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Zoning of potential for Aboriginal interest: a new decision-support tool in forestry

Highlights

- The use of adaptive and user-friendly decision-support tools helps increase the level of social acceptability of forest management.
- Zoning of potential for Aboriginal interest helps managers spatially distribute forest management activities taking into account Aboriginal use of the area.
- Land use varies from one Aboriginal community to another; these differences must be taken into account when planning forest management activities.

From theory to practice

In the summer of 2007, Tembec Inc. established an experimental ecosystem management site in Forest Management Unit (FMU/UAF) 85-51 in northwestern Quebec (Figure 1). The area represents a portion of the ancestral lands of the Algonquin First Nations community of Pikogan. The purpose of this experimental site was to implement theoretical ideas and techniques about ecosystem management, with the ultimate goal of incorporating them into Tembec's general forest management plans. Ecosystem management uses

harvest methods designed to reproduce the frequency, severity, size and spatial distribution of natural disturbances in order to maintain the ecosystem's biodiversity and functions.

Is the project acceptable from an Aboriginal perspective?

Taking Aboriginal values into account has become a central issue in Canadian forest management. Consequently, it was important to take the Pikogan people's perspectives into account while developing Tembec's ecosystem management strategy for the area. Accordingly, a participatory research project was initiated within the community to evaluate the social acceptability of ecosystem management. The objective of the project was to test the preconception that ecosystem management on natural forest dynamics to which the community had adapted over centuries – will achieve a level of social acceptability. In response, the team developed a zoning map of potential for Aboriginal interest that would allow evaluation of the level of acceptability of the spatial distribution of different harvesting types. In this research note, we introduce this new decision-support tool developed in collaboration with the Algonquin communities of Pikogan and Kitchisakik.

Zoning of potential for Aboriginal interest

The Algonquin community of Pikogan occupies and uses its ancestral lands intensively, resulting in the presence of numerous interest sites (e.g., hunting camps, gathering areas, meeting sites, burial grounds). Closely associated with the values and lifestyles of the community, these areas allow the Pikogan people to practice cultural activities for the benefit of present and future generations. The zoning map of potential for Aboriginal interest in the study area was created by combining exact locations of Aboriginal interest



Figure 1. Location of FMU 85-51 (shaded in red).

sites (55 sites in this case), and information displayed on Quebec Ministry of Natural Resources and Wildlife ecoforestry maps. Physical and biophysical characteristics of forest stands overlapping Aboriginal interest sites were statistically compared to those of an equal number of randomly selected stands within the study area. Differences between the stands enclosing sites of interest and those chosen at random, indicated characteristics that were sought or avoided in locating sites of interest.

Of the seven variables taken into consideration, five came from geo-referenced ecoforestry maps and corresponded to Québec's forest stratification standards: moisture balance, cover type, tree height, stand age and density

of forest stands. The other two variables were distance to the nearest water body or watercourse, and distance to the nearest road. The addition of these two variables to the analysis was justified by concerns expressed by the Algonquins over the opening of forest road networks, which would increase travel by non-Aboriginal people on their ancestral lands. Secondly, because canoeing is still a method of transport favoured by the Pikogan people and many of their traditional activities are associated with the presence of navigable waters.

The analysis allowed us to estimate the potential for Aboriginal interest for each forest stand in the study area. The potential for Aboriginal interest was expressed as a percentage and varied from low (0-24%) to high (75-100%). A map was then produced, where different colours illustrated different levels of potential for aboriginal interest (Figure 2).

