

Administrative Agreement between
the Department of Natural Resources of Canada and
the ministère des Ressources naturelles du Québec

Financial assistance program for owners of woodlots
who were affected by the January 1998 ice storm
and whose primary source of income
is not derived from forestry

Annual Report

2002-2003

Statement

1999-2003

Canada 

Québec 

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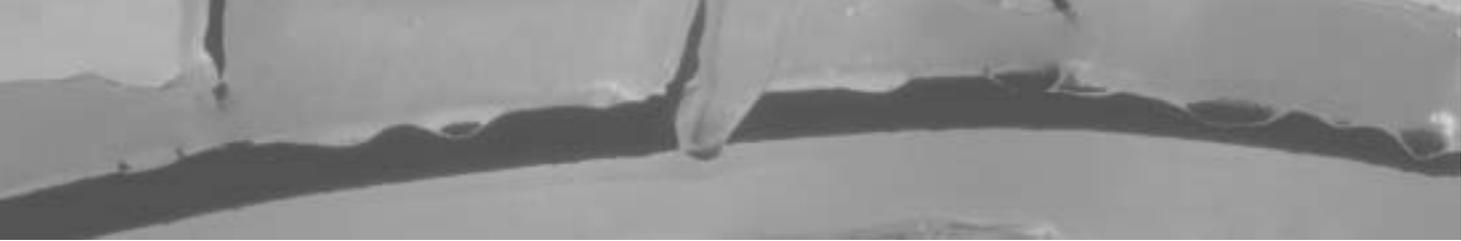


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Summary

The ice storm that struck Québec in January 1998 had a major impact on Québec's forests. The total area of forested land affected was estimated at 1.8 million hectares, 92% of which was owned by approximately 30 000 private woodlot owners. Of these 30 000 owners, approximately 10 000 were agricultural producers, 500 were individuals whose primary source of income was derived from forestry, and 19 500 were individuals whose primary source of income was not derived from forestry.

To assist these woodlot owners, the governments of Canada and Québec agreed to set up three special financial assistance programs. The first targeted agricultural producers who owned woodlots, and the second the owners of woodlots who derived their primary source of income from forestry. The two programs were established under the Disaster Financial Assistance Arrangements (DFAAs) administered by the Office of Critical Infrastructure Protection and Emergency Preparedness (OC�PEP). These arrangements stipulate that the federal government will pay financial assistance to a provincial government where the cost of the measures implemented to deal with a natural disaster place an excessive burden on the provincial economy.

In order to ensure equal treatment for the 19 500 other woodlot owners who were not eligible under the DFAAs, an administrative agreement was signed by the ministère des Ressources naturelles du Québec (MRN) and Natural Resources Canada (NRCan) that led to the establishment of a third program, the *Financial Assistance program for owners of woodlots who were affected by the January 1998 ice storm and whose primary source of income is not derived from forestry* (NPSI). This report covers the activities carried out under this third program.

The NPSI program was coordinated by the MRN, but the government measures were actually implemented by the six regional agencies for private forest development in the Bois-Francs, Chaudière, Estrie, Laurentides, Montérégie and Outaouais regions.

Like the other two programs, the NPSI program offers assistance primarily intended to give woodlot owners access to training, advisory services and technical assistance. In addition, the NPSI program provides financial support for the implementation of restoration activities and work to return heavily damaged woodlots to a productive state.

The main advisory services offered to woodlots owners eligible under the program were concerned with damage assessment, timber salvaging plans and restoration plans for young stands, as well as the marking of areas scheduled for silvicultural work. These activities were essential in order to return the damaged woodlots to a productive state, since they provided a framework for actions in the field.

At the outset, the assistance provided for forestry work in heavily damaged woodlots was basically limited to partial or total salvage operations. This first step ensured the safety of the public and the recovery of damaged timber. The program was later amended to make other work eligible, such as the restoration of young ice-damaged stands, site preparation and reforestation, and the construction and improvement of forest roads. The latter activity was made eligible to provide access to heavily damaged stands and to allow damaged timber to be salvaged.

In addition, the 1998 ice storm struck an area of Québec that was particularly significant in terms of biodiversity, and the ice storm programs responded in an innovative way by including a program component to ensure the conservation of specific biodiversity elements. If such elements were present on a particular site, the MRN issued a notice setting out the mitigation measures needed to ensure their conservation, and compliance with the measures was mandatory during all work to restore the woodlots concerned.

After four years, the NPSI program has provided assistance for approximately 6 500 woodlot owners in the form of advisory services and assistance for the restoration of damaged woodlots. An amount of \$15.1 million has been spent on assistance, allowing work on approximately 13 000 ha of forest land and the planting of over 650 000 seedlings. Training, the design and development of specific forestry techniques, and research and monitoring costs have amounted to around \$1 million. The costs relating to administration, operational audits, and program monitoring and evaluation represent \$3.1 million. Overall, the implementation of the NPSI program has cost \$19.2 million, paid in equal shares by the governments of Canada and Québec.

The ice storm programs have led to the development of a specific type of forestry adapted to the realities of ice-damaged, privately-owned woodlots. The evaluation of the NPSI program, carried out by an independent organization, will allow its strengths and weaknesses to be identified and will guide government actions in the event of another similar event. The evaluation report will be published separately.



Introduction

F Following the January 1998 ice storm, special assistance programs were set up to help woodlot owners restore woodlots that were heavily damaged during the storm. An administrative agreement between the ministère des Ressources naturelles du Québec (MRN)¹ and Natural Resources Canada (NRCan) led to the establishment of the *Financial Assistance program for owners of woodlots who were affected by the January 1998 ice storm and whose primary source of income is not derived from forestry* (the NPSI program).

After four years of activity, the NPSI program has reached its scheduled end. This report examines the work carried out during the last fiscal year, and also looks at the results achieved overall.

The report is in three sections. After a brief presentation of the assistance programs for the owners of woodlots damaged by the ice storm, the second section presents the activities for the 2002-2003 fiscal year under the NPSI program. The third section reviews the overall performance of the program.

¹ Since April 29, 2003, the ministère des Ressources naturelles du Québec has been known by the new name of ministère des Ressources naturelles, de la Faune et des Parcs du Québec.

