annual action plans for environmental emergency management.

STRENGTHENED PARTNERSHIP: CONCRETE EXAMPLES

We therefore recommend building on existing structures and on acquired experience, and making the most of the integration potential available through the Regional Integration Pilot Project. The potential areas for integration include the three

TOWARDS AN EXTENSION OF FUNCTIONAL INTEGRATION

Recommendations:

- Establish a standing internal emergency co-ordination committee

  Composition: one representative from each Service

  Chair: Director of Environmental Protection

- Maintain existing co-operation; strengthen it and extend it to other activities and new projects
- Convey a single image of the Department in communications
- Maintain existing structures, which encourage the development of the specialist expertise required for sound decision-making in environmental emergencies

fields of activity involved in crisis and environmental emergency management, they are:

- Prevention (to prevent emergencies);
- Preparedness (to make more effective integration possible); and
- Response (to respond to a warning).

We shall now describe the various ways in which co-operation is possible in these areas.

MORE INTEGRATED PREVENTION

The purpose of prevention is to reduce risk in the event of environmental emergencies. The first step is to study the risks and the second to make individuals (or agencies) aware of the sources of risk, and to give potential victims the information they need to take appropriate action to counter such risks and the ensuing consequences.

From the prevention standpoint, enhancing the partnership should have a positive impact on internal and external communications; it is, therefore, suggested that internal communications be enhanced to make it possible for all personnel to develop a more global vision of the contribution that each component of the organization can make, and to provide them with an enhanced knowledge of the Department's publics and partners. Improving the way information about the accomplishments of the partners is disseminated would also strengthen the Department's corporate identity among personnel.

As for communications with outside publics, several projects designed to provide improved information to individuals (or agencies) about the risks and populations affected by these risks are to be implemented in co-operation with the various Services or Branches. One example of this is the dissemination of information about environmental emergencies, which could be done by the CPS and the CWS together; in fact, both components have a decentralized structure that would enable them more easily to reach people in the regions. Likewise, the AES services (the Weatherradio System, Dataradio, crawlers, etc.) could be used even more effectively during natural emergency warnings.

It is only to be expected that a message disseminated by a department that is regionally integrated would provide a better overview and give our external clients a more complete picture of the services we provide and of what we do in general.

More Integrated Prevention

- Strengthen internal communications to make it possible for personnel to develop a broader vision of the contribution made by each component, and to become more familiar with the publics and partners
- Strengthen external communications to better inform individuals (or agencies) about the sources of risk and about the populations affected by these risks. Use the communications tools of the Department's Branches and Services

BETTER INTEGRATED PREPAREDNESS

In the area of preparedness, it will become possible to use the experience of the CPS managers on behalf of other field

Better Integrated Preparedness

- Exchange expertise between Branches and Services
- Include all Services in the Regional Crisis Management Plan
- Continue to give the Services access to annual training in emergency response methods and techniques
- Research and development: develop measures to make it possible to transfer and exchange data by means of a computer network, and to provide integrated data processing

More Integrated Response

- The emergency response co-ordinator will be able to have departmental personnel available at the alert stage in order to carry out the observations required and to perform the initial tasks
- The role of the Canadian Parks Service, as the lead partner, will be enhanced, and the park wardens will be trained in environmental emergencies
- The integrated telecommunications system will be used to broadcast alerts more widely within the Department, thereby mobilizing regional specialists more quickly
- Mobilization of SLC and CWS scientific teams to carry out studies on the impacts of harmful environmental conditions on ecosystems
- Evaluation of the possibility of using controlled burning as a wildlife management tool

managers or equipment (CWS, AES) when they are required to develop emergency plans. Similarly, the technical expertise of the specialists working for all Services and Branches will be made more accessible to the whole organization.

Conservation and Protection has a crisis management manual which identifies everyone's responsibilities, as well as the communications networks and the functional links between the Region and Headquarters, for the effective management of environmental crises in Quebec. DOE integration in the Quebec Region will make it possible to include the Department's two other services in the Regional Crisis Management Plan.

The benefits of more integrated preparedness will be equally obvious in terms of personnel training within all the Services. The effort undertaken in 1992 to provide basic training to departmental employees will be maintained so as to give them annual training in emergency response methods and techniques.

Research can also benefit from the positive impacts of greater integration. Indeed, several Services and Branches (AES, SLC, CWS, EPD) are already inputting data; in the medium term, tools will be in place to send and transfer these data on a computer network, and for the integrated processing of the data (GIS). It is obvious that research and development, like so many areas, cannot escape from the requirement of decompartmentalizing structures if large amounts of information are to circulate freely.

MORE INTEGRATED RESPONSE

DOE personnel will be available to the emergency co-ordinator during the alert stage to make the observations required and to perform the initial tasks.

Broadening the role to be played by the Canadian Parks Service as the lead partner is also planned, as is the provision of training in environmental emergencies to park wardens. This will make it possible for all DOE resources to be used to the full, and to keep travel to a minimum for the more straightforward types of response. The warning system will also be provided with an integrated telecommunications network to make it possible for warnings to be broadcast more widely within the Department, and to rapidly mobilize regional specialists.

The SLC and the CWS scientific teams will also be mobilized to conduct studies on the medium term effects of harmful environmental conditions on ecosystems. The CPS expertise in controlled burning and the CWS expertise in wildlife management will also be drawn upon to assess how controlled burning techniques can be used as a wildlife management tool.

IV. CONCLUSION

The improvements proposed above do not constitute major changes in the sense that they will not lead to significant modifications to the existing organizational structure.

Headquarters will continue to be informed as quickly as possible about emergencies and about action taken by federal departments and other partners, by means of occurrence reports prepared by the EPD.

Increased co-operation between the Services and Branches will not have an impact on the number of human resources. Moreover, consolidated management should give better service to Canadians, and emergency management will be perceived to be a service that is provided in Quebec only by DOE.

It should be remembered that emergency management is already integrated under the umbrella of an interdepartmental team, the regional environmental protection team, and that the main intent of our recommendation is that efforts should be pursued to increase co-operation.

It goes without saying that the main challenge for the Department's emergency response team would be to provide effective co-ordination for activities in an area where responses are becoming increasingly complex.

REGIONAL INTEGRATION PILOT PROJECT

Integration of Operations
The Informatics Function

Environment Canada

Quebec Region

Information, whether of a scientific, financial or other nature, is an essential resource for any organization. It is a valuable strategic resource in developing and delivering departmental programs.

Informatics services provide the expertise required to develop, implement and support the infrastructure upon which the Department's information management system is based.

I. THE DEPARTMENT'S INFORMATICS VISION AND MISSION

In 1990, senior management in the Department undertook a study of information management within the Department. The purpose of the study was to improve the delivery of informatics services in support of systems integration, the implementation of the Green Plan, and management practices. The study gave rise to the "Informatics Management Plan", in which a new vision was defined for the users:

"*The needs at all levels of the Department will be met by a completely integrated technological infrastructure which provides easy access to high quality information through the provision of the appropriate informatics tools.*"[1]

The Regional Integration Pilot Project is an opportunity to develop and implement a **Regional Informatics Strategy** that will make it possible for the Quebec Region to consistently implement the Department's informatics vision and mission.

To this end, computer specialists must act as expert consultants and perform a co-ordinating function with the regional managers to help them make decisions that are consistent with the Department's informatics orientation. They are also responsible for ensuring that our people and our technology are used optimally in providing services of a high standard.

[1] Informatics Management Plan, Environment Canada, April 1992.

INFORMATICS GROUP

As part of the Department of the Environment's Regional Integration Pilot Project, a group chaired by the Associate RDG for the Atmospheric Environment Service (AES), was assigned the mandate of analyzing the current informatics situation and putting forward recommendations concerning integration options for the three Services. The committee members consisted of computer experts from the informatics divisions of AES, Finance and Administration, Conservation and Protection (C&P) and the Canadian Parks Service (CPS) .

The members of the working group determined that:

- Following implementation of the Integration Pilot Project, Environment Canada personnel should, more than ever before, exchange information and be given access to the data produced by the various components of the Department in the Region.
- To meet this objective, it will be necessary to link the computer systems and to aim at enhanced compatibility for applications and databases.

An analysis of the existing situation should, therefore, make it possible to identify a variety of options that would better meet the new departmental imperatives.

The rationale for information management lies in the support that it provides to the Department's programs. It is, therefore, important that the support provided by informatics to the Green Plan and to other departmental programs be of a high standard, and that informatics generally should adapt at the rate required to keep pace with the changing needs of clients

II. CURRENT SITUATION

At the moment, the main concerns of managers with respect to informatics relate to the **management of technological components** (hardware and software). Moreover, any organization that wishes to integrate the information that it produces will have to pay more attention to **managing the data upon which their information is based.**

Under the existing regional structure, each Service (AES, CPS and C&P) has its own informatics division, but the roles and mandates of each differ considerably. There are only very limited links between the various computer specialists, and in some instances, they are virtually nonexistent. This state of affairs cannot meet the objectives of the Regional Integration Pilot Project because it does not allow for co-ordinated action that can lead to greater "connectivity" and "compatibility" between computer systems, databases and applications.

At the CPS and C&P, the Informatics Branch and Information Technology Division, respectively, are included under the Finance and Administration Branch, where they primarily support the Departmental Office Technology System (DOTS) and general applications installed on the VAX computers. Other Branches also develop computer applications. At the AES, the Informatics Branch primarily supports the operations of the Service and of DOTS.

Here in brief is a summary of how the three informatics divisions function.

The Canadian Parks Service Informatics Branch (five person-years) manages the computer and office technology activities of the Quebec Region. The computer systems used for DOTS and for departmental applications include one VAX 8530, three MicroVax IIs and three MicroVax 3100s. They are installed at the regional office and in the district offices (Montreal, Mauricie, Quebec City, Gaspé, Mingan and Saguenay), as well as a large number of terminals and personal computers. The VAX computers also support a number of ORACLE regional database applications. The principal activities are:

- Participation in regional informatics planning;
- Management and operation of the VAX minicomputers;
- Microcomputer support and development; and
- Training users in DOTS.

The Informatics Branch has few links with those in charge of information technology at CPS Headquarters.

The Conservation and Protection Information Technology Division (seven person-years) is responsible for operating and managing the computer equipment that is part of DOTS. The regional computer infrastructure includes a MicroVax 3800, located at the Ste. Foy regional office, a VAX 6310 and a MicroVax II at 105 McGill Street in Montreal, as well as several terminals and personal computers. The VAX computers also support the applications development activities for ORACLE databases. The principal activities are:

- Co-ordination and follow-up of regional information technology plans;
- Management and operation of VAX minicomputers;
- Support and training of DOTS users; and
- Management of regional databases.

Discussions with those in charge of information services at Headquarters are limited.

The Atmospheric Environment Service Informatics Division (ten person-years) is responsible for operating and managing computer and telematics equipment in the Quebec Region. The regional informatics structure includes a Tandem NSII, two HP-1000s, one Data General MV 15000, one MicroVax II, one MicroVax 3300, twenty-five Unix HP-9000 workstations and a large number of personal computers. The equipment is concentrated in the Quebec Meteorological Centre in Ville Saint-Laurent, but there is

also some equipment in offices and stations across Quebec and as far as Baffin. The principal activities are:

- Regional informatics planning;
- Management and operation of telecommunications systems and networks;
- The development of real-time data processing and gathering applications; and
- Telephone networks, DOTS and user support.

The Regional Informatics Division works in close co-operation with those responsible for informatics at AES Headquarters. The Region co-operates and participates actively in national informatics activities.

In addition to the activities of the informatics divisions, the St. Lawrence Centre (four person-years) and the C&P Environmental Protection Branch (one person-year), as well as the Public Works Engineering and Architecture Division at the CPS regional office (one person-year), also co-operate in information technology development. Their principal activities are:

- Development of ORACLE databases on the VAX computers;
- Development of microcomputer applications; and
- Use of software packages to analyze and process geocoded data.

Although the existing structure has helped to provide services that are suited to the special requirements of each Service, and to maintain a sense of belonging among employees in each Service, it can no longer supply a clear context and a coherent vision in the decision-making that is now required to meet the new departmental challenges.

Disadvantages of existing situation with respect to the needs of an integrated department:

- System incompatibility
- Impossible to access or exchange certain types of data
- Absence of a consistent and coherent approach
- Overlap of certain activities
- Expertise varies from one Division to another

III. A REGIONAL INFORMATICS STRATEGY

The integration of programs and Services in the region will require an extraordinary emphasis on information technologies to reduce relocation and other expenses. Moreover, this new technology is essential for employees and managers to have easy and rapid access to the data they require for decision-making and program implementation.

The Quebec Region must, therefore, develop an information technology and telecommunications architecture that will provide a fully-integrated technological infrastructure. The objective is to familiarize people with the information contained in the regional databases of the three Services, whether scientific, financial or other, and to make it readily accessible by means of appropriate computer tools (conviviality) and telecommunications networks (connectivity).

It will be important, in developing such an architecture, to give due regard to the specific requirements of the Quebec Region, and also to make sure that it is compatible with the orientations and configurations put forward in the departmental Informatics Management Plan.

WHAT A UNIFIED INFORMATION TECHNOLOGY SERVICE WOULD OFFER

Based on the principle that an efficient and unified department must adopt new ways of doing things, the following are some of the opportunities that would result from the implementation of a regional information technology strategy that is consistent with the Department's Informatics Management Plan.

- Harmonization and standardization of configurations for users of the Departmental Office Technology System (DOTS). DOTS users, whether in a park district office, a meteorological office or the Montreal services centre, would have access to DOTS by means of the same tools: same type of terminal, keyboard, on-line menus, word processing, etc.
- Consolidation of departmental databases (HRMIS[2], APACS[3], etc.) based on the Montreal and Quebec City services centre concept and the development of technological solutions that allow universal access through the National Telecommunications Network (WAN).
- Creation and development of computer tools for service centres, which will combine the Finance and Administration and Human Resource Management functions: automation of leave report, expense account, procurement, and inventory system procedures, etc.
- Development of technological solutions to provide network access to scientific computing resources.
- Standardization of Local Area Network Technologies (LAN): simplification of methods of accessing computer resources and improved user support.
- Creation of an environment in which it becomes possible for informatics personnel to become more flexible and more mobile by continually enhancing their professional knowledge of information technology.
- Development of a network and systems configuration that will make it possible to meet the requirements of the Department's major projects, including

2 Human Resources Management Information System
3 Automated Procurement and Contracting System

one- stop access and the projects stemming from the integration of the monitoring function.

- Standardization of data integrity and security procedures. Development of a regional contingency plan.
- Consolidation of user training and support in office technology based on the Montreal and Quebec service centres concept.

RECOMMENDATION

The working group recommends that a standing committee on informatics be established, reporting to the Associate RDG of the Atmospheric Environment Service (AES), to develop and implement a regional information technology strategy, to manage the common information technology infrastructure and to carry out annual informatics planning.

Enhanced connectivity and compatibility between computer systems, databases and applications are expected from such an approach.

The human resources required to operate and manage the common information technology infrastructure would come from the existing AES Informatics Division and the informatics divisions of the Finance and Administration, Conservation and Protection and Canadian Parks Service informatics branches.

This new regional informatics context would make it possible for employees of the three Services to exchange expertise, knowledge and resources. It would also provide opportunities for new challenges in terms of versatility, and at the same time promote a broader vision of the organization.

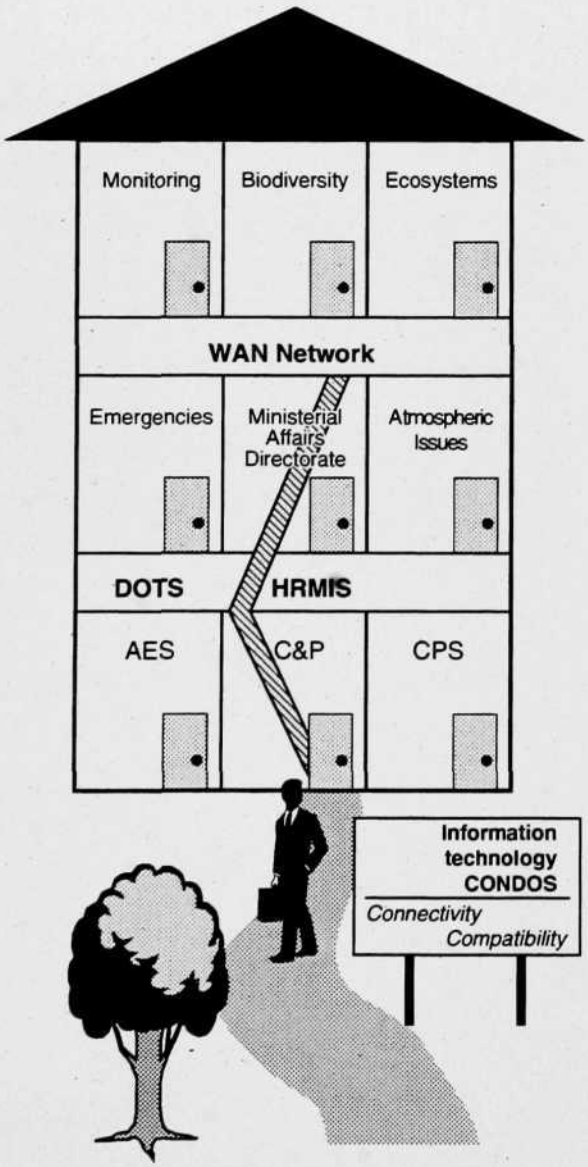
PROPOSED STRUCTURE

There are currently several information technology studies under way within the Department; however, it is up to the region to define the framework within which decisions are to be made and within which the above-described informatics vision will become a reality. This framework will enable managers and their personnel to check whether their decisions are consistent with the regional informatics strategy.

From the organizational standpoint, the following is the approach advocated by the working group. It may be compared to the management of a condominium (see figure).

A. On the one hand are computer applications and systems that directly support departmental program implementation.

The managers of these programs are responsible for their systems and run them as they please.



Those in charge of these systems will be able to work independently in a specific area for the whole Department, while at the same time meeting the standards established in the regional informatics strategy. This is what might be called the "individual unit" in our "condominium", where separate owners can do as they please, within specified limits, so as not to destroy the aesthetic harmony of the building as a whole.

B. On the other hand are the computer applications and systems of the common infrastructure.

It is in this category that the Departmental Office Technology System, the departmental wide area network (WAN), the interconnection of local networks and departmental applications (HRMIS, APACS, MIU, etc.) are included.

