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Forests, Postsecondary Education, and Aboriginal People: A Framework for Partnership and Action

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ABSTRACT

Aboriginal people in Canada are increasingly expressing a desire for forestry education opportunities. Few postsecondary education institutions have yet responded to this need. This project anticipates that Aboriginal groups will frequently enter into partnership arrangements with colleges and universities for delivery of forestry education to Aboriginal students, and for delivery of Aboriginal forestry concepts to all students. The report presents a framework for such partnership, from early explorations through program design and delivery to ongoing long-term relationships. The framework consists of a goal, a set of principles, and guidance on partnership development. The framework is offered for use anywhere in Canada, and it is hoped that early applications will bring revisions and refinements to benefit subsequent users.

RÉSUMÉ

Au Canada, les Autochtones manifestent un intérêt croissant pour les études en foresterie. Or, peu d'établissements d'enseignement postsecondaire ont répondu à ce besoin jusqu'à maintenant. Dans le projet présenté ici, nous supposons qu'il arrivera fréquemment que des groupes autochtones concluent des ententes de partenariat avec des collèges et des universités pour l'enseignement de la foresterie aux étudiants autochtones et pour l'enseignement des notions préconisées par les Autochtones en matière de foresterie à tous les étudiants du domaine. On présente le cadre de travail d'un partenariat de ce genre, depuis les premières démarches exploratoires, jusqu'à l'établissement de relations à long terme permanentes, en passant par l'élaboration et la prestation d'un programme. Ce cadre de travail comporte un but, un ensemble de principes et des conseils sur l'élaboration d'une formule de partenariat. Il peut être appliqué dans toutes les régions du Canada, et nous espérons que les premières applications donneront lieu à des révisions et à des raffinements avantageux pour ceux qui s'en serviront par la suite.

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FORESTS, POSTSECONDARY EDUCATION, AND ABORIGINAL PEOPLE: A FRAMEWORK FOR PARTNERSHIP AND ACTION

INTRODUCTION AND BACKGROUND

"Aboriginal groups are exercising control over natural resources on large areas and will have a strong voice in resource management on other lands in their traditional use areas. This means more trained Aboriginal foresters, wildlife managers, range managers, and other professionals, technicians, and workers are required".

These observations are contained in the final report of a year-long study of the Aboriginal Forestry Training and Employment Review (AFTER) (Hopwood et al. 1993). Through sustained communication with Aboriginal communities and various resource management organizations, and with an awareness of the increased land-management responsibilities of Aboriginal communities, Lakehead University's Faculty of Forestry also recognizes an increasing need for Aboriginals with professional forestry training to serve as leaders and skilled workers in First Nations' communities, and to participate effectively in the overall Canadian forest sector.

The Faculty of Forestry has long maintained links with Aboriginal communities across Canada. Faculty and staff have been involved in various projects and participated as advisors, consultants, and associates in many First Nations' natural resource management endeavors, including forest management plans, government negotiations on land-based developments, land claim negotiations, and comanagement agreements. In 1990, the Faculty of Forestry organized and hosted the first ever Native forestry conference in Ontario, entitled "Living and Working with our Forests". Dr. John Naysmith, former Dean of the Faculty of Forestry, at the invitation of the National Aboriginal Forestry Association (NAFA), serves as a member of the Aboriginal Forestry Training and Employment Review Committee. Mr. Harry Bombay, Executive Director of NAFA, is a member of the Lakehead University Faculty of Forestry Advisory Committee.

Given the strongly identified need for professional education and technical training opportunities for First Nations' natural resource managers, the authors proposed a cooperative project with Aboriginal people to define a framework for partnership and action. The work has been cofunded by the Canadian Forest Service—Sault Ste. Marie, the Ontario Ministry of Natural Resources, and the Chair in Forest Management and Policy of the Faculty of Forestry, Lakehead University, Thunder Bay, Ontario.

The objectives of the project were:

1. To define a framework of considerations that could be used by any institution contemplating delivery of postsecondary forestry and natural resources education involving Aboriginal peoples and concepts, and
2. Using Lakehead University's Faculty of Forestry, as a case study, to explore a range of options for delivering postsecondary forestry education that meets the needs of Aboriginal communities.

A few words about the scope and direction of the project are in order. First, while the study was meant to produce a framework that would have applicability anywhere in Canada, the authors concentrated their consultations with Aboriginal people in northern Ontario. This was partly a matter of convenience, partly a matter of Lakehead University being an institution "for the north in the north", and partly a matter of federal support funding being provided under the umbrella of the Northern Ontario Development Agreement.

Second, this project focused only on postsecondary education, mainly because the demand for education and training has been expressed in terms of professional-level work, and Lakehead University is dedicated to this level. Aboriginal people may well have other educational requirements related to forests, for example at the elementary and secondary school levels, or at the woodworker level. These levels are important in their own right and serve as vital complements to postsecondary education, but they were not addressed in this project.

Third, the authors refer throughout the document to Aboriginal forestry as if the concept were already well defined. While this is not the case, a sufficient amount is known about its nature and dimensions that design and delivery of postsecondary education in forestry involving Aboriginal people and content can be conceptually developed. The authors further point out that while discussion often refers to the education of Aboriginal people in modern forestry, they also encompass the education of non-Aboriginal forestry students in the relationships of Aboriginal people with forests. Thus, postsecondary education in Aboriginal forestry has two key facets that can, and perhaps should, be woven together into the same programs.

Finally, the authors stress that the framework is not necessarily dedicated to the design, development, and

delivery of new educational programs. Indeed, workshop participants were emphatic about the need to integrate, into the same programs, the forestry education needs of both non-Aboriginal and Aboriginal students. The framework will find its highest value in guiding the redesign and enhancement of existing forestry education programs.

APPROACH

This study was guided by general principles of independent inquiry and by the Ethical Guidelines for Research of the Royal Commission on Aboriginal Peoples. The guidelines indicate the importance of consultations with Aboriginal people in a project such as this. Indeed, from the beginning, the project's success hinged on involving a wide cross section of Aboriginal people and educators in the field of Aboriginal forestry. Even though this work was not funded by the commission, the authors believe that they have engaged Aboriginal people in an appropriate level of consultation as recommended by the commission.

The first task was to establish an advisory group to the project. A total of eight representatives from Aboriginal communities, Aboriginal forestry organizations, Aboriginal educators, educators who had worked with Aboriginals, the private sector with experience in working with Aboriginal communities, and the federal and provincial governments were included (*see* Appendix A).

Central to the project were two workshops. The first, held in March 1994 in Thunder Bay, was attended by 25 individuals informed in the fields of Aboriginal culture, Aboriginal learning styles, forestry in/near Aboriginal communities, postsecondary education, and training in forestry. The purpose of the first workshop was to review the structure and details of a framework for designing postsecondary education and training in Aboriginal forestry. The second workshop was held in February 1995, also in Thunder Bay. Attended by roughly the same range and number of people as the first, it was designed to review and revise the framework so that it more fully meets the expectations of Aboriginal people. (*See* Appendices B and C for lists of workshop attendees.)