1. Assistance programs for the owners of damaged woodlots

The NPSI program was one of three special programs set up to provide assistance for the owners of woodlots affected by the 1998 ice storm, and targeted owners whose primary source of income was not derived from forestry. The program was established following an administrative agreement between the MRN and NRCan, to offer equal treatment for woodlot owners who were not eligible under the Disaster Financial Assistance Arrangements (DFAAs). The other two programs targeted agricultural producers who owned woodlots, and the owners of woodlots who derived their primary source of income from forestry. The MRN, which was responsible for coordinating all three programs, shared responsibility for the program for agricultural producers with the ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec (MAPAQ). The regional agencies for private forest development in the Bois-Francs, Chaudière, Estrie, Laurentides, Montérégie and Outaouais regions were responsible for implementing the programs, and for providing training and accreditation for the forestry advisors who worked with the owners of the affected woodlots. The ice storm programs were funded jointly by the federal and provincial governments (Table 1).

Table 1: Respective contributions of the Canadian and Québec governments to the funding of the ice storm programs

Target clientele	Source of funding		Under the terms of
	Federal	Provincial	
Woodlot owners who are agricultural producers (PSI) ¹	90% ²	10%	Disaster Financial Assistance Arrangements (DFAAs) administered by the Office of Critical Infrastructure Protection and Emergency Preparedness
Woodlot owners whose primary source of income is derived from forestry (PSI) ¹	90% ²	10%	Disaster Financial Assistance Arrangements (DFAAs) administered by the Office of Critical Infrastructure Protection and Emergency Preparedness
Woodlot owners whose primary source of income is not derived from forestry (NSPI) ³	50%	50%	Administrative agreement between NRCan and the MRN

1. PSI: primary source of income.

2. Depending on the level of provincial spending per capita, the federal contribution can amount to up to 90% of total expenditure.

3. NPSI: not primary source of income.

1.1 The original NPSI agreement and its administration

The NPSI program resulted from an agreement signed by the governments of Canada and

Québec in August 1999. A joint NRCan/MRN Administration Committee was established to oversee the implementation of the program, which had a budgetary envelope of \$34 million, funded in equal parts by the two levels of government.

The program comprised two elements. Program Element 1 covered all the activities and services provided to woodlot owners, while Program Element 2 covered the financial assistance granted to the six regional agencies for private forest development to allow them to administer the program.

1.2 Amendments to the NPSI program

On April 12, 2001, NRCan and the MRN signed an initial amendment to increase the range of work covered by the program and help return heavily damaged woodlots to a productive state, and to increase the rate offered for partial salvage cutting. Once this had been done, it became clear that the period of application would also have to be extended to allow work to restore damaged woodland to continue and, more specifically, to allow the seedlings

produced by the MRN for the 2002 season to be planted. Consequently, on April 11, 2002, NRCan and the MRN signed an amended administrative agreement to allow activities under the program to continue until September 30 of that year. However, for administrative purposes, the agreement ended on March 31, 2003. The program extension allowed work to continue, for example, to restore young stands damaged by the ice storm.

2. Work completed, 2002-2003

The statements for the *Financial assistance program for owners of woodlots who were affected by the January 1998 ice storm and whose primary source of income is not derived from forestry* for the fiscal year 2002-2003 show the expenditure incurred for each activity. When the annual program was signed, the budgeted expenditure for the year amounted to \$6.06 million. Actual expenditure amounted to \$5.37 million, or \$2 687 million for each level of government (Table 2), which represented 89% of the budgeted amount (Table 3). The most active agency in 2002-2003 was in the Estrie region (Table 4), since it accounted for 30% of the expenditure by all the agencies. However, the other agencies continued to work steadily (Table 4).

Table 2: Expenditure incurred under the NPSI program in 2002-2003

Total expenditure	
\$5 375 258.61	
Apportionment of expenditure between levels of government	
Federal	Provincial
\$2 687 629.31	\$2 687 629.31

With regard to the development of technical expertise, most of the expenditure was incurred by the MRN, especially in connection with research work. The MRN continued to evaluate the effectiveness of the apparatus installed to monitor damaged stands. The data collected provided a better understanding of the ability of stands to recover from a natural disaster, and of the consequences of natural disasters over the long term. The expenditure incurred for the development of technical expertise amounted to \$141 760, slightly over the budgeted amount (Table 3).

2.1 Program Element 1

The first part of the program covered activities linked to the development and transfer of knowledge, advisory services for woodlot owners, support for restoration activities, and activities connected with program monitoring and assessment.

2.1.1 *Advisory services, information and training*

During the fiscal year 2002-2003, only the agency in the Estrie region incurred training costs. The agency in the Chaudière region adjusted its training costs for training sessions for forestry advisors during a previous fiscal year, meaning that the figure for actual versus budgeted expenditure in Table 3 is negative.

This heading also covers the amounts spent to publish the document *Les champignons des arbres de l'est de l'Amérique du Nord*, which examines agents and signs of wood biodegradation such as discoloration or rot. This document is an essential guide for understanding and identifying tree defects caused by the introduction of a fungus following injuries or stress sustained during a natural disaster such as the 1998 ice storm. It is a reference tool which will guide actions and establish harvesting priorities in stands affected by a natural disaster.

