

Recommendations of the Ontario Parks Board



Lightening the Ecological Footprint of
Logging in Algonquin Provincial Park

December 8, 2006

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RECOMMENDATIONS OF THE ONTARIO PARKS BOARD

LIGHTENING THE ECOLOGICAL FOOTPRINT OF LOGGING IN ALGONQUIN PROVINCIAL PARK

Executive Summary

The Minister of Natural Resources (the Minister) asked the Ontario Parks Board of Directors (the Board) to provide advice on how to lighten the ecological footprint of logging in Algonquin Provincial Park (Algonquin) in April 2005. The Board accepted the assignment and subsequently gathered input, advice and technical support from the Ministry of Natural Resources (MNR) and the Algonquin Forestry Authority (AFA).

The Board prepared and presented to the Minister in January 2006 an initial concept for lightening the footprint, which called for 128,000 hectares to be added to protection zones. Subsequently, the Board considered alternative concepts based on input received from MNR and the AFA. The Board has developed three recommendations for the Minister:

1. Protection zones should be expanded by 241,032 hectares to include a total of 409,482 hectares or 54 % of the park.
2. The Ministry and AFA should develop an action plan with targets to reduce the impacts of logging operations considering the 7 strategies outlined in Table 4, including a review of roads standards, aggregate use, size of pits, and use of temporary bridges.
3. The Ministry should partner with the AFA in a pilot project to test the effectiveness of more detailed forest resource inventory and a spatial computer modeling to enhance the accuracy of planning and better integrate the protection and harvesting objectives where logging continues.

These zoning proposals will provide substantial benefits including:

- Enhanced protection of 214 self-sustaining brook trout lakes and associated nursery stream habitat, 1,374 campsites, 1,481 km of canoe routes and 463 portages, old growth forest stands and representative ecosystems;
- Protected zones would increase from 168,450 hectares constituting 22% of the park to 409,482 hectares constituting 54% of the park;

- The recreation/utilization zone where logging is potentially allowed is reduced from 594,860 hectares constituting 78% of the park reduced to 353,828 hectares constituting 46% of the park.

In implementing the expanded protection zones in accordance with Recommendation 1, and focusing the areas where logging continues, the Board recommends that:

1. The Minister direct MNR/AFA to initiate appropriate consultation with potentially affected aboriginal peoples, and with the public through the park planning and forest planning process;
2. Forest management should continue according to the existing Algonquin Forest Management Plan until its normal date of 2010, but where harvest areas identified by the plan overlap with the recommended protected zones, and it is necessary¹ to harvest those areas to meet wood supply commitments, particular care should be taken to minimize impacts, such as use of single tree selection harvest or shelter wood harvesting that retains most forest cover;
3. While consultation is underway, the AFA should use the new protected zoning recommended by the Board as a basis for forest management planning for periods beyond 2010, subject to modifications that may arise from the consultation and planning process;
4. Since practical road access to the remaining wood supply in the managed forest is important, zoning of new protected areas and road strategies should provide for practical road access to future harvest areas;
5. The recreation/utilization zone should be mapped as to the areas where logging may continue and areas of the recreation-utilization zone that are not part of the managed forest – water bodies, wetlands, rock barrens and Area of Concern (AOC) Reserves – should be incorporated into protection zones;

The Board believes that Algonquin is an essential part of Ontario's heritage, and will prove of even greater value and importance in the future. Consequently, the Board reiterates its support for a strategic review of the future of this provincial treasure. This review would include the park's role in the protected areas network, goals and objectives, how the park is managed, governance and its legislative framework. In the interim, the Board believes that implementation of these recommendations will substantially lighten the impact of logging on Algonquin, increase ecological representation, enhance the wilderness values and experience, and respond to initial concerns about short term wood supply and gaps in ecological representation within the protected zones of Algonquin.

¹ Necessity should be documented and determined through an MNR process that requires consultation with the Algonquin Park Superintendent and public notice.

Background

The Board of Directors provided the Minister of Natural Resources with advice about proposed parks and protected areas legislation on February 11, 2005. The Board's advice addressed 8 legislative proposals for new legislation that the Ministry of Natural Resources had used in the fall of 2004 as a basis for public consultation. One of the proposals was that industrial uses, including commercial logging, should be prohibited in provincial parks and conservation reserves, with the exception of the recreation/utilization zone of Algonquin, where commercial logging could continue. The Board endorsed this legislative proposal with some reservations.

