

OVERALL CONCLUSIONS



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The trip began long ago

9.1 Charting and navigating a sustainable course through the Great Lakes and St. Lawrence River basin presents a formidable challenge to governments in Canada. The lakes and river themselves are immense, spanning thousands of kilometres and hundreds of communities. The legal and jurisdictional setting is complex: two federal governments, several provinces and states, international and regional organizations, and local municipalities. Finally, the range of issues and threats confronting the basin is daunting, as is the need to develop and align policies and programs in response.

9.2 There is a long history of federal environmental programs in the basin. Over many decades, the state of the basin and the performance of governments have been the subject of intense study and debate, especially the Great Lakes portion. A diverse range of stakeholders, including international institutions, academics, scientists, industry, environmentalists, labour, and First Nations, have produced hundreds of reports containing hundreds more recommendations.

9.3 These stakeholders have persistently called for more leadership, action, and progress in tackling releases of toxic substances and controlling other pollution, treating contaminated sediment, mapping groundwater, protecting habitats and maintaining biodiversity, planning land use and controlling urban sprawl, and preventing the introduction of invasive species.

9.4 Our Office, too, has conducted a number of audits and studies of matters that bear on sustainable development in the Great Lakes and St. Lawrence River basin. Appendix A describes them and some of our findings.

9.5 In our current audit, we wanted to see how the federal government has managed major threats to the environment in the Great Lakes and St. Lawrence River basin. We learned that this is not a single story but hundreds of stories, some told over many generations. They are as rich and diverse as the basin itself. They are played out in community halls and church basements, in corporate boardrooms and on shop floors, on farms and on fishing boats, in national parks and natural landscapes, in laboratories and research vessels, in state and provincial capitals, and at the federal Cabinet table. Part of every story are the people who share an interest in keeping our lakes, rivers, air, and land healthy.

9.6 What do these stories add up to? What progress has been made? What is the current state of the Great Lakes and St. Lawrence River basin? What role does the federal government play in protecting and preserving this key ecosystem, and how is it performing in that role? How can it do better and advance the sustainable development of the basin for generations to come?

These questions have no single or simple answers. Many of them are discussed in detail earlier in this chapter. The purpose of this section is to summarize key findings, highlight common patterns, and tell Parliament what we consider to be matters of special importance.

The trip so far: Remarkable achievements

9.7 Historically, the basin has seen remarkable achievements and has been the genesis of many innovations. We identified several strengths in federal activities and specific areas of progress:

- A complex infrastructure of institutions, legislation, policies, and programs has been developed.
- Agreements have been negotiated, partnerships forged, and communities mobilized.
- Our scientific understanding of the threats facing the basin and of ecosystems in general has increased.
- Amounts of some chemical and biological contaminants entering the air, waters, and land have been reduced.
- Lake Erie, once considered “dead,” has been revived.
- Some threatened species and some fish populations are recovering.
- Some wetlands and landscapes have been restored and protected.
- Soil losses have slowed, in part as conservation tillage has become widespread.
- Amounts of active ingredients used in pesticides have declined, especially in Ontario.

9.8 While it is difficult to say precisely what the federal government has contributed to this progress, it deserves credit for its positive influence. Federal officials, scientists, and others have demonstrated significant leadership and dedication. In some cases, the federal contribution is directly observable—developing policies, negotiating agreements, funding projects, and assisting communities. In other cases it is less obvious, in part because many other organizations and individuals also play a role.



Many people are involved in protecting the basin.

The state of the basin

The lakes and rivers are deteriorating

9.9 What is the current state of the basin? There are many points of view. Looking back, the Great Lakes and the St. Lawrence River have shown significant improvement and, by some measures, are cleaner than ever. Compared with other international watersheds, many believe the basin is in good shape.

9.10 However, today's best science also describes a Great Lakes and St. Lawrence River basin under tremendous and growing pressure and changing in fundamental ways that are not fully understood. Some aspects of the basin are improving; others are deteriorating before our eyes. As Section 2 of this chapter notes, governments and scientists have assessed the overall condition of the lakes and river as “mixed” or “mixed deteriorating.”