THE FRAMEWORK

A framework is like a general blueprint—it guides detailed design by providing overall direction. A framework to guide the development of partnerships and implementation of postsecondary education on Aboriginal forestry can be approached by considering a wide range of issues related to the subject. The framework proposed consists of the following parts:

- a goal for postsecondary forestry education relating to Aboriginal people and concepts;

- a set of principles and assumptions to guide thinking and provide a context for concrete proposals; and
- a process of partnership development, including: a) an exploratory phase to determine the needs to be met by such programs, b) a definition and design phase to develop programs to a state of readiness for students, and c) an implementation phase to deliver and evaluate programs and nurture long-term relationships.

Issues

The authors have used the literature, the workshops, and a general understanding of postsecondary education and Aboriginal culture to identify a wide range of issues that must be addressed by the framework. These include:

1. How Aboriginal forestry will be defined. Even documents that attempt to answer the question "What is Aboriginal forestry?" (Hopwood et al. 1993) admit difficulty in defining the concept. As elusive and multifaceted as it might remain, the design and delivery of postsecondary education dedicated to Aboriginal forestry is impossible without a strong sense of its character and elements.
2. How to foster a true exchange of ideas between Aboriginal and non-Aboriginal people.
3. How to ensure cultural sensitivity of education programs, and at the same time not compromise course content and standards. Cultural sensitivity in part means adopting the view of Aboriginal people on current practices in forest use and management.
4. How to foster economic development yet ensure sustainable and healthy forests.
5. How to understand and document the potential costs and benefits of the range of forest management options available to Aboriginal people. Depending on how Aboriginal forestry is defined, Aboriginal communities may find that a range of management intensities can be successfully implemented on a site-by-site basis across a forest.
6. How to encourage Aboriginal people to become more involved in forest management activities. While Aboriginal people have an inherent orientation to the land and use the forest in a variety of ways, many are not involved in forestry decision making and management activities in the woods.
7. How to encourage communities to prepare students and to accept graduates back into the community. If Aboriginal people are to be attracted to postsecondary education on forests, they will need much encouragement and preparation. Once they have graduated, some may want to practice their new profession in their own communities. To do so, they

- will not only need meaningful work opportunities but also a warm reception as knowledgeable people with new perspectives and something unique to offer in community development.
8. How to encourage Aboriginal participation in curriculum development and delivery. If postsecondary forestry education focuses on Aboriginal students and Aboriginal concepts about forests, then it is imperative for Aboriginal people to take a leadership role in its development and to participate in its delivery.
 9. How to document and teach traditional ecological knowledge. It is recognized that traditional Aboriginal knowledge about forests is different from scientific knowledge, and that it is useful for non-Aboriginals to understand the relationships between Aboriginal people and nature.
 10. How to build on and enhance Aboriginal community networks focused on forest-related topics. Some Aboriginal communities have considerable experience with forest management; others do not. Similarly, some communities may have more experience than others in working with postsecondary educational institutions so as to bring Aboriginal people into the institutions' programs or to teach Aboriginal topics. Subject-specific networking will enhance the exchange of relevant information so that interested communities can quickly move forward.
 11. How to facilitate a pattern of life-long learning to become established within overall education relating to Aboriginal forestry. Life-long learning, or continuing education, is gaining importance in the forestry profession. Continual nurturing and updating of the knowledge people gain in postsecondary Aboriginal forestry education must be assured.
 12. How to facilitate a sense of ownership among Aboriginal people for the education programs. A sense of proprietorship by Aboriginals for Aboriginal forestry education will be necessary if these people are to be drawn in as teachers and learners.
 13. How to address the cultural diversity among Aboriginal communities. The Aboriginal peoples across Canada differ in cultures, customs, and outlooks. The success of Aboriginal forestry education will depend on how well it accepts and builds upon this diversity. One way to address cultural diversity may be to develop Aboriginal forestry education opportunities at a regional level. Alternatively, Aboriginal cultural diversity might be addressed within specific courses in a general Aboriginal forestry curriculum.
 14. How to build on successful partnerships between Aboriginal communities and industry. In many areas, forest management companies and Aboriginal communities have engaged in strong and successful partnerships. Such progressive advances must be used to their greatest advantage in building collaboration in education.
 15. How to reintroduce, reinforce, and maintain Aboriginal values and cultural identity. Some Aboriginal forestry students may come from backgrounds where Aboriginal values and culture were downplayed or obscure. Others may have difficulty holding such values and cultures central to their being while immersed in the environment of a non-Aboriginal postsecondary educational institution. Mechanisms may be needed to encourage Aboriginal students to learn about their own cultures and communities.
 16. How to share knowledge with Aboriginal communities that is sensitive to community conditions. Many Aboriginal communities in Canada face difficult social, ecological, and economic challenges. Aboriginal forestry professionals working in Aboriginal communities must be prepared to apply their knowledge in ways appropriate for the local conditions.
 17. How to introduce forest education, in appropriate form, directly into Aboriginal communities by building on existing and previous education programs. Aboriginal students who are keen to learn more about forests at the postsecondary level may have special learning or social circumstances that make participation away from home in non-Aboriginal programs difficult. Ways to remove these systemic barriers must be found. Some students' requirements might be properly met only by taking large parts of the education programs to them in their home environment. In doing so, it will be necessary to make full use of the latest communications technology.
 18. How to develop common, basic knowledge and skills in both Aboriginal and non-Aboriginal students. Postsecondary education focused on Aboriginals and forestry will mean the delivery of current forestry education programs to Aboriginal students, and the presentation of Aboriginal culture and values to non-Aboriginal students. While specialized knowledge and skills can be obtained through emphases within programs, all students need to fulfil the basic requirements set for the educational programs if they are to receive the same qualifications upon graduation.

A Goal

An overall goal is central to the successful functioning of any framework. In defining a goal for an Aboriginal forestry program framework, the authors took counsel from a statement by Georges Erasmus, former President of the Assembly of First Nations:

"Conservation and development, policy-making and planning often seem to assume that we, the Aboriginal peoples, have only two options for the future: to return to our ancient way of life or to abandon subsistence altogether and become assimilated into the dominant society. Neither option is reasonable. We should have a third option: to modify our subsistence way of life, combining the old and new in ways that maintain and enhance our identity while allowing our society and economy to evolve". (Erasmus 1989)

Based on discussions at the workshop, the following goal emerged:

The goal of the framework is to encourage and guide the development and delivery of forest related education with Aboriginal content that meets the needs of both Aboriginal and non-Aboriginal students, and the standards of the educational institution.