With respect to the future of Algonquin the Board's recommendation was that:

The Minister should commission an independent review of Algonquin Provincial Park including the park's role in the protected areas network, the management and goals of the park, and the park's legislative and governance framework. The Board recommends this review be initiated within one year in light of current pressures on the park.

On April 26, 2005 the Minister met with the Board's Chair to discuss future tasks for the Board. The highest priority task identified was for the Board to provide advice about how to lighten the ecological footprint of logging in Algonquin Provincial Park.

In September 2005 the Board met in Algonquin to learn about logging in the park. Presentations were provided by representatives of MNR and the AFA, the Crown agency that manages logging in the park under the terms of the Crown Forest Sustainability Act. The Board was also provided with a tour of forest management operations.

At this meeting the Board established a sub-committee to work on the task. This sub-committee included:

- Ric Symmes (Chair)
- Bill Calvert
- Jennifer East
- Stewart Elgie
- David Earthy
- Gerry Killan

The sub-committee reviewed information provided by MNR and the AFA. Based on this review the Board endorsed a provisional concept for lightening the footprint that would see the area available for logging – the park's recreational/utilization zone – reduced from about 78% of the park to about 50% without reducing wood supply significantly. The Board's view that this was possible was based primarily on the pattern of average harvest levels well short of the allowable cut, and actual harvested areas well below the planned harvest area each year. At the Board's request MNR prepared a map of the park that identified proposed new "protection" zones totaling about 128,000 hectares

where logging would not occur. The Board's concept for more protection zones focused on internationally significant brook trout lakes, establishment of larger core wilderness areas and enhancing the wilderness character of canoe routes. The Board also identified in a preliminary way some measures that would reduce the impacts of logging where it did occur.

On October 25, 2005 the proposed parks and protected areas legislation – *Bill 11: The Provincial Parks and Conservation Reserves Act* – was introduced in the Ontario Legislature for First Reading. When introducing the Bill the Minister stated that the Board was going to provide advice about how to lighten the footprint of logging in Algonquin.

On January 11, 2006 the Board's Chair and other members met with the Minister and MNR's Deputy Minister. The Board's provisional concept for lightening the footprint was presented. At this meeting the Minister expressed interest in the provisional concept and requested that the Board develop the concept more fully. It was agreed that further development should include an analysis wood supply impacts and discussions with MNR and the AFA about how to mitigate any potential impacts on wood supply.

Consequently, the Board's sub-committee had three meetings with MNR and AFA representatives: an initial meeting in May, a two-day workshop in June and a follow-up workshop in July.

In developing Preliminary Proposals the Board used an iterative approach. MNR provided wood supply, ecological and recreational assessments of the Board's provisional zoning concept (the "128,000 hectare" concept presented the Minister in January). Subsequently the Board revised its provisional zoning concept in response to MNR and AFA input. The extent and location of proposed protection zones was reduced and revised significantly, with the intention of minimizing impacts on wood supply commitments and optimizing ecological benefits. MNR provided assessments of this revised zoning concept. The Board commissioned an independent qualified consultant to review the MNR wood supply analysis.

The Preliminary Proposals were presented to the Minister on October 27, 2006. The Minister asked the Board to work with MNR and the AFA to develop final recommendations and submit them to him on or about December 4th. Subsequently, the Board held a teleconference and a meeting with MNR/AFA representatives to explore how the preliminary proposals might be modified to reduce wood supply impacts and enhance protection of natural values.

The Board's Chair and sub-committee appreciated the spirit of cooperation and professionalism exhibited by MNR and AFA employees throughout this exercise. The maps, assessments and input provided by staff helped immeasurably in the development of a realistic proposal.

The Board's Vision of Algonquin

Algonquin plays a unique and important role in Ontario's system of provincial parks and conservation reserves. Ontario's third largest park, after Polar Bear and Wabakimi, Algonquin takes in 763,310 hectares of land and water. Algonquin is by far the largest protected areas south of the French and Mattawa rivers. French River Provincial Park with 73,530 hectares is the next largest in this respect, but is less than 10% the size of Algonquin. Indeed, Algonquin dwarfs all other protected areas in central and southern Ontario.