In managing a "condominium", the owners designate a person to administer the common infrastructure of the building. This person consults the owners, and together they set the rules and standards to be followed.

The following summarizes the activities of an infrastructure common to the three Services:

- ***Networks and telecommunications:***

Planning and implementation of the department-wide area network (ECONET) in the main Quebec Region Environment Canada offices. Co-ordination with central agencies.

Establishment of guidelines for the interconnection of local networks to the main ECONET network. Co-ordination with owners of local networks.

Advice and support for the design and installation of local networks and data telecommunications services; standardization of telecommunications hardware and software.

- ***Database***

Establishment and updating of a regional electronic data dictionary that is accessible by means of the departmental network, and development of a regional data model for departmental data. Consultation with database managers and co-operation with central agencies.

- ***Departmental applications***

HRMIS - Human Resource Management Information System

MIU - Equipment-in-Use

CDFS - Common Departmental Financial System, etc.

ELIAS - Environment Library Information and Acquisition System

The member of the group who is responsible for managing the information technology infrastructure will act as the regional spokesperson for information technology with the central agencies. This group will co-operate and participate in the development, installation and updating of departmental database applications. Support to regional users is another responsibility.

- ***Regional applications***

  In this category are found those information technology applications that do not support any specific programs, but which were developed to meet general requirements; one example of this is the Science, Knowledge and Monitoring Directory. Provision of expertise for the development and support of such applications.

- ***Management of common infrastructure hardware and software.***

  Planning and acquisition of hardware and software. Management, configuration, operation and control of computer systems that are part of the common infrastructure.

- ***Departmental Office Technology System***

  Development of an office technology strategy for the Quebec Region that would make it possible for us to meet the configuration harmonization objectives. The proposed configuration is consistent with the departmental vision, consisting as it does of intelligent workstations (personal computers) networked with servers. There are many advantages to such a configuration:

  - Versatile workstation for the user;
  - Reduces the load placed on the VAX minicomputers because much of the processing (e.g. word processing) would be done on the personal computers;
  - Possibility of effecting savings by purchasing network versions of PC software that can be used by several users at the same time.

  Analyze costs of replacing DEC terminals, planning the acquisition of equipment and co-ordination with central agencies.

- ***User training and support***

  Provide user training and support services for information technology systems that are part of the common infrastructure.

- ***Information technology standards***

  Adoption and dissemination of standards and guidelines to help managers make informed decisions in areas such as database development methodology, telecommunications, computer operating systems, software and security.

  The Department has already adopted the Government of Canada's strategic orientation with respect to the introduction and implementation of computer and communications standards. Thus the proposed standards will reflect the departmental orientations. Recommendation of standard office technology and microcomputer tools.

The spokesperson for the group responsible for managing the common infrastructure will act as a consultant and project manager for the regional managers, in particular to those who require major spending on computers and telecommunications for their projects. The spokesperson would also be the regional information technology contact with the central agencies, particularly with the Department's Systems and Informatics Directorate and responsible for implementing a mechanism for planning and consulting with the main informatics clients and specialists.

That is an overall picture of the main activities that will make it possible for the Quebec Region to have access to a structure that is oriented towards departmental requirements and based on open standards and systems.

Advantages of common information technology infrastructures:

- Integrated approach and broadened vision of the organization
- Access to databases for the three Services
- Optimal use of human and financial resources
- Enhanced user support
- Co-ordination of activities
- Identification of more cost-efficient solutions
- Interaction between partners enables those involved to acquire versatility

IV. IMPLEMENTATION

The areas of computer expertise found in the common infrastructure are:

- Networks and telecommunications;
- Operation and management of computer equipment;
- Development and management of relational databases;
- Office technology; and
- User training and support.

For the moment, the integrated functional structure will be guided by the following principle: decentralization of computer expertise to those areas where the clients are located, and as little personnel travel and relocation as possible.

A more detailed analysis of the organizational structure will, therefore, be carried out at a later stage, following consultation with the main clients and users. However, it can now be envisaged that human resources devoted to computer technology will be deployed in the major activity centres where the computer applications and systems are concentrated.

Information is a valuable resource, it is considered as important as human, financial or physical resources. It must be managed carefully

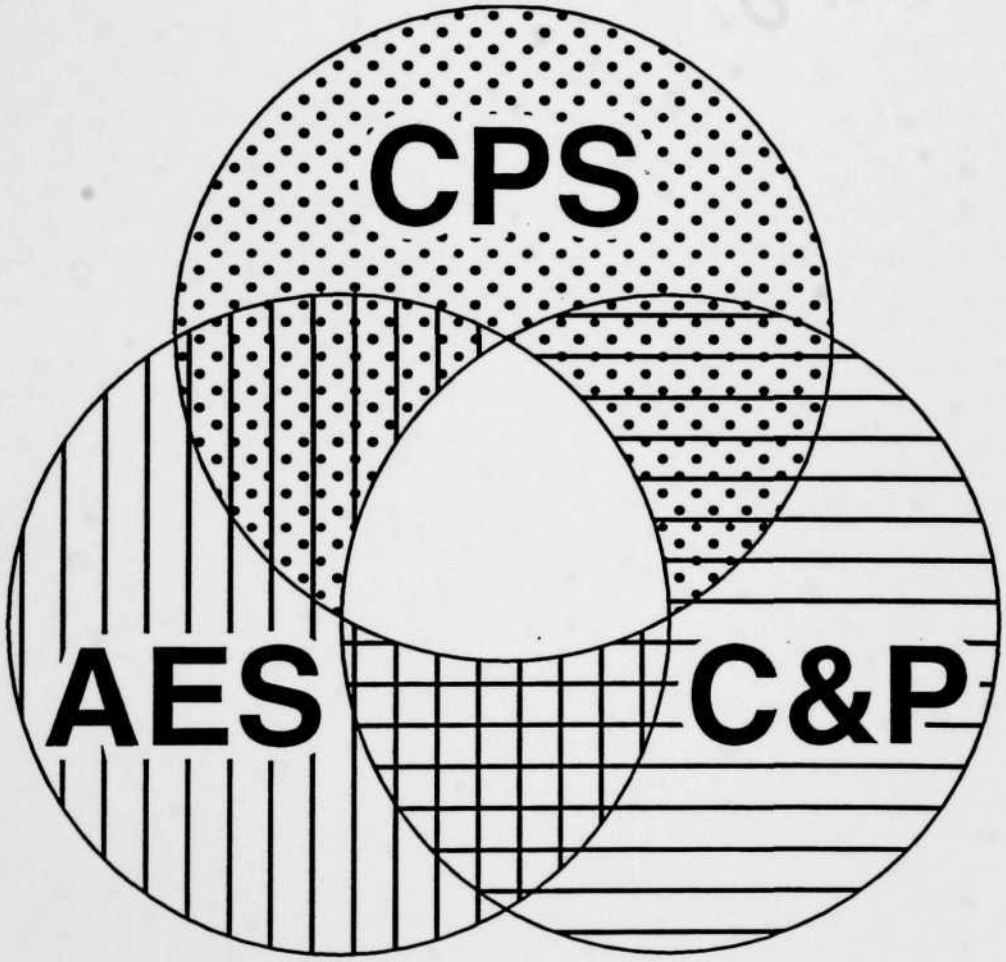
V. DECISIONS THAT REMAIN TO BE MADE

The integration of the informatics function will lead to significant changes within the organization. Here are the main aspects of the work that remains to be done:

- Inventory information technology expertise in the Quebec Region; identify gaps and develop a training strategy on the basis on those gaps and on the new systems to be introduced.
- Describe the composition and structure of the group responsible for managing the common infrastructure. Specify the manner in which co-ordination will be effected with the other computer specialists within the main regional components of the Department.
- Clearly define the functional relations and links with the central agencies.
- Develop an implementation plan and estimate the costs involved.

Follow-up and implementation will be the responsibility of the Associate RDG of the Atmospheric Environment Service, who will report to the Regional Management Table.

REGIONAL INTEGRATION PILOT PROJECT
ECOSYSTEM INTEGRATION



ENVIRONMENT CANADA

QUEBEC REGION

ECOSYSTEM INTEGRATION

REGIONAL INTEGRATION PILOT PROJECT

Ecosystemic Integration
Ecosystems Approach to Management

Environment Canada

Quebec Region

I. MANDATE

Of all the questions associated with integration, the integrated ecosystems approach to management is surely one of the most complex.

The regional working group looked at two ecosystem management scenarios before deciding on a mandate. The first of these entails developing a full-scale scientific procedure for studying the major ecosystems in Quebec.

The second, more comprehensive, scenario entails developing an integrated ecosystems approach to management, an approach that would enable the Department to make an environmental contribution to sustainable development. For this reason, the regional working group selected the second scenario as its mandate.

MANDATE

Two scenarios:

1-To develop a full-scale scientific procedure for studying the major ecosystems in Quebec

2-To develop an integrated ecosystems approach to management, an approach that would enable the Department to make an environmental contribution to sustainable development

II. CONTEXT

A summary of the context in which the Department is required to operate can shed some light on the nature and scope of the thought process that led to adoption of this innovative approach to management.

A number of events that have occurred over the past few years reveal a fundamental change in the way the government looks at developing the economy and protecting the environment, two vital issues linked to the health and well-being of all Canadians:

- International discussions, followed by announcements of global policy and ratification of a number of international agreements and conventions on global issues related to conservation and moderate use of resources (sustainable development):
  - World Conservation Strategy (1980);
  - Brundtland Report (1987);
  - Caring for the Earth - A Strategy for Sustainable Living (1991);

CONTEXT

International

- World Conservation Strategy (1980);
- Brundtland Report (1987);
- Caring for the Earth - A Strategy for Sustainable Living (1991);
- Rio Earth Summit (1992):
  - Convention on Biological Diversity;
  - Convention on Climatic Change;
  - Agenda 21

Canadian

- Citizen's concerns about the quality of their environment
- Green Plan (sustainable development)

Environment Canada

- Mission
- Vision
- Transition
- Green Plan implementation

Integration Pilot Project

- Integrated Management
- Ecosystems approach to management
- Biodiversity conservation
- Green Plan implementation

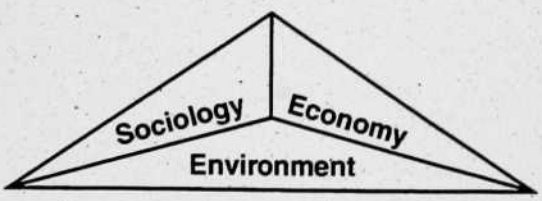


Figure 1: Sustainable development concept

- Rio Earth Summit (1992):
  - Convention on Biological Diversity;
  - Convention on Climatic Change;
  - Agenda 21;
- The Government of Canada's commitment to implementing sustainable development and setting an example by working to achieve the objectives of its Green Plan;
- Environment Canada's mission, as proposed in 1992, which integrates comprehensive environmental and economic considerations in a context of sustainable development; maintaining biodiversity is a sound indicator of a society's performance in the sustainable use of its resources.

The Department must introduce management methods that make it a leader in sustainable development, while it continues to offer the Canadian public the products and services it has come to expect. The Department must also coordinate the progress toward sustainable development of its federal, provincial and private sector partners.

The Department, if it is to be proactive and if its decision-making is to focus on promoting sustainable development, must, in cooperation with its partners, set detailed objectives for the major ecosystems in Quebec.

In spite of the broad social implications of sustainable development, traditional economic and environmental thought has largely ignored the interdependence of the concepts that underlie them.

Sustainable development can meet current needs without compromising the ability of future generations to meet their own (World Commission on Environment and Development, 1989). As a management strategy, it takes into account both socioeconomic and environmental considerations while aiming at equity among all the interested parties (Figure 1).

Sustainable development is based on expending the (figurative) "interest" on a resource rather than depleting its "capital", or the capital of a subsidiary resource. In the context of sustainable development, the term "resource" includes the relationships among all the resources exploited by users.

Environment Canada's primary role with regard to sustainable development is to promote an ecosystem-based approach and foster implementation of that approach by all the Department's partners.

The Regional Integration Pilot Project provides the Department with an ideal opportunity to spell out its ecosystem-based approach, and proceed to implement it (Figure 2).

III. INTEGRATED MANAGEMENT

The aim of the current project for integrating Environment Canada's regional components is to improve the Department's performance in managing environmental issues. Within the Region, decision-making is being transformed from a closed, vertical intra-service model to an open, horizontal model based on consensus, and on the environmental results of projects put forward by the various components.

Everyone - government administrators, business leaders, scientists, the general public - has come to recognize the inadequacies of the traditional, analytic approach when it comes to dealing with something as complex as the environment. A comprehensive approach, based on a broad vision that encompasses the interaction of phenomena, is absolutely essential to a clear grasp of the dynamics of their interrelationships.

Integrated management, then, is not synonymous with the analytical, vertical approach, which deals with a complex problem by first breaking it down into a series of smaller problem, which are resolved one at a time; the sum of the solutions is taken - sometimes in error - to be the overall solution. Integrated management recognizes, and takes into account, the interrelations among all parts of the system in question; and it entails examining the interrelations between that system and other related systems. This approach is especially (but not exclusively) well suited to complex phenomena, such as ecosystems.

The greatest challenge of integrated management is that it encompasses far more than integration of means of intervention. It encompasses integrating the decision- makers' vision of the issues, the priorities they assign to them and the sum of the actions they decide to take.

According to the papers submitted to date in the context of the Regional Integration Pilot Project, integrated management encompasses three main areas of activity: administration, operations and ecosystems. The following section discusses integrated management applied to ecosystems.

IV. ECOSYSTEMS APPROACH TO MANAGEMENT

The subject of the ecosystems approach to management is the ecosystem. In an ecosystem, everything is interrelated; each part is related to all the other parts. The ecosystems approach to management requires cohesiveness, i.e. integrated management of all programs and activities. This is especially important at the planning stage of programs and activities, when objectives for the ecosystem and the targeted results of each activity must be set. Some compartmentalization in the routine performance of tasks may be acceptable.

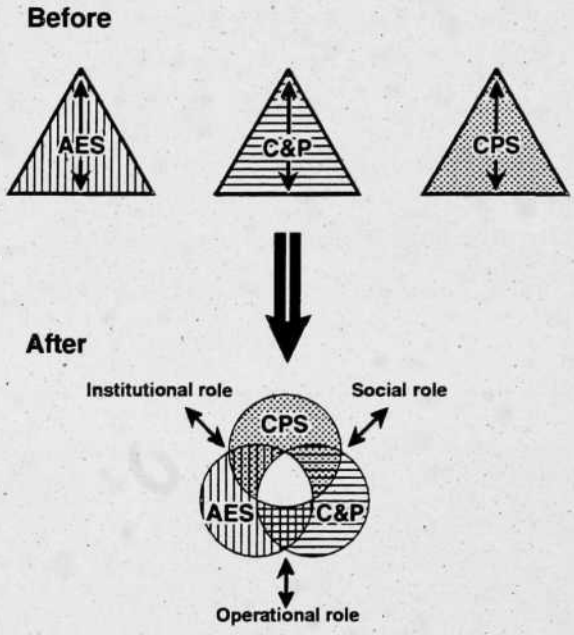


Figure 2:Environment Canada, Quebec Region

ECOSYSTEMS APPROACH TO MANAGEMENT :

Definition

Integrated management of the policies, programs, activities and evaluations associated with one or more ecosystems

Principles:

- The subject of the ecosystems approach to management is the ecosystem;
- The approach must be comprehensive and foster inclusion
- The approach must foster decision-making
- Effectiveness is measured by environmental results
- The approach demands interdisciplinarity
- The approach counts on co-operation
- The approach is based on the science and understanding of ecosystems

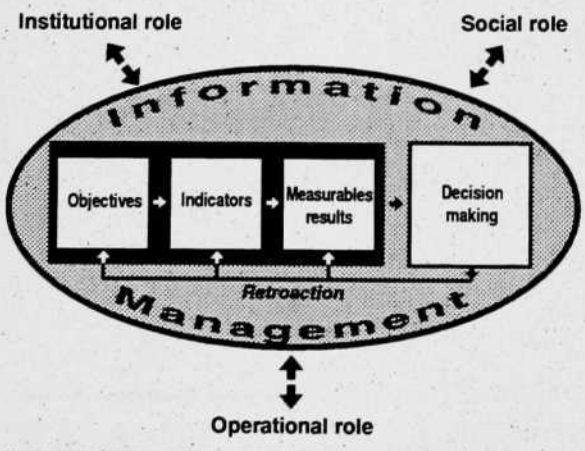


Figure 3: Main components of the ecosystems approach to management

However, evaluation of results must be comprehensive and take interrelation, the key to the integrated planning cycle, into account. This is the challenge of the ecosystems approach to management. Clearly the compartmentalized planning currently used within the Department does not foster the ecosystem-based approach.

We have defined the **ecosystems approach to management** as integrated management of the policies, programs, activities and evaluations associated with one or more ecosystems.

The **ecosystem** is defined as an **integrated and evolving association of the animate and inanimate resources operating within the boundaries of a defined physical environment.** The concept is equally valid for a system such as a lake and a system as enormous as the ecosphere (world ecosystem).

The effectiveness of the ecosystem-based approach is evaluated on the basis of environmental results. The results may be expressed in a variety of ways (e.g. improvement in water, air, soil and biota quality; maintenance of dynamic equilibria in ecological environments; improved renewable resource use; maintenance of biodiversity; public health and safety).

The ecosystem-based approach requires input from a broad range of experts. As the very concept of sustainable development embraces both socioeconomic and environmental considerations, there is an ongoing need for co-operation to ensure that the sum of our knowledge can be applied to the sum of our concerns.

The concept implies that time is of the essence in attaining results. It assumes that ecosystem related information will always be available when it is needed for management and decision-making purposes.

From among the many factors that must be considered when an ecosystem-based approach is to be used, for the above reasons we have decided to focus on:

- The subject of the ecosystems approach to management is the ecosystem;
- the approach must be comprehensive and foster inclusion;
- the approach must foster decision-making;
- effectiveness is measured by environmental results;
- the approach demands interdisciplinarity;
- the approach counts on co-operation;
- the approach is based on the science and understanding of ecosystems.

Figure 3 summarizes the main components of the approach and their interrelation.

When integrated management is applied to an ecosystem, the first step is to set objectives and goals that have measurable results which can be evaluated by specific indicators. We endorse the approach proposed in a paper published by ESED (Ecosystem Sciences and Evaluation Directorate) and illustrated in Figure 4.