Key elements of this goal imply the following:

1. Encourage and guide—the framework is intended not only to steer people interested in Aboriginal forestry education, but also to promote such endeavors.
2. Development and delivery—the framework applies not only to the planning of Aboriginal forestry education, but also to its implementation.
3. Forest-related education with Aboriginal content—while this document often refers to the graduates of Aboriginal forestry education programs as forestry professionals, the framework is not intended to be limited to degree programs in forestry at the bachelor level. The concepts of the framework are intended to be applicable in any postsecondary educational setting where forests are part of a formal program. This could mean diploma-, bachelor-, or master-level programs where forests are at least a key part of the curriculum, or even special certificates for completion of a series of courses.
4. Meets the needs of both Aboriginal and non-Aboriginal students—Aboriginal forestry education is intended not only for Aboriginal people. To overgeneralize somewhat, the basics of forestry now being taught are appropriate for all students. Interpreting forestry in an Aboriginal context is also applicable for anyone, but Aboriginal students who have been immersed in an Aboriginal cultural

environment can serve as both teachers and students. The framework is intended to serve the needs of Aboriginal students by providing information about forests and their management, and the needs of non-Aboriginal students by presenting the unique perspectives of Aboriginal people concerning the forest. In meeting these requirements, it may be appropriate to use a variety of mechanisms.

5. Standards of the educational institution—it is expected that, at least for some time, Aboriginal forestry education will be developed and delivered by, or in conjunction with, existing postsecondary institutions. Such institutions have standards for their programs, and students must meet those standards before they can graduate. While standards are not fixed forever, and evolve over time, it is vital that they not be relaxed or lowered specifically to make an Aboriginal forestry program work. Otherwise, programs may lose accreditation and graduates would be ineligible to join professional associations.

Principles and Assumptions

The following principles and assumptions are proposed as a foundation for the development and delivery of postsecondary education programs on Aboriginal forestry.

1. Aboriginal forestry is community oriented, integrated, and sets forest practices in a particular cultural context.

The concept remains poorly defined, yet there is agreement on some of the basic characteristics of Aboriginal forestry. Project workshops yielded the following additional thoughts on this topic:

- it is a competing hypothesis to the traditional natural science conception of forestry—it starts with a social/artistic approach;
- it is community based (grassroots), and combines traditional ecological knowledge with scientific knowledge;
- it is a continuation of the Aboriginal tradition of respect for nature;
- it ensures healthy forests for social and spiritual development;
- it is a traditional approach to survival (science is another approach to survival);
- it is based on community values, and is recognized by both Aboriginal and non-Aboriginal peoples;
- it is stewardship of regional forest ecosystems to sustain production of forest values and products to meet the economic, environmental, social, and cultural aspirations of Aboriginal people;

- it has contexts of traditional Aboriginal land use (communal, cultural, spiritual), and the influence of European colonization of North America;
- it involves high standards of care;
- it involves enriched understandings by joining knowledges from two cultures;
- it means living off the land in harmony with nature and the seasons;
- it is community based integrated resource management;
- it is a concept incorporating particular values and perceptions that have cultural and social implications, and it will enrich and strengthen how forestry is currently practiced;
- it is the pursuit of a balanced use of forest values, with an economic perspective at the community level;
- it means Aboriginal people have a real role in decision making;
- it is a blending of tradition and technology; and
- it is a different way of perceiving forests.

Aboriginal forestry is obviously different things to different people. However, some common themes are emerging which, despite the lack of a concrete, widely agreed upon definition, will allow the framework to be applied in the development of successful postsecondary education in Aboriginal forestry. As concepts pertaining to Aboriginal forestry mature, it is vital that Aboriginal people take the lead in defining them and in balancing the values that determine forest uses and management.

2. Successful programs can be designed and delivered only through strong partnerships involving all relevant parties.

In addition to Aboriginal communities and postsecondary institutions, involved parties may include senior governments, private enterprises, professional organizations, and others. It is vital that Aboriginal people participate in all phases of program inception, design, development, delivery, and evaluation.

3. Programs will be most successful when they integrate education for Aboriginal and non-Aboriginal students, and address both the forest education needs of Aboriginal students and an awareness of Aboriginal values and knowledge among non-Aboriginal students.

The need to have professionally trained Aboriginal forest managers for Aboriginal communities is well documented. Aboriginal foresters graduating from accredited professional programs will expand their opportunities for employment and professional practice by being able to

join professional foresters' associations across Canada. Non-Aboriginal forestry graduates may frequently work for Aboriginal communities, as they do now, or with Aboriginal forestry professionals in a variety of ventures. Because the role of Aboriginal people in forest management and policy is expected to increase across Canada, non-Aboriginal professionals will require a heightened awareness of Aboriginal thinking and views. Cross-cultural understanding related to forests and forestry, so central to productive relationships, is best achieved when Aboriginal and non-Aboriginal students learn together in the same milieu.

4. Programs must be fully sensitive to Aboriginal culture and recognize cultural diversity among Aboriginal peoples.

All aspects of forest education programs, including content and delivery style, need to recognize Aboriginal ways and thinking. Some of these ways may be consistent among all Aboriginal communities in Canada, but there is also considerable diversity. This must be accounted for if programs are to be of maximum value to all Aboriginals. However, sensitivity to Aboriginal culture and recognition of Aboriginal cultural diversity must in no way compromise the content or standards of forest education programs.

5. Programs need to foster mutual learning that draws on both traditional knowledge and scientific knowledge.

Scientific knowledge of the European tradition forms the basis for most contemporary forestry education programs. Aboriginal people have their own forms of traditional and scientific knowledge. Such Aboriginal knowledge, particularly about nature and its ethical treatment, can complement non-Aboriginal scientific knowledge so that all students are enriched with deepened understandings.

6. All parties share a responsibility to identify and create work opportunities for graduates.

Most graduates of forestry education programs focusing on Aboriginal thinking, like graduates of other programs, will seek employment that draws upon their unique knowledge and skills. Sometimes the opportunities will be wage or salary jobs; sometimes they will be business ventures. Either way, Aboriginal graduates will seek opportunities both in Aboriginal communities and with non-Aboriginal businesses and governments. Those opportunities may be fewer than the number of people seeking them, and meaningful work opportunities will be difficult to find. Those who play a role in putting graduates through a postsecondary education program in forestry must also assist them in finding meaningful ways to work in their new profession.

7. Aboriginal cultural identity must be reinforced whenever possible.

Some Aboriginal people are well aware of their cultural heritage; others are less so. For the latter, attendance at a non-Aboriginal postsecondary educational institution could widen the gulf between them and their cultural heritage unless they are encouraged and have an opportunity to participate in specific actions that strengthen such an understanding.

8. Aboriginal forestry is best understood in the context of Aboriginal community socioeconomic development.

Given the conceptions of Aboriginal forestry listed earlier, one can see it as an end unto itself. On the other hand, it may also be seen as a means to an end. Thus, while it is rooted in its own culture, Aboriginal forestry can serve as an important vehicle for socioeconomic development in Aboriginal communities.