The park plays a proportionately large role in the lives of Ontarians. Over the years hundreds of thousands of visitors have enjoyed their first taste of wilderness travel in the park. Many more enjoy car camping, hiking and picnicking along the heavily used Highway 60 corridor. The park's recreational and natural attractions have made Algonquin one of Ontario's premier tourist destinations, together with Niagara Falls, Toronto and Ottawa. Algonquin plays a dominant role in the regional tourism economy.

However, many Ontarians value the park mainly as a natural area, a place where nature operates on a large scale. The scientific value of the park is well established – a large volume of natural science research takes place in the park. All of these benefits – recreational, tourism, scientific and natural heritage – are becoming increasingly important as the land east, west and south of the park becomes more heavily used and developed, and as the population of southern Ontario within a 3 hour drive of the park increases.

TABLE 1 – EXISTING ZONING PER PARK MANAGEMENT PLAN

Zone	Area (hectares)	% of Park Area
Nature Reserve	39,250	5.1%
Wilderness	90,475	11.9%
Natural Environment	13,765	1.8%
Historical	1,680	0.2%
Development	22,545	3.0%
Access	735	0.1%
Recreation/Utilization including:	594,860	77.9%
• Managed Forest	(424,550)	(56%)
• Other ²	(170,310)	(22%)
Total	763,310	100.0%

Nevertheless, since commercial logging was halted in Lake Superior Provincial Park in the 1980s, Algonquin is the only provincial park where logging continues. Ontario's flagship provincial park is the sole holdout from the "multiple use" era of park management.

² "Other" includes areas within the R/U zone that are not subject to logging, such as lakes, wetlands, rock outcrops and Area of Concern Reserves.

The Board recognizes that logging in the park is managed effectively by the AFA. The AFA ensures that forest management in the park meets the standards established under the Crown Forest Sustainability Act. Yet, a fundamental question must be asked. Should 78 % of Algonquin be zoned to allow logging that is conducted in much the same way it is conducted on Crown land outside the park?

The Board does not believe this approach is appropriate. Logging, and in particular the construction, maintenance and use of an extensive network of primary, secondary and tertiary roads, inevitably has significant impacts on the park environment. Some of the physical impacts include:

- The footprint of roads, and the impact of road construction;
- Habitat fragmentation;
- Creation of edge habitat, and changes in species balance and forest composition;
- Mining of large quantities of aggregate for construction and maintenance of roads;
- Introduction of invasive non-native species;
- Pollution (noise, exhaust emissions, sediment, dust, oil and fuel leaks/spills, etc.)
- Animal mortality including species at risk such as wood turtle;
- Impairment of hydrological function;
- Sedimentation of stream and lakes;
- Opportunities for unauthorized public access to fish and game.

There is also a social and spiritual cost associated with logging in Ontario's flagship provincial park. This is hard to quantify, but for many Ontarians it is significant.

The Board recognizes the importance of the Algonquin wood supply for the region's economy and understands that a complete cessation of logging is not practical at this time, without serious social and economic fallout. The Board believes actions can be implemented to lighten the ecological footprint of logging in the park while maintaining an adequate regional wood supply.

Consequently, the Board is making recommendations to lighten the footprint of logging under three headings:

1. Protection zones should be expanded by 241,032 hectares to include a total of 409,482 hectares or 54 % of the park.
2. The Ministry and AFA should develop an action plan with targets to reduce the impacts of logging operations considering the 7 strategies outlined in Table 4, including a review of roads standards, aggregate use, size of pits, and use of temporary bridges.
3. The Ministry should partner with the AFA in a pilot project to test the effectiveness of more detailed forest resource inventory and a spatial computer modeling to enhance the accuracy of planning and better integrate the protection and harvesting objectives where logging continues.

