

The Crisis in Post-Secondary Enrollments in Forestry Programs: A Call to Action for Canada's Future Forestry Professional/Technical Workforce.

A White Paper on Post-Secondary Forestry Recruitment

Canada's Post-Secondary Forestry Schools and the Canadian Institute of Forestry

Executive Summary

Enrollment in post-secondary forestry programs at technical/technologist and university levels has been in dramatic decline for several years. This trend has been linked to such perception factors as a negative industry image, mischaracterization of the sector as embracing of low technology, and lack of diversity both in human resources and job description. This contrasts predictions of an impending shortage of technical and professional workers in the forest sector. And these predictions are an imminent reality.

A united recruitment effort from within the forest sector is needed with: a consistent message from the sector about the exciting future career opportunities for students, a commitment to the message that forestry is, first and foremost, concerned with sustainability and stewardship of the forest, and a commitment to support existing post secondary capacity in technical and professional programs.

The National Forestry Recruitment Summit took place in June 2005 in Ottawa to initiate a unified, coordinated recruitment effort, to address "best practices" in post-secondary forestry recruitment and to suggest possible strategies for all the institutions to increase enrollment and thus increase the number of forest sector professionals available in Canada now and into the future.

Graduates of technology and baccalaureate forestry programs are the professional human resources required to steward and manage forest resources across Canada. As our programs decline and are discontinued, there will be a significant impact to human resource development capacity and a subsequent reduction in the supply of forest professionals and other qualified, trained modern forest workers. The decline has the potential for irreparable loss to national capacity to meet the needs of industry.

The role of the forestry professional, and the societal expectations of them, is growing throughout the country. Legal definitions of "Right to Practice" also govern who practices forestry in a number of provinces, such as British Columbia, Ontario and Quebec. Many other provinces are pursuing professional certification, right-to-title and right-to-practice legislation for forestry professionals. This suggests a continuing need for healthy post secondary programming.

It is clear that forestry practitioners face many challenges in recruiting students to our programs and to careers in forestry. These include:

- A message about the careers and opportunities that is weak, uncoordinated, and too often interpreted to be anti-environmental
- No common message about forestry and its importance in Canada to address inappropriate and incorrect perceptions of our forests, forestry, and forest management,

- Poor use of new technologies in recruitment – we are disconnected from our potential students,
- Keeping programs, vibrant and modern.

There are a number of excellent opportunities to engage our communities in this issue. For example, the Aboriginal peoples of Canada have a strong cultural and potential economic connection to the forest. Aboriginal Peoples are also one of the fastest growing segments of the Canadian population. The forest industry is already one of the largest industrial employers of aboriginal people, and aboriginal communities have an increasing role in forest management. Because of these attributes Canada's aboriginal people provide a natural fit for partnership with our forestry schools.

The long term strategic goals of this National initiative will be:

- The development of a coordinated national marketing program for forestry technical/professional post secondary programs in Canada with a focus on career paths and opportunities and on overcoming current misconceptions of forestry and ,
- The formation of an HRSDC "Sector Council" for Forestry Technical/Professionals.

The short term goals of this initiative will be:

- To continue to expand our understanding of work force demographics and determining the capacity needed to train and educate for the positions to keep forestry vibrant and leading edge:
- Work with FPAC, HRSDC and provincial governments and industries and other partners as well as the post-secondary institutions to develop a national marketing campaign for forestry in Canada.

Canada is a forest nation and our forests provide an underestimated source of wealth and essentially immeasurable environmental goods and services. Our forests will provide new and important roles and opportunities in the global context such as carbon sequestration and in the moderation of climate change. Canada has made international commitments to maintain global forest productivity that may be compromised by lack of qualified professional foresters. The careful and thoughtful management of our forests is necessary if we are to maintain this natural and integral legacy. To perpetuate the flows of these goods and services for the benefit of Canadians and the greater global population we require modern, well educated, forward thinking graduates to do this; our post-secondary forestry programs can provide these people.