Table 3: Budgeted and actual expenditure for the 2002-2003 fiscal year

	Budgeted	Actual	Percentage completed
PROGRAM ELEMENT 1			
1.1 Advisory services, information and training			
<i>Training</i>	\$4 925.00	-\$878.96	-18%
<i>Development</i>	\$137 386.00	\$141 759.55	103%
1.2 Support for the implementation of restoration activities			
<i>Advisory services</i>			
File opening	\$18 240.00	\$31 930.94	175%
Damage assessment	\$116 250.00	\$170 605.08	147%
Damage assessment for young stands	\$0.00	\$3 082.67	
Recovery plans	\$182 000.00	\$250 863.77	138%
Restoration plans	\$61 600.00	\$38 884.21	63%
Advisory services for biodiversity	\$33 687.00	\$1 869.15	6%
Updating of forest management plans (FMPs)	\$10 730.00	\$3 002.16	28%
Operation reports	\$391 400.00	\$374 975.32	96%
Follow-up visits	\$91 800.00	\$34 427.01	38%
<i>Technical assistance</i>			
Tree marking for salvage cut	\$422 110.00	\$407 388.26	97%
Marking of contours	\$9 180.00	\$10 222.28	111%
Marking of young trees	\$208 200.00	\$206 320.36	99%
<i>Forest management work</i>			
Partial salvage cut	\$1 846 395.00	\$1 668 303.00	90%
Total salvage cut	\$68 850.00	\$34 783.50	51%
Cutting back of debris along road corridors	\$3 575.00	\$0.00	0%
Site preparation	\$81 180.00	\$33 898.40	42%
Tree planting	\$173 375.00	\$118 675.41	68%
Restoration of young ice-damaged stands	\$742 805.00	\$653 572.95	88%
Road planing	\$89 915.00	\$74 403.28	83%
Mitigation measures to improve biodiversity	\$1 950.00	\$8 540.00	438%
GST refund to owners	\$0.00	\$56 517.15	
QST refund to owners	\$0.00	\$64 789.56	
1.3 Studies and knowledge development			
<i>Biodiversity</i>	\$80 401.00	\$70 472.53	88%
1.4 Miscellaneous			
<i>Monitoring and evaluation</i>	\$270 966.00	\$434 484.70	160%
<i>Operational audits</i>	\$219 692.00	\$141 615.96	64%
<i>Other activities</i>	\$159 500.00	\$21 924.20	14%
PROGRAM ELEMENT 2			
<i>Administration costs</i>	\$633 888.00	\$342 094.13	54%
SUB-TOTAL	\$6 060 000.00	\$5 398 526.57	89%
<i>Interest on investments¹</i>	\$0.00	-\$23 267.96	
TOTAL	\$6 060 000.00	\$5 375 258.61	89%

1. Interest earned on investments is deducted from the administration costs of the agencies.

Table 4: Expenditure incurred during the 2002-2003 fiscal year, by agency and by activity

	Bois-Francs	Chaudière	Estrie	Laurentides	Montérégie	Outaouais	MRN	TOTAL
PROGRAM ELEMENT 1								
1.1 Advisory services, information and training								
<i>Training</i>	\$0.00	-\$1 272.56	\$393.60	\$0.00	\$0.00	\$0.00	n/a	-\$878.96
<i>Development</i>	n/a	n/a	n/a	n/a	n/a	n/a	\$141 759.55	\$141 759.55
1.2 Support for the implementation of restoration activities								
<i>Advisory services</i>								
File opening	\$3 772.82	\$6 671.45	\$11 318.46	\$5 199.13	\$2 208.48	\$2 760.60	n/a	\$31 930.94
Damage assessment	\$15 217.81	\$37 072.56	\$67 324.13	\$27 928.07	\$9 109.98	\$13 952.53	n/a	\$170 605.08
Damage assessment for young stands	\$172.54	\$345.08	\$977.71	\$1 299.78	\$287.56	\$0.00	n/a	\$3 082.67
Recovery plans	\$31 718.14	\$65 006.38	\$95 936.60	\$16 644.12	\$30 792.19	\$10 766.34	n/a	\$250 863.77
Restoration plans	\$4 175.41	\$8 074.76	\$12 342.18	\$10 846.86	\$730.41	\$2 714.59	n/a	\$38 884.21
Advisory services for biodiversity	\$143.78	\$0.00	\$287.56	\$287.56	\$1 150.25	\$0.00	n/a	\$1 869.15
Updating of forest management plans (FMPs)	\$695.90	\$212.80	\$1 823.15	\$0.00	\$0.00	\$270.31	n/a	\$3 002.16
Operation reports	\$60 903.56	\$40 331.21	\$117 394.52	\$36 018.36	\$80 063.74	\$40 263.93	n/a	\$374 975.32
Follow-up visits	\$5 222.14	\$9 443.56	\$16 782.16	\$0.00	\$2 473.04	\$506.11	n/a	\$34 427.01
<i>Technical assistance</i>								
Tree marking for salvage cut	\$50 333.41	\$84 575.58	\$178 048.35	\$47 895.26	\$25 451.58	\$21 084.08	n/a	\$407 388.26
Marking of contours	\$915.60	\$2 008.34	\$4 516.46	\$1 536.73	\$957.59	\$287.56	n/a	\$10 222.28
Marking of young trees	\$9 317.03	\$10 352.25	\$24 293.28	\$97 380.17	\$4 313.44	\$60 664.19	n/a	\$206 320.36
<i>Forest management work</i>								
Partial salvage cut	\$279 466.70	\$243 179.00	\$473 069.00	\$163 687.50	\$331 681.80	\$177 219.00	n/a	\$1 668 303.00
Total salvage cut	\$6 718.50	\$6 870.00	\$15 765.00	\$3 555.00	\$1 605.00	\$270.00	n/a	\$34 783.50
Cutting back of debris along road corridors	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	n/a	\$0.00
Site preparation	\$16 795.90	\$712.00	\$13 486.50	\$462.00	\$330.00	\$2 112.00	n/a	\$33 898.40
Tree planting	\$24 805.31	\$12 971.39	\$50 300.22	\$0.00	\$21 229.05	\$9 369.44	n/a	\$118 675.41
Restoration of young ice-damaged stands	\$69 645.45	\$24 738.00	\$176 838.00	\$207 014.50	\$57 855.00	\$117 482.00	n/a	\$653 572.95
Road planing	\$5 652.81	\$27 394.80	\$26 453.53	\$0.00	\$8 842.29	\$6 059.85	n/a	\$74 403.28
Mitigation measures to improve biodiversity	\$1 665.00	\$0.00	\$0.00	\$330.00	\$6 545.00	\$0.00	n/a	\$8 540.00
GST refund to owners	\$15 113.81	\$0.00	\$8 320.25	\$18 903.36	\$7 289.74	\$6 889.99	n/a	\$56 517.15
QST refund to owners	\$17 326.49	\$0.00	\$9 538.48	\$21 671.29	\$8 354.39	\$7 898.91	n/a	\$64 789.56
1.3 Studies and Knowledge development								
<i>Biodiversity</i>	n/a	n/a	n/a	n/a	n/a	n/a	\$70 472.53	\$70 472.53
1.4 Miscellaneous								
<i>Monitoring and evaluation</i>	n/a	n/a	n/a	n/a	n/a	n/a	\$434 484.70	\$434 484.70
<i>Operational audits</i>	\$13 146.59	\$10 264.35	\$39 409.38	\$47 193.75	\$12 668.02	\$18 933.87	n/a	\$141 615.96
<i>Other activities</i>	\$5 598.42	\$3 273.33	\$8 029.77	\$1 680.47	\$2 984.82	\$357.39	n/a	\$21 924.20
PROGRAM ELEMENT 2								
<i>Administration costs</i>	\$37 173.27	\$16 321.88	\$72 762.24	\$60 803.36	\$63 502.23	\$91 531.15	n/a	\$342 094.13
SUB-TOTAL	\$675 696.39	\$608 546.16	\$1 425 410.53	\$770 337.27	\$680 425.60	\$591 393.84	646 716.78 \$	\$5 398 526.57
<i>Interest on investments</i> ²	-\$3 099.22	-\$299.01	\$0.00	-\$2 465.47	-\$2 760.94	-\$14 643.32	n/a	-\$23 267.96
TOTAL	\$672 597.17	\$608 247.15	\$1 425 410.53	\$767 871.80	\$677 664.66	\$576 750.52	\$646 716.78	\$5 375 258.61