Enlargement of Protection Zones

The Board recommends that portions of the current recreation/utilization zones (where logging may be permitted) be rezoned as protection zones (where logging may not be permitted). The Board has identified 5 components for inclusion in protected zones:

- Component 0 – Areas identified to protect representative ecosystems;
- Component 1 – Core areas to connect and expand existing protection zones;
- Component 2 – 200 m setbacks for key self-sustaining brook trout lakes and primary canoe routes (including lakes);
- Component 3 – 120 m setbacks for remaining canoe routes (including lakes) and remaining self-sustaining brook trout lakes;
- Component 4 – Additional setbacks of 200 to 500 m for high priority areas and creation of blocks to connect and expand existing protection zones;
- Component 5 – Areas within remaining recreation/utilization zone (i.e. after Components 0 through 4 are incorporated in protection zones) that would not be subject to logging (lakes, wetlands, rock outcrops, Area of Concern Reserves, etc.)

TABLE 2 – COMPONENT AREA SUMMARY

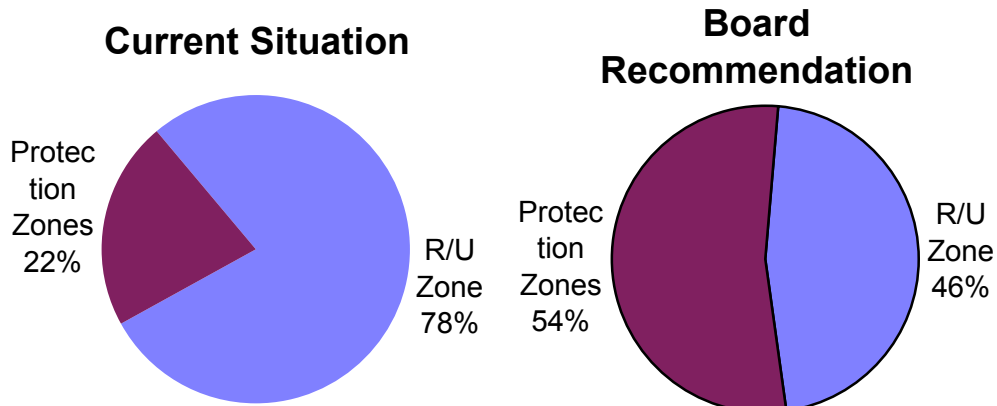
Parks Board Proposal	Managed Forest⁵ Area (ha)	Total Area (ha)	Cumulative Total Area (ha)
Component 0	3,070	4,054	4,054
Component 1	16,687	30,906	34,960
Component 2	21,630	67,430	102,390
Component 3	5,545	19,926	122,316
Component 4	24,241	30,128	152,444
Component 5	0	88,588 ³	241,032
Total	70,722	241,032	241,032

TABLE 3 – PROTECTED ZONE COMPARISON

	Current Situation		Board Recommendation	
	Hectares	% of Park	Hectares	% of Park
Total Park Area	763,310	100%	763,310	100%
Protection Zones⁴	168,450	22%	409,482	54%
Recreation/Utilization Zone	594,860	78%	353,376	46%
Managed Forest⁵	424,550	56%	353,376	46%

³ The total area of Component 5 is estimated. Areas of non-forest habitat are widely dispersed and fragmented; it might not be practical to include in protection zones some small, isolated areas.

⁴ Includes wilderness, natural reserve, natural environment, historical, development and access zones, in all of which logging is not permitted; develop and access zones together make up 3.1% of the park's total area.



Benefits of the Enlarging Protected Zones

Implementation of the recommendation would increase protected zones to 54% of the park's area from 22%, and reduce the recreation/utilization zone to 46% of the park from the current 78%. While protected zones would be increased by 241,032 hectares, only 70,722 hectares would be removed from the managed forest, a reduction of 17%. The bulk of the area added to protection zones would consist of lakes, wetlands, other non-forested landscape elements, and Area of Concern Reserves not subject to logging.

The recommendation will enhance protection of:

- 214 self-sustaining brook trout lakes and associated nursery stream habitat;
- 1,374 campsites;
- 1,481 km of canoe routes;
- 463 portages;
- Old growth forest stands; and
- 6,288 hectares of under-represented terrestrial ecosystems.

The Board gave considerable weight to the protection of self-sustaining brook trout lakes. The Board believes that it is prudent and necessary that additional protection be given brook trout lakes and tributaries, consistent with the principle that ecological integrity is the first priority for management of protected areas.

