National Employer Demand Survey

For Foresters and Forestry Technicians

Undertaken on behalf of the

Canadian Council of Forest Ministers, Deputies Committee

March 25, 2004

Acknowledgements

The contribution of the following individuals in supporting and enabling this survey to be undertaken is appreciated:

Mr. Paul Short, Sustainable Resources Development, Alberta; Mr. Bob Carman; Ms. Nancy Desjardin, ing.f, CSMO Québec; Mr. Germain Pare, Ministère des Ressources naturelles, Gouvernement du Québec; Mr. Peter Yanciw, RPBio, British Columbia Institute of Technology; Mr. Tom Lakusta and Ms. Susan Corey, Department of Resources, Wildlife and Economic Development, Northwest Territories; Mr. Tom Reid, Department of Natural Resources and Energy, New Brunswick; Mr. John Thompson and Mr. Michael McLaughlan, Department of Environment, Saskatchewan; Ivan Dowton, Department of Forest Resources and Agrifoods, Newfoundland and Labrador; Mr. Ed MacAulay, Department of Natural Resources, Nova Scotia; Ms. Roxanne Comeaux, Canadian Institute of Forestry; Ms. Sophia Sudnikowicz and Dr. Guy Brassard, Natural Resources Canada; Dr. Reino Pulkki, Lakehead University; Mr. Francois Lamontagne, Canadian Labour and Business Centre; Lianne Parry, Sault Ste. Marie College of Applied Arts and Technology; Dr. Susan Watts, RPF, University of British Columbia; Mr. Ken Baker, Ministry of Forests, British Columbia; Mr. David L. Wotton, Manitoba Conservation, Manitoba; Mr. Gary Miltenberger, Energy, Mines and Resources and Mr. Pat MacDonell, Department of Environment, Yukon Territory; Ms. Rosemary Keenainak, Department of Sustainable Development, Nunavut; all of the forest industry representatives who responded to the survey and staff of the Ontario Ministry Natural Resources.

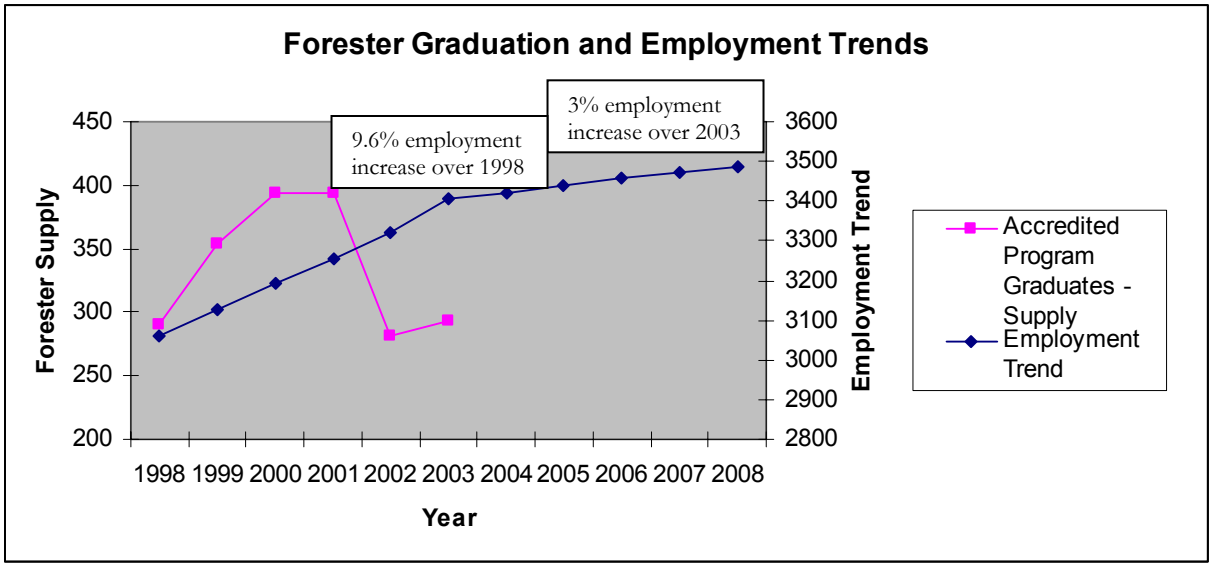
Executive Summary

There has been a steady decline in enrollment in university forestry programmes (nearly 30% nationally) over the past five years. This trend is contrary to other programs where the demand for places in Canadian universities is increasing at an unprecedented rate. It has been suggested that a similar trend exists in the college forestry programs as well.

The Association of University Forestry Schools of Canada (AUFSC) discussed the declining enrollment concern and its potential impact on forestry schools in April, 2003. As a result of these concerns, the issue was brought forward to the Canadian Council of Forest Ministers (CCFM) Deputies meeting in June, 2003 for discussion and support for action.

The CCFM Deputies resolved to undertake an employer demand survey to assess the current and future employer demand for university forester and college forest technician graduates. Ontario subsequently led the development of and administered the survey on behalf of the CCFM Deputies. Each jurisdiction was to survey both the government and the forest industry. The survey, completed in October, 2003 and supplemental information, from Statistics Canada, enrollment and graduate data, provided the results documented below.

While most jurisdictions responded to the survey, in some jurisdictions, industry response was incomplete. Data from other sources were supplemented in order to draw conclusions where gaps existed. The surveys returned by the various agencies accounted for 3398 foresters and 3981.5 forestry technicians. When compared with the 2001 Statistics Canada data, the surveys identified approximately 52% and 36% of the possible professional foresters and forestry technicians respectively working in Canada.