Federal role and performance: Key findings and concerns

9.11 This chapter has discussed in some detail the role and performance of the federal government. Each subsection summarizes our audit objectives and findings and notes the extent to which the government has fulfilled its commitments. We also identify both strengths and weaknesses in its management practices and governance structures. Exhibit 9.1 summarizes at a higher level the weaknesses of the government's approach as well as strengths that provide a good foundation for future efforts

9.12 As challenging as the past has been, the future will be a far greater challenge. We have come through relatively still waters compared with the whitewater rapids we are quickly approaching. With this in mind, we highlight below our major concerns.

Important matters left to drift

9.13 The federal government is generally aware of the threats the basin faces, now and in the future. Over time, it has responded with hundreds of commitments to Canadians, in many forms. Some are grounded in international agreements or federal legislation, or stated in government policies. Others originate in departments' sustainable development strategies, ministers' speeches, and government responses to various reports. In each of the subject areas and issues we examined, we set out to determine whether the federal government was doing what it had said it would do. Was it meeting its commitments to Canadians?

9.14 **It is not always clear what the government stands for.** Overall, we have serious concerns about the lack of transparency and clarity of the government's commitments and priorities. Many of the commitments are stated in vague and general terms that cannot be measured—for example, the government's commitment in the National Accord for the Protection of Species at Risk to implement recovery strategies “in a timely fashion.” Other commitments are outdated—though they still exist on paper, in practice they have long since been abandoned. For example, Environment Canada and other departments view several annexes to the Great Lakes Water Quality Agreement as no longer relevant.

9.15 Commitments not met, policies not implemented. Our audit found that the federal government's record of meeting its commitments is mixed. Some have been met, but many key ones have not. The pace of progress in many respects is slow. In some cases, this lack of progress is not news: the government itself has reported it. Prime examples include restoring areas of concern, developing lakewide management plans, performing needed fisheries habitat management, conducting studies of human health, and passing federal species-at-risk legislation. Many key initiatives have been started but not completed: the Canada-Ontario Agreement; the federal-provincial accord on bulk water removals; fish habitat renewal. Faced with multiple priorities and greatly diminished funding, departments are spreading their efforts thin.

Exhibit 9.1 Holding the federal government to account

Area	Strengths	Weaknesses
Planning	<p>Developed a good understanding of many threats facing the basin.</p> <p>Established plans and identified priorities for many issues.</p>	<p>Many commitments and priorities to deal with key threats to the basin's sustainability are general and vague, and results are difficult to measure.</p> <p>Many specific long-term outcomes desired for the basin have not been identified, and related plans have not been developed.</p> <p>Funding has declined, is unstable, and is insufficient to meet all commitments.</p>
Using tools	<p>Developed and implemented a range of tools to address specific issues in the basin.</p>	<p>Only some tools in the federal tool box are being used.</p> <p>Whether the tools used are sufficient to manage threats to the basin has not been assessed.</p> <p>A consistent, co-ordinated basin-wide approach to issues that span the basin is lacking.</p> <p>Federal science activity is weakened. There are significant gaps in scientific knowledge needed to understand and manage threats to the basin.</p>
Working with others	<p>Established effective partnerships at the local, provincial, federal, and international levels.</p> <p>Engaged local citizens.</p>	<p>Roles and responsibilities—who is responsible for what—are often unclear.</p> <p>Accountability arrangements with partners to make sure federal objectives are met are weak.</p>
Getting results	<p>Achieved gains in several areas.</p>	<p>Many key commitments have not been met; many key initiatives have not been completed; departments are spreading their efforts thin.</p>
Monitoring and reporting	<p>Collected and disseminated information on a variety of topics.</p> <p>Developed some environmental indicators.</p> <p>Developed some indicators for measuring performance.</p>	<p>Data gathered to understand the nature and trends of key threats to the basin are insufficient and inconsistent.</p> <p>Development of indicators of the state of the Great Lakes and the St. Lawrence River is unco-ordinated.</p> <p>How federal activities have improved the basin's sustainability has not been analyzed or demonstrated.</p> <p>Information to Parliament and others does not afford a clear understanding of federal progress.</p>

9.16 Too many priorities for the resources given. The impacts of declining and unstable funding are too clear to ignore (see Federal government spending in the basin). As we describe in our observations on St. Lawrence Vision 2000 (Subsection 7.2) and Great Lakes 2000 (Subsection 7.3), funding cuts made it hard for departments to meet their obligations. This was especially obvious in Great Lakes 2000—much of the promised funding never arrived and existing budgets were slashed. The carefully developed plan of action unravelled as departments simply withdrew from the program. St. Lawrence Vision 2000 also suffered some cuts, but not as large as those in the Great Lakes 2000 program.