As noted above, for many visitors Algonquin is primarily about wilderness canoeing. Yet many canoe routes are within recreation/utilization zones, while many campsites and portages are in close proximity to roads and logging operations. The Board

⁵ The term "managed forest" is used in this report for simplicity sake in place of the technically correct term "available managed Crown production forest".

believes it is important to protect the wilderness character of canoe routes and has included these in recommended protected zones.

MNR/AFA expressed concern that inclusion in protection zones of some areas scheduled for harvest per the 2005 – 2010 Forest Management Plan (FMP) would have significant short term impacts on wood supply (especially hardwood sawlogs) that could not be fully mitigated. Mitigation, where feasible, would require amendment of the FMP, a complex and time consuming process. In response, the Board dropped from recommended protection zones two areas near Lake La Muir and Lake Louisa totaling 3,646 hectares.

MNR developed for the Board's advice zoning considerations aimed at achieving established natural heritage protection objectives. These considerations differed in some respects from the Board's preliminary proposal. Most significantly MNR identified areas intended to fill ecological representation gaps. The Board identified in its preliminary proposal a 3,000 hectare "budget" to be used in the future to fill these gaps. The Board has now included recommended protected zones the areas required to fill representation gaps and dropped the recommendation regarding a 3,000 hectare budget. Consequently, in eco-district 5E-9 (west side the park and surrounding area) 67 under-represented landform/vegetation associations with 1,926 hectares would be protected. In eco-district 5E-10 (east side of park and surrounding area) 80 under-represented landform/vegetation associations with 4,362 hectares would be protected.

In implementing the expanded protected zones and focusing the areas where logging continues, the Board recommends that:

1. The Minister direct MNR/AFA to initiate appropriate consultation with potentially affected aboriginal peoples, and with the public through the park planning and forest planning process;
2. Forest management should continue according to the existing Algonquin Forest Management Plan until its normal date of 2010, but where harvest areas identified by the plan overlap with the recommended protected zones, and it is necessary⁶ to harvest those areas to meet wood supply commitments, particular care should be taken to minimize impacts, such as use of single tree selection harvest or shelter wood harvesting that retains most forest cover;
3. While consultation is underway, the AFA should use the new protected zoning recommended by the Board as a basis for forest management planning for periods beyond 2010, subject to modifications that may arise from the consultation and planning process;

⁶ Necessity should be documented and determined through an MNR process that requires consultation with the Algonquin Park Superintendent and public notice.

4. Since practical road access to the remaining wood supply in the managed forest is important, zoning of new protected areas and road strategies should provide for practical road access to future harvest areas;
5. The recreation/utilization zone should be mapped as to the areas where logging may continue and areas of the recreation-utilization zone that are not part of the managed forest – water bodies, wetlands, rock barrens and Area of Concern (AOC) Reserves – should be incorporated into protection zones;

Wood Supply Impacts

The Board fully recognizes MNR/AFA concerns about future wood supply. The Board's view is that at a gross scale, withdrawal of 17% of the managed forest need not jeopardize long term regional wood supply commitments. This is because on average only 56% of the planned harvest area was actually harvested each year, between 1995 and 2005. The Board also believes that there are opportunities to enhance harvest levels on public and private lands outside the park.

At the request of the Board, MNR undertook a Wood Supply Analysis of the preliminary proposal using a computer model (Strategic Forest Management Model or SFMM) generally used for this purpose in Ontario. This analysis concluded that if implemented the proposal would have impacts on product-based commitment volumes and would potentially affect certain mills.

The Board requested an independent consultant (KBM Forestry Consultants Inc.) to review the MNR Wood Supply Analysis. The consultant verified that the MNR Analysis was sound but that the inputs and assumptions were conservative. Conservative approaches are the industry norm due to the large uncertainties arising from the low reliability of inventories at the stand level and model errors associated with variation in growth, yield and natural events such as blowdowns. The consultant also noted that an alternative "spatial" computer model might provide more accurate modeling of the Board's proposal and that Forest Resource Inventory (FRI) data was coarse and that a more thorough inventory would provide more reliable results.

The possibility of limited impacts on wood supply dependent mills is recognized because of uncertainty, however the Board believes that the impact can be mitigated over the long term, both within Algonquin and on surrounding lands. As noted above, the Board has made recommendations that will allow wood supply commitments to be met during the course of the current Forest Management Plan.