9. It is vital for all parties, and in particular for Aboriginal leaders, educators, and employers, to have realistic expectations of what graduates can accomplish when they arrive at the workplace. Moreover, a successful program will account for the wide range of potentially challenging work environments that graduates will ultimately face.

Forestry professionals, even with the very best educational experience behind them, are not miracle workers. Aboriginal forestry may mean forest and socioeconomic development in remote communities with limited funds and little experience in the technical and economic aspects of forest development. It may also mean operating in an environment where skills in public relations and conflict resolution are essential. People working in such circumstances will need much support, understanding, and patience on the part of those responsible for their education. As well, the education program can prepare graduates for these circumstances by dealing with them in simulated and real settings throughout the learning experience.

10. A variety of education mechanisms is needed for a successful and comprehensive program.

Postsecondary education in Aboriginal forestry has several distinguishing features. Key among these are students with special attributes and needs, and subject matter and knowledge coming from a unique culture. Traditional classroom and laboratory delivery of forestry education at the institution's main premises is unlikely to fully and efficiently serve Aboriginal forestry. Additional mechanisms, such as distance education, in-community sessions, and special field sessions, will need to be considered.

11. A successful program will recognize and accommodate the potentially unique learning styles

and needs of Aboriginal students. In addition, appropriate support services are needed for Aboriginal students at non-Aboriginal postsecondary educational institutions.

Coming from the Aboriginal culture, with its own particular methods of educating young people, and given the unique environment for children growing up in Aboriginal communities, Aboriginal people often have learning styles and needs different from those of non-Aboriginal postsecondary students. Postsecondary educational institutions have developed methods from a Europe-based culture. This poses a potential dilemma that can be tackled from opposite directions—have the Aboriginal students conform to the education system or customize the education system for Aboriginal learning styles. The latter may be required to a significant degree if a forestry program is to attract significant numbers of Aboriginal students. Here again, workshop participants stressed that this must be accomplished without compromising educational standards or rigor.

12. Aboriginal foresters must be prepared to work with and under a variety of forest tenures and management arrangements, especially situations where the community has control over nearby forest land and where forest revenues are retained in local hands to be used for resource stewardship.

It is clear today that most Aboriginal communities in Canada want autonomy and control over the management and use of natural resources in their traditional use areas. Given that this is an environment within which Aboriginal foresters may well work, they must be adequately prepared through their educational experience to take leadership roles in implementing such new arrangements.

13. It is prudent to assume that partners must work within their existing resources. New resources, especially money, are likely to be scarce.

Existing forestry education programs at postsecondary institutions may need to be modified to some extent if they are to be attractive to Aboriginal students. Unfortunately, the most likely scenario regarding financial support for such modifications is that there will be little or no new money. Some institutions will be able to find new monies, but an assumption of having to work within existing budgets is prudent. One of the several advantages of partnerships in the development of new education opportunities is that they can often make available resources in kind. Program leaders must exploit all such opportunities.

14. Role models for students in Aboriginal forestry will serve as powerful incentives for excellence in academic performance.

Non-Aboriginal students at postsecondary institutions usually perform best when they can take guidance and inspiration from personal mentors or role models. These may be teachers or practitioners. This should be even stronger for Aboriginal students who come from a culture of strong respect for elders. Rather than letting such mentors and role models stand out and be recognized by happenstance, it will be important for the partners to make special efforts to identify Aboriginal forestry leaders, make their accomplishments known to Aboriginal forestry students, and even encourage personal relationships to develop between the mentors and the students. One method of lasting recognition is to establish scholarships bearing the names of key figures in Aboriginal forestry.

A Process of Partnership Development

The principles, assumptions, and goal described earlier provide a strong context for the design of a process to develop and deliver Aboriginal forestry education. The main operating principle for the process is that of partnership—it will only work if the key parties work together from the beginning. Strong initial consultations will strengthen and sustain Aboriginal interest in forestry education as well as orient faculty members toward Aboriginal thinking about forests.

Exploring the Potential

The first task of the key partners in Aboriginal forestry education is to discover whether and how their respective goals and desires can be served through working together to develop and participate in program delivery. Recent studies indicate that Aboriginal communities want some of their members to become trained and educated about forests and their use and management, and educational institutions want to deliver useful and appropriate programs. It could be seen, perhaps a bit simplistically, as a case of demand and supply—Aboriginal people demand a specific form and type of education, and postsecondary educational institutions may be willing and able to supply it. To make something work, it is necessary to define the parameters of the demand and the supply, to determine their degree of fit, and to see how each might have to be modified to develop a workable solution. A foundation for detailed program design, development, and delivery is needed; the early work of the partners is to build it.

Who are the Partners?

At minimum, there are two key partners in any venture on Aboriginal forestry education: Aboriginal people and a postsecondary educational institution. Other partners may or may not become involved. As a matter of principle, other key players in the forest community should be canvassed for their interest and contributions. How might these partners be defined?

Aboriginal people

A demand for Aboriginal forestry education goes beyond the individual First Nation or distinct Aboriginal settlement or community. However, it is not clear how inclusive to become in defining the Aboriginal groups to be involved in a partnership arrangement. As stated earlier, Aboriginal cultures across a country as large as Canada are diverse, and their relationships with different types of forests may vary strongly as well. Political relationships among Aboriginal groups must also be considered. It is conceivable that Aboriginal people may wish to present a united voice at a treaty (Robinson-Superior), regional (northern Ontario), or provincial (Ontario) level. This is an important matter upon which Aboriginal people must agree.

Educational institutions

Those educational institutions in the strongest position to offer programs specializing in Aboriginal forestry are undoubtedly the diploma and degree forestry schools (i.e., colleges and universities). Each institution might work independently with Aboriginal people to develop programs. Alternatively, several institutions might become partners in program development and delivery, thereby building upon each other's strengths related to experience, current programs, faculty expertise, external networks, ability to raise financial resources, and others.

Other partners

For technical expertise, financial support, logistical support in kind, employment counselling and opportunities, co-op arrangements, and other kinds of contributions, the following additional partners, among others, may become involved with the Aboriginal people and the educational institution in Aboriginal forestry education:

- groups such as the National Aboriginal Forestry Association;
- provincial government agencies (e.g., ministries of education, natural resources, environment, tourism);
- federal government agencies (e.g., Indian and Northern Affairs Canada, Natural Resources Canada, Parks Canada);
- private enterprises (e.g., forest management companies, forest products companies, forestry equipment and material suppliers), and their associations (e.g., Ontario Forest Industries Association);
- professional associations (e.g., Ontario Professional Foresters' Association, Canadian Institute of Forestry); and
- other university faculties and departments (e.g., outdoor recreation, indigenous learning, sociology, biology, nursing, engineering, education).