Federal government spending in the basin
<ul style="list-style-type: none"> • Percentage of Great Lakes science funding by Fisheries and Oceans cut since 1993: 30 • Percentage reduction in federal soil science staff in Ontario, Quebec, and the Atlantic provinces: 88 • Number of Fisheries and Oceans staff in Quebec with expertise in fresh water: 0 number needed to do the required work: 14 • Percentage of the financial commitment to St. Lawrence Vision 2000 Phase II that was received by departments: 84 • Percentage of the funds announced by the Minister of the Environment for Great Lakes 2000 that departments received: 12 • Percentage decrease in federal funding to reduce environmental effects of agriculture, 1993–94 to 1997–98: 75 • Total operating and maintenance budget for the 56 national wildlife areas and migratory bird sanctuaries in Ontario and Quebec in 1999–2000: \$185,000

9.17 Cuts in federal budgets affected programming outside the ecosystem programs, too. For example, federal soil databases are out-of-date. Scientific research has fallen below the level needed to support the federal mandate for freshwater fisheries. National wildlife areas, which are federally owned, are threatened by the lack of funds to maintain them. It is not clear that new funding for species at risk is adequate to complete the job that the federal government needs to do.

9.18 Although the federal government has been successful with its agenda of deficit reduction, our audit found many significant gaps between the commitments it has made and the resources it has allocated to meeting them. Clearly, federal commitments are out of step with the resources given; one or the other needs to change.

9.19 But diminished funding is not the only reason why the government is not meeting key commitments. The limited use of federal powers, weaknesses in basic management and accountability, and the politics of federal–provincial relations have all played a part. The role of each department participating in the 1987 Federal Water Policy has never been established. Recent attempts to develop a new federal strategy for fresh water lack

direction, and so have stalled. Fisheries and Oceans has been unable to define clearly its role in managing freshwater fisheries.

9.20 Reporting to Parliament and others. Our audit found several examples of incomplete reporting to the public, international organizations (such as the International Joint Commission), and parliamentarians. Information needs to improve significantly on a variety of fronts, including budgetary allocations and expenditures, progress made toward specific commitments, and the state of the basin. Integrated reporting of this information could be valuable.

No federal strategies for key issues

9.21 Many of the threats to the basin today have been present for decades, and many of the pressures will not go away; people place demands on their environment. Past experience demonstrates the need for constant vigilance, a long-term view, sustained actions, research and monitoring, and stable funding in line with commitments. Much of this is missing from federal programming.

9.22 Instead, we found a short-term approach to most of the issues on the agenda. The government takes incremental steps to demonstrate its forward momentum—a bit more research, another study, a new regulation, another species recovery plan. These are all necessary actions, but it is hard for Canadians to know where they are all heading, what ends they are meant to achieve. Many programs we looked at do not take a long-term view of the issues: cleaning up contaminated sediment, delisting areas of concern, managing exports of our water, preventing the introduction of invasive species, dealing with intensive production of livestock. For example, Agriculture and Agri-Food Canada is committed to sustainable agriculture, a noble if broadly defined goal, but there are some critical gaps in the Department's plan for achieving it.

9.23 We do not suggest that the government can develop an all-encompassing solution that will end the need for action; for some problems, that kind of solution cannot be found. We do suggest the need for a long-term plan for living within the carrying capacity of the ecosystem—a plan with a sense of vision, concrete steps, clearly defined roles, dedicated resources, and follow-through. Today, even where the federal government's commitment to a specific activity or result is clear, its long-term role and those of its partners in managing the issue are not always so clear.