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The Crisis in Post-Secondary Enrollments in Forestry Programs: A Call to Action for Canada's Future Forestry Professional/Technical Workforce.**A White Paper on Post-Secondary Forestry Recruitment****Canada's Post-Secondary Forestry Schools and the Canadian Institute of Forestry****Introduction**

Enrollment in post-secondary forestry programs at technical/technologist and university levels has been in dramatic decline for several years. This trend has recently been documented and has been linked to such perception factors as a negative industry image, mischaracterization of the sector as embracing of low technology, and lack of diversity both in human resources and job description¹. In addition, a great majority of students who go on for advanced education now come from urban and suburban areas, meaning that few matriculating students arrive at our institutions with a practical understanding of forestry. The public perception stands in stark and disturbing contrast to predictions of an impending shortage of technical and professional workers in the forest sector². Most unfortunately, these predictions are an imminent reality.

Canada's forest sector is the largest single contributor to our favourable balance of trade, accounting for 3% of the national gross domestic product and in 2004 resulting in \$4.6 billion of goods to global markets. The forest sector is the 3rd largest investor in research and development in Canada. Canada's State of the Forest Report 2004-2005 states "For the many Canadians who live or work in forested areas, the forests provide material, cultural and spiritual sustenance. Wood is the pride of many Canadians, not only in the form of standing trees but also in the structure of our buildings and the material of everyday objects"³. Furthermore, employment in the forest sector accounts for 1 in 17 jobs directly or indirectly in Canada.⁴ Canada's National Forest Strategy⁵ calls for "maintaining and enhancing the skills and knowledge of forest practitioners", and states as a specific objective: "Supporting innovative post-secondary education institutions, continuing education and technology transfer to ensure that the principles of adaptive management improve the management of our resources."⁶

A united recruitment effort from within the forest sector is needed with:

- A consistent message from the sector about the exciting future career opportunities for students.
- A commitment to the message that forestry is, first and foremost, concerned with sustainability and stewardship of the forest
- A commitment to support existing post secondary capacity in technical and professional programs

¹ Hoberg, G. et al, 2003. Image and Enrolments in: FORUM Magazine, Volume 10, Issue 6

² Vancouver Sun, "Forest jobs far from dead". September 13, 2003

³ Canada's State of the Forest Report 2003-2004, p 5

⁴ http://www.fpac.ca/en/economy/economic_impact.php (Nov 22, 2005)

⁵ National Forest Strategy 2003 – 2008, , p.2

⁶ National Forest Strategy 2003 – 2008, Objective 5B, p16.

- Financial incentives for students considering enrolling in a post secondary forestry program
- Effort to promote and advertise excellent employment opportunities for forestry graduates
- Broad forest sector representation at the federal level

Continuing from a solid foundation

As the turndown in forestry enrollments has developed, both reactive and proactive recruitment efforts have been undertaken, usually in isolation, by the post-secondary institutions and more recently by governments, industry and industry groups. These efforts have met with varied levels of success. In Canada over the last number of years we have lost some post-secondary programs in forestry, and the continuance of some others is tenuous with the potential for suspension or cancellation with the potential for suspension or cancellation. Senior administrations are challenging programs to increase enrollments.

The issue of forestry enrollment has also not gone unnoticed outside (and within) the forestry schools. Several groups including the Association of University Forestry Schools of Canada, the Canadian Council of Forest Ministers and the Newfoundland and Labrador Western Newfoundland Model Forest, and the Canadian Institute of Forestry and have examined the issue and have made calls for increased recruitment efforts and enrollments at forestry schools. Industry groups and provincial governments have also recognized the matter. In early 2005, a group of educators and recruiters from post-secondary forestry schools and the Canadian Institute of Forestry called for a "Recruitment Summit". All post-secondary forestry schools in Canada were invited to Ottawa in June 2005 and all but a handful attended this summit. The remarkably widespread attendance underscores the reality of the situation.

The National Forestry Recruitment Summit (June 14-15, 2005) described in this "white paper" took place in order to initiate a unified, coordinated recruitment effort, to address "best practices" in post-secondary forestry recruitment and to suggest possible strategies for all the institutions to increase enrollment and, in turn, increase the number of forest sector professionals available in Canada. The result has been one common national message. Further institutions can now coordinate activities, share resources and advice and generally look for synergies in promoting forestry as a modern, rewarding career for the "best and brightest" of our students. This white paper provides a widely endorsed starting point to further engage our partners in government and industry in solving our common human resource problem.