With the exception of the federal government, over the short-term (i.e. the next 3 years) the declining production of foresters is not a major concern. It becomes increasingly important beyond that point. Demographics appear to suggest that there will be an increased demand resulting from retirement in the 4 to 10 year time period.

Employers predict a 3% increase nationally in the number of foresters employed over the next 5 years. While not an immediate crisis in terms of numbers currently graduating, these results combined with an aging demographic, early retirement, and an older forester demographic in management positions (not part of the survey), suggests the need to produce close to 300 forestry university graduates nationally per year during the years of highest retirement. As it takes 4 years to graduate a potential recruit, it is therefore important that action be taken to reverse the continuing declining enrollment trend. Without a supply of qualified foresters, the sustainability of Canada's forests may be put in jeopardy.

Similar trends are evident in the demand for forest technicians. While there will be essentially no change in the total number of forestry technicians employed in Canada, in order to maintain existing numbers, it is estimated that colleges will need to produce about 246 forestry technician graduates per year over the short term and well over 300 per year in the long term.

Recommendations have been put forward to address the concerns that have been identified through the survey and as a result of other investigations into the declining enrollment issue. In particular, it is suggested that CCFM should support, not lead, a coordinated marketing effort to promote public awareness of professional and technical forestry school programs as an environmental science field, focused on sustainable management and to market the potential employment opportunities. Particular attention should be given to targeting aboriginal communities, which are currently under-represented in the workforce.

While not a specific component of the survey, it was noted that the shortage of labourers in the forest sector appears to be a more urgent concern, particularly for Ontario and Quebec.

It is clear that CCFM has a leadership role in Canada's forest sector. While CCFM committed to undertaking this survey, others must come forward to accept a lead role in addressing the recommendations in the report.

Background

There has been a steady decline in enrollment in university forestry programmes (nearly 30% nationally) over the past five years. It has been suggested that a similar trend exists in the college forestry programs as well. This trend is contrary to other areas where the demand for places in Canadian universities is increasing at an unprecedented rate. For example, Leonard (2000) documented up to 35% increases in enrollment in electrical and computer engineering programs over a 5 year period in Canada.

The Association of University Forestry Schools of Canada (AUFSC) discussed the declining enrollment concern and its potential impact on forestry schools in April, 2003 at their annual meeting. As a result of these concerns, the issue was brought forward to the Canadian Council of Forest Ministers (CCFM) Deputies meeting in June, 2003 for discussion and support for action.

The CCFM Deputies resolved to undertake an employer demand survey to assess the current and future employer demand for university forester and college forest technician graduates.

The report that follows summarizes the survey results and is supplemented by other data and resources to draw conclusions and make recommendations for actions to address concerns.

Survey Methods

Ontario coordinated, developed and administered the survey. Alberta, the federal government and a representative from the University of Toronto Dean's Advisory Board provided input into the survey questions and design. Questions were developed using a standard survey format of short answer and multiple choice responses. The survey was designed to assess national employment trends and projected future demand for foresters and forest technicians. The survey (Appendix 1) was sent to CCFM deputy committee members in July, 2003. Respondents were invited to complete the survey by going to a website or by responding via mail or fax by August 29th. The response date was later extended until October 10, 2003. Follow up communications were made to ensure a high response rate.

Each responding jurisdiction was to survey their provincial or territorial government as well as the forest industry (i.e. the 2 largest employers) within their jurisdiction. The federal government was to respond on behalf of government employees only. Respondents were to define their forestry workforce and how they would administer the survey within their jurisdiction. Generally, the industry response did not include forestry consultants. Survey results were collated and summarized by jurisdiction and sector averages (government, industry) for analysis.

To supplement the employer demand survey results, Statistics Canada census data, university enrollment and B.Sc.F and graduate data was also collected and analyzed. College enrollment and graduation trends are also discussed in this report.

Results and Discussion

All provinces and territories with the exception of PEI responded to the survey. The response rate from government was high while from industry, it was inconsistent. Particularly, it may be difficult to draw conclusions regarding the industry in B.C. and Ontario due to the small number of responses relative to the population. This may significantly affect the national results as well. It is also important to note that no results were received from forestry consultants from most jurisdictions. In some cases consultants employ many foresters and forestry technicians. Despite the above it is felt that the survey was successful in helping to identify existing and future employer demand trends.

Table 1: Summary of responses by jurisdiction and sector.

Jurisdiction	Sector Responded?	Sector Responded?
	Government	Forest Industry
Canada (federal)	YES	n/a
British Columbia	YES	Partial response
Alberta	YES	YES
Saskatchewan	YES	YES
Manitoba	YES	Partial response
Ontario	YES	Partial response
Quebec	Combined with industry	YES
New Brunswick	YES	Partial response
Nova Scotia	YES	Partial response
Prince Edward Island	No response	No response
Newfoundland and Labrador (NL)	YES	No response
Northwest Territories (NWT)	YES	Responded – n/a
Nunavut	Responded – n/a	Responded – n/a
Yukon Territories	YES	Responded – n/a

Number of foresters/forest technicians employed

Table 2 shows the results for the question “How many foresters/forest technicians or full-time equivalents (undergraduate forestry degree/forestry diploma) does your organization employ (where one full time equivalent equals the amount of time of an employee or employees that when added up equals one position employed on a full-time basis for one year and could include contract/part-time/full-time employees)?”