1. n/a: not applicable.

2. Interest earned on investments is deducted from the administration costs of the agencies.

2.1.2 **Support for the implementation of restoration activities**

This part of the program covers the advisory services and technical assistance provided to woodlot owners by forestry advisors, as well as the forest management work carried out to restore woodlots. The changes made to the agreement, as advocated by woodlot owners and their representatives, led to a broadening of the range of eligible restoration work in damaged woodlots.

As in previous years, there was often a discrepancy between the budgeted and actual expenditure for this category of activities. The amounts spent on advisory services and technical assistance in 2002-2003 represented 36% of all the assistance provided to woodlot owners.

During the 2002-2003 fiscal year, 694 files were opened (Table 5), a decrease compared to the 1 709 files opened the previous year, but one that was expected given the imminent end of the program. The opening of files in 2002-2003 resulted in an expenditure of \$31 931, well over the amount forecast at the beginning of the year (Table 3).

The expenditure on advisory services offered to preserve biodiversity was less than the budgeted amount, and remained as low as in previous years (Table 3). Almost one quarter of this amount was paid to expert scientists for work performed to locate sensitive biodiversity elements. The remainder was used to allow forestry advisors to be present during on-site advice sessions, which were designed to give advisors and owners more scientific backing and to raise their awareness of the need to protect specific biodiversity elements. Most of the advisory services were provided in the area covered by the Montérégie agency, the region with the most biodiversity.

Since the 1998 ice storm brought about major changes in many woodlots, the program provided financial assistance for owners who wished to update their forest management plans (FMPs) and plan their forest management work in the best possible way. In 2002-2003 few woodlot owners took advantage of this program element and, as a result, approximately \$3 000, or 28% of the budgeted amount, was spent in this area (Tables 3 and 4).

Table 5: Number of files opened and areas treated, by agency and by activity

	Bois-Francs	Chaudière	Estrie	Laurentides	Montérégie	Outaouais	TOTAL
Files opened (number)	82	145	246	113	48	60	694
Tree marking for salvage cut (ha)	335.2	565.6	1 190.7	320.3	170.2	141.0	2 723.0
Marking of young trees (ha)	27.0	30.0	70.4	282.2	12.5	175.8	597.9
Partial salvage cut (ha)	576.2	501.4	975.4	337.5	683.9	365.4	3 439.8
Total salvage cut (ha)	44.8	45.8	105.1	23.7	10.7	1.8	231.9
Cutting back of debris along road corridors (500 m)	0	0	0	0	0	0	0
Site preparation (ha)	28.5	1.3	41.6	0.7	0.5	3.2	75.8
Planting of seedlings (number)	101 940	56 271	174 723	0	88 410	28 834	450 178
Restoration of young stands (ha)	104.7	37.2	288.9	311.3	87.0	176.7	1 005.8
Road planing (km)	5.3	15.9	16.0	0	5.3	4.3	46.8

Given the fact that the program was about to end, the activities to assess damage and plan restoration work continued to decline in 2002-2003 compared to previous years. Expenditure on damage and young stands assessment work amounted to roughly \$173 000. Expenditure on recovery plans and restoration plans amounted to \$250 863 and \$38 884, respectively (Tables 3 and 4). The agencies in the Estrie region and, to a lesser extent, in the Chaudière and Montérégie regions were the most active in terms of the number of recovery and restoration plans completed.

Marking activities also declined during the last year. In comparison to the 7 000 ha of forest where trees were marked for salvage or as crop trees during 2001-2002, an area of a little over 3 300 ha was covered in 2002-2003 (Table 5). Total expenditure on marking amounted to \$623 931 (Table 3). The agency in the Estrie region provided the most assistance for the marking of trees for salvage in commercial stands. The agencies in the Outaouais and Laurentides regions, for their part, provided the most assistance for the marking of crop trees in young stands.

The owners of damaged woodlots could apply for a follow-up visit; in other words, a second visit by a forestry advisor to allow them to make more enlightened decisions concerning the management of their forest property. This type of follow-up was made even more important by the fact that several woodlot owners initially carried out extremely limited management work, meaning that several trees initially left standing began to decay in the years following the ice storm. In 2002-2003, the expenditure incurred for this activity was \$34 427 (Table 3), the third increase in as many years.

During the 2002-2003 fiscal year, the expenditure incurred to carry out restoration work in damaged woodlots amounted to \$2 696 552, or 64% of the total assistance granted to woodlot owners. Almost 30% of the expenditure on support for the implementation of restoration activities in 2002-2003 was incurred in the Estrie region (Table 3).

The amounts paid out for partial salvage cuts represented roughly 60% of all the amounts paid out to support restoration activities, and 25% was spent to restore young stands. Partial salvage cuts were carried out on 3 440 ha of land, and young stands covering 1 006 ha were restored. The amounts spent and the areas covered in

connection with these two activities are similar to those reported for 2001-2002.

Almost \$35 000 was spent on total salvage cuts, or 51% of the budgeted amount (Table 3). It is important to note that total salvage was considered a last resort. Wherever possible, owners and forestry advisors preferred to preserve a residual stand. This explains why less than 2% of the amounts paid out to woodlot owners were related to total salvage cuts.