Post-secondary forestry institutions have researched issues around declining and low enrollments and have instituted various recruitment programs. These efforts have been more or less aggressive (usually dependent on resources available at an individual institution) and have been directed at varied audiences. Through informal connections, there have been some (mostly regional) attempts to coordinate information on recruitment issues and efforts. The emerging "message" for forestry recruitment has now changed from a regional and sometimes inward-looking one, to one of national importance.

To be clear, the central issue is not one of needing increased post-secondary forestry education capacity. The issue is attracting students to the capacities that currently exist

and avoiding disappearance and dilution. Post-secondary secondary forestry education programs have undergone significant restructuring along-side their industry and government counterparts. Now, we desperately need to attract students to the many career opportunities that exist for technologists and foresters in the Canadian workforce.

While it is important for post-secondary institutions to maintain our Canadian forestry programs and the high quality of our professional forestry curriculum, there is a broader issue in the wider community. **Graduates of post-secondary forestry programs are the professional/technical workforce in the forest sector.** If undergraduate and career technology forestry programs are discontinued, it will be increasingly difficult to find the next generation of forest practitioners and other qualified, trained modern forest workers to maintain the important economic standing of the forest industry in Canada. Industry, governments and professional bodies that employ our graduates must be engaged if they want the highly qualified personnel required to continue their activities.

What is “Recruitment”?

In developing a strategy for post-secondary recruitment a definition of recruitment should be clarified. A common definition is “to enlist or enroll someone”. In the business sector, this means to find employees or newcomers. In an era of rapidly changing demographics and in a very broad sector such as forestry the term means attracting, enrolling, retaining, and completing the programs of qualified and appropriate applicants for post-secondary forestry/forest land management programs. The ultimate goal is to provide the forest sector with knowledgeable, competent professional/technical practitioners. .

Recruitment into forestry professions is a complex issue that involves many players and many aspects. A number of considerations are essential as post secondary institutions recruit and educate for the forest sector:

- Public perception has become generally disconnected with reality about forestry. This has been an ongoing issue for the sector and has been exacerbated by perceptions that the forest sector is a “sunset” industry.
- Ongoing accountability through accreditation remains an important issue for post secondary forestry programs (undergraduate and diploma); accreditation involves provincial legislation, accrediting bodies and the post-secondary institutions all playing a role. The benefit to the sector is high standards of reasonably consistent education.
- Industries, government, and small business, the employers of forestry graduates, also play a role in forestry messaging and promoting the opportunities provided by the profession. In any recruitment model and initiatives there will be many partners to contribute.

Forestry programs under threat and in decline

Graduates of technology and baccalaureate forestry programs are the professional human resources required to steward and manage forest resources across Canada. As our programs decline and are discontinued, there will be a significant reduction in the supply of forest professionals and other qualified, trained modern forest workers. Employers of our graduates must be engaged if they are concerned with their ability to achieve their business objectives.

The forest sector has been subject to a number of challenges in recent years both within government and private industry. This has resulted in a significant restructuring. Post-secondary institutions have also undergone significant restructuring of programming to adjust to changing funding models, changing demographics, and a buoyant economy where young people are choosing work instead of further education. Despite these efforts to restructure programming and market forestry careers, forestry programs are at real risk of closure because enrollments have continued to decline. Indeed, a number already have been discontinued. (e.g. Northwest Community College in BC)

A collaborative recruitment effort between forest sector employers, professional associations, and the post-secondary sector is required to recruit new and returning students. Our partnership needs to create the information and conditions by which forestry becomes once again a profession of choice with the goal of providing future forest practitioners in anticipation of demographic changes awaiting the forest sector in Canada.

The trend is not a typical cycle and therefore needs a different response

In the mid 1990's forestry programs in Canada were healthy. If there were highs and lows in program enrollment these were often related to regional (or even local) situations. Enrollment targets were generally met and recruitment of new students was a relatively simple matter; staff from a forestry school would visit high schools and high school counselors and usually an enthusiastic and large (enough) class of new forestry students would soon arrive at our schools. As well, there was sufficient demand for graduates that mature students could receive funding while on employment insurance to take post secondary training in forestry.