Reducing the Impacts of Logging Operations

The Board discussed with the AFA and MNR proposals for reducing the impact of logging operations in areas where it continues. Many of these proposals were suggested by the AFA. They are to a large extent “operational” in nature and can be implemented independently of the Board’s proposes for enlarging protection zones. Proposed actions and their benefits are listed below in Table 4.

Protection of species at risk should be a priority when planning and undertaking logging operations. For wood turtles this means in essence the protection of watercourses and associated habitat. Per #7 referenced in Table 4 below, practices should have particular regard for maintenance of ecological integrity, including protection of species at risk.

Pilot Project to Enhance Forest Management Planning

KBM Forestry Consultants Inc, when reviewing MNR’s Wood Supply Analysis, noted that an alternative spatially-based computer model known as Patchworks has potential to more adequately support decision making in the park. This would need to be supported by enhanced forest inventory.

The Board recommends that a pilot project be undertaken for a portion of Algonquin by conducting a more thorough forest resource inventory and applying the Patchworks computer model (or an equivalent spatial model) to test the potential for enhanced, more iterative forest management planning. Possible benefits of such an approach include:

- Increased certainty of wood supply while reducing impacts on sites with high natural and recreational values;
- Increased ability of Algonquin and AFA staffs to integrate decision making and cooperation;
- Opportunities to protect some sites without withdrawing them entirely from the managed forest.

In making this proposal the Board is not suggesting that Ontario’s forest management regime is inadequate. Algonquin is a special place, and logging in the park requires special care.