9.24 A basin-wide perspective. The Great Lakes and the St. Lawrence River form a single hydrologic basin whose natural boundaries defy political distinctions. The federal government is uniquely positioned to identify broad threats and select priorities from a basin-wide perspective, but it has not done so. On key issues there is no co-ordinated and consistent federal voice in the two regions. The regional ecosystem programs are relatively isolated from one another.

9.25 The priorities of the Great Lakes ecosystem program were driven in large part by Canada's obligations under the Great Lakes Water Quality Agreement between Canada and the U.S. The priorities and shape of federal programs and the companion Canada–Ontario Agreement have evolved over time, with changes to the Agreement. The requirement to develop a lakewide management plan for each of the Great Lakes was an attempt to take a broad look at the key threats facing the lakes and adjust programming priorities accordingly. As we note in Subsection 3.6, this has been a slow process, and ineffective so far.

9.26 Developing priorities in the St. Lawrence ecosystem program has been relatively free of similar outside forces. There is no obligation for program managers to develop river-wide plans and priorities, and they do not. Instead the selection of issues, while guided by an assessment of key threats, is based largely on existing programs of the federal and the provincial governments.

9.27 Officials of both ecosystem programs have identified four activities that could be integrated better to benefit the environment: control of toxic substances, monitoring of water levels, technologies for cleaning up contaminated sediments, and development of indicators of the state of the environment.

Scientific research, monitoring, and measurement systems are impaired

9.28 **If we meander off course, will anybody know?** One species lost, soil washed from one farm, untreated effluent from one city, one more wetland lost, one invasive species altering the ecosystem, a stretch of shoreline eroded—each alone may not be a crisis. But their cumulative impact on the basin is what concerns many scientists.

9.29 Our ability to detect and measure changes in the environment has a direct bearing on the quality of the decisions we make. Good scientific information is needed to understand the basic functioning of ecosystems. And further, it is needed to determine how effective past actions have been and to identify emerging trends and issues that may warrant future action.

9.30 Several of our audits in the past have pointed to problems in the government's ability to conduct needed scientific research and monitoring. Our work on biodiversity, climate change, toxic substances, and urban smog have reached similar conclusions. Despite repeated assertions by the government that it will provide scientific leadership to support decisions, our present audit reached the same conclusion: there are major gaps in essential information.

9.31 This isn't news. Several reports and reviews by the International Joint Commission, the State of the Lakes Ecosystem Conferences (SOLEC), scientific research organizations, and the government's own publications (such as the 2001 interim report of the Task Force on a Canadian Environmental Information System) have identified and lamented the weakened state of federal science. Indeed, most scientific assessments of the state of the basin are qualified by a note on the incomplete and inconsistent

data that support them. Cuts in funding for scientific research and monitoring have made an already bad situation worse.

9.32 Indicators are part of the solution, but co-ordination is needed. Part of the scientific challenge is to identify what we need measured. This is behind the recent drive to develop basic indicators of environmental health and sustainable development in the basin and in other parts of Canada—indeed, around the world. As we note earlier in this chapter, even after years of activity and progress in certain areas, a lot of this work is still in its formative stages. We are concerned about the lack of progress.

9.33 But we are more concerned that the federal government lacks a uniform approach. Separate activities are under way in the Great Lakes and the St. Lawrence River ecosystem programs. Though their challenges are basically the same, each program is “doing its own thing,” with not enough co-ordination between them.

9.34 Basic measurement is missing. Not enough information is collected for the public and the government to know whether the state of the basin is getting better or worse overall. Data collected on wetlands by different organizations are inconsistent, incomplete, and largely out-of-date. Population trends are known for less than half the species at risk in the basin that are under federal jurisdiction. Whether there are net gains or losses of fish habitat is not known. There is not enough information to say whether the federal government is meeting its objective of conserving and protecting fish in the basin for their sustainable use. Soil information is becoming outdated, and the human resources to support research on soil properties have dropped. Most critically, the federal government has trouble demonstrating the links between its activities and actions and their impacts on the state of the basin.