Important Early Roles for Each Partner

Aboriginal people and the forestry educational institution each have unique jobs to do in laying the foundation for an Aboriginal forestry program. The parties will, however, need to be patient and understanding as partnerships develop. For example, Aboriginal communities are still organizing and developing their institutions and structures regarding forests. Although academic institutions are relatively well organized and mature, they generally move cautiously when regarding new ventures. The crucial point is that neither party will be able to progress much on their own, and working together simultaneously is the only sensible approach.

Aboriginal people

Aboriginal people need to undertake a range of activities including:

- determining the Aboriginal communities to be directly involved in the initiative;
- defining their requirements and aspirations with respect to forests, forest use and management, and forest-oriented education;
- clarifying some basic concepts and dimensions of Aboriginal forestry;
- determining how Aboriginal forestry fits into the broader context of Aboriginal social, economic, and political development, and advising how Aboriginal forestry might fit with and influence the broader context of industrial society;
- identifying the specific Aboriginal participants in the partnership arrangements, i.e., who will lead the discussions, who will network throughout the communities, and who will potentially be the first students to take programs;
- defining preliminary operating principles for the partnership;
- canvassing other potential partners for their interests and contributions; and
- encouraging, motivating, and preparing potential students.

The postsecondary educational institution

The postsecondary educational institution should expect to:

- revisit its conceptions of professionalism in forestry, ensuring that they are appropriate for the contemporary and future scene and especially that they embrace Aboriginal forestry concepts;
- chart current and future trends in professional education, and examine the fit of Aboriginal forestry education into the future delivery of regular programs;

- examine current and future resources and strengths, and explore how Aboriginal forestry education fits into the plans and the possibilities;
- build on existing Aboriginal programs and services within the institution or, in their absence, build support in principle with the institution's administrative leaders;
- gauge faculty willingness to participate, and build support and commitment if necessary;
- define preliminary operating principles for the partnership; and
- canvass other potential partners for their interests and contributions.

Other partners

The potential partners are listed above. Once contacted by the Aboriginal partners or the educational institution, they need to examine their interests, their potential contributions and role, and the likely benefits and costs of involvement at various levels. A particularly valuable role for governments and the private sector is to provide short-term forest related employment opportunities for Aboriginal students, as a means of piquing their interest. Since some of these other potential partners have already been engaged in successful relationships with Aboriginal communities, and are committed to the pursuit of cooperative ventures with them (e.g., Ontario Forest Industries Association 1993), they could help significantly by sharing the basis for their successes with the educational institution.

Consultation Process for Partnership Development

In addition to tasks that each partner must undertake individually, there is a need for sustained and productive consultations. The two lead partners—Aboriginal people and the educational institution—need to develop a joint protocol for discussions. The protocol should be based on principles of equal partnership and mutual respect, and consensus based decision making should be used. Multiple modes of communication, focused on an efficient and effective mix of telecommunications and face-to-face gatherings, would serve the exercise well.

If the partnership chemistry is right, if the partners are committed to rapid progress, if they have previous successes upon which to build, and if technical obstacles are few and surmountable, the process may move quickly through its initial stages. However, patience, diligence, and a willingness to compromise are vital qualities in all participants.

Partnership Assessment

A key point in the process occurs when the partners agree that a sufficiently firm basis has been laid for detailed

program design and delivery to begin. At this stage, each partner feels confident about the philosophies and commitments brought to the initiative by the other parties and by themselves. The partners pose the question "Could something work?", and answer it affirmatively. They are also able to define in gross terms the dimensions of programs to be developed and offered. Perhaps this is the stage of a "memorandum of understanding" that gives legitimacy and direction to detailed discussions. Certainly there is no point in talking about program details if fundamental understandings and commitments are not at least provisionally settled.

Program Definition, Design, and Development

After agreements in principle to proceed are achieved, the partners can move forward with program definition and design. Essentially, this boils down to working out what knowledge will be delivered, and how. It also deals with who the students will be, and how they will be brought into the program. Finally, it deals with financing and the ongoing role of the Aboriginal communities.

Program Content

Knowledge needs of students

What have Aboriginal people defined as their knowledge needs regarding the forest and its use and management? These needs may range from operational skills (e.g., heavy equipment operation, tree planting, fire fighting) to be contemporary woodworkers through technician/technologist skills (e.g., operations supervision, treatment layouts) or professional forester knowledge and skills (e.g., silvicultural prescriptions, forest management planning, negotiating with forest stakeholders) to research capabilities.

What have both Aboriginal and non-Aboriginal people defined as the knowledge needs of non-Aboriginal students about Aboriginal forestry? These needs too can range widely, from the basic and technical (e.g., medicinal qualities of forest plants) through the philosophical and ethical (e.g., Aboriginal values with respect to the land) or the social and political (e.g., how Aboriginal peoples govern themselves, what socioeconomic conditions prevail in Aboriginal communities and how forest development can influence these conditions) to the artistic (e.g., how Aboriginal people understand nature through stories, art, or music). It will be important to ensure that Aboriginal concepts are dealt with in a rigorous and in-depth fashion.

Educational levels and knowledge needs

Given the needs that have been identified, at which educational levels are they most appropriately met? Possible levels that currently exist in postsecondary institutions include:

- a certificate demonstrating completion of a small set of related courses (e.g., at Lakehead University, a five-course Certificate in Environmental Assessment, the six-module Ontario Advanced Forestry Program, or a 1-week course on geographic information systems and remote sensing);
- a diploma in a technical program (e.g., a 2-year Diploma in Forest Technology);
- a degree in a professional academic program (e.g., a 4-year Honours Bachelor of Science in Forestry);
- a degree in an advanced professional academic program (e.g., a Master of Forestry); and
- a degree in a forestry research program (e.g., a Master of Science in Forestry, or a Doctor of Philosophy in Forestry).

Program customization

Given that an appropriate educational level has been identified, how much change will be required in current program content to satisfy this need? Will current programs, even if modified, be appropriate at all, or will new programs be needed? Can electives be designed to fulfil the needs? If current programs are modified, it will be vital to build upon them, yet not remove key elements to make room for new materials.

Again, a wide range of degrees of modification to existing programs can be envisaged, depending on the knowledge needs identified, the level at which they are appropriately met, and the current orientation of the programs. The following options demonstrate the range:

- fit Aboriginal thinking and examples into one or more existing courses. If more than one course is involved, this could be a piecemeal incorporation or it could be coordinated in the fashion of an "across the curriculum" program;
- one or more new courses (perhaps electives) specifically dedicated to the concepts of Aboriginal forestry;
- one or more courses on nonforest Aboriginal subjects, to be taken as electives by forestry students;
- research projects in Aboriginal forestry, such as undergraduate theses;
- co-op programs where the work-term employer is an Aboriginal community or institution, or the work location is in an Aboriginal community;
- a minor emphasis in Aboriginal forestry, consisting of taking a series of courses (possible electives) that by their inherent nature or special design highlight Aboriginal forestry; and
- a full-fledged program, at any level, called and emphasizing Aboriginal forestry.