V. THE MAJOR ECOSYSTEMS IN QUEBEC

Depending on the objectives that are pursued, the level of intervention that is contemplated or the specific problems to be solved, ecosystem can be defined in different ways. Our analysis focused on three types of ecosystems; terrestrial ecozones, hydrographic basins and urban centres, that are found in the Quebec region.

The Province of Quebec is divided into five terrestrial ecozones (see Appendix A):

- tundra
- taiga
- boreal forest
- mixed forest
- hardwood forest

These terrestrial ecozones are covered by a complex network of hydrographic basins composed of biophysical elements (water, air, soil, biota) which operate in close, dynamic relationships.

The Atlantic ocean basin area may be subdivided into seven hydrographic basin areas:

- Great Lakes
- Outaouais
- St. Lawrence
- North Shore - Gaspé
- Saint-John - Sainte-Croix
- Maritime Provinces Coastline
- Newfoundland - Labrador

The Outaouais, St. Lawrence and North Shore - Gaspé areas are located within Quebec, as is the New Quebec portion of the Hudson Bay oceanic area (see Appendix B).

The St. Lawrence basin is recognized by both levels of government and the public as a high priority ecosystem for restoration and protection. The St. Lawrence basin has a population of over five million; it is the source of drinking water for 101 municipalities and is inhabited by an impressive range of animal and vegetable species. The St. Lawrence

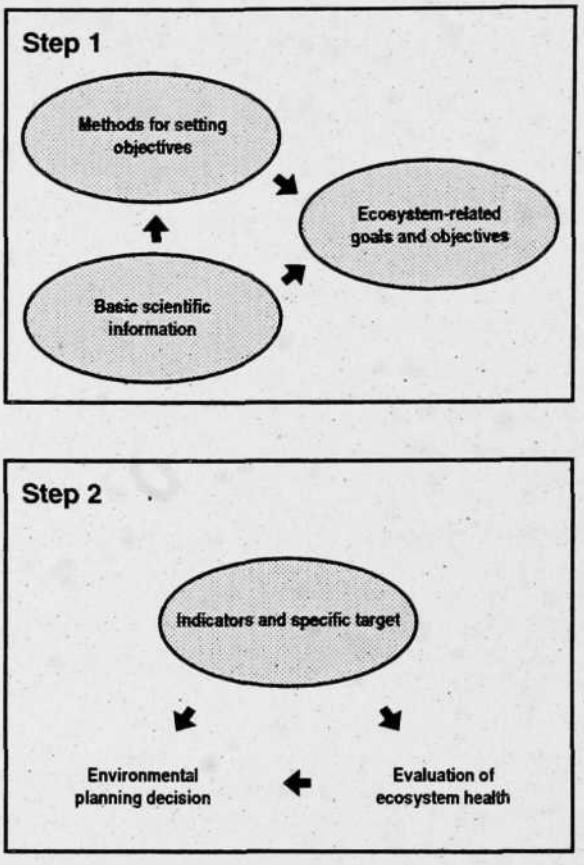


Figure 4: Approach recommended by ESED

Source: «A Proposed National Framework for Developing Indicators for Evaluating and Reporting Ecosystem Health: Discussion Paper, March 93»

basin is also a major factor in the economic, social and tourist development of Quebec.

Conservation and restoration of this ecosystem requires input from many partners; the project can be a common denominator for the regional integration process.

The ecosystem concept can also be used in the more social context of urban environmental management. With the steadily rising population density in municipalities, quality of life is directly linked to the way in which these environments are managed. The ecosystem-based approach can enhance integrated management of urban activities. In Quebec, the complex environment of the Montreal Urban Community ecosystem would manifestly benefit from an ecosystem-based approach.

Furthermore, selection of a terrestrial ecozone as the site of a concrete and clearly defined ecosystem-based approach project has definite advantages. La Mauricie National Park (544 km2) and the surrounding area (6,000 km2) offers obvious potential for a project of this kind (see Appendix C). The Park is in fact an uninterrupted conservation area surrounded by land that has a wide range of uses (e.g. agriculture, forestry, hunting, tourism, resorts, industry). Furthermore, the Park and surrounding area are subject to environmental stresses (e.g. air pollution, climate change, introduction of exotic species, exploitation of hydrographic networks); very little is known about the present and future consequences of these stresses on the evolution of the ecosystems in the area.

Finally, other organizations and individuals concerned about making resource management compatible with the principles of sustainable development have expressed interest in the area. These include the MLCP (Quebec department of hunting, fishing and recreation), Forêts Québec, Integrated Resource Management Group, and Kruger (a company involved in forestry planning and operations).

For all the above reasons, the St. Lawrence and the Greater La Mauricie ecosystems have been selected as test program sites for our ecosystems approach to management. At that time it does not seem possible to apply the ecosystems approach to the greater Montreal ecosystem. Many departmental initiatives will have ecosystem conservation and protection objectives but these will not all necessarily be subjected to as rigorous an approach as are the two test subjects.

Chapters VI and VII provide further details on the directions and objectives of the two programs we have selected.

VI. INTEGRATED MANAGEMENT ADAPTED TO THE ST. LAWRENCE ECOSYSTEM

An ecosystem is not really something that can be managed. Things that can be managed include the use made of resources and the programs and activities designed for ecosystem protection, conservation or restoration.

However, because the physical boundaries of ecosystems are defined by nature, management of these systems can become extremely complex, for us as well as our partners (e.g. the Government of Quebec). The areas targeted by most land management systems are defined on the basis of geopolitical considerations, not ecosystems.

The ecosystems approach to management requires flexibility. We must change our ways of doing things and design programs and activities for areas that transcend sociopolitical boundaries and considerations. This innovative approach, the challenge of the St. Lawrence Action Plan, must be adopted by our partners.

The ecosystems approach to management for the St. Lawrence basin must specify **directions**, **objectives**, **activities** and **measurable results**.

Management methods and tools designed for monitoring programs and objectives are also needed.

The directions of the St. Lawrence II Action Plan are:

- Consolidate SLAP I;
- prevent and reduce pollution at source;
- produce lasting environmental results;
- maximize co-operation with all activity sectors;
- support action with the science and understanding of the ecosystem;
- promote participation by the public and NGOs;
- highlight Canadian expertise in managing major rivers;
- foster environmental education focused on the St. Lawrence basin.

Based on the above directions, five objectives have been set.

Protection: pursue a toxic waste reduction program and a technology development program.

Prevention: implement programs of co-operation with riverside communities (ZIP), pollution prevention programs and a plan focusing on health and the environment.

Biodiversity: implement programs aimed at acquiring knowledge of St. Lawrence biodiversity, programs

Directions of the St. Lawrence Action Plan:

- Consolidate SLAP I
- Prevent and reduce pollution at source
- Produce lasting environmental results
- Maximize co-operation with all activity sectors
- Support action with the science and understanding of the ecosystem
- Promote participation by the public and NGOs
- Highlight Canadian expertise in managing major rivers
- Foster environmental education focused on the St. Lawrence basin

Objectives of the St. Lawrence Action Plan:

Protection: Toxic waste reduction program; technology development program.

Prevention: Programs of co-operation with riverside communities (ZIP); pollution prevention programs; plan focusing on health and the environment.

Biodiversity: Programs aimed at acquiring knowledge of St. Lawrence biodiversity; programs to protect high priority fluvial and marine species and habitats; programs for developing specific biological resources of the river.

Restoration:
- Lachine Canal;
- Montreal and Quebec City port areas.

Decision Making Support:
- Two reports on the state of the environment;
- evaluate the sources and incidence of anthropic toxic substances, especially airborne toxic substances;
- "diagnose" the health of St. Lawrence marine mammals.

to protect high priority fluvial and marine species and habitats, and programs for developing specific biological resources of the river.

Restoration:

- Restore the Lachine Canal;
- Support restoration of the Montreal and Quebec City port areas.

Decision Making Support:

- Publish two reports on the state of the environment;
- evaluate the sources and incidence of anthropic toxic substances, especially airborne toxic substances;
- "diagnose" the health of St. Lawrence marine mammals.

VII. INTEGRATED MANAGEMENT ADAPTED TO THE GREATER LA MAURICIE ECOSYSTEM (GLM)

The ecosystems approach to management for the GLM has four objectives, and a number of clearly defined activities. As historical and socioeconomic factors are significant here, the project requires input from experts in a broad range of fields.

OBJECTIVES - GLM

- Define ecological integrity criteria for the ecosystems in the Park and the surrounding area
- Understand the state of the ecosystems and the environmental issues that are a potential threat to their ecological integrity
- Evaluate the historic and current importance of the resource exploitation methods in the area
- Design models for monitoring biodiversity and management models based on ecosystem conservation and sustainable development in the area

Main Objectives

- Define, on a scientific basis, the criteria for ecological integrity of the ecosystems in the area and the natural processes that govern their evolution;
- evaluate the state of the ecosystems in the Park and surrounding area; identify and document the environmental issues and problems that threaten their ecological integrity;
- evaluate and document the historical and current importance of resource use and exploitation methods in the area;
- design biodiversity monitoring models; design resource management integration models for the area in a perspective of conserving the Park's ecosystems and achieving sustainable development in the area.

Activities

The project has three facets: improving our understanding of ecosystems; evaluating environmental problems related to protecting biodiversity and ecological integrity of the ecosystem; and proposing models for management and decision-making.

An integrated, interdisciplinary approach will be used. The input from the individual services, based on each one's spe-

cial area of expertise and service, will ensure that project objectives are met. The joint efforts of the services will include the following activities:

- Study the structure and operation of the ecosystems;
- study the effects of various environmental stresses on ecosystem integrity in the Park and biodiversity conservation in the area;
- develop a model of ecological integrity for the ecosystems based on the Park's bird population; using the model, determine the impact of the forestry operation methods used;
- study the presence of specific contaminants and specific sources of air pollution;
- study the atmospheric and climatic factors that have potential for affecting biodiversity conservation and ecosystem integrity in the Park and surrounding area;
- evaluate the financial and social benefits to the community of Park protection and sustainable resource use; evaluate the worth of this heritage treasure;
- from a historical standpoint, gain insight into past uses of the Park and related human activities, with a view to reaching a clearer understanding of the current state of resources in the Park and surrounding area.

ACTIVITIES - GLM

- Structure and operation of the ecosystems
- Impact of environmental stress on their integrity and the conservation of biodiversity
- Model of the ecological integrity of ecosystems based on the Park's bird resources
- Presence of contaminants
- Atmospheric and climate related factors
- Financial and social benefits to the community
- Background of Park site (past uses, human activity)

VIII. ORGANIZATIONAL MEASURES

Two organization methods have been designed to ensure implementation and monitoring of the two programs.

ST. LAWRENCE ACTION PLAN (SLAP)

SLAP is to be managed by an Executive Committee chaired by the Executive Director St Lawrence Centre. Committee members are to include the Associate Director General, Canadian Parks Service; Associate Director General, Atmospheric Environment Service; Director, Canadian Wildlife Service; and Director, Environment Protection Branch (Figure 5).

The Executive Committee will ensure participation of the federal departments concerned by SLAP II, i.e. Health and Welfare Canada and Fisheries and Oceans Canada. Considering the importance of improving resource management in the Regions, the SLAP Executive Committee has been mandated to coordinate and publish an annual regional report. Based on the activities of the Services and the Branches, the report is to document short and medium term compliance with the ecosystem-based approach.

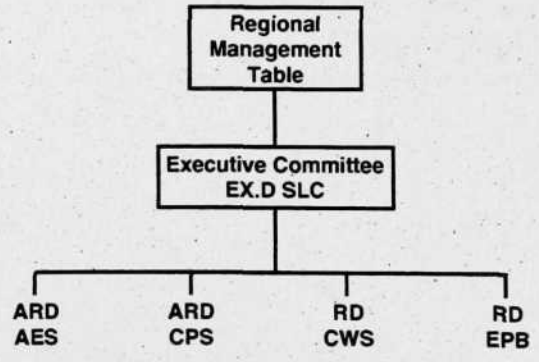


Figure 5: Organizational measures, SLAP

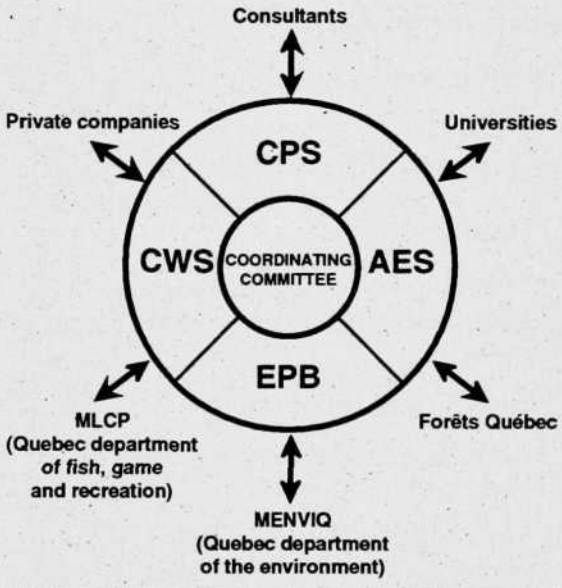


Figure 6: Organizational measures, GLM

GREATER LA MAURICIE ECOSYSTEM (GLM)

The GLM pilot project is to be coordinated by a joint committee representing Environment Protection Branch, Canadian Wildlife Service, Canadian Parks Service and Atmospheric Environment Service.

The committee will oversee the joint efforts of key government, private and private partners (Figure 6).

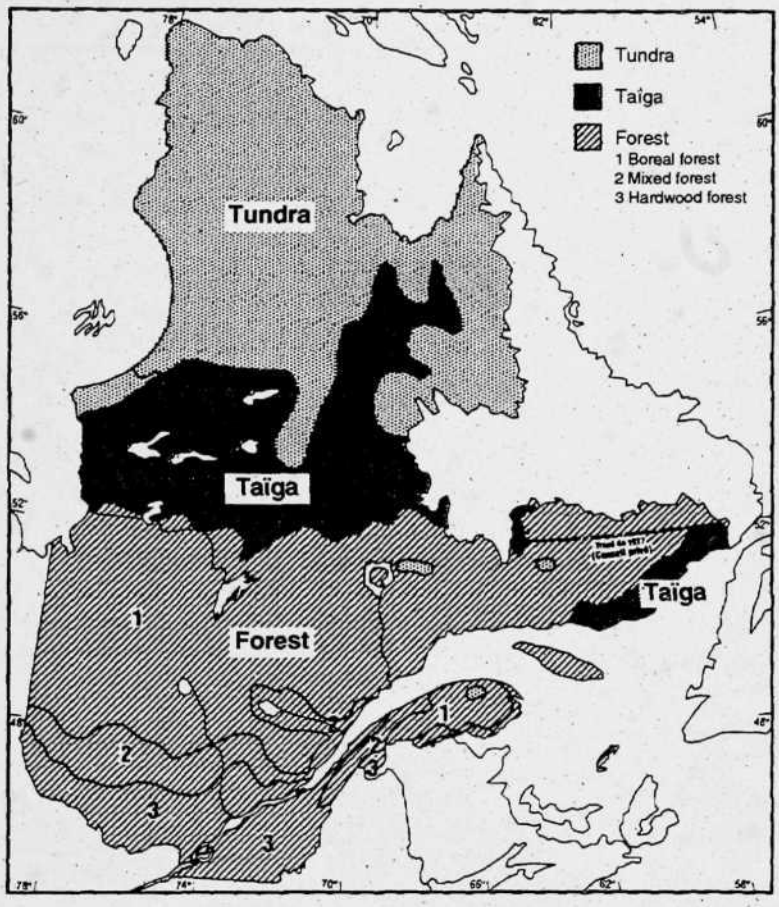
IX. CONCLUSION

Within the context of the Regional Integration Pilot Project, we have defined the ecosystem-based approach as integrated management of the programs and activities related to one or more ecosystems. The St. Lawrence basin and the Greater La Mauricie area have been selected as top priority ecosystems.

The St. Lawrence Action Plan and the Greater La Mauricie area will be the basis for regional action to implement and improve the ecosystem-based approach. Program monitoring and evaluation will be provided by the Regional Management Table, which can later adopt a parallel approach for other ecosystems (e.g. urban areas) in which we wish to intervene.

This in no way diminishes our responsibility for ensuring that all our actions contribute to the conservation and protection of ecosystems.

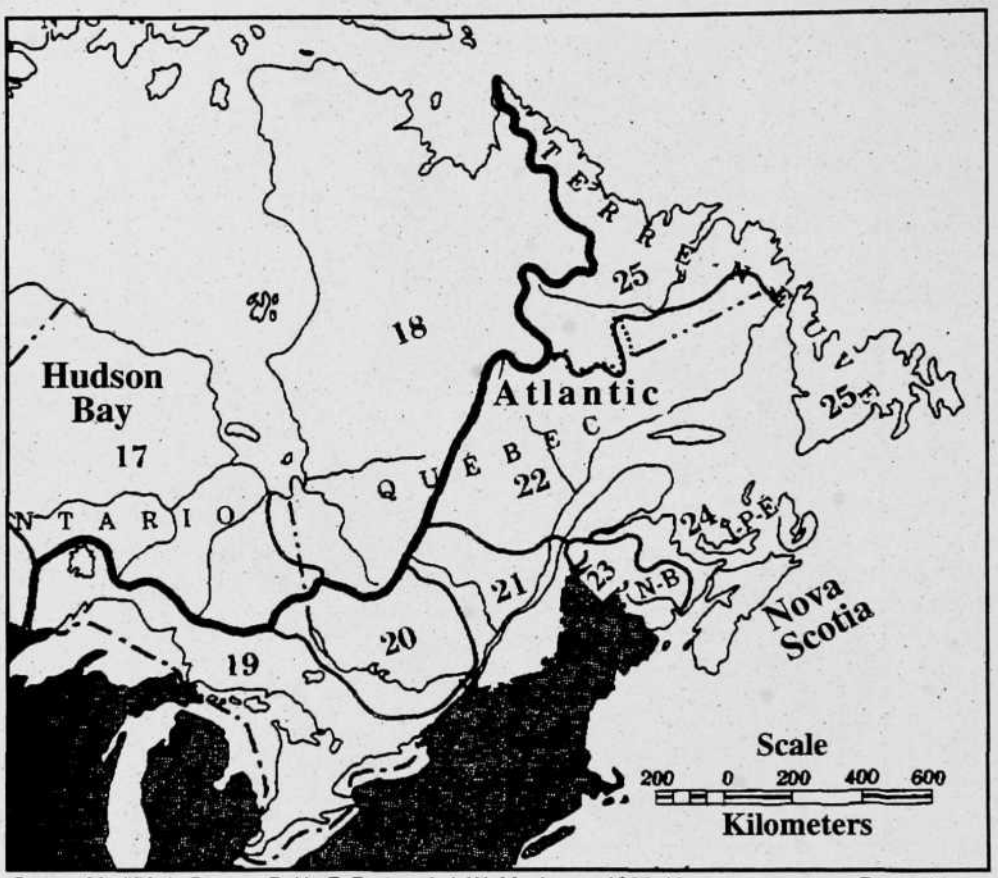
APPENDIX A: The major ecosystems in Quebec



Territory	Area (km²)	Percentage
Hardwood forest	112,600	7
Mixed forest	86,500	5
Boreal forest	558,800	34
Taïga (open forest)	336,100	20
Tundra	402,400	24
Water	171,600	10
Total	**1,668,000**	**100**

Source: Commission sur la protection des forêts, 1991. *Des forêts en santé. Rapport d'enquête et d'audience publique sur la Stratégie de la protection des forêts.* Bureau d'audiences publiques sur l'environnement. Gouvernement du Québec, p. 18.