Table 2: Number of foresters/forest technicians employed (survey sample only)

Jurisdiction	sector	# Foresters	# Technicians
CAN	Government	75	85
BC – G*	Government	500	780
BC – I**	Forest Industry	269	149
AL - G	Government	130	202
AL - I	Forest Industry	246	227.5
SASK - G	Government	32	48
SASK - I	Forest Industry	27	29
MAN - G	Government	20	45
MAN - I	Forest Industry	18	25
ON - G	Government	148	766
ON - I	Forest Industry	45	33
QC - I	Forest Industry	1650	1000
NB - G	Government	63	278
NB&NS - I	Forest Industry	108	112
NS	Government	29	120
NL - G	Government	12	260
NWT - G	Government	14	16
YK – G	Government	12	6
Total	Both	3398	3981.5

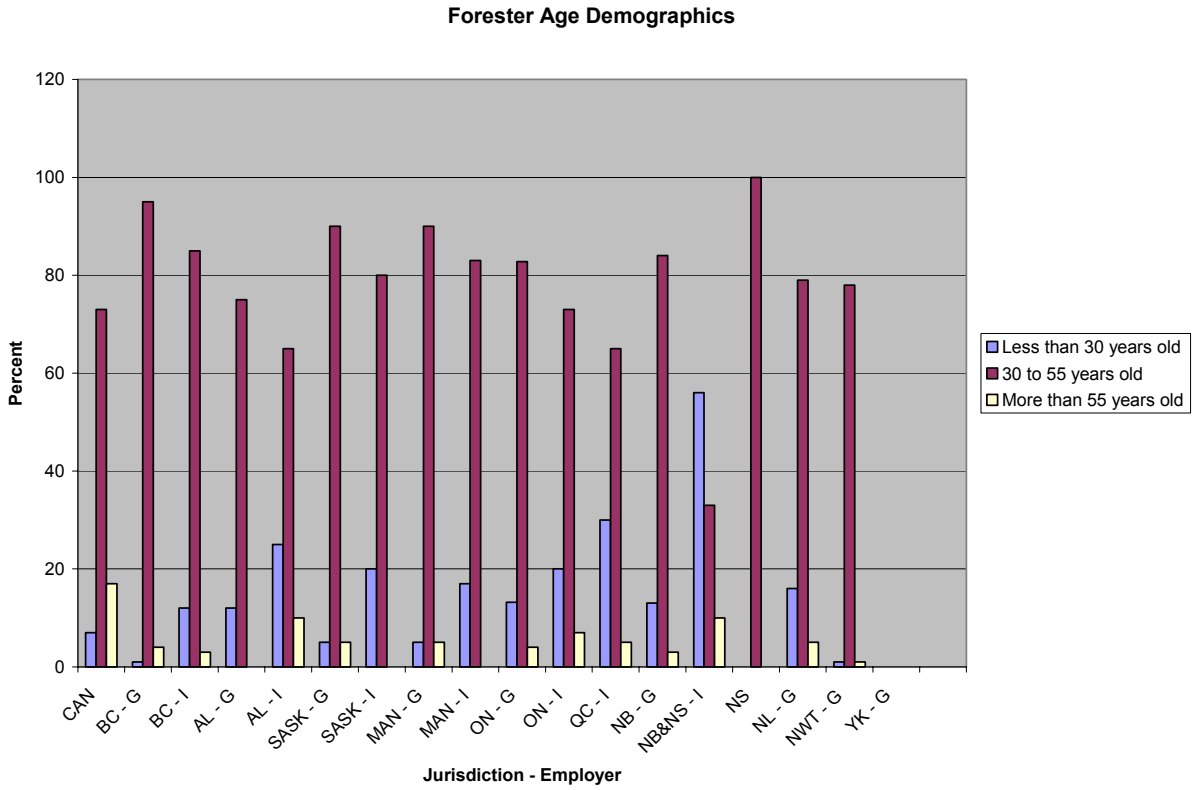
* G = government
** I = industry

Compared to the 2001 Statistics Canada census data where there is a reported 6,475 forestry professionals and 11,200 forestry technicians, it would appear, that overall the survey captured a 52% and 36% response rate respectively. It is important to note that only the government agency with primary forest management related responsibility and the industry was surveyed. The survey did not include other agencies or consultants who contribute significantly to the forestry workforce or those who are no longer employed as foresters but are in management or other jobs.

Forester Demographics

Respondents were asked to indicate what percentages of their organization's foresters are in the following age groups: Less than 30 years of age, 30 to 55 years and more than 55 years of age. The results are presented in Figure 1 below.