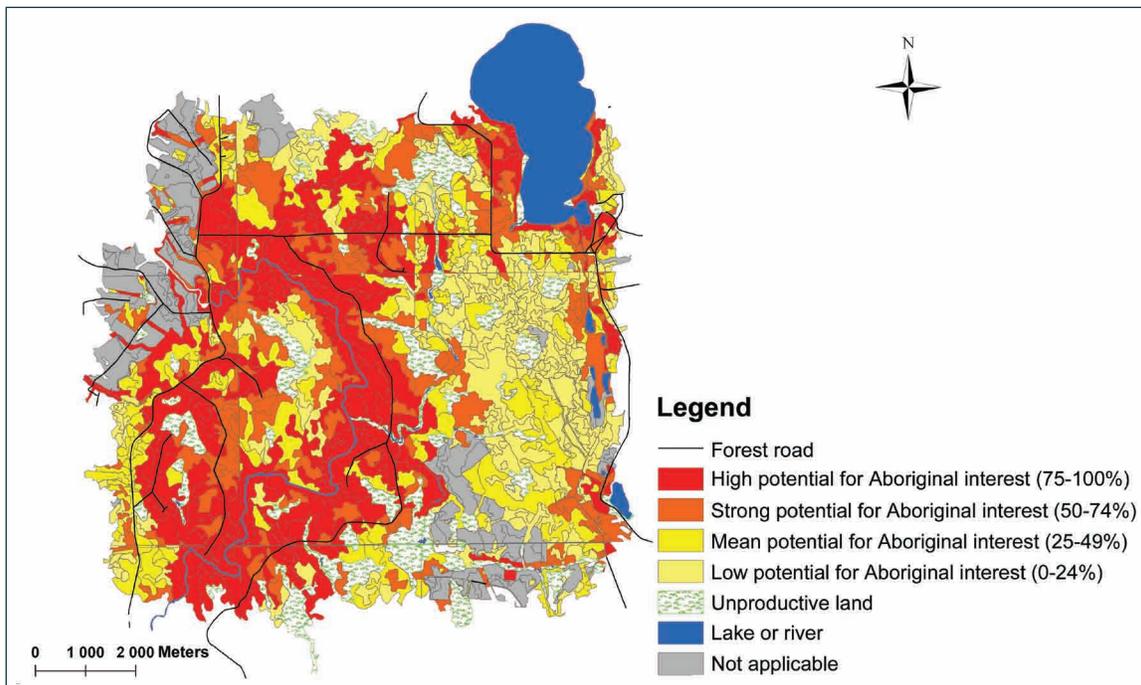


Figure 2. Zoning map of potential for Aboriginal interest for a portion of Pikogan's ancestral lands.

Forest characteristics sought by the Pikogan people

Among the seven variables taken into consideration, two were positively associated with the location of Aboriginal interest sites. The presence of a water body or watercourse less than 60 m away was the most strongly favoured characteristic. This was expected given that the traditional way of life has always been strongly associated with river systems. River systems allow access to even the smallest patches of the land, and provide reference points when people are moving through the landscape. From an ecological standpoint, the riparian environment also plays an important role as habitat for a wide variety of plant and animal species. Therefore, aquatic environments are critical for the pursuit of cultural activities, in addition to assuring a constant supply of drinking water.

The presence of a forest road less than 100 m away was the second most important variable explaining the location of Aboriginal interest sites. The benefits of a well-distributed road system are extremely important for this community whose ancestral lands are located more than 100 km from the reserve. A network of forest roads simplifies travel and makes it possible to avoid long stays away from family. In addition, forest roads allow elders to preserve their connection with the land when traveling by traditional means becomes too difficult. However, some members of the community expressed concerns about an expanding road network, which creates access to familial lands and interest sites to non-Aboriginals.

A simple and reliable tool

When presented with the zoning map of potential for Aboriginal interest, Pikogan people indicated it was a good representation of community use of the land. The methodology used to create the zoning map of potential for Aboriginal interest was also developed in collaboration with the Algonquin community of Kitcisakik. Here again, the map portrayed land use very well; indeed, it was similar in many respects to a map of land assignment developed independently, and from different data, by the community's own Forest Committee. Therefore, in addition to being relatively easy to create and use, the zoning map of potential for Aboriginal interest also displayed a high level of reliability.

Each community is different

Comparing the maps developed for the Kitcisakik and Pikogan territories illustrated that each community uses the landscape in a unique manner. While the potential for Aboriginal interest in the Pikogan area was mostly linked to the proximity of forest roads, watercourses and water bodies, the situation was very different at Kitcisakik. The proximity of water was just as important, but not the proximity of roads. Conversely, several variables that were not significant at Pikogan were important at Kitcisakik, where potential for Aboriginal interest was positively linked to old, dense mixedwood stands with low-angle slopes.



Discussion group at Pikogan.
Photo courtesy of R. Germain.

An adaptive and adapted tool

The zoning map of potential for Aboriginal interest will allow communities to evaluate proposed distributions of forest activities, and make suggestions that will reduce the impact of forest management on the pursuit of cultural activities on the land. For example, conservation measures or adapted silvicultural systems could be considered in areas showing a high potential for Aboriginal interest. Conversely, areas with lesser potential for Aboriginal interest could be more intensively exploited to

facilitate overall profitability of forest management activities. However, the judgement of acceptability is subject to change, and what is acceptable today will not necessarily be so tomorrow. Updating the zoning map of potential for Aboriginal interest at each ten-year forest inventory will make it possible to evaluate the level of acceptability of forest activities over time.

Information relating to interest sites and traditional use of areas is often sensitive, and some communities are sensitive to sharing information for fear of non-aboriginal exploitation. The zoning map of potential for Aboriginal interest could be very useful in this context by allowing the sharing of general information while preserving the confidentiality of the basic data. Indeed, the map shows only the zoning, without identifying the precise location or nature of interest sites. This new decision-support tool will encourage a better reconciliation of Aboriginal and industrial uses of the forest by encouraging the planning of forest management activities that are adapted to the Aboriginal context; this should in turn reduce the social impact of forest management in these areas.

Further reading

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Management Implications

- Spatial distribution of forest activities in a given area according to an intensity gradient is made easier by the zoning of potential for Aboriginal interest.
- The zoning map is easy to update and can account for changes in silvicultural practices and land use over time.
- Precise data concerning Aboriginal interest sites (i.e., nature and location) are not shown on the map, thereby preserving sensitive information while sharing other useful data with forest managers.
- The zoning map of potential for Aboriginal interest will ease consultation and reduce the time needed for it, to the benefit of all parties.

Written by: Roxane Germain¹ and Hugo Asselin²

¹Université du Québec en Abitibi-Témiscamingue, Rouyn-Noranda, Canada, roxane.germain@uqat.ca

²Université du Québec en Abitibi-Témiscamingue, Rouyn-Noranda, Canada, hugo.asselin@uqat.ca

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