Since the mid 1990s, however, there has been a national trend toward declining enrollments in forestry programs involving students continuing from high school, and decreasing financial support through job re-training programs as incentive for mature students. In some cases programs are enrolled with less than half the numbers they did ten years ago.

Forestry and other natural resource management programs have endured cyclical enrollment over the last few decades but not to the same extent currently experienced. A number of things have changed. At the post-secondary institutions, it is an era of greater fiscal restraint and new, challenging public funding models that link program support in detail with short-term enrollment figures, coupled with increasing costs for forestry program delivery. In the late 1990's, institutions began to develop more comprehensive recruitment strategies and make the first attempts at a new type of recruitment.

In these efforts, one of the questions that first needed answering was why enrollment was so low and where were students enrolling if not to forestry programs. Several institutions began to examine these situations. Some common trends were noticed

- Populations generally and specifically of students attending post-secondary programs are declining (thus giving a smaller pool of candidates),
- More sedentary, less outdoor-oriented students, coming mainly from urban and suburban areas,

- Poor perception of the forest sector: Painted as 'bad' by environmentalists and lack of effective response to incorporate public environmental concerns in the curriculum, bad news stories (mill closures, trade disputes, etc), perception of a sunset low tech industry,
- Perception (and perhaps short-term reality) of poor employment prospects for graduates,
- Traditional students are being captured by a multitude of new "environmental sciences" programs,
- Competitor professions are more experienced and aggressive than we are, using a more high-tech, more attractive message and message delivery, and better use of technologies.

What has this meant to forestry programs?

In many cases the poor perception by our potential students and the subsequently lowered enrollments has led to a negative feedback cycle from which only a few schools have been able to break free. The cycle follows a typical pattern:

- Decreasing enrollments, and the potential for declining quality of applicants
- Decreased number of graduates,
- Increase cost per student to deliver program,
- Program cost reductions to decrease cost per student,
- Program reductions (thus reducing ability to counter the problem),
- Threats of programs closure and/or merging with other programs and or staff layoffs
- Actual program closure or,
- Reduction in course offerings,
- Less attractive and relevant programs.

Why should government and industry be concerned?

Most notably this issue relates directly to human resources and strategic human resource planning. Post-secondary institutions have been dealing with declining enrollment and coincident recruitment issue for the last several years and have been making attempts to solve the very broad and complex issue. However, our partners in government and industry are now beginning to see the effects that weaker programs with low enrollment have on abilities to meet their own mandates. Many employers now face an imminent and serious situation in their ability to meet their staffing needs. This, of course, directly reduces the ability of government and industry to carry on their core business. Coupled with impending retirements of the baby boom generation, the situation will likely get worse before it gets better. Employers at all levels and in all sectors are facing large numbers of retirements in the next decade. The current Human Resource situation has fundamentally changed in the last few years. It is a "seller's market" now, not a "buyers market". While some positions will be lost to attrition or "technological replacement" there will be large numbers of professional positions that will need to be filled. Some telling statistics include:

- The Canadian Council of Forest Ministers survey highlighting declining enrollments in forestry programs and increasing demand for employees,
- The B.C. Ministry of Forests predicts having to replace 80% of the technical/professional workforce in 10 years,

- The Alberta Forest Products Association reports that the average age of forest practitioners in Alberta is 48 years.

This issue has additional relevance to provincial governments and the forest industry but in different ways

Both provincial forest resource and land management ministries and the forest industry have emerged from a period of restructuring. While the forest sector will continue to need technical professional personnel for its woodlands operations, it is the provincial ministries that will feel the most significant near term impact of low enrollments.

Provincial governments, to a large degree, have been reducing staff over the last decade at the same time that industry has. But staff retained in general tended to have greater seniority. These employees are now retiring or due to retire and there is a large gap of not only staff, but also of the experience and training that senior staff has. What does this mean?

For government it means an impending capacity gap. For industry the indirect impact will be a less optimal and functional regulatory relationship with provincial ministries as government adjusts and attempts to rebuild capacity following the retirement “wave”.