Figure 1: Forester Age Demographics



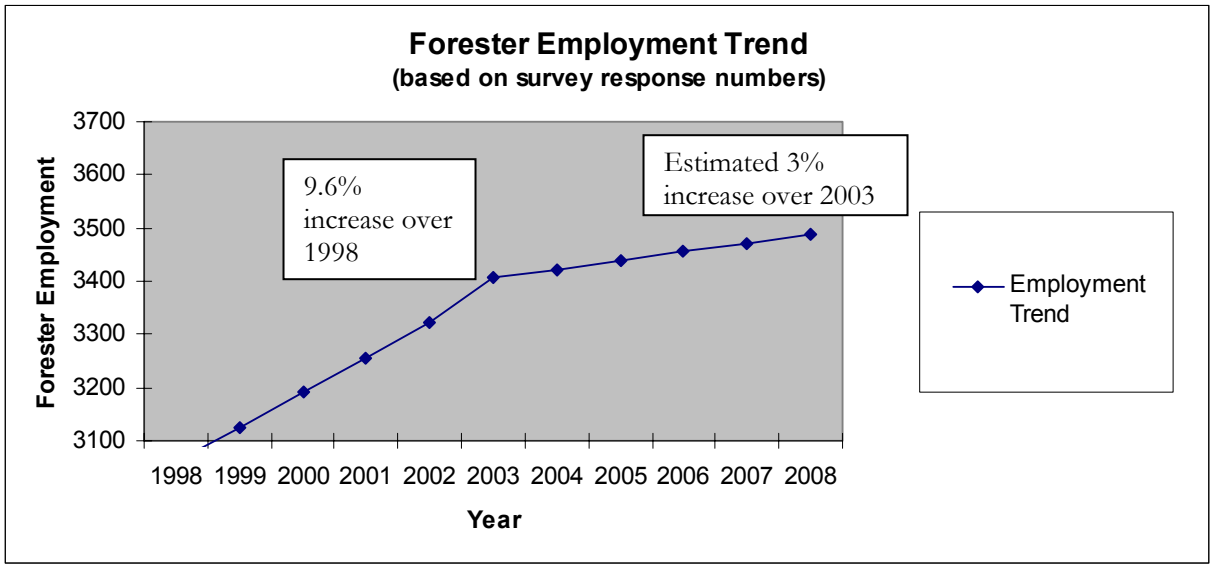
G = Government, I = industry

A retirement concern appears to be on the horizon for many jurisdictions. Eight of 18 respondents indicated that over 80% of their forester workforce is in the middle demographic versus what would be expected, 62.5% if the population was evenly distributed across all age classes. Statistics Canada data was used to supplement the results and enhance the interpretation.

With early retirement being a fairly common trend, many foresters are retiring prior to age 65 and often prior to age 60 (according to Statistics Canada, the average retirement age in the natural resource sector is 60.8). In addition, a large number of RPFs have moved in to management positions. These individuals were not included in the survey results and are generally in an older age demographic. Results suggest that in the short-term, 3 years from now, with the exception of the federal government, the retirement rate of foresters is not a major concern. However, it may be a considerable concern 4 to 10 years from now, particularly in light of declining enrollment trend in the forestry schools.

Forester employment trends

Figure 2: Forester employment trends.



Based on the survey results, respondents predicted that there will be a 3% increase (78 positions) in the number of entry level foresters employed in Canada in the next 5 years (Figure 2). However, if the projected increase and the estimated number of entry level foresters to replace retirements to be hired over the next 5 years is extrapolated using Statistics Canada forestry professional population estimates, forestry schools will need to produce close to 200 graduates per year over the short term just to replace retiring professionals, not including those in management. This assumes that the industry response for these jurisdictions is an accurate reflection of the industry forester population and there are no unforeseen issues that may affect employment levels. However, beyond 2008 this number could increase by as much as 150% or, 300 graduates per year based on replacing retirements alone.

According to the Association of University Forestry Schools of Canada (2003), overall the number of foresters graduating from forestry schools in the last 5 years has declined considerably (Table 3). Enrollment in accredited forestry programs continues to decline. While employment rates have been cyclical, as is common in natural resource dependent occupations, foresters may be less impacted by these fluctuations due to the nature of the employment. Issues such as the softwood lumber dispute and perceptions of the work may be contributing factors to the enrollment in university forestry degree programs declining by 34% (from 2494 to 1648) between 1998 and 2002.

Laval University reports that there have been positive responses to a marketing and recruitment drive that they initiated several years ago, resulting in increased

enrollment.

Table 3: Forestry Graduates from Canada's Nine CFAB Accredited Programs

	2003	2002	2001	2000	1999	1998	1997	1996	1995
UBC									
Forest Res Mgmt, Operations	29	29	66	57	81	71	60	49	37
Forest Operations	18	10	11	20	16	7	7	4	4
Total	47	39	77	77	97	78	67	53	41
UNBC									
Natural Resources Man. Major in Forestry	52	47	70	81	47	37	14	8	0
University of Alberta									
Forestry	22	32	36	42	49	47	50	41	31
Forest Business Management	2	6	11	6	8	2	0	0	0
Total	24	38	47	48	57	49	50	41	31
Lakehead University									
Forestry	48	35	55	47	37	33	39	31	28
U Laval									
Forest Environment and Forest Resources Management	47	52	55	46	34	37	51	66	56
U Moncton									
Forestry Sciences	28	32	25	16	15	7	7	4	8
UNB									
Forestry	47	38	65	79	67	49	53	75	40
Grand Total	293	281	394	394	354	290	281	278	204

Over the next 4 years Human Resources Development Canada (2003) statistics predict that competition for jobs among forestry professionals will be below the average for other professions. Graduates currently earn 24% more on average than all university graduates at the bachelor's level. Those earnings are also growing 5% faster. Half the graduates have work within 1 month of graduating and 95% are working within 1 year.

Responses to the following questions are summarized below: "In the next 5 years, what percentage of the foresters in your organization do you expect will retire? How many entry level foresters (recent graduates) does your organization expect to hire in the next 5 years? In the Next 5 years, the number of foresters employed by your organization will change by what percentage?"

Table 4: Predicted forester retirement and employment trends.