APPENDIX B: Atlantic oceanic basin area

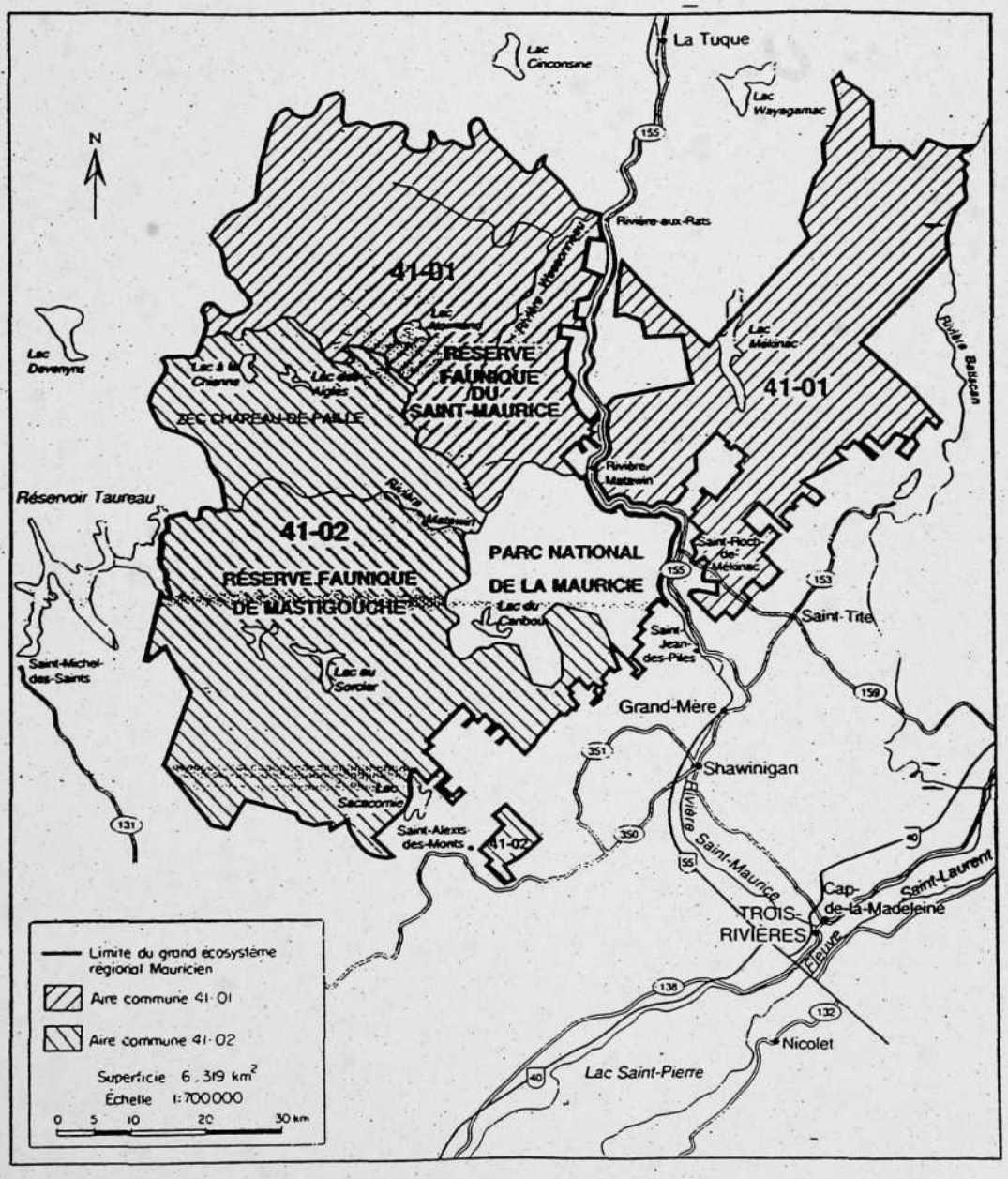


Source: Modifié de Pearse, P. H., F. Bertrand, J. W. MacLaren, 1985. *Vers un renouveau. Rapport définitif de l'Enquête sur la politique fédérale relative aux eaux.* Gouvernement du Canada.

Hydrographic basin area	Area in thousands km²	Population in thousands inhabitants
19- Great Lakes*	319	7 579
20- Outaouais	146	1 270
21- St. Lawrence*	116	5 193
22- North Shore - Gaspé	403	653
23- St-John - Ste. Croix*	37	393
24 Maritime Provinces Coastline	114	1 314
25 NewFoundland - Labarador	376	568

* Canadian coast only: American land area and population figures for the international basin areas are not included in the totals.

ANNEXE C: La Mauricie National Park, Cooperative management zones (preliminary boundaries)



REGIONAL INTEGRATION PILOT PROJECT

Ecosystemic Integration
Biodiversity Conservation

Environment Canada

Quebec Region

I. CONTEXT

Since the time the regional working group on biodiversity conservation was set up, its mandate has evolved rapidly. At the outset, it was mandated to study potential areas of integration within Environment Canada's Quebec Region, with special emphasis on the conservation activities conducted by the Canadian Parks Service (CPS) and the Canadian Wildlife Service (CWS). During initial discussions, it became clear that another important question needed to be resolved: *Environment Canada's leadership role in maintaining biodiversity throughout the province.*

Mandate of Working Group:

- To enable Quebec Region to take part in implementing the Convention on Biodiversity
- To define objectives and priority actions for contributing to the conservation of biological diversity

The nineteen eighties saw significant changes in ecological thinking worldwide. The World Conservation Strategy (WCS) of 1980 introduced the concept of sustainable development based on ecosystem conservation, natural evolution and diversity. The concept, echoed by the Brundtland Commission in 1987, and ratified in "Caring for the Earth - A Strategy for Sustainable Living" in 1991, was at the heart of the discussions at the Rio Earth Summit in June of 1992.

Canada demonstrated international leadership by developing and implementing the Green Plan, a program that has sustainable development as its stated objective. At the Earth Summit, Canada adopted the Rio Convention on maintaining biological diversity (biodiversity), thereby committing itself to conserving the Earth's biological resources.

In this global context, the regional working group set its objectives and defined its mandate as:

- Evaluating and proposing means that will enable Environment Canada, Quebec Region, to play a part in implementing the Convention on Biodiversity;
- defining objectives and priorities that will contribute to conserving biological diversity.

The report issued by the working group makes recommendations on improving integration within Environment Canada and on the Department's role vis-a-vis its Quebec partners.

The Issues:

- By 2018, fifteen per cent of the Earth's existing species will have disappeared
- 100,000 of the Earth's species disappear every year
- In the Gulf of St. Lawrence, there is a moratorium on the cod fishery
- Quebec sawmills are closing down
- In 1982, in Cornwall, 1,000,000 eels went through the fish ladder, compared to 11,000 in 1992.
- Since 1967, not a single smelt has been caught upstream from Quebec City
- Between 1977 and 1987, the Atlantic tomcod catch fell from 93 to 40 tonnes

II. THE ISSUES

It is estimated that 15 per cent of the world's species could disappear in the next 25 years. Some experts estimate that 100,000 species disappear annually.[1]

The expression "the fabric of life" is often used to illustrate the significance of individual species and their interrelationships to conserving, and maintaining balance in, the Earth's ecological systems. If a single thread is pulled from a piece of cloth, the cloth is not visibly damaged. However if 20 threads are pulled out, the cloth is seriously weakened and will tear at a touch. One can see how this analogy applies to the species that make up the Earth's living systems. Human beings, themselves part of the fabric of life, have reaped enormous benefits by "pulling single threads". However we appear to be blissfully unaware of the far greater benefits we reap from overall biological diversity, as we are of its contribution to the survival of the planet through such key factors as chemical cycles, photosynthesis, temperature equilibrium, decomposition of waste and oxygen production. Destruction of this living fabric could be catastrophic.

The more tangible benefits of biological diversity in Canada are related to the monetary profits produced by the development of natural resources (fisheries, forestry, agriculture, wildlife). In most cases, the profits come from harvesting and processing natural resource species. In 1988 for example, the monetary value of forestry products totalled $49 billion nationally. Conversely, the recent closure of the Atlantic cod fishery clearly demonstrates the need for renewable resource management if we are to avoid economic and social disaster.

THE BENEFITS OF BIODIVERSITY:

Economic Benefits:

- fisheries
- forestry (49 billion annually)
- agriculture
- wildlife

Medical Benefits:

- taxol
- cyclosporine

Ecosystem Benefits:

- chemical cycles
- photosynthesis
- temperature balance
- decomposition of waste
- production of oxygen

For a long time, man has derived numerous medications from a broad range of animal and vegetable species. As a result of recent advances in genetics and DNA manipulation, selected animal and plant genes can be used in the manufacture of medications, and to inhibit disease-producing viruses and bacteria. When a species is lost, the potential for developing solutions to present and future problems is reduced. A much sounder approach to the development of living organisms, and one that greatly enhances their value (especially their genetic value), will undoubtedly be one of the major issues of economic development in the coming century.

If these valuable resources are to be maintained, we must make a point of conserving "every little piece" of the living systems; the loss of one insignificant (by today's standards) piece may prove of crucial importance to humanity when our knowledge has progressed sufficiently to grasp its true value.

(1) Procès-verbaux et témoignage du Comité permanent de l'environnement - fascicule no 47, 23-11-92.

III. REQUIREMENTS OF THE CONVENTION ON BIODIVERSITY

In June of 1992, Canada and 153 other countries signed the Convention on Biological Diversity. Six months later, in December of the same year, Canada ratified the Convention, which is to come into force when it will have been ratified by 30 countries.

The Rio Convention adopted a broad definition of biodiversity, or diversity of living organisms, which includes the four following parameters.

- **Genetic Variety and Variability**

  The variety of genetic components found in representatives of a species. A diversified genetic pool ensures resilience and productivity under environmental stress and a high potential for adaptation to unknown future change.

- **Species Variety and Variability**

  The variety of organisms found at a specific site: in a mature forest, for example, the plants, birds, mammals, insects and a whole panoply of less visible species (e.g. mushrooms, mycorrhiza, bacteria).

- **Ecosystem Variety and Variability**

  The variety of integrated associations of animate and inanimate resources operating within a defined physical environment (e.g. a mature forest, a riparian area, a desert, an estuary, a major river).

- **Variety and Variability of Ecosystem Processes and Functions**

  For example, the range of chemical cycles, waste decomposition, nitrogen fixing, pollination.

Definition:

Biodiversity: diversity of life

- Genetic variety and variability
- Species variety and variability
- Ecosystem variety and variability
- Variety and variability of ecosystem processes and functions

The committee adopted this same comprehensive definition for all aspects of its mandate.

The objectives of the Rio Convention on biodiversity are:

- Conservation of biological diversity;
- sustainable use of resources;
- fair and equitable sharing of the benefits of genetic resource.

Convention Objectives:

- Conservation of biological diversity
- Sustainable use of resources
- Fair and equitable sharing of the benefits of genetic resources

Environment Canada's role with respect to these three objectives ranges from direct responsibility through influence and leadership.

The Convention specifies requirements that are both international and national:

International Requirements

- Access to genetic resources in accordance with agreements;
- development of expertise in developing countries;
- sharing the profits of research and development (R&D) with the -countries of origin of the genetic resources;
- transfer, under favourable, equitable onditions, of technologies essential to conservation and sustainable use of biodiversity;
- financial assistance for meeting the conservation needs of developing countries;
- transfer of information on conservation and sustainable development.

National Requirements

- Identify important species and ecosystems;
- protect important areas and control use in surrounding areas;
- manage sustainable biological resource development;
- integrate biodiversity into the decision-making processes of governments, resource developers and society at large;
- maintain and promote equitable use of aboriginal knowledge of conservation, biodiversity and sustainable use;
- develop economic and social incentives for conservation;
- promote public sector participation;
- implement biodiversity education programs;
- use environmental assessment procedures to ensure that development projects comply with policies, acts and regulations.

Environment Canada is bound by two requirements: 1) to contribute to development of a Canadian strategy on biodiversity; and 2) to ensure implementation and monitoring of that strategy.

Maintaining biodiversity entails a major conceptual challenge: all living organisms must be taken into account, not only the small number of organisms which have given us our organic products and traditional commodities. Furthermore, the concept transfers emphasis from managing a single species or small group of species to a concern for the life support systems on which all species, including man, depend.

IV. CURRENT ENVIRONMENT CANADA PRESENCE IN QUEBEC

Although the Convention on Biodiversity was adopted in June of 1992, some of its objectives were already embodied in federal programs. As the aim of the regional integration project is closer coordination of the Department's directions and actions, the regional working group has examined the overall role of each service with regard to this issue.

CANADIAN WILDLIFE SERVICE (CWS)

CWS is directly involved in conserving biodiversity. Although its special interest is migratory bird conservation, it does have an interest in other species, as evidenced in its conservation programs for threatened species and conservation of wildlife habitats. In the area of biodiversity conservation, it conducts the following activities.

- Protects threatened species (fauna and flora), especially within the framework of the St. Lawrence Action Plan;
- conserves wildlife habitats and environments essential to the survival of many species;
- manages protected areas;
- manages databases on the birds of Quebec;
- develops and participates in developing plans for recovery of endangered species;
- studies ecological processes, impact on trophic levels of the presence of toxic substances and their progress through the food chain;
- promotes sustainable resource use by individual owners, municipalities and NGOs;
- monitors a range of populations that can serve as environmental indicators.

CANADIAN PARKS SERVICE (CPS)

The CPS mandate is not direct protection of species, but rather protection of defined areas within ecological zones. The following CPS activities contribute to protecting the species that inhabit these zones and the related ecological processes.

- Preserves areas representative of ecological zones;
- preserves ecosystem integrity in national parks;
- inventories biological resources within the boundaries of the national parks;
- identifies and understands the stresses that affect the parks;

- participates in developing an integrated natural resource management plan for the areas adjacent to parks.

ATMOSPHERIC ENVIRONMENT SERVICE (AES)

Although the Atmospheric Environment Service does not contribute directly to maintaining biodiversity, a number of its current activities do contribute to enhancing the knowledge, protection and supervision of ecosystems and defining a conservation strategy aimed at sustainable development.

- Assesses the impact of airborne toxic substances on marine ecosystems;
- studies stress factors based on meteorological and climatological data (real time);
- studies thinning of the ozone layer and ultraviolet radiation to determine any potential negative impact of these phenomena on the health of living organisms;
- measures NOx/VOC associated with smog episodes in urban environments;
- measures acid rain levels and issues pH bulletins.

ENVIRONMENTAL PROTECTION DIRECTORATE (EPD)

The Environmental Protection Directorate is primarily responsible for applying the legislation designed to ensure ecosystem protection and surveillance, an activity that by definition contributes to maintaining biodiversity. The acts and regulations cover land, water and atmospheric environments.

As recommended in the terms of the Canadian Environmental Protection Act, EPD also participates in protecting biologically diverse genetic pools by monitoring strains genetically altered through biotechnology.

In the field of pollution prevention, EPD is mandated to advise concerned parties about available options for mitigating the harmful effects of polluting industrial processes, and ways of changing consumer behaviour to reduce pollution.

ST. LAWRENCE CENTRE (SLC)

The main function of the St. Lawrence Centre is to contribute to prevention, protection and restoration in the St. Lawrence River ecosystem through improved knowledge, surveillance and development of the ecosystem. It is also concerned with developing technology for solving pollution problems. Thus it too works to conserve biodiversity. The following are its principal activities.

- Studies fish communities as an indicator of state of the environment;
- provides ecosystem assessment and surveillance;
- monitors the state of the River's environment and publishes a report on it;
- develops bio-indicators for the state of the environment;
- develops biological tests for assessing toxic substances;
- identifies sources of contamination in the River;
- researches the impact on the ecosystem and human use of the introduction of exotic species;
- develops techniques for riparian habitat restoration and protection;
- develops techniques for restoring wetlands and stabilizing banks.

DIRECTION DES ÉVALUATIONS ENVIRONNEMENTALES ET DU NORD QUÉBECOIS (DEENQ) (ENVIRONMENTAL AND NORTHERN QUEBEC ASSESSMENT BRANCH)

DEENQ also contributes to biodiversity conservation. In the context of environmental assessment of development projects, the branch oversees departmental concerns arising from the application of the acts, regulations and policies that govern protection of air, water and land quality.

Generally speaking, DEENQ activities tend to protect the integrity of ecosystems threatened by the constant pressure of urbanization. This branch is specifically concerned with major issues related to bird species and habitats.

- Provides surveillance of incursions into protected areas;
- identifies direct impact on bird species, especially threatened species;
- identifies indirect impact (e.g. habitat destruction, deterioration, partition);
- introduces the concept of cumulative impact as it refers to repeated aggression against species and habitats;
- proposes measures to mitigate the impact on biodiversity conservation.