Site preparation and tree planting are relatively recent activities since the seedlings produced following the ice storm only became available in the spring of 2001. Expenditure in 2002-2003 on site preparation activities amounted to \$33 898, or 42% of the budgeted amount (Table 3). Mechanical clearing was the most frequent method of site preparation used, followed by brushing and clearing with or without timber salvage. Site preparation was essential on land where there were not enough suitable microsites to plant seedlings. The changes made to the program, which allowed a second planting season to be completed, were greatly appreciated. Over 450 000 seedlings were planted in the spring of 2002 (Table 5), representing an expenditure of \$118 675 (Table 4). This means that almost twice as many seedlings were planted during the 2002-2003 fiscal year as during the 2001-2002 fiscal year.

Assistance for the construction and improvement of forest roads was provided to allow woodlot owners to gain access to damaged stands and salvage damaged trees. In 2002-2003, work was carried out on 46.8 km of forest roads (Table 4), 68% of the work involving the construction of new roads. Expenditure on forest roads amounted to almost \$75 000, or 83% of the budgeted amount (Table 3). The most active agencies were those in the Chaudière and Estrie regions (Table 4).

The changes made to the agreement in 2001 allowed the following activities to be added to the program: the cutting back of debris along road corridors, mitigation measures to improve biodiversity, and GST and QST refunds to owners. However, although the cutting back of debris along road corridors was an eligible activity for owners whose primary source of income was not derived from forestry, the expenditure was not accounted for in the NRCan-MRN administrative agreement.

In woodlots where the presence of particular elements of biodiversity was confirmed, the MRN issued a notice setting out the mitigation measures required to protect those elements. This topic will be dealt with in more detail in point 2.1.3. However, in some cases the owners were offered extra financial assistance if the mitigation measures required major changes to be made to the activities undertaken to restore the woodlot or the installation of a protection perimeter around the element concerned. During the 2002-2003 fiscal year, fifteen files were recommended for this approach by the MRN, covering a total area of 63.8 ha. The financial assistance paid amounted to \$8 540, well over the budgeted amount (Table 3). Given the wealth of biodiversity in its territory, most of this expenditure was incurred by the Montérégie agency (Table 4).

Sales tax refunds (GST and QST) to woodlot owners in 2002-2003 amounted to \$121 306 (Table 3), double the amount spent the previous year.

Lastly, the operation report allowed forestry advisors to assess the quality of the work carried out on a woodlot. The operation report was the document used to support an application for payment to the owner. In 2002-2003, \$374 975 was paid to forestry advisors for such assessments, or 96% of the budgeted amount, which is roughly the same amount as the amount paid the previous year (Table 3).

2.1.3 Studies and knowledge development

This heading covers various actions taken to maintain biodiversity under the ice storm programs, and more specifically the actions taken to prepare notices specifying mitigation measures.

As mentioned above, the 1998 ice storm had a devastating effect on regions containing a wealth of biodiversity. The effects of the storm, combined with those of the work undertaken to restore woodlots, created a risk that many remarkable elements of Québec's forest biodiversity would simply disappear. These forests are home to most of Québec's threatened or vulnerable animal and plant species, and contain several exceptional forest ecosystems and many different wildlife habitats. The mitigation measures specified in the mitigation notices were initially proposed by the ministère de l'Environnement (MENV) and the Société de la faune et des parcs du Québec (FAPAQ), or

directly by the MRN, and were designed to ensure the conservation of specific biodiversity elements. The measures had to be integrated into the plans to salvage damaged trees or to restore young stands, and compliance with the measures was compulsory during marking and other forest management work. During the 2002-2003 fiscal year, around twenty new notices were issued; the decrease compared to previous years was expected given the impending end of the program. The expenditure incurred to prepare notices amounted to \$70 472, or 90% of the budgeted amount (Table 3).

2.1.4 Miscellaneous

This heading covers the monitoring and evaluation of the program, operational audits, and all the other activities agreed on by the Administration Committee.

During the 2002-2003 fiscal year, \$434 485 was allocated to administrative monitoring, the development and improvement of the computerized program management system, seedling production, the organization of a seminar on the ice storm, and the evaluation of the NPSI program by an independent organization. The heading also covers expenditure relating to the research budget for the project Ice storm damage and maple tapping: development of an ecophysiological vitality scale. The results of the project, combined with the results from other monitoring projects carried out by the MRN, are expected to provide a more accurate statement of the health of the forests affected by the ice storm.

The MRN, the Centre Acer and NRCan organised a seminar on the theme Ice storm and forest: Where do we stand five years later? During the seminar, held in Sherbrooke from January 28 to 30, 2003, research findings were presented, the results of the assistance programs for woodlot owners were surveyed and assessed, and acquired knowledge was passed on to other forestry stakeholders to allow them to better prepare for natural disasters of this type. The registration fees paid by participants offset most of the cost of the seminar, but a three-way agreement stipulated that any deficit would be divided equally between the three organizing bodies. An amount of \$5 200 was therefore charged to the NPSI program.

During the last fiscal year, the Administration Committee commissioned an independent organization to complete an evaluation of the NPSI program. The evaluation will analyze the basis for the program, describe the services offered, measure the results obtained and assess program effectiveness. In addition, the evaluation will measure whether the type of assistance provided was considered satisfactory by woodlot owners to compensate for the losses caused by the ice storm, and whether the woodlots were restored satisfactorily. The evaluation should thereby highlight the strengths and weaknesses of the program and guide government actions in the event of a similar disaster in the future.

The cost of the operational audits completed by the agencies amounted to 64% of the budgeted amount, or \$141 616. These costs related to the verification of the activities carried out by forestry advisors, and the verification of work carried out in the field. They represented 3.35% of the amounts paid out to forestry advisors and woodlot owners, which is below the planned 5% threshold (Table 6).

The item Other activities covered a total disbursement of \$21 920 (Table 3), mainly associated with seedling transportation.

2.2 Program Element 2

Program Element 2 covered the financial assistance paid to the agencies to administer the program, as well as the interest received from investments.

2.2.1 Administration costs

During the 2002-2003 fiscal year, the unadjusted administration costs (see point 2.2.2) amounted to \$337 304, or 53% of the budgeted amount (Table 3). Once adjusted, the administration costs represented 6.68% of agency spending (Table 6). When establishing their annual forecasts, the agencies generally reserved an amount equal to 15% of their total budgeted expenditure for administration, and their actual costs were thus well below the budgeted amounts (Table 3).

