

The Quetico Foundation Summer Research Program

Roger Suffling¹ and Jon Nelson²

¹School of Planning, University of Waterloo, Waterloo, Ontario N2L 3G1

²Confederation College, P.O. Box 398, Thunder Bay, Ontario P7C 4W1

Abstract

The Quetico Foundation Summer Research Program is run by the Quetico Foundation, and is supported by government agencies, by several foundations and by the Faculty of Environmental Studies at the University of Waterloo. The program conducts research relevant to Park needs, seeks to develop a love for wilderness among youth, trains students from Northwestern Ontario in both leadership and specific skills, and provides summer employment. Participants are recruited from Atikokan High School's Outers Program, and from the Lac la Croix native community. In 1997 two crews were deployed to study the area of Fire 141, a 25,000 ha fire of 1995. One crew searched for archaeological sites revealed by the fire, while the other studied plant survival in unburned forest fragments within the fire perimeter. In 1998, three crews surveyed the shoreline of Pickerel Lake for archaeological sites, studied plant species surviving in unlogged forest fragments just east of the Park, and documented spatial aspects of plant colonisation of burns inside the Park. In 1999 the archaeological work continued, and ground information collection began for an inventory of Park ecosystems using Forest Resource Inventory and Forest Ecosystem Classification. The 1997 ecology work demonstrated that many plant species survive after fires only in unburned fragments, and current work is documenting spread over time of these species from unburned fragments into former burned areas. Results indicate that intensive salvage logging of burned over land may negatively affect biodiversity. The archaeological workers discovered 58 sites, 36 of them new to the park. First Nation concerns over removal of artifacts by archaeologists have been addressed by documenting and replacing material in situ, and Park staff are considering adopting this as standard practice.

The Quetico Foundation

The Quetico Foundation, which began in 1954, promotes preservation and enjoyment of wilderness. The founders were all avid canoeists and while the foundation has always promoted canoeing in Quetico Provincial Park, it has increasingly championed wildland values throughout northern Ontario. The Foundation recognises that continued existence of wilderness in Quetico relies heavily on the support of the northwestern Ontario population. This, in turn, hinges on wilderness understanding by local residents and on the economic well-being of communities adjacent to Quetico. Only if the Park is seen to be a social and economic asset is it likely to garner substantial local support.

The specific activities of the Foundation include its research and technical publications. The Foundation also was instrumental in starting the John B. Ridley Library at Quetico, and it publishes a popular canoe tripping map which generates much current revenue. The Foundation has lobbied governments and the forest industry

concerning conservation issues in the Ontario boreal region, for example, during the *Lands for Life* process. In 1997, the Foundation began the Quetico Foundation Summer Research Program initiative, which is the focus of this paper.

The Summer Research Program

Late in 1996, Stephen Cole, a trustee of the Foundation, conceived a program to meet several current needs. The first was to further catalogue the resources of the Park, which are incompletely documented, even though it was founded in 1913. The second was to promote the Park among youth in the Quetico region so as to instill in them a strong affection for the Park and the values that it embodies. Third was the opportunity to provide student employment in a region where quality summer jobs are invariably in short supply relative to demand. Last, there was the notion of involving youth from both the white and native communities, so as to promote connections and mutual understanding.

The program began in summer 1997 with four students from the former mining town of Atikokan, and one from the Lac La Croix First Nation. In 1998 and 1999 there have been six students in each year. Four individual university students have been involved in leadership roles—one in 1997, and two in 1998 and in 1999.

Program Organisation

Program organisation has evolved on an *ad hoc* basis, with various small committees undertaking specific segments of work (Figure 1). This functioned well in the first two years when it spread a substantial workload among numerous individuals. With an increasing activity and project complexity, it is becoming obvious that this arrangement needs reworking, probably using a coordinator and a more formal organisational structure.