Jurisdiction	Percent of foresters retiring in next 5 years	Number of foresters to be hired in next 5 years	Percent Change # foresters employed next 5 years
CAN	10%-25%	no response	unknown
BC - G	10%-25%	111	Unknown decline
BC - I	Less than 10%	29	0
AL - G	Less than 10%	15	3
AL - I	10%-25%	57	9
SASK - G	Less than 10%	3	13
SASK - I	Less than 10%	1	-10
MAN - G	10%-25%	5	0
MAN - I	10%-25%	5	0
ON - G	10%-25%	10	2
ON - I	Less than 10%	13	9
QC - I	10%	150	0
NB - G	Less than 10%	11	0
NB&NS - I	10%-25%	32	14
NS	10%-25%	9	0
NL - G	26%-40%	4	5
NWT - G	Less than 10%	2	No resp
YK – G	Less than 10%	3	15
Total		+461	Avg. response +3%

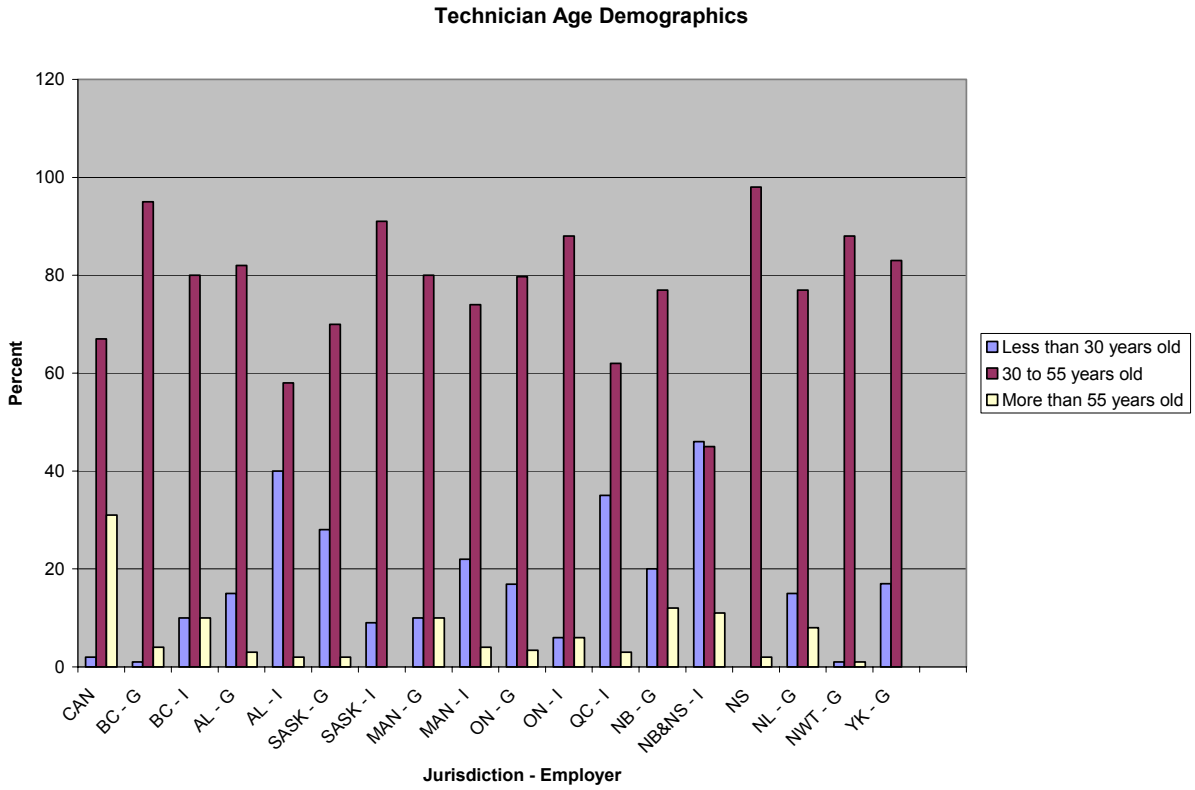
Currently, it does not appear that there is a notable shortage of foresters. While 8 of 18 respondents indicated that they are hiring non-foresters where they would have hired foresters in the past, 5 of 7 indicated they are doing so to address skill needs that current forester graduates do not have. Three indicated that other graduates were hired due to a shortage of qualified foresters.

This data suggests that for British Columbia, Alberta, Ontario and the federal government, that while a short-term drop in enrollment (or applications) is not necessarily a major concern, it may be critical that enrollment and the number graduating from the B.Sc.F program increase within the next 5 years. Although not clear by the survey results, it appears that there is a more dramatic concern beyond 5 years to address the anticipated shortage of qualified foresters for many jurisdictions.

Forestry Technician Demographics

Respondents to the question: “What percentage of your organization's forest technicians are in the following age groups? Less than 30, 30 to 55 and more than 55 years old?” provided the following:

Figure 3: Forestry Technician Demographics



Technician population data, similar to that available for Ontario and B.C., is not readily available to make comparisons with the survey data. Statistics Canada data from 2001 however, indicates that there are close to twice as many technicians as there are foresters employed in Canada. The age distribution is somewhat similar to the forester age distribution with 59% of forest technicians being between the ages of 35 and 54 versus 65% of foresters who are in the 35 to 54 age category.

The following table (Table 5) is a summary of the responses to questions: “In the next 5 years, what percentage of the forest technicians in your organization do you expect will retire? How many entry level technicians (recent graduates) does your organization expect to hire in the next 5 years? In the Next 5 years, the number of forest technicians employed by your organization will change by what percentage?”