9.35 A long way to go to understand how ecosystems work. In the latter part of the 20th century, science ushered in a new awareness of how different components of natural environments relate to each other. Leading-edge science by Canadians and others substantially improved our understanding of how aquatic and terrestrial ecosystems function. This understanding helped in developing science-based solutions such as controls on phosphorus and persistent pesticides. But today, when basic science is needed more than ever—to understand, for example, the significance and implications of climate change, endocrine disruption, and genetic diversity—it is being eroded. In some areas, such as groundwater and fish habitat, basic mapping is fragmented and incomplete because of years of indecision and uncertainty inside the federal government over who is responsible for what. In still other areas, such as fisheries, the government has not clarified what science it needs.

The changing and waning federal role

9.36 Concerted actions by many governments, industries, and individuals are required to manage sustainability in the basin. The federal government cannot be expected to do it all. But it should be expected to focus on its

Did you know?

- Number of years it took to develop the first agri-environmental indicators: **7**
- Of the 80 indicators proposed by the State of the Lakes Ecosystem Conferences, number not yet reported on: **47**
- Of the 15 indicators reported for the state of the St. Lawrence River, number for which no data are available: **2**
- Number of years since some Ontario counties last had a soil survey: **over 40**
- Of the 258 chemicals in the National Pollutant Release Inventory that are found in Quebec and Ontario waters, number that are monitored in the basin: **fewer than half**
- Amount of groundwater on the Canadian side of the basin: **unknown**
- Amount of fish habitat lost or gained in the basin: **unknown**
- Number of reports that summarize results of federally supported stewardship activities: **0**

distinct role, to be explicit and open about what it is accountable for, and to use the various tools and authorities at its disposal.

9.37 The federal role is limited, in part, by constitutional constraints. But the government has chosen to limit its role further. It is not using the legislative powers and tools it could use. In the past few decades, especially the last one, the federal government's role changed and it retreated from many areas where it once was active. It is shifting the emphasis from leading to facilitating, from deciding to consulting, from acting to studying, from intervening directly to relying on others.

9.38 The growing reliance on partnerships: More work to be done. The importance of making and maintaining links is a recurring theme in the work of our Office. Links are needed between the federal government and other players in the basin and among federal departments and programs.

9.39 In the Great Lakes and St. Lawrence River basin, the federal government has worked hard to make the needed links with outside partners, both domestic and international. Many effective partnerships are now in place. But this in turn has raised fundamental questions about the federal government's role in overseeing its partners' actions and providing assurance that federal and national objectives are being met. These questions are illustrated well in Fisheries and Oceans' relationships with the provinces in managing the fisheries, protecting fish habitat, and meeting the requirements of the Great Lakes Water Quality Agreement.

9.40 There is a need for fuller engagement by all departments active in the basin. The federal government has more to do to forge internal links. Although it has made significant progress in recognizing the relationships between individual issues and programs, it has yet to truly integrate or cross-link them. Programs are still fragmented and compartmentalized. Though federal departments acknowledge the need for a concerted effort to manage "horizontal" issues, in our opinion there is a prevailing sentiment that protecting the basin is primarily up to Environment Canada.

9.41 Tackling the tough issues: Where the government fears to tread. Principles such as "the polluter pays," the "precautionary principle," "prevention vs. remediation," and "pollution prevention" are common themes the federal government articulates in many of its important plans and policies. It leaves the impression that it is committed to doing all of these things. But is it doing them? Is it using the tools it has to ensure that the job gets done?

9.42 Our audit found in many cases that the federal government was not fully exercising its legislative authorities. Pollution prevention sections of the *Fisheries Act* have been effective in controlling and preventing the entry of industrial effluents into the basin's waters. Yet in some areas, the government continues to allow the dumping of poorly treated sewage directly into the same waterways. Although it has at its disposal a legislative tool for corrective action, it has chosen not to use it. The enabling powers of the *Canada Water Act* to provide more consistent planning and protection have been largely unused.

9.43 The federal government has the power to regulate all aspects of the agriculture industry. Canadians are concerned about the impact that agricultural development could have on our environment, and particularly on our water quality. As we note in our observations on manure and fertilizer management, the number of hogs per farm in the basin has grown by almost 2,500 percent in the last 35 years, feeding growing concerns about industrial farming practices. The federal government has yet to take sufficient action to make agriculture environmentally sustainable.