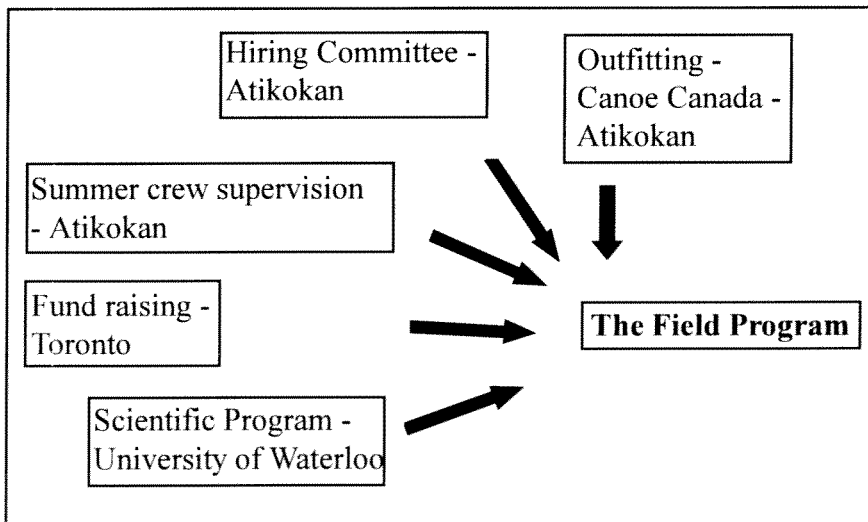


Figure 1: Organisational structure of the Quetico Foundation Summer research Program 1997-1999.

Funding and Logistic Support

The Quetico Foundation has committed \$175,000 to the program over five years, but has also sought and received funding from individuals and foundations, as well as from the Federal Summer Career Placement Program. Another key resource has been logistic support from the Ontario Ministry of Natural Resources (OMNR) Quetico Provincial Park through accommodation, office space, and bush plane flights. In particular, the Ministry committed extensive training expertise in 1999 from the Northwest Science and Technology Unit. The Ontario Ranger's Mink Lake Camp staff have been extremely supportive in making their facility available for training activities. The University of Waterloo's Faculty of Environmental Studies provided logistic support through equipment loans, faculty time, and use of computing equipment. Avenor (now Bowaters) has provided forest inventory maps for use in areas immediately outside the Park, and advice on choosing sites for study. Several Atikokan businesses have provided services at favourable rates and, in particular, Canoe Canada has outfitted field crews with equipment and food. Students working on the program are paid a wage, as are the two field leaders.

- Avenor Ltd. (Now Bowaters)
- Canoe Canada
- Dalglish Family Foundation
- M and C Motors
- Molson Cos. Donations Fund
- Ontario Ministry of Culture and Communications
- Ontario Ministry of Natural Resources (OMNR)
- Raptors Foundation
- Richard Ivey Foundation
- Stephen Cole, Cole and Partners
- University of Waterloo Faculty of Environmental Studies

Table 1: Foundations, individuals, companies, and government agencies which have committed funds and resources to the Quetico Foundation Summer Research Program

Selection of Participants

The recruitment objective is to hire students with bush skills and with definite leadership potential. We are fortunate to work with the "Outers Program" at the Atikokan High School which provides a pool of students with winter and summer wilderness tripping experience, as well as first aid and water safety training. Applicants from Atikokan are selected by an Atikokan high school teacher and a trustee of the Foundation, while the band elders at Lac La Croix select native applicants.

Field Organisation

The students are generally divided into three crews. Two of these worked on ecological projects, and the third on an archaeological reconnaissance of the Park. The crews have been led by Environmental Studies and Science university students and by an archaeologist, Jon Nelson. The program begins, immediately after the end of the high school year, with a one week training program at an Ontario

Ranger Program camp, and this is followed by a further week of training in the Park. Training has been led by an archaeologist, a faculty member from the University of Waterloo, and additionally in 1999, by OMNR staff.

The remainder of each summer's program is run on approximately four cycles of ten days canoe camping in the Park followed by about four days off. It has proven logistically important to have the field leaders present at least two weeks before training begins, and for a week after the end of the program.

Students from the ecological and archaeological programs often camp together or in adjacent campsites and this allows informal exchange of information between participants. Though students are assigned to one research project, they are deliberately rotated, one at a time, to the other research program for a day or two, so that they gain a greater variety of experiences.

The Research Findings

Ecological Studies

In 1997, the ecology team examined the fragments of unburned forest left within a large 1995 fire (Fire 141) in the southeast corner of the park. The study purpose was to determine the locations and characteristics of unburned fragments of forest left by this very hot, lightning-caused fire burning in unlogged forest. It has been determined (Suffling and Kachi in progress) that the unburned forest fragments are successional much older than expected on a random basis, also that forest floor species of mature forest are found only in fragments and not at all in burned areas. Thus the unburned fragments of forest are integral to preserving forest plant biodiversity in the boreal forest. The findings suggest that unconstrained salvage logging of burned areas may be detrimental to forest species diversity.