Table 5: Predicted forestry technician retirement and employment trends

Jurisdiction	Percent technicians retiring in next 5 years	Number technicians to be hired in next 5 years	Percent Change in number of technicians employed next 5 years
CAN	26%-40%	4	unknown
BC - G	26%-40%	200	-5
BC - I	Less than 10%	-24	-10
AL - G	10%-25%	67	0
AL - I	10%-25%	16	8
SASK - G	26%-40%	23	29
SASK - I	Less than 10%	5	-10
MAN - G	10%-25%	0	0
MAN - I	10%-25%	-7	0
ON - G	10%-25%	116	2
ON - I	10%-25%	11	-6
QC - I	Less than 10%	0	-5
NB - G	Less than 10%	18	0
NB&NS - I	10%-25%	0	9
NS	10%-25%10%-25%	6	0
NL - G	26%-40%	0	0
NWT - G	Less than 10%	0	No response
YK – G	26%-40%	3	20
Total		+438	0%

These results are similar those for foresters. The employers responding to the survey anticipated that a total 438 entry level forest technicians will be hired. When extrapolated to the Statistic Canada census data level, the results indicate that about 1232 will be hired at the entry level nationally in the next 5 years or 246 per year over the short term and over 300 per year in the long term.

The current national production level of forest technicians is unknown and therefore makes interpretation of the results difficult. Potential increases in the number of forestry technicians employed in some jurisdictions are partially offset as a result of a reduction in other jurisdictions. Some jurisdictions may have some recruitment difficulty with declining enrollment, particularly if graduates are not willing to relocate.

It was not feasible to summarize the national graduate data for forestry technical programs as no such database exists. A national forestry college association, similar to the AUFSC should be developed to help promote program interests in a coordinated fashion and provide a forum for other activities such as information collection and analysis.

A few colleges were contacted to assess enrollment trends, the results showed that Sault College of Applied Arts and Technology in Ontario has seen a 35% decline in enrollment and a 62% decline in the numbers graduating from the forestry technician program in the last 5 years. The British Columbia Institute of Technology had been faced with a 78% decline in enrollment when it undertook an aggressive marketing strategy and introduced a 1 year certificate and laddering program. The results

have been very positive and it is predicted that there will be a 69% increase in graduate numbers in 2004 over 2003, the first increase since 1998. The Maritime College of Forest Technology in Fredericton, New Brunswick, also had a declining enrollment concern and undertook program modifications and implemented a marketing program, resulting in a positive response.

Employee Skill and Occupational Needs

Employers were asked to look at all the skill needs of their foresters and forestry technicians and assess how important a range of actions would be in addressing those skill needs. The results, in Table 6 below are for both forest technicians and foresters as the responses were similar:

Table 6: How employers will meet forester and forestry technician skill needs.

	Not at all	Not important	Somewhat important	Important	Very Important
attracting workers from other organizations	0	1	14	2	0
Hiring recent university graduates	0	2	6	9	1
Upgrading skills of current employees	0	1	1	11	5
Improving succession planning	0	0	4	9	5
Phased-in retirement policies (ie. retain longer)	1	9	4	3	1
Mentoring of young workers by older workers	1	0	5	10	3
Changing job descriptions; relocating work	1	3	7	6	1
Implementing specific measures to retain current employees	0	3	11	4	0
Contracting out	1	6	5	3	1
Down sizing	4	8	3	0	2
Other (please specify below)					

Responses varied for most questions depending on the jurisdiction. Most interesting

to note is that the vast majority of employers feel that it is important or very important that existing employees upgrade their skills to meet future needs. Very few jurisdictions have programs that support the upgrading of skills and knowledge, particularly of mid-career personnel. The longest standing advanced forestry program in Canada, notably the Forest Management Institute of B.C. (previously known as the Silviculture Institute of B.C.), has recently taken a short-term hiatus due to very limited enrollment. This may suggest that while employers support professional development, they may be reluctant to pay for it. When budget constraints occur, usually one of the first areas impacted is investing in continuing competency development of staff, potentially impacting future skill levels.

Employers were asked: "If you anticipate challenges in meeting all of your skill needs, how important do you expect the following potential problems to be?" The responses are provided in Table 7 below:

Table 7: Challenges meeting future skill needs.

	Not at all	Not important	Somewhat important	Important	Very Important
Low internal priority on upgrading skills	2	6	5	5	0
Not a clear picture of what new skills are needed	2	3	9	4	0
Increased efforts by other employers to retain employees	1	5	6	6	0
Competition from other employers for new workers	0	2	8	6	2
Difficulties finding qualified workers	0	3	4	8	1
Lack of qualified new graduates	0	8	3	5	2
Lack of needed skills available internally	0	3	7	6	2
Poor information on employees' current skills	1	8	6	3	0
Lack of internal training/upgrading resources	1	6	6	5	0
Low priority on recruitment	0	7	6	3	1
Poor succession planning	0	0	11	3	3
Difficulties increasing compensation to attract workers	0	1	5	9	3

Forestry employment responsibilities have dramatically changed over the last 15 years, employers continue to expect change but, it is suggested that many are

uncertain what skills the forestry professional of the future will need. The lack of access to learning resources appears to a concern.

Employers anticipate difficulties finding qualified workers. No comments were submitted as to why they perceived this to be a concern. Nonetheless, some of the more remote communities have recently been reporting this challenge. By in large, employers have not developed succession plans to ease staff turnover and to address corporate knowledge retention issues. However, an effort to retain existing employees appears to be a priority for some agencies.

Difficulty increasing compensation to attract new workers was of note particularly for government agencies.

When asked, “In your view, how serious are the following issues in meeting the needs of the occupations?” The following was reported (Table 8):

Table 8: Meeting the needs of the occupations.

	Not a problem	Slight problem	Moderate problem	Serious problem	Very serious problem
Quality of education received by foresters	9	5	2	2	0
Quality of education received by forest technicians	9	3	3	2	0
Amount of workplace training	3	8	5	2	0
Quality of workplace training	3	10	5	0	0
Increasing the amount of training	2	4	10	2	0

Generally, employers are reasonably satisfied with the quality of education foresters and forestry technicians are receiving. However, as reported in Table 9, improvements need to be made. Emphasis should be placed on quality versus quantity of training when it comes to existing employees. While there are numerous training opportunities available to employees, learning should focus on critical skill and knowledge needs.