These options are arranged roughly in order of difficulty, with the easiest presented first. Given the shortage of funds to mount new programs or even modify existing ones, program designers will likely favor the easier options.

Process for curriculum revision

By what means does an educational institution, in partnership with Aboriginal people and others, modify its programs to meet requirements for Aboriginal forestry education? Curriculum design and revision are well studied and well known processes in colleges and universities. A variety of techniques can be used to good effect, but the greatest success is achieved when teachers work with former and current learners in the design process. In the case where a special body of knowledge, some of a fundamentally different kind, is the center of attention and few among the current teachers are likely to possess it, the experts in that knowledge (i.e., certain Aboriginal people such as elders and shamans) will need to be central contributing figures in curriculum design.

Program Delivery

How are students expected to gain the knowledge and skills in Aboriginal forestry that the partnership has defined and decided to incorporate into course content? Can ordinary methods succeed? Perhaps they can for some topics and some students, and in these cases program delivery may not need adjustment beyond the current means. However, for two reasons at least, new or adjusted methods may be required. First, the knowledge and skills may be of such a nature that regular postsecondary educational methods do not work. Second, Aboriginal students may be accustomed to learning styles that do not coincide with standard non-Aboriginal learning methods.

Unique knowledge and skills

The traditional ecological knowledge of Aboriginal people is transferred from those who know to those who do not by means of art, music, stories, and apprenticeship. Formal oral and written words are not favored media. Perhaps some elements of this knowledge can be transmitted via print, visuals, or speeches, but some elements can not. In such cases, methods of knowledge transfer that are traditional to non-Aboriginal educational institutions need to be augmented with Aboriginal means.

Learning styles

Accommodating different learning styles is a challenge in classrooms where students come from diverse cultures and socioeconomic backgrounds. The challenge is increased when the classes are led by teams of teachers and guest speakers. The key is to generate an environment where students are comfortable and predisposed to learning

(McCarthy 1987). Teachers will need to encourage students to share their concerns about learning and teaching styles. They also need to be well equipped and ready to adapt to improve classroom learning situations.

Implications for program delivery

Given the kinds of knowledge to be learned, and the styles of some of the learners, adjustments may be required in the standard methods of delivery of postsecondary forestry programs. Such adjustments may occur in:

1. Residency requirements—Aboriginal students may need more time studying in their home environments.
2. Distance education—given the above, teachers may have to develop ways to teach and tutor using telecommunications and other methods of communicating at a distance.
3. Practicum work—Aboriginal students may need to learn and demonstrate competency through practical rather than abstract tasks.
4. Communications—Aboriginal students may feel greater comfort in nonverbal forms of communication; written and oral language are still vital, but nonverbal communications may serve as a strong complement.
5. Knowledge transfer settings—it may be necessary to spend much more time in the woods than is currently the case with non-Aboriginal students. This is consistent with many calls for forestry education to become more practical and to have students do things rather than just read or hear about important topics.

Students

Postsecondary educational institutions have standard programs for relating to students before, during and after their participation in educational programs. Specific programs have also been designed to meet the needs of identifiable student groups. Aboriginal students comprise one such group. Thus, both Aboriginal communities and the educational institution must cooperate in a number of areas.

Identifying and stimulating the interest of potential students

Aboriginal people are unlikely to be attracted to forestry without some encouragement. It will be necessary for the partners to make special efforts to let Aboriginals know of and excite them about opportunities regarding forests and forestry education programs customized for their participation. Active recruiting will be required.

Preparation for entry

Given the principle of maintaining program standards for all students, non-Aboriginal and Aboriginal alike, it may be necessary to offer special assistance to potential

Aboriginal students to gain the requisite entrance standards (e.g., mathematics, biophysical sciences, English). Such assistance may be provided in the Aboriginal community or at the educational institution, depending on local circumstances.

Support during study

Full-time attendance at a college or university might be a trying experience for Aboriginal students who have previously lived only in their own communities. To do well in academic work, they may need special Aboriginal counselling and services, networking assistance, abundant opportunities to link with home, etc. Of particular help here will be raising the profile of Aboriginal forestry on the campus, thus giving Aboriginal students a real sense of belonging. Initiatives could include an Aboriginal forestry association, Aboriginal guest lecturers, and general involvement of non-Aboriginal students in Aboriginal activities.

Support upon graduation

Normally there is little routine follow-up by educational institutions once graduates have left the facility and entered the workforce. To extend the collegial and knowledge-sharing experiences beyond the walls of the institution, partners should consider opportunities for regular communications for Aboriginal graduates among themselves, with non-Aboriginal graduates, and with teachers in the institution.

Roles for the Aboriginal Community

How can Aboriginal communities help when Aboriginal forestry education programs are in full operation? Some ways include:

- maintaining regular contact with Aboriginal students;
- offering teaching on topics in which Aboriginal people are authorities, both at the institution and in the woods;
- working toward achieving a stronger community stake in forest management;
- developing employment opportunities for Aboriginal graduates who wish to return home;
- participating in student support services and activities at the institution;
- seeking funds to assist students with defraying their education costs;
- encouraging students to focus their research projects on Aboriginal topics; and
- working to incorporate clauses related to postsecondary education needs into land-claim and self-government agreements.

Here is an example of how an Aboriginal community might become involved. The community might propose and sponsor a candidate, provide the necessary support, assist with funding arrangements, and coordinate with other partners in summer and postgraduation employment. The community could also help to reinforce the candidate's traditional ecological knowledge. This type of involvement with an educational institution would help raise the community's understanding of and participation in alternative forest use and management arrangements.

Financial Considerations

The authors have previously concluded that few new monies will be available for development and delivery of Aboriginal forestry postsecondary education programs. However, some progress can be made by pooling resources and by depending on resources in kind from a variety of partners. Still, the degree of innovation and program customization that can occur may be directly related to the funding allocated to Aboriginal forestry education. Some of the needs that Aboriginal people identify, and thus the program needs that the educational institution deems necessary, may be expensive and available only with significant new funds. Potential funding sources must be included among the partners as early as possible, because securing required monies can often take a long time.

Nurturing Long-term Relationships

Aboriginal forestry education initiatives, if successful once they are started, are likely to be needed as ongoing programs. This means that the partnership between the Aboriginal communities and the educational institution (and others) will be ongoing too and in need of constant maintenance. Contemporary communications technology can be used to great advantage here. Some of the facets of nurturing a long-term relationship and helping it to mature include the following.

Ongoing Partner Relations and Consultations

The partners will need to communicate regularly with each other. Perhaps the best way to facilitate this is to establish an advisory committee that meets frequently to guide the program. Such a committee is an effective way to link structures and bridge cultures.

Monitoring and Evaluation

Adaptive management of new programs depends on monitoring progress continually and evaluating it periodically. An advisory committee could be charged with these tasks.