Competing for recruits in the high tech world

An important consideration in forestry recruitment is the characteristics of our competition. There is a current and projected shortage of workers in ALL sectors of the economy and all groups are aggressively recruiting potential employees. In their efforts they have met the current expectations of Canada’s youth by using modern, web-based technologies. In our post-secondary forestry curricula and in the forest sector overall, advanced cutting-edge technologies are widely utilized. But in our recruitment efforts this is not the case. Natural Resource programs across North America have been very slow, relative to our competitors, to embrace new technologies in recruitment, particularly the internet. Medical and Engineering school websites are very interactive, advanced and attractive tools. Forestry programs, with diminished resources, have not employed technology to the same effect. We know that high school students are doing their investigation of careers and schools on the web but we haven’t met their expectations or gained their interest.

The changing gender make-up in post secondary programs

Over the last few years, many colleges and universities across Canada have experienced a trend towards a greater percentage of female students in most programs. This trend could have an impact on future enrolment in forestry programs, which have traditionally attracted a higher percentage of male students. For example, the UBC Faculty of Forestry has found that female enrolment in traditional forestry programs averages approximately 28%, while female enrolment in the natural resources conservation program is currently 61%. Therefore, if the pool of potential students consists of an increasing number of females over time, and female students are more attracted to non-traditional programs, then the trend of decreased enrolments in forestry programs could continue to head downward. In our recruitment efforts we must be aware of the changing makeup of post-secondary students and address our recruitment to both genders.

Caution surrounds the use of non professionals in professional roles

The question is often raised in the public that the technical/professional forestry workforce could be filled by graduates of “aligned” programs. However the skill sets of sophisticated and modern forest land managers have become highly advanced and specialized. Aligned programs with clear guidelines for credential upgrade such as the “Allied Science Forester in Training” program through the Association of BC Forest Professionals is an example of the standard that still must be met to practice the forestry profession when coming from a non-forestry undergraduate background.

Legal definitions of “Right to Practice” also govern who practices forestry in a number of other provinces. Many provinces have, or are pursuing, professional certification, right-to-title and right-to-practice legislation for forestry professionals.

The forest sector is well positioned to be a very effective partner in collaborating with the post-secondary sector to address forestry enrollment.

The Role of Aboriginal People

Aboriginal people in Canada should be considered natural partners in forestry. Most aboriginal communities exist in the forested environment and many have ongoing land claim considerations for ownership of land allocated for forestry activity. Therefore, First Nations have a strong cultural and potential economic connection to the forest. Aboriginal Peoples are also one of the fastest growing segments of the Canadian population. The industry is already one of the largest industrial employers of aboriginal people, and aboriginal communities have an increasing role in forest management. Because of these attributes Canada’s aboriginal people provide a natural fit for partnership with our forestry schools.

Despite all the advantages, the aboriginal community faces difficult social and economic conditions which must be considered in a workforce strategy. Aboriginal students are not completing high school at the same rate as the general population, and those students that are graduating are less likely to have the science courses necessary to enter a forestry related program. Many post-secondary institutions, and some specific forestry programs, are increasingly better positioned to help aboriginal students adjust to post-secondary school (e.g., UBC’s First Nations House of Learning). Aboriginal people and the opportunities and challenges faced by them, will need to be an integral part of future forest recruitment efforts.

Challenges and Opportunities

In discussion amongst forestry program recruiters, with forestry professionals as well as with long list of associates (including high school and other teachers, career counselors, employers, and students both within and outside forestry programs), it is clear that forestry practitioners face many challenges in recruiting students to our programs and to careers in forestry. These include:

- A message about the careers and opportunities that is weak, uncoordinated, and too often interpreted to be anti-environmental

- No common message about forestry and its importance in Canada to address inappropriate and incorrect perceptions of our forests, forestry, and forest management,
- Poor use of new technologies in recruitment – we are disconnected from our potential students,
- Keeping programs, vibrant and modern.

What are we doing about it?