The survey was developed due to declining enrollment in the forestry schools. To address this concern, employers were asked where emphasis should be placed to achieve increasing recruitment in to the forestry schools with the intention of increasing the overall attractiveness of entering a forestry program. Table 9 provides a summary of the areas that were recommended.

Table 9: Methods of increasing recruitment to forestry schools.

	Much less	Less	Emphasis is right	More	Much more
Alter curriculum education quality and/or content	0	0	5	11	2
Increase marketing of post-secondary forestry education	0	0	4	11	3
Improve accessibility to post-secondary education	0	0	12	4	2
Increased government investment in forestry education and training	0	0	5	12	0
Increased private sector investment in forestry education and training	0	0	5	10	1
Improved workplace training	0	0	4	14	0
Government/forest industry sponsored forester in training programs for new graduates	0	1	2	13	2
Government/forest industry sponsored forest technician in training programs for new graduates	0	1	6	8	3

According to the 2003 Education, Sustainability and Security Conference Report (U.S. National Council for Science and the Environment), professional practitioners/leaders must be educated in the broader sense of sustainability to be able to cope and communicate on the social, economic and environmental components of sustainability.

There is strong support for increasing the marketing of post secondary forestry education. Employers tend to agree that there is a need to improve the overall education of technical and professional programs and that it is important that both the government and the private sector increase investment in the continuing education of those in the forestry field.

Conclusions

The results of the survey are difficult to interpret. A number of assumptions have been made to draw conclusions and provide recommendations. While, with the exception of the federal government, over the short-term (i.e. the next 3 years) the declining production of foresters is not a major concern, it becomes increasingly important beyond that point. Demographics suggest that there will be an increased demand resulting from retirement in the 4 to 10 year time period.

Employers predict a 3% increase nationally in the number of foresters employed over the next 5 years. While not an immediate crisis in terms of numbers currently graduating, these results combined with an aging demographic, early retirement, and an older forester demographic in management positions (not part of the survey), suggests the need to produce close to 300 forestry university graduates nationally per year during the years of highest retirement. As it takes 4 years to graduate a potential recruit, it is therefore important that action be taken to reverse the continuing declining enrollment trend. Without a supply of qualified foresters, the sustainability of Canada's forests may be put in jeopardy.

Similar trends are evident in the demand for forest technicians, with the exception that the age demographic for technicians appears to be more even. While there will be essentially no change in the total number of forestry technicians employed in Canada, in order to maintain existing numbers, it is estimated that colleges will need to produce about 160 forestry technician graduates per year over the short term and well over 300 per year in the long term.

While the survey did not consider forest worker (labourer) demographics, recruitment and employment, a number of employers noted that this area of the workforce is their most urgent concern. Large numbers of this segment of the labour market will be retiring over a very short time frame. The Canadian Labour and Business Centre (2003) indicates that the number of retiring workers is expected to be much greater than the number of youth entering the labour force. The numbers dramatically illustrate that based on the 2001 Census data, Ontario's natural resources sector (which includes forestry and logging), more than 46% of the workforce is aged 45 or older, while the managers/professional segment of the forestry workforce on the other hand is reported to have 36% in this age demographic. Quebec communicated a similar concern during the survey period.

Recommendations based on the survey and other investigations:

Five recommendations are put forward to address the concerns that have been identified through the survey and as a result of other investigations into the declining enrollment issue.

1. The CCFM survey data confirms the need for a group (perhaps the AUFSC) to come forward and lead the development of a marketing strategy. CCFM should consider establishing a task force under the CCFM Sustainable Forestry Working Group and commit resources to contribute to the initiative.

   Components of the strategy should include a coordinated effort to promote public awareness of professional and technical forestry school programs as an environmental science field focused on sustainable management and to market forestry as an attractive source of employment. A component of the marketing strategy should also target aboriginal communities.

2. Individual forestry schools must invest or continue to invest in the development of aggressive marketing strategies at the high school level.

3. Federal and provincial governments should initiate programs that raise the profile of forestry. Activities such as the sponsorship and marketing of Forester Intern programs, similar to those that exist in some provinces, should be pursued at the provincial and national level.

4. CCFM should support the Accreditation Board in it efforts to enhance forestry education to promote the new skills that professionals require and to support technical schools in producing graduates that are more job-ready. Training programs to support the development of a forest worker labour pool should also be considered.

5. Continued efforts need to be made to remove barriers to labour mobility. Professional Associations and the Accreditation Board need to continue to work together to allow for the recognition of RPF status and accommodating the migration of forestry professionals. Efforts should also be considered to promote the development a forest worker (labourer) supply.

It is clear that CCFM has a leadership role in Canada's forest sector. While CCFM committed to undertaking this survey, others must come forward to accept a lead role in addressing these recommendations.

References

Blockstein, D. and J. Greene, editors. 2003. National Council for Science and the Environment (NCSE). 2003. Recommendations for education for a sustainable and secure future. 48 p.p.

Bouliane, C. and C. Andre. 2003. The professional recognition of Quebec's forest management workers.

Clear Lake Ltd. 200. Forestry employer demand survey for the province of Alberta. 32 p.p.

Decima. 2002 Canadian's attitudes toward natural resources issues, 2002. p. 25-27.