9.44 Where it does use legislative tools, the government is not looking at how different programs interact—how different economic and environmental policies and programs could support and complement each other more effectively. Farm income support programs have potentially adverse effects on the environment, but the federal government’s understanding of those effects is limited. Similarly, the federal infrastructure program is not tied to its policy of promoting realistic water pricing. In not making those ties, the government is missing an opportunity to influence water consumption and quality.

9.45 In other respects, the federal government has not yet equipped itself with the scientific or policy tools to do the job. Contamination of sediments from years of industrial pollution in the basin has yet to be addressed. Even where the polluter is known, federal legislation provides little remedy. And who will pay for the many “orphan” sites in the basin, those for which a responsible party cannot be found?

9.46 Exotic invasive species continue to enter the basin and wreak havoc on its ecosystem. Canada has only voluntary guidelines to deal with this. We depend on U.S. regulations to control invasive species, but those regulations alone have not prevented the problem, particularly in the St. Lawrence River. Canadians are also concerned that the safety of their drinking water is at risk where provinces and municipalities do not follow national guidelines. Has the time come for the federal government to evaluate the need for nationally enforceable standards?

9.47 The federal government’s inaction on many of the issues our audit raised begs the fundamental question, What is its role? What is the value of making domestic and international commitments when, in some cases, there is no capacity to deliver?

9.48 When the federal government signed the Great Lakes Water Quality Agreement, for example, it assumed an obligation to ensure that action would be taken. The government decided to rely on others, and when others failed to deliver, it did not assume the lead. In our view, the federal government remains accountable for its obligation to ensure that the job gets done. The time has come for it to either take responsibility for its commitments or change them.

The future: Charting a course for sustainability

9.49 That the basin is a critical resource for Canadians is beyond dispute. That it is subject to ongoing, growing, and changing threats and pressures is

also beyond dispute. But is there an environmental crisis in the basin? That is largely a matter of perspective.

9.50 At one level, the state of the lakes and rivers—especially compared with other threatened watersheds around the world—is a testament to the determination and ability of Canadians and Americans to manage the basin for the future. Governments have built an elaborate array of important institutions, laws, and programs designed to manage the present and safeguard the future. Past experience offers evidence of our ability to resolve crises as they appear.

9.51 Other perspectives show a different view. The leadership, innovation, science, and diligence that served the basin in the past have diminished. There is a sense of complacency, not urgency; resignation, not inspiration.



9.52 The basin our children will inherit will be much different from today's. Part of the challenge of sustainable development is to ensure that their future is secure. In our view, the federal government is not keeping pace with future needs. While achieving sustainability in the basin is not up to the federal government alone—actions are needed by many other governments and organizations—it does have a crucial and distinct role to play. We look to the federal government, as the leader of this trip, to chart the destination and course (vision, policies and plans), properly map the approaching rapids and obstacles (robust science and monitoring), obtain the right equipment (policy instruments and integrated programs) and, working together and with partners, mobilize the expertise and teamwork it needs.

How the federal government can do better

9.53 In addition to the recommendations made in preceding sections, we believe that at a higher level, the following are things that the federal government can do better.

- Provide clear-cut federal commitments to deal with key threats to the basin's sustainability.
- Adequately fund its commitments.
- Articulate the long-term outcomes it seeks for the basin, translating them into concrete plans that drive its actions.
- Apply a consistent basin-wide approach, where appropriate, for issues that span the entire basin.
- Reassess whether the legislative and other tools it uses are sufficient to manage threats to the basin.
- Rebuild or acquire the scientific knowledge needed to understand and manage threats to the basin.
- Set-up consistent data gathering to understand the nature and trends in key threats to the basin.
- Analyze and demonstrate how federal activities have improved the basin's sustainability.
- Strengthen accountability arrangements with partners to make sure federal objectives are met.

- Clarify responsibilities within the federal government about who is responsible for what.
- Report information to Parliament and others that provides a clear understanding of federal progress.

(See Summary for the joint interdepartmental response.)