As discussed, post-secondary institutions in forestry have been making efforts to meet our shared recruitment challenges. While these have been often in isolation or applied only regionally, there have been focused and serious efforts in many areas,

- Articulation - schools are working together to make transferability between programs easier and more transparent thus allowing students to tailor their programs better.
- Promoting the message that **forestry** is important and that there are many avenues and institutions available to pursue a career in forestry, and that fulfilling careers are available for graduates.
- Working to adjust curricula to include a strong and persuasive environmental focus so that foresters are seen as taking care of the whole forest, including its inhabitants and ecological processes, and not just the timber that they include.
- Attempt to assist in coordination of recruitment among post-secondary institutions and government and industry.
- Lobbying government and industry for support.
- Pursuing a national forestry recruitment strategy.

Solutions with the help of our partners

We are asking for:

- A nationally coordinated “marketing campaign” involving post-secondary schools, government and industry aimed at increasing the profile of forestry and countering the misconceptions that currently exist in the general public and in our potential recruits and,
- The eventual formation of a HRSDC “Sector Council” for forestry.

In the interim the formation of a “working committee” of approximately 6 members (co-chaired by representatives from a technology school and a university program in forestry) that will be advised by a broad “Council” representing all segments of the forest sector to drive a national message. The Council will have representation from FPAC, a provincial professional forestry association and a provincial Natural Resource ministry, and the Canadian Institute of Forestry (CIF).

The long term strategic goals of this group will be:

- The development of a **coordinated national marketing program** for forestry technical/professional post secondary programs in Canada with a focus on career paths and opportunities and on overcoming current misconceptions of forestry and ,
- The formation of an HRSDC “Sector Council” for Forestry Technical/Professionals.

The more tactical, short term goals of the group will be:

- To “move from anecdote to evidence”. Gather and compile the current and projected future data on the forestry Human Resources situation.
 - 1) Understand our work force, its demographics, where it is going and who will be filling the positions in forest land management in the near and longer term.
 - 2) Determine the capacity needed to fill these positions and keep forestry vibrant and leading edge.
 - 3) Distinguish between “capacity” vs. “engagement.”
- Work with FPAC, HRSDC and provincial governments and industries and other partners as well as the post-secondary institutions to develop a professional and attractive national message and marketing campaign for forestry in Canada. Key points could be
 - 1) Forestry is a vibrant, modern, technologically advanced career focused on stewardship to sustain the whole forest resource and ,
 - 2) There are tremendously diverse, rewarding (financially and otherwise) and available career opportunities,
 - 3) There are great opportunities in Canada’s forests,
 - 4) Forestry provides an excellent lifestyle; at school and throughout a career,.
 - 5) Forestry is concerned with the vast multitude of the resources, goods and services our forests provide.
- Engage all our partners for the success of all
- Be proactive and nimble with regards to changing issues in post-secondary enrollment and the changing HR demographics in the forest sector.

Conclusions

Canada is a forest nation and our forests provide an underestimated source of wealth and essentially immeasurable environmental goods and services. Our forests will provide new and important roles and opportunities in the global context such as carbon sequestration and in the moderation of climate change. Canada has made international commitments to maintain global forest productivity that may be compromised by lack of qualified professional foresters. The careful and thoughtful management of our forests is necessary if we are to maintain this natural and integral legacy. To perpetuate the flows of these goods and services for the benefit of Canadians and the greater global

population we require modern, well educated, forward thinking graduates to do this; our post-secondary forestry programs can provide these people.

The current low student numbers in post-secondary forestry programs could have disastrous consequences for the professional forestry scene in Canada. Low enrollments threaten the continued existence of post-secondary programs. Low enrollments today mean decreased availability of professionals in the future, at a time when large retirements in government and industry are predicted. Thus, the recruitment issue is not only a post-secondary education problem but a problem that must be shared and addressed by all players in the forest sector in Canada.

We propose to initiate a new partnership involving all post-secondary forestry schools, government, industry, small business, industry associations and professional bodies. We recommend that this should involve a small group of individuals representing the various players and that has access to appropriate resources required to develop a comprehensive plan to restore a strong position for forestry in the Canadian scene. The ultimate goals of this group should be defined as promoting development of a national forestry technical/professional recruitment program and seeking the formation of a Federal HRSDC Sector Council in Forestry to ensure that the momentum is maintained.

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