In 1998, the ecological work was extended to compare the ground flora of logged areas with that of adjacent unlogged fragments. This work was conducted in the commercial forest areas immediately to the northeast of the Park. Results are pending.

The work on unburned forest fragments was continued in 1998, with examination of the marginal spread of forest floor plant species from unburned areas into various adjacent burns ranging up to 69 years old. The results for individual species were highly variable but, on average, species spread steadily from the unburned areas with a linear, statistically significant trend line. This implies that salvage logging should leave selected unburned fragments in a spatial pattern that encourages re-establishment of the full forest floor flora.

At the time of writing the 1999 field program has just begun. The ecology program has been reworked to begin a major resource survey of the park. This incorporates both the Ontario Ministry of Natural Resources' Forest Resource Inventory and the Forest Ecosystem Classification System for northwestern Ontario. It is expected that the ground data-gathering phase of this program will take between two and four years. The Ontario Ministry of Natural Resources has provided a full training program, not only for the Quetico Summer Research Program, but also for various Park staff. The Quetico Foundation Summer Program is coordinating the collation

The stream of research results from the program is just beginning, and shows promise. The research activities of the program come at a time when the Ontario Ministry of Natural Resources has suffered massive financial cut-backs and the reduced staff at Quetico find it very difficult to spend time in the Park interior. A survey of the park ecosystems and archaeological sites would be impossible without the labour available through the Summer Research Program. Thus the program provides cost-effective research funding. The program also results in spin-off activities. For instance, several of the leaders of field crews are writing masters theses and senior undergraduate essays based on data collected during the program.

Last, the program has been effective in strengthening links between the Quetico area community and the Foundation, enabling it to get its message across more effectively, as well as strengthening the local communities.

of the field data from all these groups.

The previous work on plant recolonisation of burned sites is continuing with collection of soil seed bank samples to assess the role of the soil seed bank in maintaining plant biodiversity in burned areas. In addition, the crews are making observations of camper occupancy of campsites in Quetico in connection with a masters thesis. The objective is to discover rates of compliance with closures of sites using a variety of notice formats.

Archaeological Studies

In 1997, an archaeological reconnaissance was conducted along shorelines above and below the fluctuating levels of ancient Lake Agassiz and within the Fire 141 area. The area bared by the fire revealed 37 archaeological sites, of which 30 were previously unknown. Occupancies ranged from the Paleo-Indian to Blackduck cultures, and there were also artifacts from the historical era. The number of new sites found strongly indicates that archaeological sites become more visible after forest fires. A complete survey of the shoreline (in contrast with the more conventional method of only examining modern campsites) yielded large numbers of new sites in unexpected locations, especially where there are no current camp sites.

Because of a spiritual belief that one should not disturb items left by past occupants, the Lac la Croix elders were very uncomfortable with the conventional archaeological practice of removing artifacts from sites. The archaeology team therefore arranged to draw and photograph artifacts, returning them to their sites immediately. Artifacts of relatively high study and collector value were returned to unmarked caches adjacent to the sites, and their locations were recorded. This approach is innovative and is attracting interest from other archaeologists including those in the US Forest Service.

In 1998 an archaeological survey was conducted along the shoreline of Pickarel and Rawn Lakes. These lakes, which are connected by a long narrows, were chosen because their water level has not fluctuated markedly since immediate post-glacial times. The survey was aided by unusually low water levels that exposed areas normally under water. Over half of 58 archaeological sites found were new sites. This also confirmed the 1997 finding that surveying the entire shoreline of a lake is superior to just inspecting contemporary campsites. Two sites were found with large numbers of artifacts and both were along sections of shoreline with no current campsites. Neither site would have been found using a search technique that did not include the entire shoreline. The procedure of leaving all artifacts on site and making caches of significant artifacts was continued.

Conclusions

The Quetico Foundation Summer Research Program has been effective in sensitizing participants to wilderness issues. While the participants were pre-selected for their leadership potential, it is evident that the Program has developed such skills in participants. About three quarters of those taking part have gone on to thrive in university and college programs. The summer program provides critical earning power for such students as they approach the beginning of their studies.