2.2.2 Interest on investments

The interest received by the agencies was generated by the deposit of cash advances with financial institutions. On the basis of the agreements entered into by the agencies and the MRN, the interest was deducted from the administration costs (Tables 4 and 6).

Table 6: Administration and operational audit costs for the 2002-2003 fiscal year

	Amount	Percentage
Total expenditure by agencies	\$4 728 541.83	
Amount paid to forestry advisors and woodlot owners	\$4 247 054.46	
Administration costs	\$342 094.13	
Interest on investments	-\$23 267.96	
Adjusted administrative costs ¹	\$318 826.17	6.74%
Operational audits ²	\$141 615.96	3.33%

1. The percentage of administrative costs is calculated on the basis of total agency expenditure.

2. The percentage of operational audit costs is calculated on the basis of the amounts paid to forestry advisors and woodlot owners.

3. Statements for all the fiscal years of the NPSI program

The tables in this section show cumulative expenditure for the four fiscal years of the NPSI program, namely 1999-2000, 2000-2001, 2001-2002 and 2002-2003. Table 7 shows cumulative expenditure over all four years of the NPSI program. In all, \$19.2 million in funding was provided for the program by the federal and provincial governments, representing 71% of the budgeted amount (Table 8). However, the percentages of work completed varied widely from one activity to another.

Table 7: Cumulative expenditure under the NPSI program

Total expenditure	
\$19 245 075.27	
Apportionment of expenditure between levels of government	
Federal	Provincial
\$9 622 537.64	\$9 622 537.64

3.1 Program Element 1

The first part of the program covered activities linked to the development and transfer of knowledge, advisory services for woodlot owners, support for the implementation of restoration activities, and activities connected with program monitoring and assessment.

3.1.1 *Advisory services, information and training*

To ensure the development of the required technical expertise, the forestry advisors accredited under the ice storm programs were able to benefit from a wide range of training, which was necessary to ensure that the standards of the program were properly understood. Training sessions were also organized when new activities were made eligible following the changes made to the program.

In addition, the woodlot owners eligible for the program were able to attend information and training sessions on various aspects of the special type of forestry applied in ice-damaged

woodlots under private ownership. The sessions focused particularly on ways to carry out the required silvicultural work in a safe way. In all, over the four fiscal years, the cost of the training sessions for both forestry advisors and woodlot owners amounted to \$184 304.

The effects of the ice storm on forests were the subject of both monitoring and research projects. A monitoring system was set up by the MRN to assess the recovery of damaged stands, and in particular to validate the treatments prescribed in the guide on forest management practices in ice-damaged stands. The research and monitoring work currently underway tends to show that the rate of recovery is better than what we anticipated in the immediate aftermath of the storm, and will also help improve silvicultural approaches in the event of another similar disaster. In all, \$652 936 was spent to develop technical expertise.

Table 8: Statements of all fiscal years for the NPSI program

	Budgeted	Actual	Percentage completed
PROGRAM ELEMENT 1			
1.1 Advisory services, information and training			
<i>Training</i>	\$149 915.00	\$184 304.26	123%
<i>Development</i>	\$668 858.00	\$652 935.62	98%
1.2 Support for the implementation of restoration activities			
<i>Advisory services</i>			
File opening	\$387 614.00	\$372 635.00	96%
Damage assessment	\$1 919 812.00	\$2 066 905.42	108%
Damage assessment for young stands	\$0.00	\$52 347.89	
Recovery plans	\$1 673 696.00	\$1 669 988.59	100%
Restoration plans	\$463 320.00	\$232 914.13	50%
Advisory services for biodiversity	\$68 288.00	\$23 062.93	34%
Updating of forest management plans (FMPs)	\$46 888.00	\$21 509.69	46%
Operation reports	\$1 890 025.00	\$917 465.78	49%
Follow-up visits	\$171 260.00	\$53 469.42	31%
<i>Technical assistance</i>			
Tree marking for salvage cut	\$2 212 781.00	\$2 086 584.51	94%
Marking of contours	\$17 848.00	\$31 396.11	176%
Marking of crop trees	\$952 320.00	\$743 421.57	78%
<i>Forest management work</i>			
Partial salvage cut	\$6 471 256.00	\$4 277 001.19	66%
Total salvage cut	\$695 293.00	\$180 689.22	26%
Cutting back of debris along road corridors	\$10 175.00	\$0.00	0%
Site preparation	\$324 060.00	\$110 955.40	34%
Tree planting	\$253 675.00	\$173 883.40	69%
Restoration of young ice-damaged stands	\$1 999 655.00	\$1 646 949.95	82%
Road planing	\$220 200.00	\$205 350.49	93%
Mitigation measures to improve biodiversity	\$35 700.00	\$11 000.00	31%
GST refund to owners	\$0.00	\$87 270.35	
QST refund to owners	\$0.00	\$100 940.36	
1.3 Studies and knowledge development			
<i>Biodiversity</i>	\$645 211.00	\$618 492.08	96%
1.4 Miscellaneous			
<i>Monitoring and evaluation</i>	\$1 635 343.00	\$1 112 583.85	68%
<i>Operational audits</i>	\$905 365.00	\$435 398.88	48%
<i>Other activities</i>	\$606 531.00	\$120 790.90	20%
PROGRAM ELEMENT 2			
<i>Administration costs</i>	\$2 608 242.00	\$1 163 970.43	45%
SUB-TOTAL	\$27 033 331.00	\$19 354 217.42	72%
<i>Interest on investments ¹</i>	\$0.00	-\$109 142.15	
TOTAL	\$27 033 331.00	\$19 245 075.27	71%

1. Interest earned on investments is deducted from the administration costs of the agencies.

3.1.2 Support for the implementation of restoration activities

Table 9 breaks down the amounts spent by agency and by activity. The Estrie agency was the most active, spending 30% of the total agency allocation. The agencies in the Montérégie and Bois-Francs regions have also been very active, accounting for 19% and 16% of the allocation, respectively. The rest of the money was spent by the three other agencies, where ice storm damage was less extensive.

The statement of expenditure for the four years of the program shows that the owners of damaged woodlots were receptive to the changes made to the NPSI program. Once the new activities were made eligible under the program, the related expenditure increased constantly. The program, as amended, not only allowed young stands to be restored but also, thanks to the planting of tree seedlings, it allowed heavily damaged stands to be returned to a productive state.