Lamontague, F. 2003. Demographic profile of the natural resources sector, Canadian labour and Business Centre. 6 p.p.

Leonard, J. 2000. Survey of student and faculty trends in Canadian electrical and computer engineering programs.

Malatest, R.A. 2003. The aging workforce and human resources development implications for sector councils.

Sauer, S. editor. 2003. Crisis in our forestry schools. Forum. November-December, 2003. 26p.p.

Statistics Canada. 2001. 2001 Census of population – table:97F0012XCB01024.

APPENDIX 1

FORESTRY EMPLOYER DEMAND SURVEY

1. For which jurisdiction(s) are you responding? *(check all that apply)*
Alberta
British Columbia
Federal (Canada)
Manitoba
New Brunswick
Newfoundland and Labrador
Northwest Territories
Nova Scotia
Nunavut
Ontario
Prince Edward Island
Quebec
Saskatchewan
Yukon Territories

2. What sector do you represent?
Forest Industry
Government

3. How many **foresters** or full time equivalents (undergraduate forestry degree) does your organization employ?
Insert number

4. How many **forest technicians** or full-time equivalents (forestry/natural resources technician diploma) does your organization employ?
Insert number

5. What percentage of your organization's **foresters** are in the following age groups?
Less than 30 years old ___%
30 to 55 years old ___%
More than 55 years old ___%

6. What percentage of your organization's **forest technicians** are in the following age groups?
   Less than 30 years old ___%
   30 to 55 years old ___%
   More than 55 years old ___%

7. In the last 5 years, the number of **foresters** (or full time equivalents*) employed by your organization:
   (*1 full time equivalent equals the amount of time that when added up equals one position employed on a full time basis and could include contract/part-time/fulltime employees)
   Increased by ___ positions
   Decreased by ___ positions
   Stayed the same

8. In the last 5 years, the number of **forest technicians** (or full time equivalents) employed by your organization:
   Increased by ___ positions
   Decreased by ___ positions
   Stayed the same

9. Is your organization hiring other university graduates (biologists, environmental science, etc.) to fill jobs formerly occupied by foresters?
   Yes
   No

10. If YES to Question # 9, is this shift due to a shortage of trained (or quality) foresters or is there a preference for the educational attributes of other disciplines?
    Shortage of trained or qualified foresters
    Preference for other disciplines
    Other (please specify)

11. In the next 5 years, what percentage of the **foresters** in your organization do you expect will retire?
    Less than 10%
    10%-25%
    26%-40%
    41%-55%
    Over 55%

12. In the next 5 years, what percentage of the **forest technicians** in your organization do you expect will retire?
    Less than 10%
    10%-25%
    26%-40%
    41%-55%
    Over 55%

13. How many entry level **foresters** (recent graduates) does your organization expect to hire in the next 5 years?
    Insert number

14. How many entry level **forest technicians** (recent graduates) does your organization expect to hire in the next 5 years?
    Insert number

15. In the next 5 years, the number of **foresters** employed by your organization will:
    Stay the same
    Increase, by ___%
    Decrease, by ___%
    Unknown

16. In the next 5 years, the number of **forest technicians** employed by your organization will:
    Stay the same
    Increase, by ___%
    Decrease, by ___%
    Unknown

17. Looking at **all** your skill needs for **foresters**, how important will each of the following actions be in addressing these skill needs?

	Not at all	Not important	Somewhat important	Important	Very important
Attracting workers from other organizations					
Hiring recent university graduates					
Upgrading skills of current employees					
Improving succession planning					
Phased-in retirement policies (ie. retain longer)					
Mentoring of young workers by older workers					
Changing job descriptions; relocating work					
Implement specific measures to retain current employees					
Contracting out					
Downsizing					
Other (please specify)					

18. Looking at **all** your skill needs for **forest technicians**, how important will each of the following actions be in addressing these skill needs?

	Not at all	Not important	Somewhat important	Important	Very important
Attracting workers from other organizations					
Hiring recent college graduates					
Upgrading skills of current employees					
Improving succession planning					
Phased-in retirement policies (i.e. retain longer)					
Mentoring of young workers by older workers					
Changing job descriptions; relocating work					
Implement specific measures to retain current employees					
Contracting out					
Downsizing					
Other (please specify)					

19. If you anticipate challenges in meeting all of your skill needs, how important do you expect the following potential problems to be?

	Not at all	Not important	Somewhat important	Important	Very important
Low internal priority on upgrading skills					
Not a clear picture of what new skills are needed					
Increased efforts by other employers to retain employees					
Competition from other employers for new workers					
Difficulties finding qualified workers					
Lack of qualified new graduates					
Lack of needed skills available internally					
Poor information on employees' current skills					
Lack of internal training/upgrading resources					
Low priority on recruitment					
Poor succession planning					
Difficulties increasing compensation to attract workers					
Other (please specify)					

20. In your view, how serious are the following issues at meeting the needs of the occupations?

	Not a problem	Slight Problem	Moderate Problem	Serious Problem	Very Serious Problem
Quality of education received by foresters					
Quality of education received by forest technicians					
Amount of workplace training					
Quality of workplace training					
Increasing the amount of training					

21. Where should emphasis be given to increasing recruitment to forestry schools?

	Much less	Less	Emphasis is right	More	Much more
Alter curriculum, education quality and/or content					
Increased marketing of post-secondary forestry education					
Improve accessibility to post-secondary forestry education					
Increased government investment in forestry education and training					
Increased private sector investment in forestry education and training					
Improved workplace training					
Government/forest industry sponsored forester in training programs for new graduates					
Government/forest industry sponsored forest technician in training programs for new graduates					