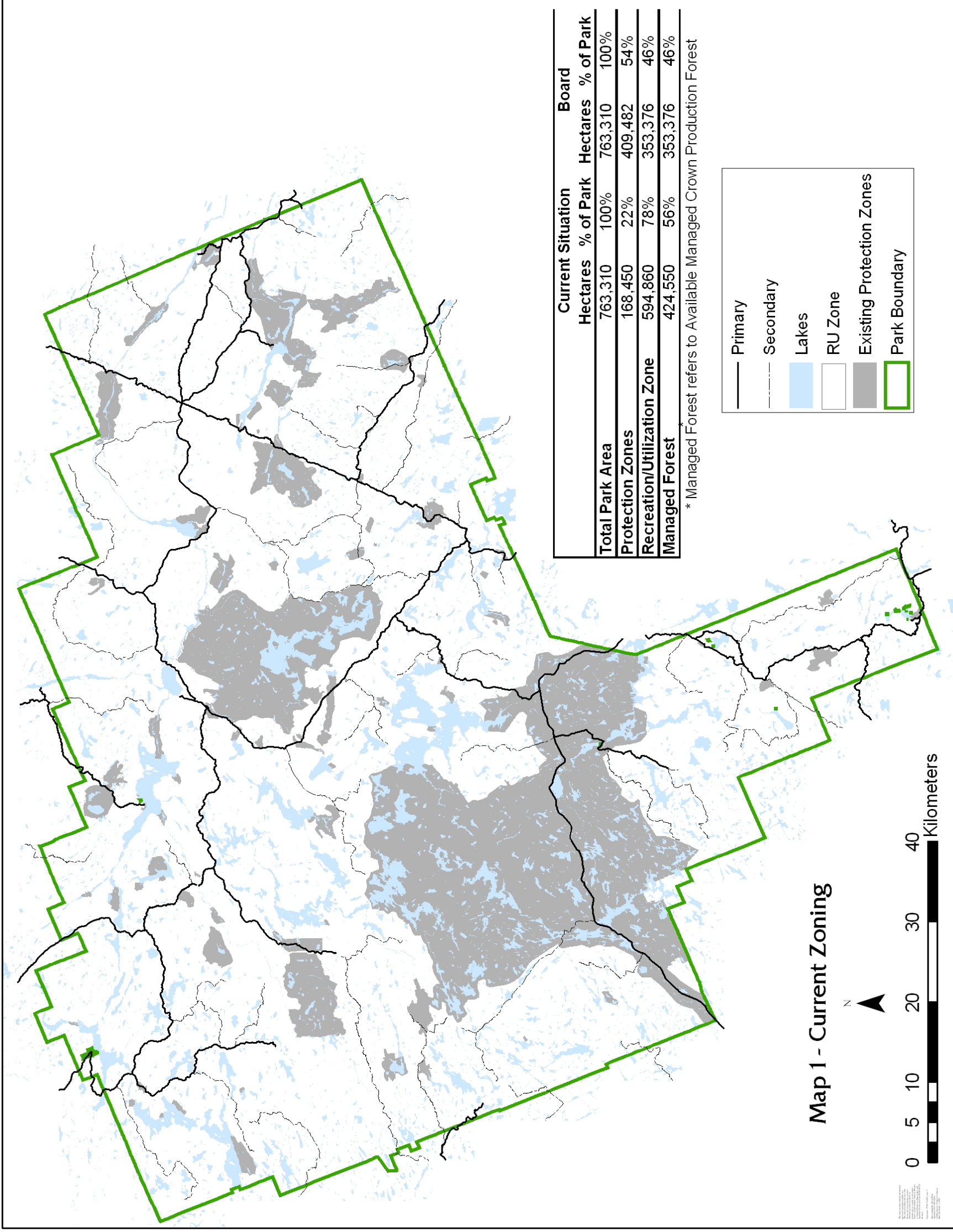
TABLE 4 – PROPOSED ACTIONS TO REDUCE IMPACTS OF LOGGING OPERATIONS

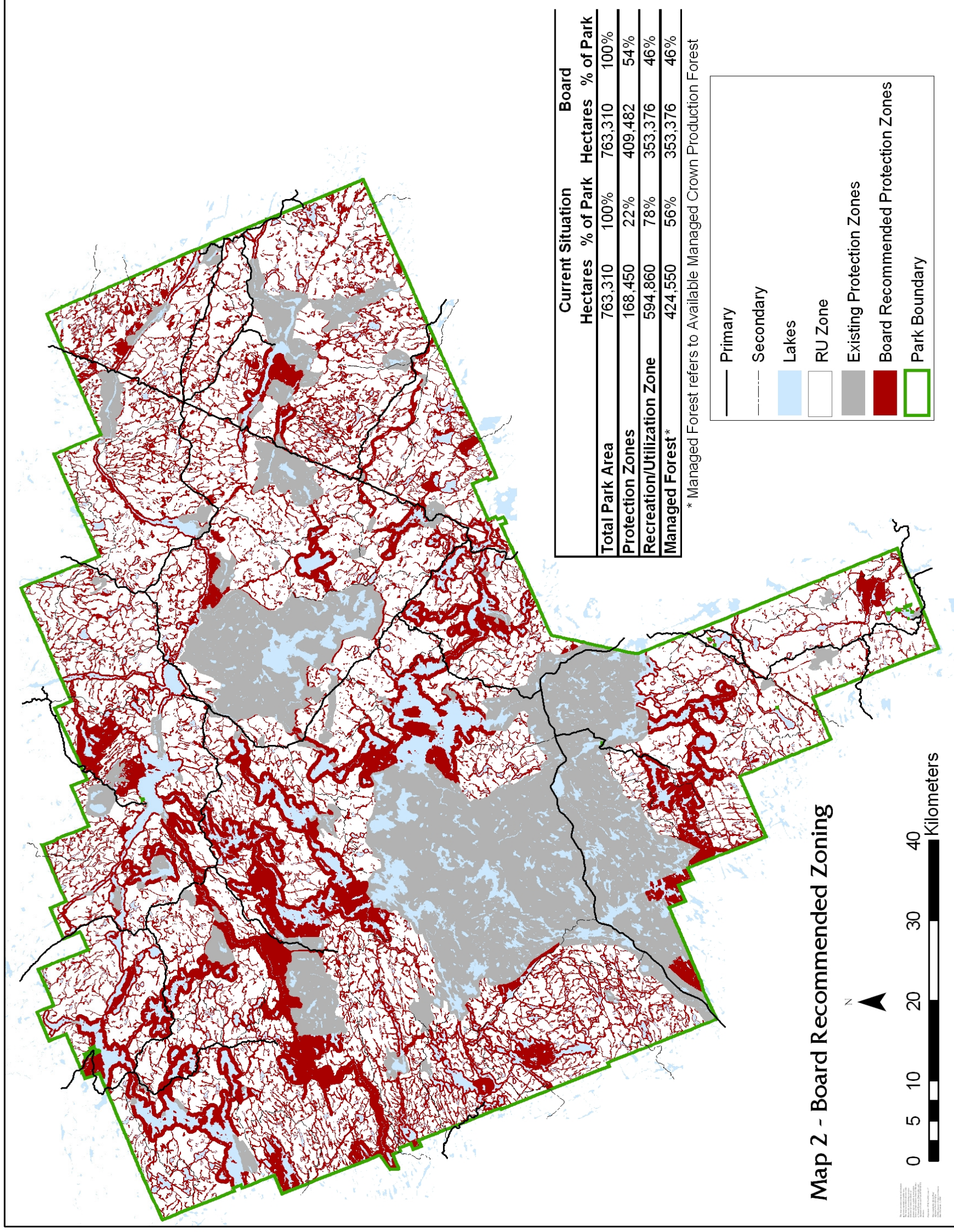
Proposed Action	Benefits
1. Complete application of the Forest Access Management (FAM) Zone concept to the park, whereby the managed forest is broken into zones with local access/egress from the park and hauling of timber across the park is minimized (i.e. including the permanent elimination of the Crow River bridge crossing).	Minimizes traffic through the park and wear and tear on park logging roads. Algonquin and AFA staffs are working together to finalize a roads strategy that will implement the FAM Zone approach. The decommissioning of roads also reduces the risk of culvert failure and environmental damage, as well as reducing unauthorized access to the Park interior.
2. Integrate the management of aggregate use, supply and pit rehabilitation into the FAM zone concept and minimize use of aggregate on roads, especially on in the east portion of the park, by developing new road standards (i.e. narrower 4.8 m wide running surface) and modifying practices (i.e. less hauling during wet seasons).	Reduced number and size of aggregate pits.
3. Develop more rigorous standards for aggregate pits (i.e. reduced maximum size of pits) and their rehabilitation (i.e. progressive, active rehabilitation rather than relying on natural succession).	Reduced ecological impact from aggregate extraction.
4. Use temporary portable bridges more widely for stream crossings, in place of culverts and permanent bridges (e.g.. Daventry).	Reduced disturbance of stream habitats (placement and removal of culverts, and erosion culvert ends, can have significant local impacts on stream habitats).
5. Manage logging roads more actively by using old roads where possible, rehabilitating abandoned roads, decommissioning roads that will not be used for 10 years or more, etc.	Reduced overall impacts from road network.