Continuing Education

In recognition of the needs of forestry professionals for lifelong learning, continuing education opportunities need

to be created for Aboriginal forestry. Such opportunities, for both Aboriginal and non-Aboriginal forestry professionals, might include night courses, short courses, or modules associated with the Ontario Advanced Forestry Program.

Recruiting and Mentoring

The partners will benefit by working together to continue efforts in attracting young Aboriginal people to study forestry. Of great influence in this regard will be the work of graduate Aboriginal forestry professionals in Aboriginal communities. If these individuals are admired and respected by young people, there will be no shortage of eager applicants to the Aboriginal forestry education programs.

Alumni Association

Alumni associations exist for all postsecondary educational institutions, and for most classes as well. A special branch of an institution's alumni association could well be dedicated to its Aboriginal forestry graduates.

Redefinition of Aboriginal Forestry

With time, the concepts and dimensions of Aboriginal forestry will evolve. The Aboriginal forestry education partnership is in an excellent position, especially through the advisory committee, to lead in redefining Aboriginal forestry as the need arises.

Other Knowledge-oriented Endeavors

The partners may well be interested in pursuing education not only as it pertains to Aboriginal forestry, but also in engaging in joint activities for other knowledge-oriented endeavors. These activities may relate to technology transfer, research, advisory services, and comanagement ventures. Thus, education will serve as the initial focus of an ever-strengthening and expanding partnership related to forest stewardship.

CONCLUSIONS

The importance of Aboriginal forestry in Canada is growing. This stems from the fact that Aboriginal people are gaining increased responsibility for forest use and management. More forest land is being entitled to Aboriginal people, and publicly owned forests are increasingly being allocated to comanagement arrangements involving Aboriginal people. Thus, there is a growing demand for Aboriginal resource managers, and today's practising foresters need preparation for the professional responsibilities and challenges of implementing the new management perspectives.

Aboriginal forestry is an emerging concept. As shown, it is not well defined but is becoming better understood as

people offer and debate alternative ideas on what it really means. Aboriginal forestry education programs, however, are needed now, and will have to be developed flexibly and refined over time while the concept of Aboriginal forestry matures.

The development and delivery of Aboriginal forestry education must involve partnership endeavors. Any solo efforts are doomed to failure. It is vital that Aboriginal people play a strong part right from the beginning. Aboriginal communities must take key roles in developing and implementing both the concept of Aboriginal forestry and the education programs. The latter may well involve direct formal links between communities and educational institutions.

The possibilities for developing and delivering advanced education in Aboriginal forestry are limitless. These can range from incorporating Aboriginal forestry concepts into existing courses and curricula, to specially designed programs delivered to Aboriginal students in their home communities or on campus. (*See Appendix D for a detailed look at the case of Lakehead University.*) Creativity and open minds are needed when partners begin the process of matching needs, hopes, and expectations with resources. Education institutions must explore and be prepared to implement a variety of delivery mechanisms. Attention to student requirements for support and direction is needed before, during, and after participation in the main diploma and degree programs. Interested students may need entry preparation provided in the Aboriginal communities. In addition to academic programs, students on campus may need specially targeted support services. Finally, new graduates and current practising foresters, both Aboriginal and non-Aboriginal, will need access to Aboriginal forestry continuing education opportunities.

The framework described in this document, like Aboriginal forestry itself, is a "work in progress"—an evolving concept. It has been based on a consultative process involving the very partners needed to participate in developing and delivering Aboriginal forestry education programs. It is offered in the hope that people will not only use it, to the extent that it can fruitfully guide thinking, but also improve it based on experience in application. The authors encourage potential users of the framework, or in fact anyone who has consulted the framework when embarking on the development of Aboriginal forestry education programs, to strengthen it in any way necessary, and to document the improvements in such a way that anyone interested can learn from the experience. This is the essence of adaptive management.

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APPENDIX D. The Case of Lakehead University

Background

In Lakehead University's Native Education Strategy (November 1992), the university is described as being "of" and "for" the north. Indeed, because of Lakehead's extension and distance education capacity, it is in effect a university "in" and "for" the north. The "north" as a geographic region includes many Aboriginal communities, thereby giving both the university and these communities ample opportunity to collaborate in providing university-level education to Aboriginal students.

During its history, Lakehead University has introduced several specialized programs designed to meet Aboriginal requirements for professional training. These include the Native Teacher Education Program, the Native Language Instructor's Program, the Native Nurses Entry Program, and the Native Access Engineering Program. The university also has in place a program of Native Student Support Services and a Native Students' Access Program. In 1992, the Department of Native Studies was established. In 1994, it was renamed as the Department of Indigenous Learning. Recently, the university received substantial financial support from the Rockefeller Foundation for program development and research in the new department.

The university also has in place a 15-member Lakehead University Aboriginal Management Council. Membership in this council is comprised of senior representatives from the following community groups:

1. The Grand Council Chief of the Nishnawbe-Aski Nation
2. The Grand Council Chief of Grand Council Treaty No. 3
3. The Grand Council Chief of the Union of Ontario Indians
4. The Grand Chief of the Association of Iroquois and Allied Indians
5. The President of the Ontario Métis and Aboriginal Association
6. The President of the Ontario Federation of Indian Friendship Centres
7. The President of the Ontario Native Women's Association
8. The President of the Lakehead University Native Student's Association
9. Two Native persons from northwestern Ontario nominated and appointed by the Committee, one of whom must be an elder

10. The Chairperson of the Native Studies Study Group
11. Two persons appointed by and from the Native Studies Study Group
12. The Coordinator of Native Programming
13. The Vice-president (Academic), who is Secretary of the Committee.

(Lakehead University 1992)

The council has been operational since 1990, and serves as an advisory body to the university administration with respect to Aboriginal issues. It is also a vital link between the university community and the general Aboriginal community of the region.

Native Academic Programs

As mentioned earlier, there are several academic programs at Lakehead University that pay specific attention to the requirements of Aboriginal communities. There are also discrete course offerings in the departments of anthropology, English, history, philosophy, political studies, social work, and visual arts. Currently there are an estimated 500–600 Aboriginal students at the university, representing roughly 10 percent of the student population.

Many members of the university community are actively involved in the affairs of the Aboriginal communities in the region. They serve on a variety of committees, are members of study or advisory groups, and serve on many government review boards. There are also many well established bonds that enhance the relationships between the university and Aboriginal people. This research effort is focused on the area of natural resource education; therefore, the only academic department that will be discussed in detail is the Faculty of Forestry.

The Faculty of Forestry

The Faculty of Forestry at Lakehead University has had, and continues to have, many opportunities to work with Aboriginal communities. Like all other Canadian forestry schools and faculties, however, it has attracted only a handful of Aboriginal students. There are no formal statistics on the number of students who may have applied and been rejected, been accepted and refused, or attended and failed to complete. In the recent past, however, there were two known Aboriginal student graduates — one from the HBScF (1991) and one from the Forest Technology Diploma Program (1992). Known Aboriginal registrants in the HBScF since then have numbered four. These accomplishments, though commendable, do not and can not satisfy the requirements for professional training to the extent required by the Aboriginal community.