Table 10 presents an overview of the main activities completed under the NPSI program. In all, over 8 000 files were opened. Salvageable trees were marked in 13 967 ha of commercial stands, of which 8 803 ha were harvested in partial salvage cuts and 1 190 ha in total salvage cuts. In some cases, it was necessary to construct or improve forest roads to provide access to the harvesting area, and 125 km of forest roads were built. Crop trees were marked in 2 154 ha of young stands, and 2 500 ha of young stands were restored. The NPSI program funded the planting of over 650 000 seedlings.

3.1.3 Studies and knowledge development

As part of the NPSI program, forest advisors checked whether particular elements of biodiversity were present in over 3 000 cases, with positive results in around 12% of the sites. Following this verification, around 350 notices setting out mitigation measures were issued by the MRN. The most frequently encountered elements were wildlife habitats, and especially white-tailed deer yards. However, in several cases, it was necessary for an expert to determine the precise location of the element in question, especially for threatened or vulnerable species of flora or fauna.

In around fifteen cases, the landowners were granted extra financial assistance where the measures involved major changes in the activities undertaken to restore the woodlot or the installation of a protection perimeter around the element concerned. Around \$8 500 was spent on this activity.

3.1.4 Miscellaneous

Under the NPSI program, \$1 112 584 was allocated to administrative monitoring and related activities, such as program coordination and the establishment and maintenance of a computerized management system (Table 9).

This heading also covered the amounts paid out for operational auditing activities. Under the program, the regional agencies were accountable to the MRN for the conformity of the activities carried out. This meant that the agencies had to ensure the quality of the services provided to woodlot owners and the proper use of public money. Each agency was required, each year, to perform administrative and technical audits of at least 10% of the work performed by the accredited forestry advisors and of the silvicultural work carried out as program activities. The operational audits completed by the agencies showed that a large majority of the cases audited were in compliance with the program. In cases of non-compliance, the necessary corrections or refunds were made. The expenditure incurred for operational audits by the agencies amounted to \$435 399 (Table 9), or 2.9% of the amount paid to forestry advisors and woodlot owners (Table 11).

This heading also included the expenditure incurred for the evaluation of the NPSI program by an independent organization, an amount of \$128 000.

Table 9: Statements for the NPSI program, by agency and by activity

	Bois-Francis	Chaudière	Estrie	Laurentides	Montérégie	Outaouais	MRN	TOTAL
PROGRAM ELEMENT 1								
1.1 Advisory services, information and training								
<i>Training</i>	\$14 859.98	\$10 426.05	\$83 448.24	\$9 938.42	\$59 917.47	\$5 714.10	n/a	\$184 304.263
<i>Development</i>	n/a ¹	n/a	n/a	n/a	n/a	n/a	\$652 935.62	\$652 935.62
1.2 Support for the implementation of restoration activities								
<i>Advisory services</i>								
File opening	\$46 286.06	\$43 985.57	\$104 580.73	\$57 834.57	\$89 213.39	\$30 734.68	n/a	\$372 635.00
Damage assessment	\$241 000.39	\$251 559.67	\$642 414.63	\$324 427.84	\$427 580.78	\$179 922.11	n/a	\$2 066 905.42
Damage assessment for young stands	\$977.72	\$2 737.60	\$21 164.60	\$12 756.27	\$11 916.59	\$2 795.11	n/a	\$52 347.89
Recovery plans	\$340 589.03	\$164 595.03	\$580 278.13	\$72 469.95	\$439 653.96	\$72 402.49	n/a	\$1 669 988.59
Restoration plans	\$29 365.88	\$17 023.71	\$61 906.45	\$53 210.57	\$34 772.06	\$36 635.46	n/a	\$232 914.13
Advisory services for biodiversity	\$950.12	\$0.00	\$950.12	\$287.56	\$20 356.35	\$518.78	n/a	\$23 062.93
Updating of forest management plans (FMPs)	\$4 267.43	\$638.39	\$5 820.27	\$0.00	\$9 207.76	\$1 575.84	n/a	\$21 509.69
Operation reports	\$156 604.94	\$86 466.02	\$312 654.05	\$99 106.70	\$190 111.38	\$72 522.69	n/a	\$917 465.78
Follow-up visits	\$8 764.92	\$9 443.56	\$26 933.12	\$0.00	\$7 821.71	\$506.11	n/a	\$53 469.42
<i>Technical assistance</i>								
Tree marking for salvage cut	\$439 004.53	\$210 736.15	\$663 116.83	\$146 063.35	\$520 299.31	\$107 364.34	n/a	\$2 086 584.51
Marking of contours	\$5 526.96	\$4 192.67	\$10 699.64	\$3 417.39	\$7 185.62	\$373.83	n/a	\$31 396.11
Marking of crop trees	\$60 664.20	\$32 264.51	\$96 172.40	\$313 328.11	\$48 129.92	\$192 862.43	n/a	\$743 421.57
<i>Forest management work</i>								
Partial salvage cut	\$789 767.13	\$483 981.50	\$1 489 029.50	\$383 538.00	\$848 948.56	\$281 736.50	n/a	\$4 277 001.19
Total salvage cut	\$36 247.72	\$21 039.00	\$102 300.00	\$4 620.00	\$15 657.50	\$825.00	n/a	\$180 689.22
Cutting back of debris along road corridors	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	n/a	\$0.00
Site preparation	\$35 961.40	\$15 819.50	\$25 141.50	\$462.00	\$27 431.50	\$6 139.50	n/a	\$110 955.40
Tree planting	\$54 577.80	\$17 007.42	\$62 318.43	\$547.50	\$26 725.25	\$12 707.00	n/a	\$173 883.40
Restoration of young ice-damaged stands	\$213 817.45	\$92 900.50	\$260 761.00	\$608 674.50	\$93 499.00	\$377 297.50	n/a	\$1 646 949.95
Road planing	\$21 266.84	\$48 442.17	\$94 042.41	\$0.00	\$22 886.67	\$18 712.40	n/a	\$205 350.49
Mitigation measures to improve biodiversity	\$1 665.00	\$0.00	\$0.00	\$2 445.00	\$6 890.00	\$0.00	n/a	\$11 000.00
GST refund to owners	\$19 774.43	\$179.94	\$13 362.74	\$36 097.96	\$8 337.05	\$9 518.23	n/a	\$87 270.35
QST refund to owners	\$22 669.64	\$206.28	\$15 318.43	\$42 278.97	\$9 555.05	\$10 911.99	n/a	\$100 940.36
1.3 Studies and knowledge development								
<i>Biodiversity</i>	n/a	n/a	n/a	n/a	n/a	n/a	\$618 492.08	\$618 492.08
1.4 Miscellaneous								
<i>Monitoring and evaluation</i>	n/a	n/a	n/a	n/a	n/a	n/a	\$1 112 583.85	\$1 112 583.85
<i>Operational audits</i>	\$62 926.85	\$28 402.83	\$142 729.55	\$93 646.45	\$77 814.34	\$29 878.86	n/a	\$435 398.88
<i>Other activities</i>	\$17 627.53	\$16 655.96	\$30 249.22	\$27 432.86	\$9 804.43	\$19 020.90	n/a	\$120 790.90
PROGRAM ELEMENT 2								
<i>Administration costs</i>	\$147 817.59	\$87 724.24	\$280 398.14	\$181 265.97	\$266 584.94	\$200 179.55	n/a	\$1 163 970.43
SUB-TOTAL	\$2 772 981.54	\$1 646 428.27	\$5 125 790.13	\$2 473 849.94	\$3 280 300.59	\$1 670 855.40	\$2 384 011.55	\$19 354 217.42
<i>Interest on investments</i> ²	-\$29 856.82	-\$6 886.26	-\$10 673.88	-\$9 683.48	-\$32 738.91	-\$19 302.80	\$0.00	-\$109 142.15
TOTAL	\$2 743 124.72	\$1 639 542.01	\$5 115 116.25	\$2 464 166.46	\$3 247 561.68	\$1 651 552.60	\$2 384 011.55	\$19 245 075.27