V. ENSURING BIODIVERSITY CONSERVATION (CONCRETE MEASURES)

In 1993 conserving biodiversity is a major issue at Environment Canada. The Department must play a leader-

Conservation Measures Required:

- Inventories of species diversity
- Develop a conservation strategy
- Maintain and develop a network of pretected areas
- Monitor flora and fauna populations and the value of protected areas for conservation of biological diversity
- Implement programs aimed at consolidating knowledge and bringing together experts in fields related to biodiversity
- Make sure that the various conservation programs (e.g. St. Lawrence Action Plan, Green Plan, North American Wildfowl Management Plan) are consistent with the conservation objectives of biodiversity

ship role in coordinating the efforts and the commitment of each province and territory toward developing a Canadian strategy for implementing the Convention in Canada. At the regional level, Environment Canada must also participate in and support the process for developing the Canadian strategy. However its primary role in the regions is to ensure that specific concrete measures designed to ensure biodiversity conservation are implemented:

- Conduct inventories of species diversity;
- develop a conservation strategy;
- maintain and develop a network of protected areas;
- monitor the fauna and flora populations and the value of the protected areas for purposes of conservation and biological diversity;
- implement programs aimed at consolidating knowledge and bring together specialists in different fields related to biodiversity;
- make sure that existing conservation programs (e.g. St. Lawrence Action Plan, Green Plan, North American Waterfowl Management Plan) are consistent with the conservating objectives of biodiversity;
- explain the concept of biodiversity in layman's terms and distribute information that can enhance its image;
- influence the decision-making process related to sustainable resource use through studies of immediate and cumulative environmental impact, and thus speed up implementation of sustainable development.

VI. ORGANIZATIONAL MEASURES

Organizational Measures Environment Canada:

- Establish a Regional Management Table on Biodiversity
- Develop and implement a biodiversity conservation strategy
- Designate the Director, CWS as the person responsible for implementing the strategy
- Prepare an annual action plan as part of the planning process
- Set up a joint CWS - CPS team to plan development of the protected area network

As described in section IV above, Environment Canada already operates a number of programs that target biodiversity conservation. We have shown that the programs delivered by the Canadian Parks Service and the Canadian Wildlife Service are directly related to conserving biodiversity: both services combine research programs with concrete measures for conserving species of fauna and flora and protected sites. The programs of other branches support biodiversity to a greater or lesser degree.

It has been observed that both expertise that is strictly biological and expertise related to understanding ecosystems are distributed rather unevenly among the branches. On a larger scale, a comparable situation exists throughout the federal and provincial departments concerned.

For the above reasons and because ratifying the Convention on Biodiversity is a priority for the Canadian government, it is imperative that we rationalize our actions and programs if

we are to meet Convention objectives and maximize our investment, in both expertise and protected areas.

To empower the Department to implement the Convention on Biodiversity, the regional working group therefore proposes that the following organizational recommendations be implemented.

Within Environment Canada

- Establish a CWS-led Management Table made up of representatives of each branch. The Table would be mandated to develop a biodiversity conservation strategy and see that it is implemented in Department programs. It could draw on the expertise of all the services to ensure implementation of this comprehensive issue.

  In the short term, the Management Table will:

  1) Set long-term and annual priorities for the Department with regard to biodiversity conservation.
  2) Propose a plan for implementing these priorities.
  3) Provide annual assessment of strategy implementation results.
  4) Foster biodiversity conservation through EARP (Environmental Assessment Review Process).

Form a team made up of representatives of CWS and CPS and mandate it to evaluate and plan development of the protected area network (NWAs, sanctuaries, parks).

With Federal Partners

Following the example of other regions, give CWS the mandate to strike a committee made up of representatives of each federal department or organization in Quebec that is concerned with conserving biodiversity. The aim here is to:

- Identify current programs or activities that foster the biodiversity conservation strategy;
- develop the programs needed to meet Convention requirements.

Both activities are among those required to develop the Canadian Strategy mandatory by November of 1994.

With Federal Partners:

- Establish a federal committee
- Identify the programs and actions aimed at conserving biodiversity
- Develop the programs needed to meet the requirements of the Convention

With Provincial Partners

- Cooperate with the Government of Quebec on developing the Quebec strategy on biodiversity.
- Within the framework of PASL II, form a joint federal-provincial working group mandated to:

With Provincial Partners:

- Cooperate with the Quebec government on completing the Quebec strategy on biodiversity
- Within the framework of SLAP II, establish a joint working group to:
  - Coordinate activities related to conserving threatened species and spaces
  - Develop a list of areas to be protected along the St. Lawrence; include the measures to be taken
- Subsequently extend the response team's mandate to the entire Province of Quebec

Priority Measures:

- Atlas of Quebec Fauna and Flora species
- Report on threatened species in Quebec
- Implementation of recovery plans for threatened species
- Development plan for a protected area network in Quebec
- Establishment of a Quebec Biodiversity Centre

  - Coordinate the activities related to conserving threatened species and spaces;
  - jointly develop a list of areas along the St. Lawrence that require protection and methods and action plans for achieving this end.

- At a later date, extend the mandate of the PASL II Conservation Response Team to cover all of Quebec.

VII. PRIORITIES FOR BIODIVERSITY CONSERVATION

As soon as the teams are in place and the organizational priorities have been determined, the following programs should be given immediate attention.

- **Atlas of Quebec Flora and Fauna Species**

  Working from the databases put together by various organizations, establish, for each major species group, the geographic distribution and relative abundance of the flora and fauna species of Quebec.

  Product: an atlas of birds, mammals, reptiles, amphibians, fish and plants.

  Time frame: 5 years

- **Report on Threatened Species in Quebec**

  For each category of species (i.e. birds, fish, reptiles , amphibians, mammals, plants), identify endangered species and threatened species.

  Product: annotated list and distribution map

  Time frame: 3 years

- **Preparation and Implementation of Threatened Species Recovery Plans**

  For each category of animal species, prepare and implement five (5) threatened species recovery plans (birds, fish, reptiles and amphibians, mammals), and ten (10) for plant species

  Product: 30 recovery plans

  Time frame: 5 years

- **Protected Area Network Development Plan for Quebec**

  Evaluate the needs of species for protected areas and the capacity of the existing network to meet those needs. Identify the areas required to make up the shortfall.

  Products:
  - Report on the requirements of the key species in Quebec ecosystems;
  - detailed mapping of areas requiring protection, specifying the legal status they should be given.

  Time frame: 5 years

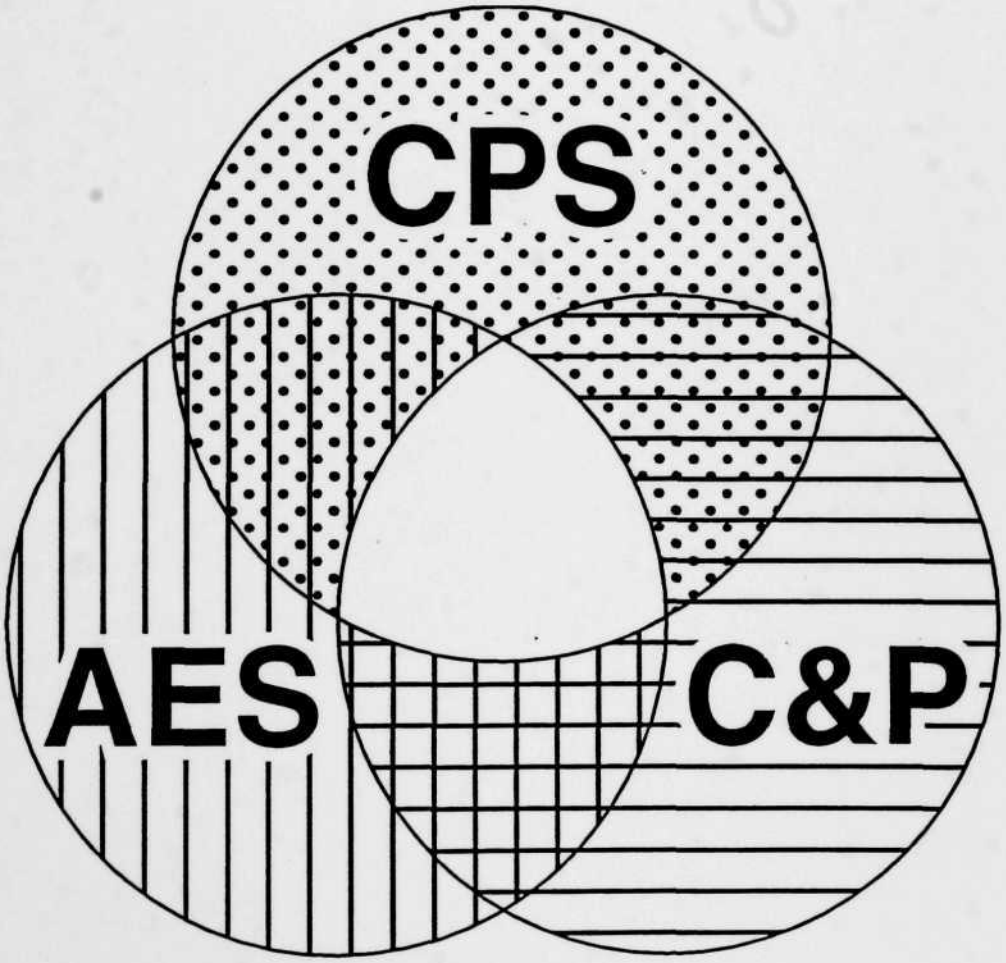
- **Establishment of a Quebec Biodiversity Centre**

The mission of the Quebec Biodiversity Centre (CBQ) would be to collate, analyze and distribute the biological data necessary to ensure sound natural resource use and promote better understanding of biological systems and their benefits.

The Centre would ensure accessibility of an inventory of Quebec species and information on their abundance and distribution. It would be responsible for spatial representation of the species, i.e. for producing a mapping of Quebec biodiversity. The information so produced would be vitally important for environmental impact studies related to development projects and land development plans.

Canada is currently looking into the feasibility of establishing a biodiversity centre, along the lines of the American National Biological Survey. In light of current international efforts to conserve biodiversity, there is reason to believe that the various national biodiversity centres will eventually be closely interrelated, resulting in an international network of biodiversity centres.

REGIONAL INTEGRATION PILOT PROJECT
INTEGRATED MANAGEMENT



ENVIRONMENT CANADA

QUEBEC REGION

REGIONAL INTEGRATION PILOT PROJECT

Integrated Management

Environment Canada

Quebec Region

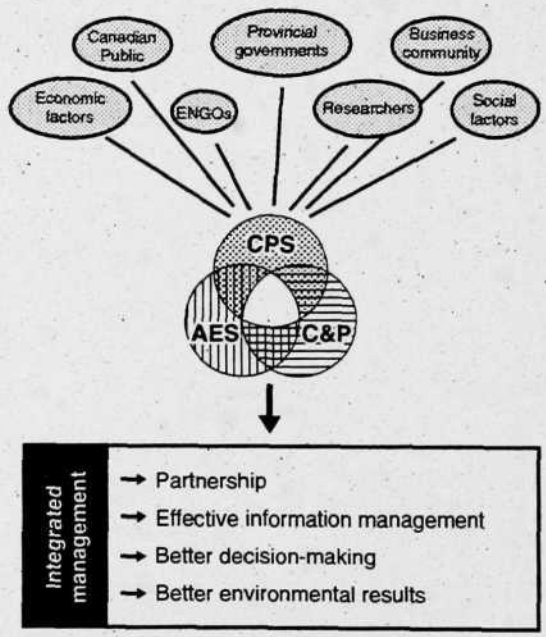
I. INTRODUCTION

To make sound environmental decisions, Canadians will have to work more closely with environmental stakeholders. In this context, information management and decision-making are key tools for dealing with environmental issues.

The implementation of the Green Plan and its objective to promote sustainable development and the Public Service 2000 administrative policy have made it imperative to harmonize the Department's operations in the region more effectively. By integrating the operations of its components (CPS, AES, C&P), Environment Canada is striving to attain greater cohesiveness in order to carry out its mission more effectively and efficiently, which is to play a leading role in achieving sustainable development. Regional integration must improve the Department's performance in managing environmental issues. Within the region, decision-making is being transformed from a closed, vertical intra-Service model to an open, horizontal model based on consensus and the environmental results of projects put forward by its components.

This paper outlines the chief aspects of the implementation of integrated management in the Quebec Region. Following a brief description of the concept of integrated management and the challenges it poses in the context of regional integration, the paper shows how this approach will be implemented in three areas of activity: administration, operations and ecosystems.

Need for Co-operation



II. INTEGRATED MANAGEMENT CONCEPT

Government administrators, business leaders, scientists and the public have come to recognize the inadequacies of traditional, analytical approaches when it comes to dealing with something as complex as the environment, because such approaches focus on isolated and measurable parts of the whole and seem increasingly unsuited to resolving problems involving total processes, such as conserving biological integrity and preserving biodiversity. Only a comprehensive

approach, based on a broad vision that encompasses the interaction of phenomena, can provide a clear grasp of the dynamics of the world and ecosystems. The integrated management approach does not provide solutions, but a better way to diagnose the state of the environment and therefore to intervene more effectively.

Integrated management:

- Takes into account the interrelationships among all parts of the system
- Entails examining the interrelationships between that system and other related systems
- Is especially well suited to complex phenomena, such as ecosystems

Integrated management is, then, not synonymous with the analytical, or systematic, approach, which deals with a complex problem by first breaking it down into a series of smaller problems; the sum of the solutions is taken, perhaps erroneously, to be the overall solution. Integrated management takes into account the interrelationships among all parts of the system in question. It entails examining the interrelationships between that system and other related systems. This approach is especially (but not exclusively) well suited to complex phenomena, such as ecosystems.

III. MANAGEMENT CHALLENGES IN THE CONTEXT OF REGIONAL INTEGRATION

Achieving integration means more than merely grouping our three Services together and assuming that their operations will become harmonized by themselves. It involves much more than that. We must go beyond making structural changes to a truly integrated management style. To this end, the Quebec Region plans to adopt a management style pooling the expertise and knowledge available within the organization. Prior to integration, each component of the Department operated in isolation as it saw fit. From now on, the components will perform their functions in conjunction with one another. To foster better decision-making and encourage everyone concerned to participate at each stage in the decision-making process, decision-making mechanisms will be implemented so that the Services can strive to attain common goals.

The greatest challenge of integrated management lies in the fact that it goes far beyond integrating operations. It means integrating the decision makers' vision of the issues, the priorities they assign to them and the sum of the actions they take.

IV. INTEGRATED MANAGEMENT: APPLICATIONS AND PROCEDURES

According to the papers submitted to date in the context of the pilot project[2], integrated management encompasses three main areas of activity: administration, operations and ecosystems (Figure 1).

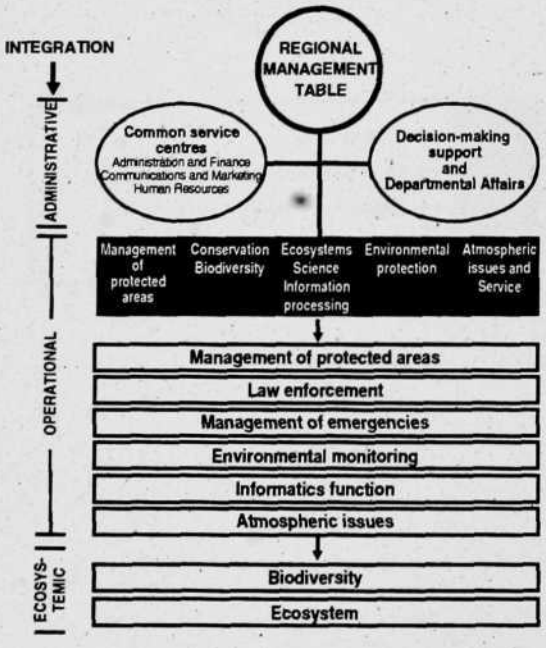


Figure 1: Integrated Management Environment Canada, Quebec Region

[2] Readers wishing more detailed information may obtain copies of the integration reports available in their branches.

ADMINISTRATIVE INTEGRATION

The objective of administrative integration (Figure 2) is to pool strategic information and make support services available to the Regional Management Table and the entire organization. Integration mechanisms must therefore be established for decision-making (Regional Management Table), Regional Management Table support (Decision-Making Support Unit) and administrative services delivery (common service centres). To create these mechanisms, the regional branch and support services must be reorganized. To harmonize activities, an integrated strategic planning cycle, as illustrated in Figure 3, must be developed. Although the planning cycle is an administrative process, it also involves the operational and ecosystem aspects of integrated management, as we shall see later on.

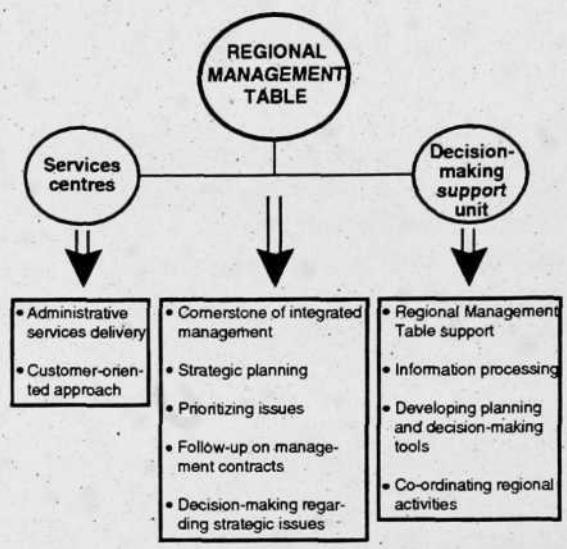


Figure 2: Administrative Integration

The Regional Management Table is the cornerstone of integrated management. It brings together all the directors of the departmental components in the region in the same centre of authority (Figure 1). Its objective is to produce the best decision-making and most coherent action possible in the organization with respect to major environmental issues.

To accomplish this, it must have access to all relevant strategic information. It must also share in unified strategic planning and equal knowledge of priorities and management contracts. Such support in terms of information management, planning, production and monitoring of management contracts is provided by the Decision-Making Support Unit.

Strategic planning cycle

The objective of the integrated strategic planning cycle is to better integrate the activities of all the departmental components in the region.

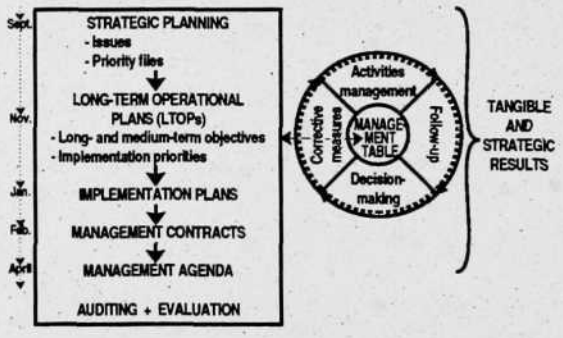


Figure 3: Integrated Strategic Planning Cycle

The cycle would entail:

- Strategic planning integrated around the Regional Management Table, harmonizing all branch priorities, including those of the service centres and operational units, and overall intersectoral issues to be tackled by integration committees;
- co-ordinated production of management contracts by all the members of the Regional Management Table;
- strategic monitoring to determine whether anticipated results have been obtained;
- regular monitoring to determine whether such results have been obtained.