The Faculty of Forestry is in an excellent position to benefit from the highly developed university infrastructure and support network for Aboriginal students. Also, there is a large local Aboriginal community in Thunder Bay and ample transportation possibilities to the many rural Aboriginal communities in northern Ontario. The Faculty can also benefit from the healthy selection of Aboriginal studies courses across the university and from the established Aboriginal tutoring program in mathematics and sciences.

The Faculty of Forestry currently delivers the following forestry education programs:

- Diploma in Forest Technology (2-year program);
- Honours Bachelor of Science in Forestry (4-year regular program, and 5-year cooperative program, leading to certification as a registered professional forester);
- Master of Science in Forestry;
- Master of Forestry (regular residential program, and distance-education option focusing on forest resources planning); and
- Ontario Advanced Forestry Program (six 2-week modules).

For the sake of this discussion, presume that the program of interest is the HBScF. The following topics require elaboration in discerning the possibilities for Aboriginal forestry education: a) how might Aboriginal students gain entrance, b) how might Aboriginal forestry concepts and content be worked into the curriculum for delivery to all students, and c) how might delivery of the program be modified to accommodate any special learning circumstance of Aboriginal students.

Avenues to Entrance

There are two main avenues for qualifying to enter the HBScF program: a) graduation from secondary school with an Ontario Secondary School Diploma (OSSD) plus six Ontario Academic Courses (or equivalent from other provinces), with an average grade performance of 60 percent or better; or b) graduation from an accredited forestry technician or technologist program. Entrance into Lakehead University's program for a Diploma in Integrated Forest Resources Management generally requires satisfactory completion of the OSSD (or equivalent from other provinces).

Thus, an Aboriginal secondary school graduate with an OSSD plus six relevant OACs can gain direct access to the HBScF program, but with an OSSD only can gain access by successfully completing the Diploma, or by completing

six relevant OACs. However, it is anticipated that many Aboriginal people who wish to consider taking a course of study leading to a forestry diploma or degree will be mature applicants who have been away from school for some time, and who may not have received the OSSD. Lakehead University has provisions for special admissions for adult students (Lakehead University 1994, p. 14), and the Faculty of Forestry may well wish to emulate the Faculty of Engineering's so-called Native Access Program for Engineering (NAPE). Through the NAPE, Ontario's Aboriginals can be considered under the provisions of "Extraordinary Admissions" (Lakehead University 1994, p. 14). NAPE is essentially a program designed to provide an academic background equivalent to the OSSD. Those who successfully complete the NAPE are eligible to apply to enter the first year of the Engineering Technology Program.

Curriculum Content Regarding Aboriginal Forestry

Workshop participants were adamant about two things: a) the program of study leading to the HBScF should be the same for Aboriginal as for non-Aboriginal students, and b) Aboriginal forestry concepts should be added to the curriculum, yet not replace any current content. The authors envisage three means of enriching the HBScF program with Aboriginal forestry content:

1. An across-the-curriculum approach

Here, the idea is to bring Aboriginal forestry thinking into each course, to the extent that such thinking is relevant to the subject matter. Some courses are obvious candidates for significant inclusion of Aboriginal forestry concepts (e.g., fourth-year courses in Integrated Forest Resources Management, and Forest Policy and Legislation), whereas other courses seem less so (e.g., Photogrammetry, and Forest Harvesting). An across-the-curriculum approach is relatively easy to implement, distributes the responsibility of delivering material among many teachers, and is best implemented in a coordinated fashion through periodic exchanges of information among all participating teachers.

2. An electives approach

Students taking the HBScF program are required to complete eight elective courses. They may choose these courses from among a wide variety of electives offered within the Faculty of Forestry, or from among the full spectrum of courses offered elsewhere in the university. Using this approach, the faculty would develop one or more electives focusing specifically on concepts of Aboriginal forestry. Such electives would be open, of course, to both Aboriginal and non-Aboriginal students.

3. The stream or area-of-emphasis approach

The faculty is considering a modification to the HBScF program whereby students will be invited to specialize in one of a number of areas of emphasis as they complete their undergraduate degree. To qualify for recognition as having taken an area of emphasis, six of the eight electives must be taken from a specified set of courses, all of which relate to the area of emphasis. Thus, if the faculty proceeds with this area-of-emphasis concept, then conceivably there could be an area in Aboriginal Forestry. This would necessitate development of a few electives dealing specifically with Aboriginal forestry. The remaining courses could perhaps be oriented toward Aboriginals, but be delivered in other departments or faculties.

Program Delivery

Conventional approaches to program delivery at the university (e.g., residential delivery of lecture/laboratory courses) may need to be modified to meet the unique needs of Aboriginal students. These needs may include: a) different learning styles (e.g., learning based on oral, artistic, and interactive traditions), b) unfamiliarity with non-Aboriginal and university cultural and social environments, and c) inability to leave home for extended periods.

1. Learning styles

People raised in Aboriginal communities may have learning styles that rely heavily on the observation of nature and on the oral transfer of information. The university environment typically relies heavily on reading, writing, discussion, and laboratory experimentation. To assist Aboriginal students with postsecondary education in forestry, it may be necessary to expand the range of learning styles that students are permitted to use in understanding the relevant subject matter. In addition, Aboriginal students may require extra coaching in the learning styles to which they are less accustomed.

2. Unfamiliarity with non-Aboriginal and university cultural and social environments

If Aboriginal students come to the University from isolated communities, they may experience difficulties adjusting to the new cultural and social environment. A wide variety of mechanisms can be used to help such students cope. Lakehead University has considerable experience in this regard, with an estimated 10 percent of the student body of Aboriginal origin and with several academic and support programs established specifically for Aboriginal students. The Faculty of Forestry will make full use of all support programs as it attracts Aboriginal students. In addition, it may also consider additional mechanisms to help its Aboriginal students. One suggestion arising from the workshops is the establishment of a system of mentors.

Each Aboriginal student in forestry could be "matched" with one or more senior Aboriginal people for dialogue and advice. It would be helpful to have, for each student, an Aboriginal mentor in Thunder Bay (either on or off campus), for face-to-face counseling, and another who is an Aboriginal professional in natural resources who can advise on subject matter and on dealing with the rigors of academic study.

3. Inability to leave home for extended periods

For a variety of reasons, Aboriginal students may not be able, or at least be very reluctant, to leave their communities for the periods of time normally required to fulfil residency requirements of the diploma or degree programs in forestry at Lakehead University. Distance education approaches and technology are becoming increasingly common, and the faculty is indeed already committed to developing and delivering a distance-delivered MF in Forest Resources Planning. It may be highly desirable, even necessary, to consider various distance-education options to permit some Aboriginal students to participate in studies towards an HBScF.

LITERATURE CITED

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