1. n/a: not applicable.

2. Interest earned on investments is deducted from the administration costs of the agencies.

3.2 Program Element 2

Program Element 2 covered the financial assistance paid to the agencies to administer the program, as well as the interest received from investments.

3.2.1 Administration costs

Over the four fiscal years of the program, the agencies spent \$1 159 025 to administer the program. Given the interest earned on investments, the costs were adjusted (see 3.2.2), for a

final total of \$1 050 193, or 6.24% of the total spending by the agencies (Tables 9 and 11), which is well below the budgeted amount.

3.2.2 Interest on investments

The interest received by the agencies was generated by the deposit of cash advances with financial institutions. On the basis of the agreements entered into by the agencies and the MRN, the interest was deducted from the administration costs (Tables 9 and 11).

Table 10: Number of files opened and areas treated, by agency and by activity. Statements for the NPSI program

	Bois-Francis	Chaudière	Estrie	Laurentides	Montérégie	Outaouais	TOTAL
Files opened (number)	1 006	956	2 273	1 257	1 939	668	8 099
Tree marking for salvage cut (ha)	2 981.6	1 410.4	4 415.5	976.8	3 467.2	715.9	13 967.4
Marking of young trees (ha) ¹	175.8	93.5	278.7	908.0	139.5	558.9	2 154.4
Partial salvage cut (ha)	1 630.2	1 000.5	3 066.7	790.8	1 751.3	580.9	8 820.4
Total salvage cut (ha)	227.9	140.3	682.0	30.8	104.4	5.5	1 190.9
Cutting back of debris along road corridors (500 m) ²	0	0	0	0	0	0	0
Site preparation (ha) ¹	58.7	26.4	64.9	0.7	45.6	9.8	206.1
Planting of seedlings (number) ¹	204 221	68 124	222 668	1 500	114 357	41 590	652 459
Restoration of young stands (ha) ¹	321.5	139.7	415.1	915.3	140.6	567.4	2 499.6
Road planing (km)	13.8	27.8	56.0	0	14.3	13.1	125.0

1. Data compiled for 2000-2001, 2001-2002 and 2002-2003 fiscal years solely.

Table 11: Administration and operational auditing costs. Statements for the NPSI program

	Amount	Percentage
Total expenditure by agencies	\$16 861 063.72	
Amount paid to forestry advisors and woodlot owners	\$15 065 741.40	
Administration costs	\$1 163 970.43	
Interest on investments	- \$109 142.15	
Adjusted administrative costs ¹	\$1 054 828.28	6.26%
Operational audits ²	\$435 398.88	2.89%

1. The percentage of administrative costs is calculated on the basis of total agency expenditure.

2. The percentage of operational audit costs is calculated on the basis of the amounts paid to forestry advisors and woodlot owners.



Conclusion

At the end of the four-year NPSI program, it is clear that the government intervention has helped restore woodlots affected by the 1998 ice storm and return them to a productive state. Thanks to the program, eligible woodlot owners have received advice on the management of ice-damaged stands, along with financial assistance to carry out the work needed to restore their woodlots.

Immediately after the ice storm, the government authorities asked woodlot owners to act prudently and patiently, in order to gain a clear idea of how the damaged trees would react. The research work carried out and the monitoring system established under the program have allowed the progress of the damaged stands to be assessed, and the results tend to show that the silvicultural strategies prescribed in the guide on the management of ice-damaged stands, as well as the advice given, were well-founded.

When it was first established, the main focus of the program was the recovery of damaged timber, but after a few months it became clear that changes had to be made to adapt the program to the needs of woodlot owners and to the type of silvicultural work carried out in ice-damaged stands. The amendments to the program allowed a more effective response to be made to meet the needs expressed. The program, as amended, not only allowed young stands to be restored but also, thanks to the planting of tree seedlings, it allowed heavily damaged stands to be returned to a productive state. In all, the implementation of the NPSI program has cost the government authorities \$19.2 million, paid in equal shares by the governments of Canada and Québec, as mentioned previously.

The program has also led to the development of a special type of forestry adapted to the realities of privately-owned forests. In particular, it has stimulated the development of expertise in the area of forest disasters, and demonstrated the ability of the regional agencies for private forest development to take concrete action.

The biodiversity component of the program has made woodlot owners, and all stakeholders, more aware of the need to take biodiversity in the forest environment into account.

The evaluation of the program will be carried out by an independent organization, and will highlight both its strengths and weaknesses in order to guide future government actions in the event of a similar disaster in the future.



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