The integrated management approach advocated by the Quebec Region will also promote more extensive integration

of various departmental support functions, namely Finance and Administration, Human Resources, Communications and Informatics. All too often until now, these functions, which are vital to effective action, have been managed independently of more operational activities.

Following the example of effective organizations as they are recognized today, financial and human resource aspects must be integrated as extensively as possible in planning and decision-making mechanisms

Following the example of effective organizations as they are recognized today, financial and human resource aspects must be integrated as extensively as possible in planning and decision-making mechanisms. To this end, the Quebec Region will have those in charge of these functions sit at the Regional Management Table and will ensure that these functions are subject to the same strategic planning and decision-making mechanisms as the other components of the organization.

OPERATIONAL INTEGRATION

Operational Integration

- Structural changes: "Operational units"
- Functional mechanisms: "Integrating committees"
- Administrative processes:
  1- Integrated Strategic Planning Cycle
  2- Regional management agenda
- Support: Decision-making support unit

The objective of operational integration is to ensure that activities common to operational units are performed as effectively as possible. It involves some structural changes (operational units), active and responsible co-operation with the Regional Management Table (integrating committees), and information dissemination and strategic monitoring mechanisms.

The integrating committees are a concrete example of operational integration. Interdisciplinary by nature, they bring together experts from each of the operational units concerned with the following issues: law enforcement, management of emergencies, environmental monitoring, informatics and atmospheric issues. They are chaired by representatives affiliated with the units. Their goals are collective ones, and work is conducted jointly. Pooling skills to tackle issues produces optimum results. Concerned with co-ordinating efforts and harmonizing activities, each committee produces an annual management contract, which the chairperson submits to the Regional Management Table for its approval.

The Decision-Making Support Unit monitors the work plans of all the integrating committees. The Unit must collect and organize the required information and forward it on a regular basis to the Regional Management Table for study and decision-making. All decision-making in the region then hinges on the Regional Management Table on the basis of a regional management calendar. The calendar contains all important regional issues stemming from the preparation of management contracts. The calendar is used to determine which strategic issues will be discussed at the Regional Management Table in each operating year. This approach will enable the Regional Management Table to deal systematically with priority environmental issues and make the necessary decisions, while integrating as many parameters as possible. The calendar also ensures that priority issues will

be discussed in a timely fashion within time frames that are clearly specified in the management contracts.

This will make the Regional Management Table not only an effective channel for following up on priority issues in a proactive manner, but also a focal point for redirecting efforts and taking corrective action to obtain the anticipated results.

The approach described is also aimed at empowering managers with respect to their colleagues in the Region and making it easier for them to discharge their reporting obligations.

ECOSYSTEM INTEGRATION

Priority will be given to adopting an ecosystem approach, whose management focus is the ecosystems themselves. Such an approach must inform our decision-making, enabling us to integrate our ecosystems knowledge with major socioeconomic development issues in Quebec. Through this innovative approach, departmental programs and activities are managed and planned taking into account the health of ecosystems and society. The effectiveness of this approach is measured away from the point where action is taken in the light of environmental results obtained, which are determined according to the characteristics of the ecosystem in question.

Focus of the ecosystem management approach is the ecosystem itself

Ecosystem integration acts on the objective being sought. It applies to issues as broad and comprehensive as biodiversity, for example. Such issues require more than co-operation among the operational units. They call for a tailor-made management approach and organization of resources designed to handle issues specific to them. In ecosystem integration, the integrated management approach as presented in the previous sections is not merely an approach resulting in greater effectiveness. It is an absolute necessity. Optimum intervention in an ecosystem is only possible through integrated management, since ecosystems are vast systems formed by the interaction of living things with constituent organisms.

In ecosystem integration, the integrated management approach as presented in the previous sections is not merely an approach resulting in greater effectiveness. It is an absolute necessity

For example, the St Lawrence ecosystem encompasses a number of issues that require tailor-made environmental solutions. Environment Canada is striving to attain a major objective for this ecosystem through the St Lawrence Action Plan, which is designed to rehabilitate and preserve the St Lawrence. The plan includes several types of activities, such as research, monitoring, co-operation, legislation and preservation of habitats and species. It is only through integrated management that this series of activities has managed to produce the environmental results that we have seen. The Plan takes into account the specific needs of the ecosystem and its multiple interrelationships. The Plan also makes it

It is only through integrated management that this series of activities has managed to produce the environmental results that we have seen

possible to intervene on several fronts to rehabilitate the ecosystem.

An important aspect of integrated management geared to a particular ecosystem is networking among partners having a bearing on the ecosystem. Through integrated management and taking into account individual mandates and intervention methods, Environment Canada will be able to position itself strategically with respect to environmental stakeholders and use its influence to maximize results.

The integration of knowledge, objectives, actions and results, which is made possible by integrated management, must form the backdrop for ecosystem integration

The integration of knowledge, objectives, actions and results, which is made possible by integrated management, must form the backdrop for ecosystem integration.

V. CONCLUSION

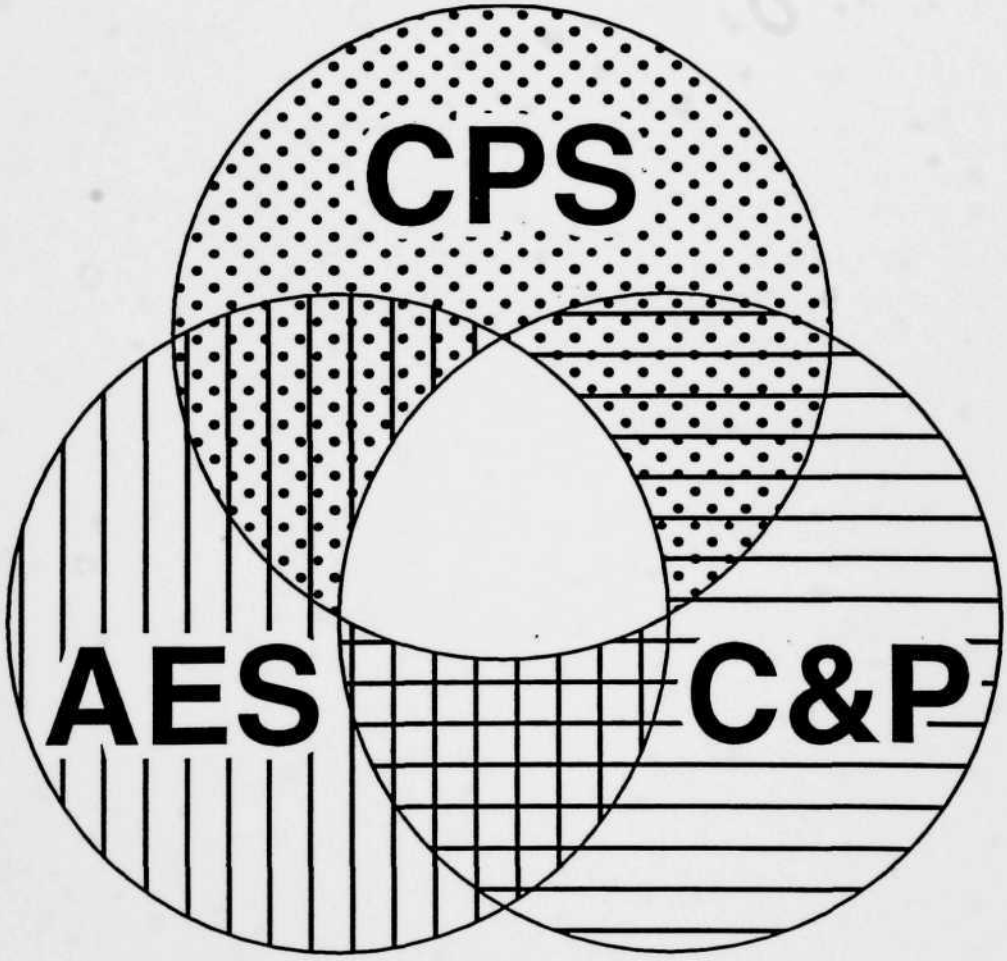
Integrated management is the tool that should be used in the regional integration process if we want to obtain the best possible results, since integrated management will be used to tackle the increasingly complex problems posed by the environment.

In adopting integrated management, Environment Canada is providing itself with the tools required to meet its customers' increasing expectations and carry out its complex mandates.

Integrated management applies to all levels of integration targeted by the regional project: administration, operations and ecosystems

Integrated management applies to all levels of integration targeted by the regional project: administration, operations and ecosystems. This organization-wide approach will enable the Department to carry out its mission in accordance with its values and management principles.

REGIONAL INTEGRATION PILOT PROJECT
CONCLUSION



ENVIRONMENT CANADA

QUEBEC REGION

REGIONAL INTEGRATION PILOT PROJECT

Conclusion

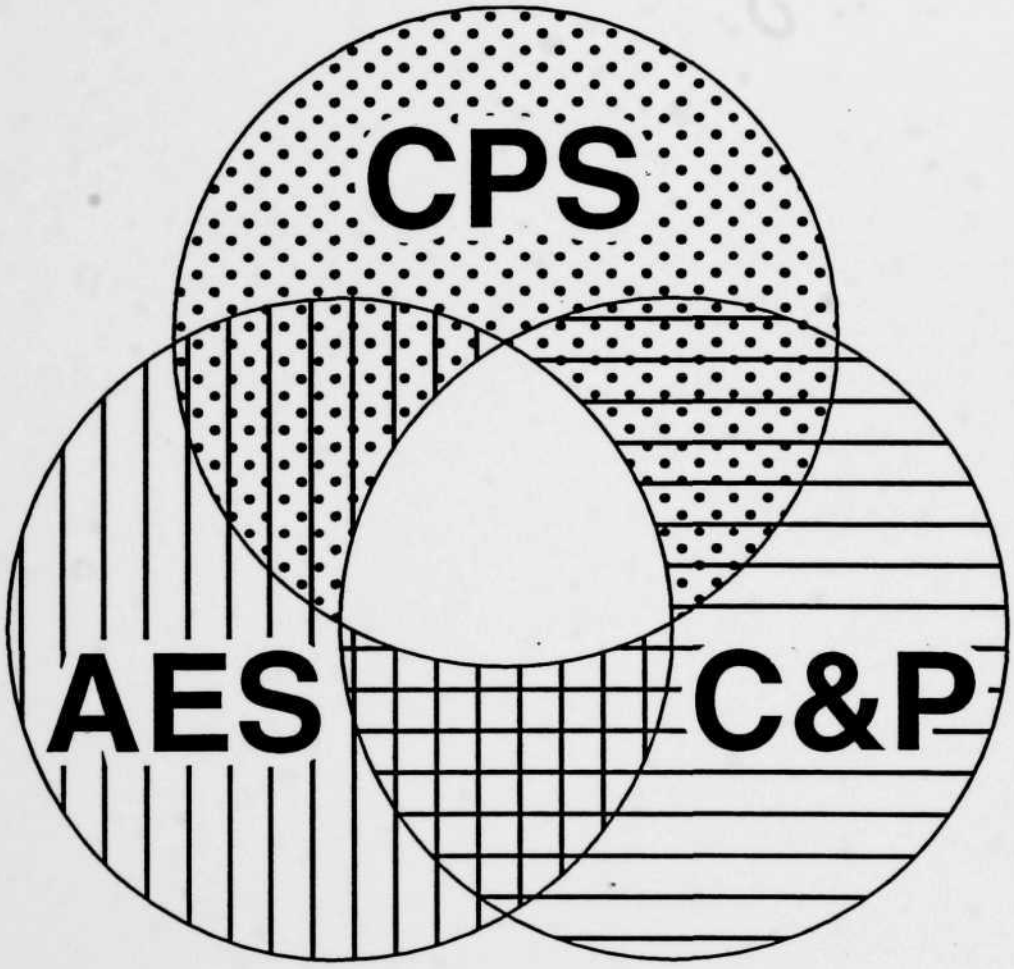
Environment Canada

Quebec Region

In the Quebec Region, we have conducted a very interesting experiment in participative management over the past six months. First and foremost, we became "integrated in our thinking". We got to know one another a lot better and we discovered that we all must contribute our knowledge and abilities to the achievement of the Department's vision in the Region. This allowed us to find simple, flexible and perhaps even innovative ways of achieving the organizational integration that was asked of us.

The high point of this initiative isn't so much the conclusions we came to, but more the way in which we all came to those conclusions: in a spirit of teamwork, collaboration and interdependence. Quite a statement of what can be accomplished if we believe in the professionalism of our staff.

REGIONAL INTEGRATION PILOT PROJECT
APPENDIX A
LAUNCHING AND CONSULTATIONS ASSESSMENT



ENVIRONMENT CANADA

QUEBEC REGION

REGIONAL INTEGRATION PILOT PROJECT

Pilot Project Launch and Regional Consultations

Environment Canada

Quebec Region

The Quebec Regional Integration Pilot Project has been carried out in close co-operation between management and staff. Staff consultations and the use of effective channels of communication have played a key role in promoting and maintaining this co-operation.

Pilot Project Launch

More than 550 employees attended the pilot project launch on December 9 and 10, 1992 in Montreal and Quebec City. All DOE employees in the region (some 1,100) were given written information on the project on December 10.

On December 14 and 16, close to 300 employees took up the Regional Director General's invitation to discuss the project with him as he visited work locations in Chambly, Montreal, Ville St. Laurent, Trois-Rivières and Quebec City.

Consultations and activities of working groups

Seventy-five employees representing all areas of activity were appointed to the regional working groups which were mandated to explore the possibility of integrating 12 specific activity areas and submit recommendations in this regard.

The reports of the 12 working groups were posted in all workplaces in the region with a view to obtaining comments and suggestions from all those concerned. Prior to this, the working groups were asked to consult employees engaged in that line of work.

During the 12 consultation sessions held in Montreal and in Quebec City, over 250 participants expressed their points of view in relation to the proposals put forward by the working groups. Many key changes were made in response to the points raised.

Ongoing communication

Eight information bulletins on the progress of the pilot project were distributed to all employees in the region. Over the past six months, the Regional Director General has issued four commentaries on themes related to the integration process.

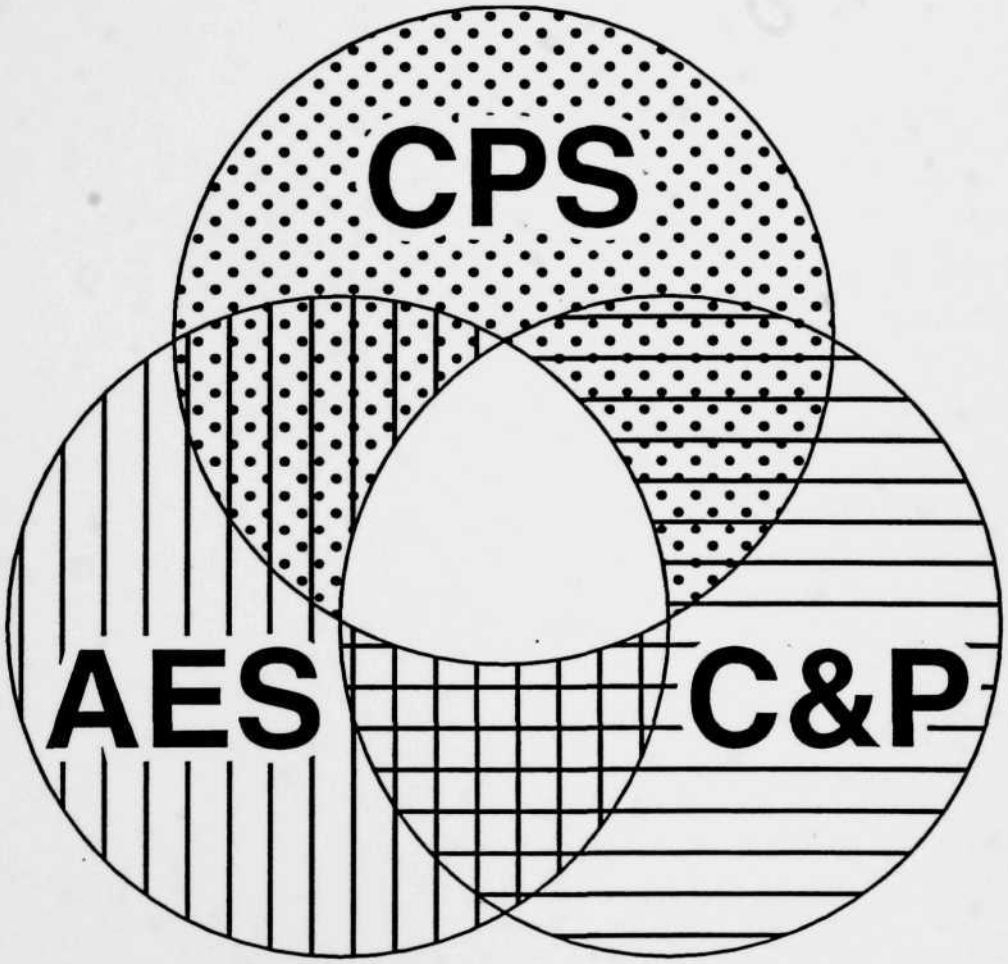
The minutes of the meetings held by the Regional Integration Committee were distributed to all offices and posted on bulletin boards.

SUMMARY

We have used every possible means to respect our commitment to carry out the pilot project in a spirit of openness.

The consultations and ongoing communication associated with the pilot project have helped to strengthen the teamwork that was demonstrated in the working groups. This same spirit will ensure that the proposals will be implemented once the Deputy Minister's Management Committee has given its approval.