6. Where forest management activities occur during the June to October period, enhance planning of operations, communications between AFA and MNR regarding use patterns, and consider options for quieter equipment and modified practices.	Improved recreational experiences and reduced logging – recreation conflict.
7. Review forestry practices with an eye to reducing impacts and supporting ecological integrity (i.e. leave more slash and cull on the forest floor, consider use of environmental friendly lubricants and fluids, increase winter logging).	Reduced impact from forest operations.

Next Steps

The Board is aware of the potential interest the public, stakeholders and aboriginal communities have in the future of Algonquin. Changes in park management and zoning would have to be addressed through park planning process with appropriate consultation. Any changes would have to be reflected in a new Forest Management Plan. The Crown's obligation to consult regarding any ramifications with respect to aboriginal and treaty rights would need to be met.

The Board would be available to assist provide the Minister with further support and advice for communications once a course of action is decided.





Map 2 - Board Recommended Zoning

	Current Situation		Board	
	Hectares	% of Park	Hectares	% of Park
Total Park Area	763,310	100%	763,310	100%
Protection Zones	168,450	22%	409,482	54%
Recreation/Utilization Zone	594,860	78%	353,376	46%
Managed Forest*	424,550	56%	353,376	46%

* Managed Forest refers to Available Managed Crown Production Forest

Legend:

- Primary (black line)
- Secondary (dashed line)
- Lakes (light blue)
- RU Zone (white)
- Existing Protection Zones (grey)
- Board Recommended Protection Zones (red)
- Park Boundary (green outline)

Scale: 0 5 10 20 30 40 Kilometers

North Arrow: N