

## Forest Fire Management Program at Pukaskwa National Park

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### Abstract

One role of protected areas is to act as an ecological baseline, a control site by which changes in surrounding lands can be measured. Parks Canada mandates sites to direct effort toward maintaining ecosystems in as natural a state as possible. The suppression of all forest fires has long been identified as a management practice that is not consistent with the aforementioned objective. Fire use has been advocated in the Pukaskwa National Park Management Plan, the Ecosystem Conservation Plan (Geomatics, 1997) and the Vegetation Management Plan (Lopoukhine, 1989). This paper will describe the park's strategy, through the Forest Fire Management Plan (1997), to reintroduce fire to the park landscape. Planning is complete for a White Pine understory prescribed burn to be conducted in May or June 1998. The transition from fire suppression to fire management is a significant step. This paper will describe the park's strategy to operationalize the ideal of fire management as an essential component of ecosystem integrity in the boreal forest.

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The mandate of Pukaskwa National Park is to protect and present the natural and cultural resources within the park as a representative example of the Central Boreal Uplands Natural Region. The dominant natural process within the park, and the one that controls the park ecosystem, is fire. However, the area contained within the park has been under a fire exclusion policy for many decades, first under the jurisdiction of the Province of Ontario, and since 1978, under the jurisdiction of Parks Canada. While early attempts at fire control were not particularly effective, a significant number of fires have been suppressed in the last thirty – forty years. Given the documented role of fire in ecosystem dynamics, and the fire-adapted nature of much of the vegetation, the exclusion of fire has disrupted the health and the function of the park ecosystem. This is evidenced by a large age class gap in the younger forest stand age classes, and the dominance of mixed-wood stands with a strong representation of balsam fir in the canopy.

Reversing these changes and fulfilling the legislated mandate of the maintenance of ecological integrity of the park ecosystem requires the reintroduction of fire. The Pukaskwa National Park Fire Management Plan (Heathcott and Crofts, 1997) is designed to address these problems through the management of all fires – human caused and natural. For the purposes of fire management, the park is divided into three fire management zones:

Zone 1 - Fire Exclusion/Mechanical Fuel Reduction

Zone 2 - Wildfire Exclusion and Planned Ignition Prescribed Fire

Zone 3- Random and Planned Ignition Prescribed Fire

A Fire Operations Plan describes the park's fire management response in Zone 3 in more detail. Zone 3 is further divided into fire management units. A Decision Flow Chart determines the management action on each fire in each unit.

The park maintains an Initial Attack crew and an inventory of equipment including pumps, portable tanks, hand tools and an aerial ignition device. We have an excellent working relationship with the Forest Fire Operations staff at OMNR's Wawa District Office. The park is linked to OMNR's informatics system for fire weather, situation reports and other information, as well as to other Parks Canada sites through the Parks Canada Fire Information System. Parks Canada is a full member of the Canadian Interagency Forest Fire Centre (C.I.F.F.C.) and can loan or request resources through this agency.

Pukaskwa National Park maintains a network of three permanent weather stations. Data from these stations is used daily to determine fire preparedness levels. The park has a portable weather station for gathering/monitoring weather data at prescribed burn sites.

The park is updating its vegetation inventory following the OMNR Terrestrial and Wetland Ecosites protocol. The last comprehensive inventory, the Biophysical Resources Inventory, was completed in 1978. The updated inventory will be used to refine vegetation management objectives and will be a key tool in the fire management program. Ground truthing transects – of which 300 were completed to support this inventory – will augment a network of 90 more detailed permanent sample plots as baselines for fire effects monitoring. Thirty-five of these sites have been established to date.

Pukaskwa National Park is currently renegotiating its long-standing Fire Management Agreement with the OMNR. A prescribed burn, the first for Pukaskwa National Park, is planned for late May 1998. A red/white pine stand will be treated with low intensity fire as a means of reducing the balsam fir competition and encouraging the natural regeneration of the stand.

Science, public opinion, strong policy and the efforts of many park staff have guided the evolution from fire suppression to fire management. This year (1998) promises to be an important one for Pukaskwa National Park as the Fire Management Plan becomes operational. While ensuring the protection of life, property and other values at risk, this strategy will, over time, result in the restoration of the natural structure and dynamics of the park's forest ecosystem.

## References

- Heathcott, M. and M. Crofts. 1997. Forest Fire Management Plan. Pukaskwa National Park. Department of Canadian Heritage, Parks Canada.
- Lopoukhine, N. 1989. Pukaskwa National Park Vegetation Management Plan. Department of Canadian Heritage, Parks Canada.