REGIONAL INTEGRATION PILOT PROJECT
APPENDIX B
STRUCTURE



REGIONAL INTEGRATION PILOT PROJECT

Proposed New Regional Structure

Environment Canada

Quebec Region

QUEBEC REGION

Office of the Regional Director

Service centres

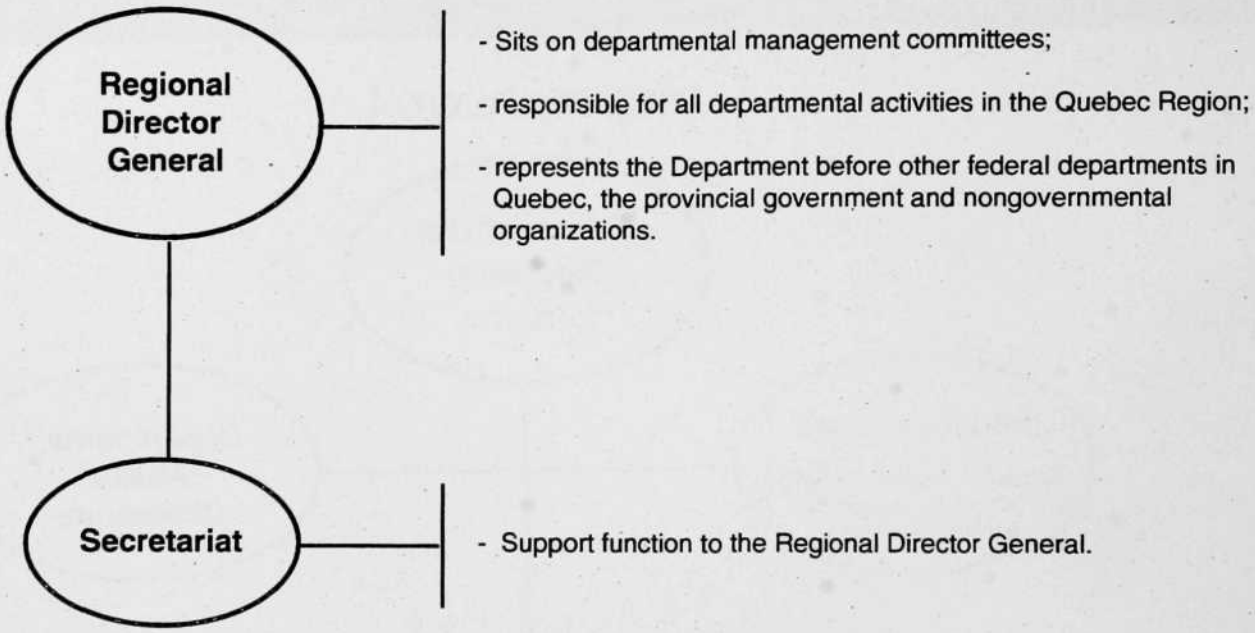
Communications and Marketing
Finance and Administration
Human Resources

Departmental Affairs Directorate

- Atmospheric Environment Service
- Environmental Protection Directorate
- St Lawrence Centre
- Canadian Wildlife Service
- Canadian Parks Service

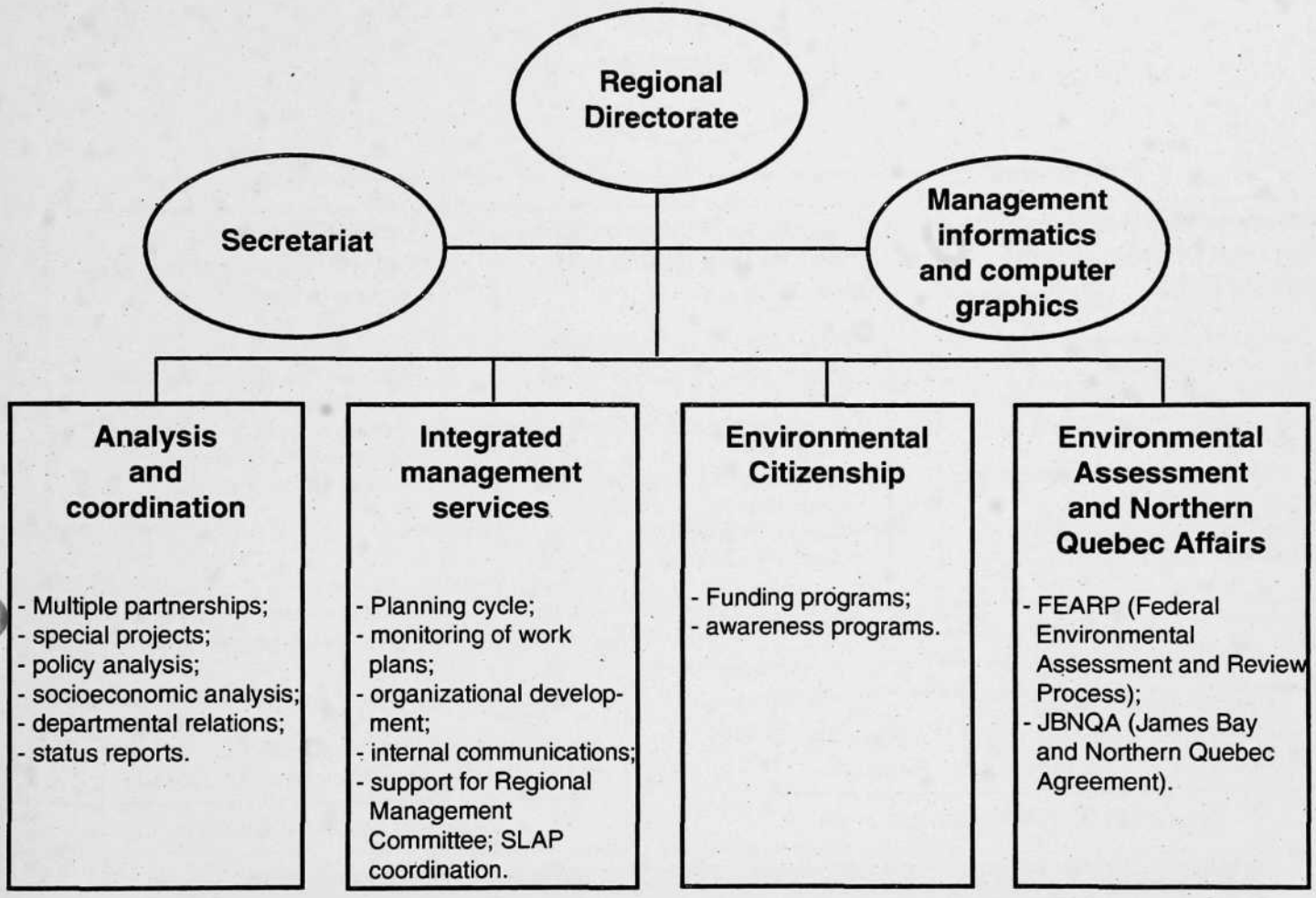
Quebec Region Human and financial resources	
Full-time equivalent	1,018 persons
Salaries	$44,095,000
Other operating costs	$23,583,000
Capital	$16,094,000
Grants and contributions	$13,688,000
Total	**$97,460,000**

OFFICE OF THE REGIONAL DIRECTOR



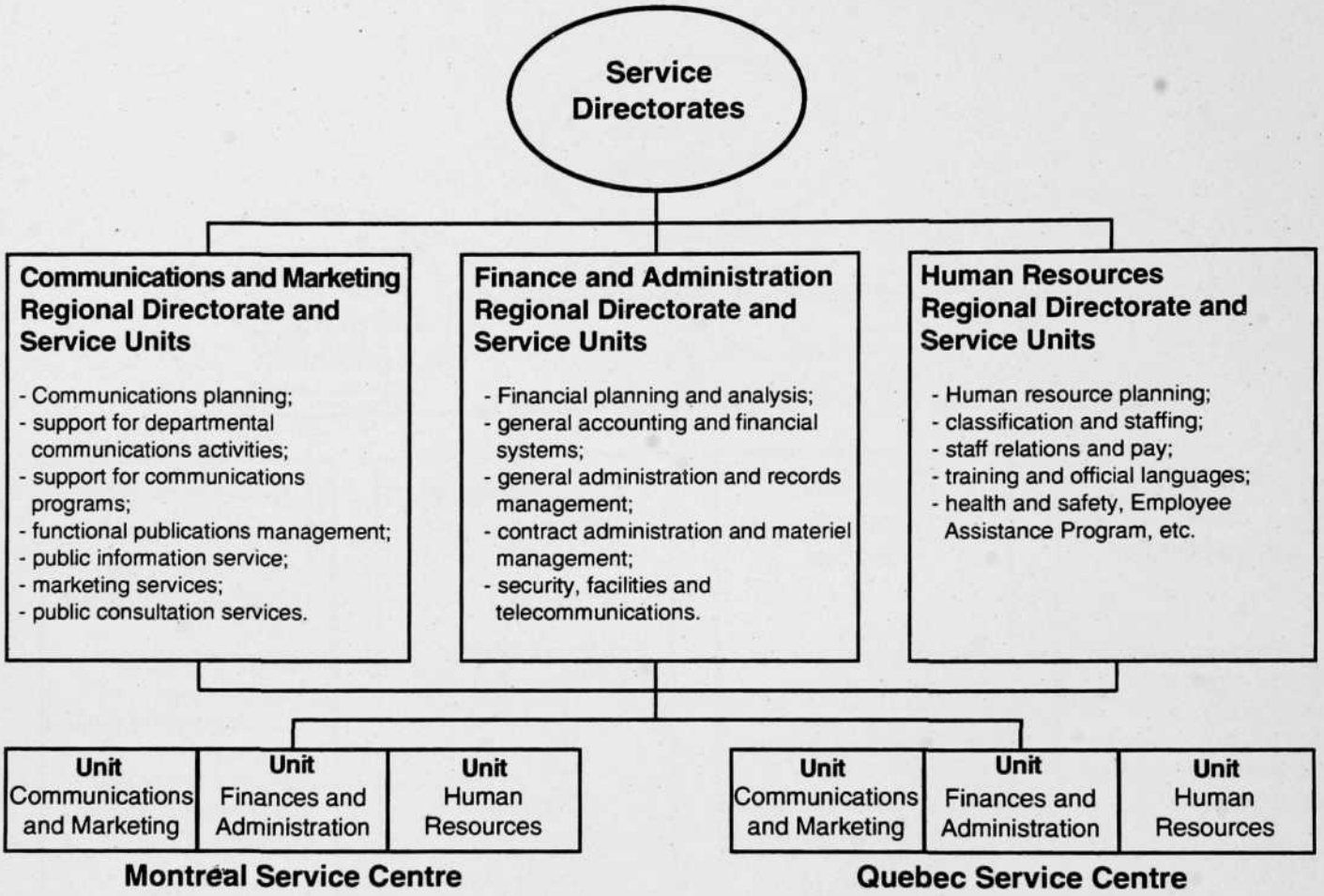
Office of the Regional Director Human and financial resources	
Full-time equivalent	3 persons
Salaries	$185,000
Other operating costs	$75,000
Capital	$0
Grants and contributions	$0
Total	**$260 000**

DEPARTMENTAL AFFAIRS DIRECTORATE



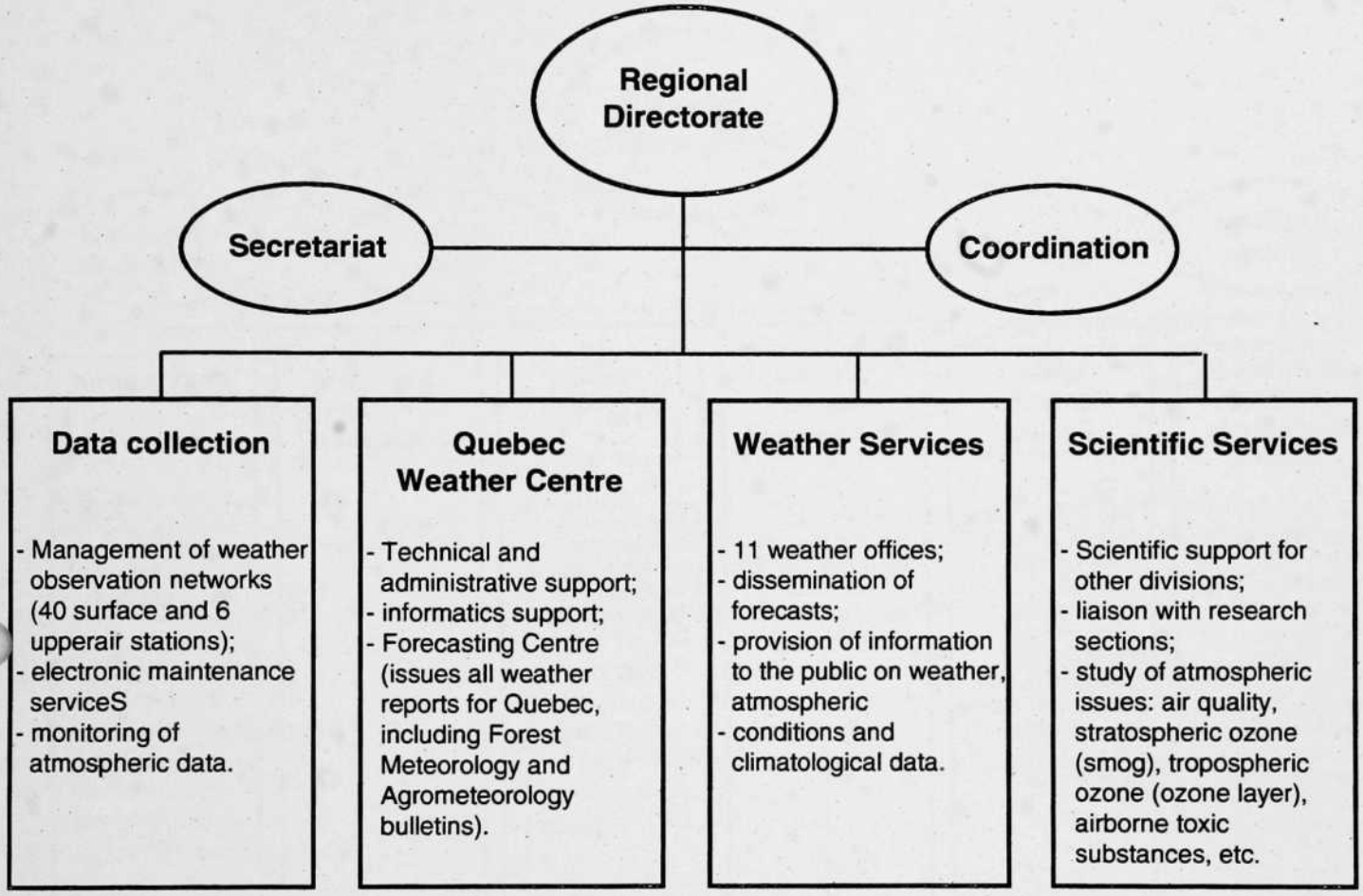
Departmental Affairs Directorate Human and financial resources	
Full-time equivalent	30 persons
Salaries	$1,404,000
Other operating costs	$825,000
Capital	$20,000
Grants and contributions	$1,631,000
Total	**$ 3,880,000 $**

SERVICES DIRECTORATES



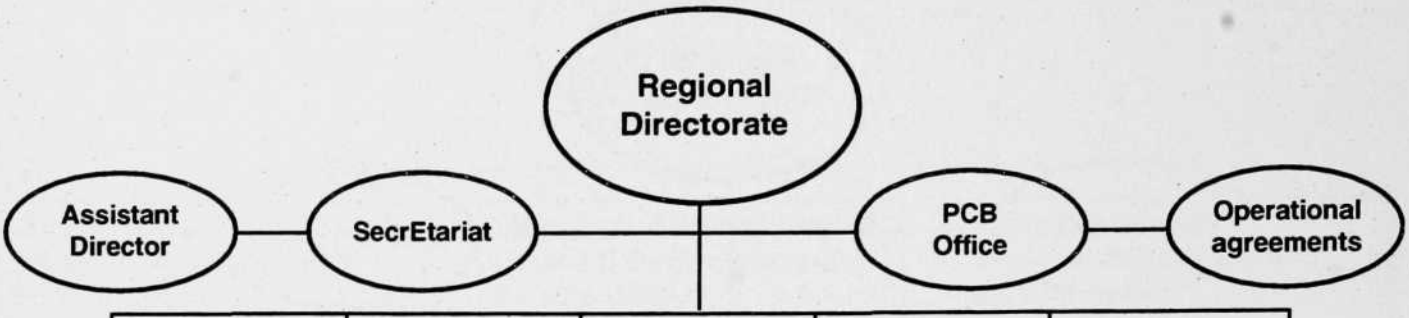
Service Directorates Human and financial resources			
	Communications and Marketing	**Finances and Administration**	**Human Resources**
Full-time equivalent	16 persons	71 persons	31 persons
Salaries	$628,000	$2 252,000	$1,209,000
Other operating costs	$252,000	$1 570,000	$163,000
Capital	$0	$4,000	$28,000
Grants and contributions	$0	$0	$0
Total	**$880,000**	**$3,826,000**	**$1,400,000**

ATMOSPHERIC ENVIRONMENT SERVICE



Atmospheric Environment Service Human and financial resources	
Full-time equivalent	191 persons
Salaries	$10,973,000
Other operating costs	$5,216,000
Capital	$407,000
Grants and contributions	$0
Total	**$16,596,000**

ENVIRONMENTAL PROTECTION DIRECTORATE



Air Pollution and Toxic Substances Control

- Air cleanup programs (acid rain, NOx/VOCs management plan, NAPSN (National Air Pollution Surveillance Network) measuring network, industrial cleanup and environmental assessments);
- toxic substances program (substances targeted under the CEPA, pollution prevention, pesticides, etc).

Water Pollution Control

- Regulated industrial sectors (pulp and paper, mines, refineries, environmental assessments);
- Shellfish Water Quality Protection Program (monitoring water quality and rehabilitating sectors)

Soil and Waste Management

- Restoration of contaminated sites;
- waste management;
- information and advice for the public.

Federal Programs

- Restoration of contaminated aquatic sites;
- federal activities;
- Ocean Dumping Control Program.

Inquiries and Inspections

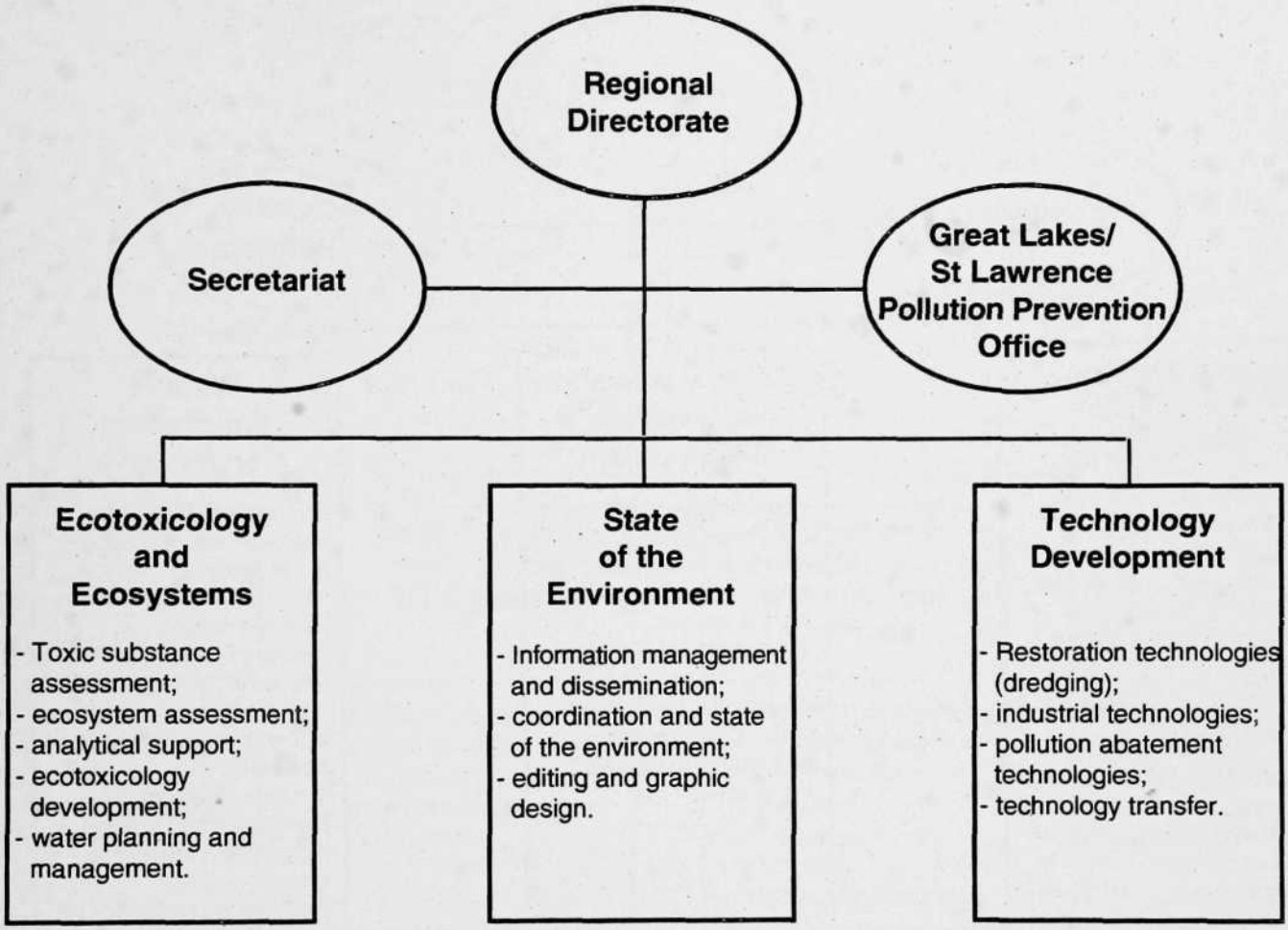
- Enforcement of federal regulations.

Emergencies

- Emergencies at sea (spills);
- emergencies on land (hazardous spills);
- prevention.

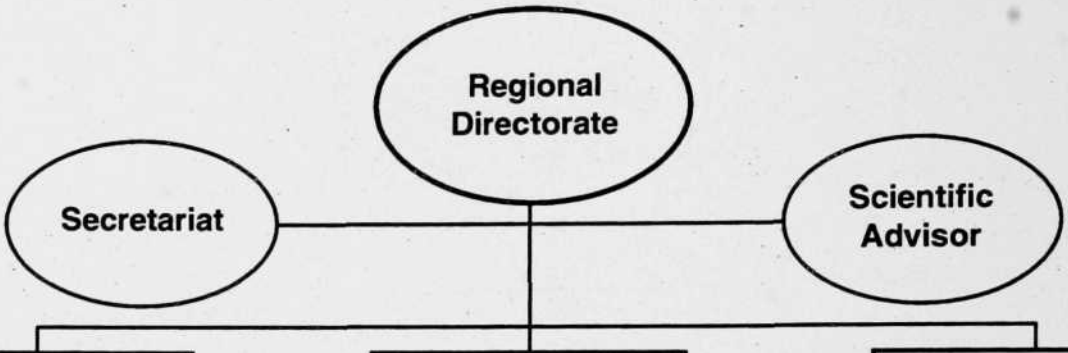
Environmental Protection Directorate Human and financial resources	
Full-time equivalent	72 persons
Salaries	$3,332,000
Other operating costs	$2,205,000
Capital	$277,000
Grants and contributions	$2,750,000
Total	**$8,564,000**

ST. LAWRENCE CENTRE



St Lawrence Centre Human and financial resources	
Full-time equivalent	75 persons
Salaries	$3,774,000
Other operating costs	$3,120,000
Capital	$328,000
Grants and contributions	$1,131,000
Total	**$8,353,000**

CANADIAN WILDLIFE SERVICE



Migratory Birds Management

- Research on waterfowl (bird populations, hunters' takes, etc);
- negotiations with Natives on management and harvesting of migratory birds;
- issuance of licenses and enforcement;
- management of 32 sanctuaries and 3 staging areas;
- Black Duck and Arctic Goose Joint Ventures (North American Waterfowl Management Plan).

Ecosystems and Sustainable Development

- Atlas on Breeding Birds in Southern Quebec;
- research on the effects of toxic substances on certain wildlife species;
- assessment of impact of projects on wildlife habitats;
- development of concepts and approaches for promoting sustainable development.

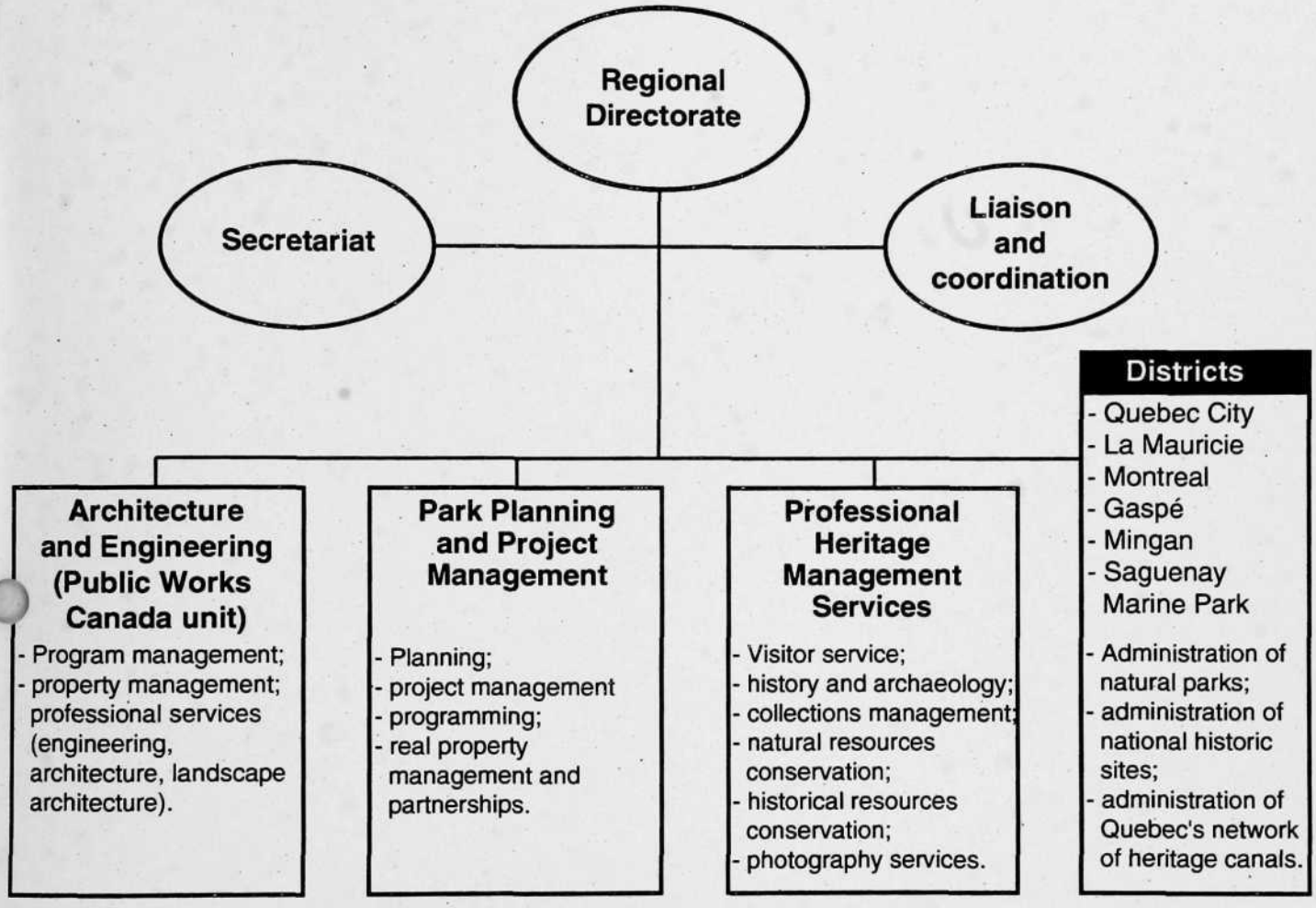
Wildlife and Habitat Conservation

- Protection and management of migratory bird habitats;
- management of 8 national wildlife areas;
- Eastern Habitat Joint Venture;
- safeguarding of endangered habitats and species;
- programs to reestablish threatened bird species;
- support for conservation groups;
- restoration of endangered wetlands.

Canadian Wildlife Service
Human and financial resources

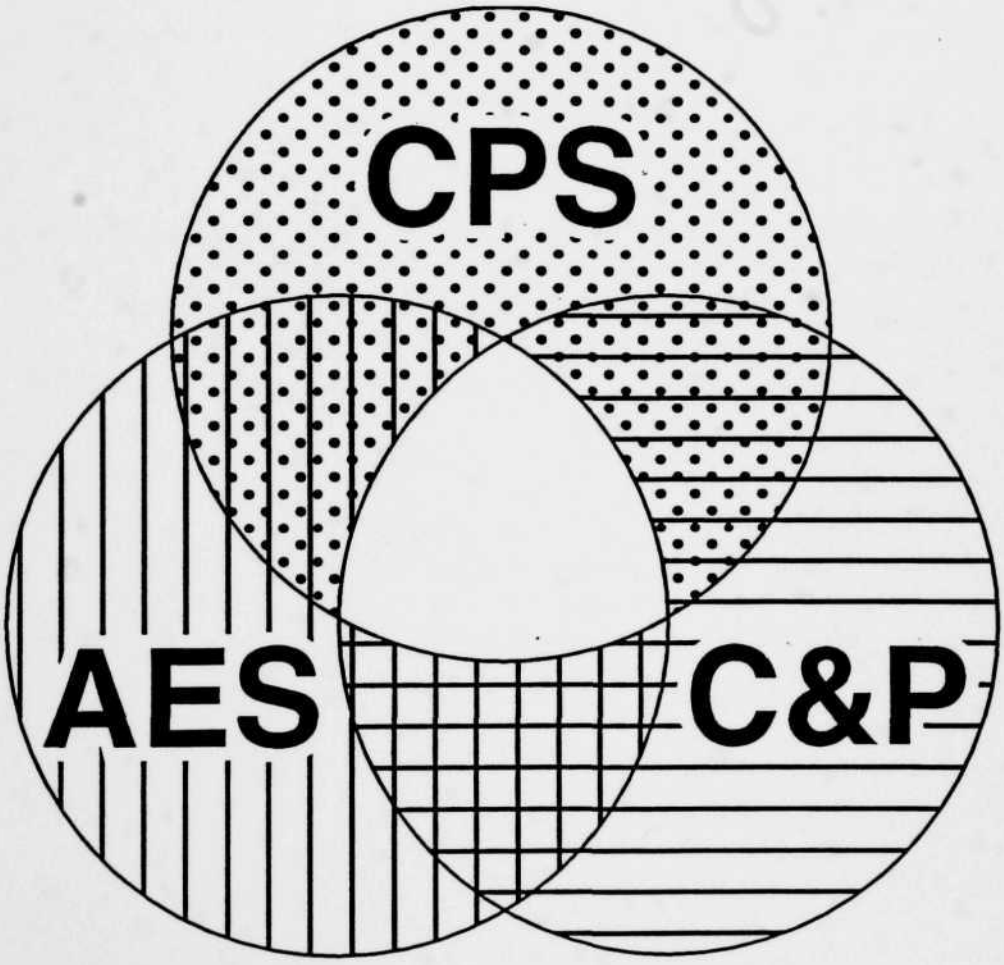
Full-time equivalent	47 persons
Salaries	$2,341,000
Other operating costs	$2,309,000
Capital	$168,000
Grants and contributions	$192,000
Total	**$5,010,000**

CANADIAN PARKS SERVICE



Canadian Parks Service Human and financial resources	
Full-time equivalent	482 persons
Salaries	$17,997,000
Other operating costs	$7,848,000
Capital	$14,862,000
Grants and contributions	$7,984,000
Total	**$48,691,000**

REGIONAL INTEGRATION PILOT PROJECT
APPENDIX C
IMPLEMENTATION (PLANNING AND SCHEDULING)



ENVIRONMENT CANADA

QUEBEC REGION

REGIONAL INTEGRATION PILOT PROJECT

Implementation Plan

Environment Canada

Quebec Region

Implementation of the regional integration proposals contained in this report was to have been a continuation of the work we did in the pilot project. Government restructuring that was announced on June 25 changes the context of that implementation in a significant way.

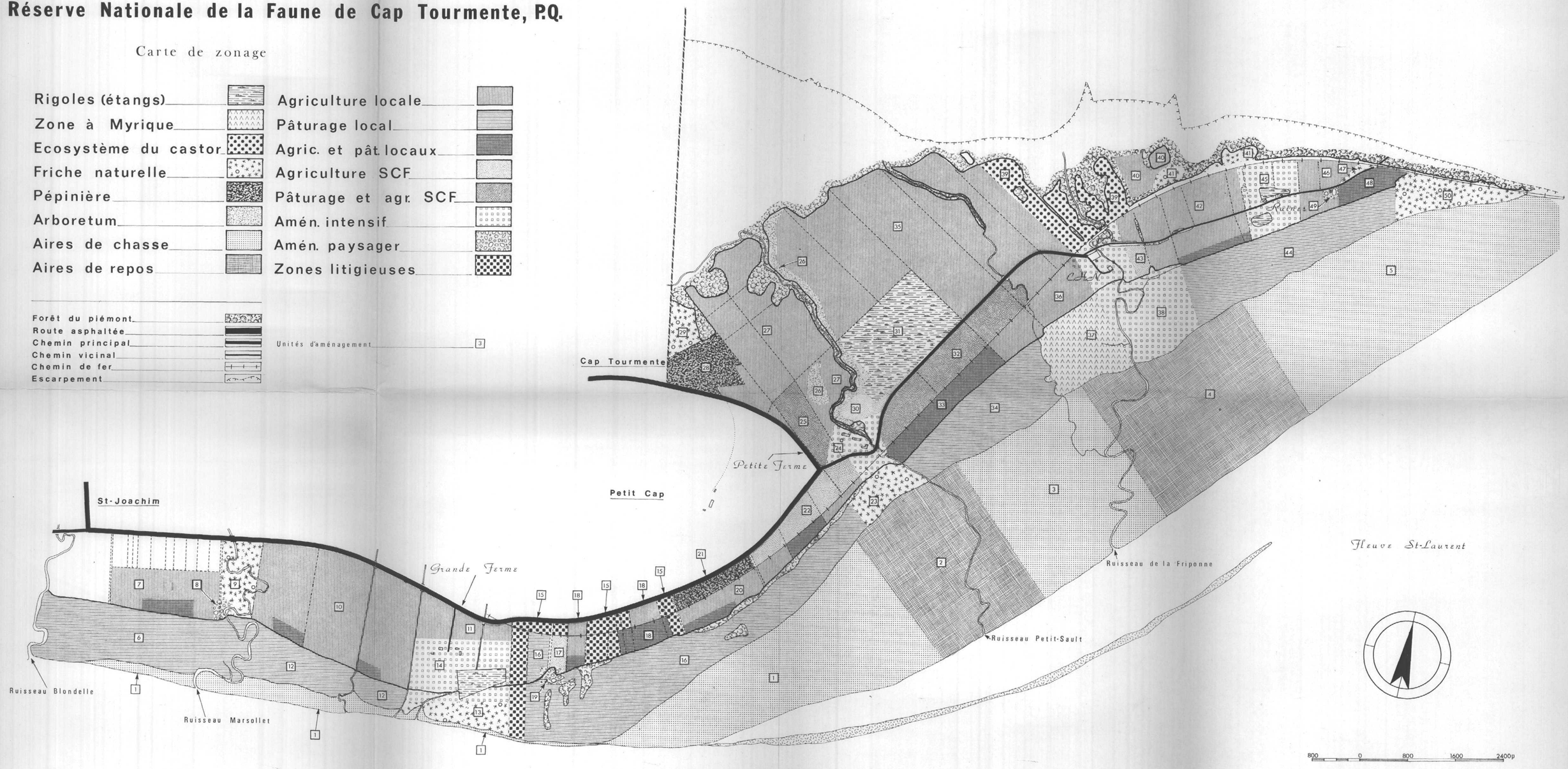
Senior management of the Department will have to determine which aspects of the proposals remain pertinent in the new context. Regardless of which aspects may or may not be implemented in a formal way, we believe many of our proposals for the administrative, operational and ecosystemic integration of the Department remain valid and will be adopted by staff in their day to day activities.

Réserve Nationale de la Faune de Cap Tourmente, P.Q.

Carte de zonage

Rigoles (étangs)		Agriculture locale	
Zone à Myrique		Pâturage local	
Ecosystème du castor		Agric. et pât. locaux	
Friche naturelle		Agriculture SCF	
Pépinière		Pâturage et agr. SCF	
Arboretum		Amén. intensif	
Aires de chasse		Amén. paysager	
Aires de repos		Zones litigieuses	

Forêt du piémont	
Route asphaltée	
Chemin principal	
Chemin vicinal	
Chemin de fer	
Escarpement	
Unités d'aménagement	3



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