Measuring Up

A National Evaluation, Comparison and Recommendations for Quebec’s Public Forests

A Report to the Commission for the scientific, technical, public and independent study of public forest management in Quebec
Acknowledgements

We would like to thank the Richard Ivey Foundation and the R. Howard Webster Foundation for their generous support of this project.

We would like to thank Tim Gray, Lorne Johnson, Gaetane Boisseau and Christian Messier for reviewing this report.

The Canadian Parks and Wilderness Society (CPAWS), founded in 1963, is Canada’s grassroots voice for wilderness. We focus on establishing interconnected networks of parks and wilderness areas, making sure that nature comes first in their management and improving resource management outside of parks.

CPAWS has twelve chapters, a national office and approximately 15,000 active members across Canada. CPAWS’ boreal program is developing conservation solutions on the ground in Canada’s boreal forests. Our efforts include involvement in forest policy reform, markets and certification, oil and gas practices reform, aboriginal community engagement, land-use planning participation and public outreach and communication. Our two chapters in Quebec were founded in the Outaouais in 1970 and in Montreal in 2001.

World Wildlife Fund Canada (WWF-Canada) was founded in 1967 and is a member of the WWF International network, which has more than 5 million supporters worldwide and offices in more than 100 countries. WWF-Canada actively contributes to the achievement of the organization’s mission which is to stop the degradation of the planet’s natural environment and to build a future in which humans live in harmony with nature, by:

• Conserving the world’s biological diversity,

• Ensuring that the use of renewable resources is sustainable,

• Promoting the reduction of pollution and wasteful consumption.

In Quebec, WWF-Canada’s forest work has primarily focused on promoting the establishment of protected areas and encouraging better forest management practices through the adoption and implementation of Forest Stewardship Council Certification standards. Our recent work includes partnering with forest companies such as Tembec, Domtar and Abitibi Consolidated on Forest Stewardship Council certification and High Conservation Value Forest Assessments and collaborating with the Algonquins of Barriere Lake on the identification of candidate protected areas that conserve both ecological and cultural values.
Executive Summary

This report was written by CPAWS and WWF-Canada to provide insight and forest policy recommendations to the Commission for the scientific, technical, public and independent study of public forest management in Quebec (the Coulombe Commission).

We intend the report to assist the Commission in meeting its stated goal of defining “an overall vision of sustainable development for Quebec’s public forests.”

The report is written in two parts. The first part is a national assessment of the status of forest policy with respect to key conservation indicators. In this section Quebec’s regulatory framework for forestry is compared to Canada’s other two large forestry economies – British Columbia and Ontario.

The certification requirements of the Forest Stewardship Council’s (FSC) Canadian National Boreal Standard are also included in this assessment as a broadly supported national measure of sound forest policy and practice.

The forest sector assessment prepared for World Wildlife Fund Canada by Arbor Vitae Environmental Services Ltd. for the WWF’s 2003 Nature Audit was the basis of this report’s assessment. Our assessment focuses on a subset of the original 32 indicators and has been updated to reflect changes in policy, improved knowledge and the availability of the new FSC national boreal standard. Some indicators have been modified and three have been added.

The second part of the report contains specific forestry policy recommendations to the Coulombe Commission.

To evaluate the outcome of the assessment, a scoring system was developed that rates the indicator assessments on a scale from 0 – 3:

0 - The indicator is not addressed;
1 - The indicator is broadly addressed, but only partly covered;
2 - The indicator is specifically addressed but the requirement is inadequate or optional; and
3 – The indicator is specifically addressed, adequate direction is provided and adherence to the direction is mandatory.

The final percentage scores for each system of forest management were:

Quebec: 43.1%
British Columbia: 56.9%
Ontario: 60.8%
FSC National Boreal Standard: 82.2%
The main areas in which Quebec lags behind both British Columbia and Ontario are:

- Protected areas
- Maintenance of natural landscape patterns
- Managing the ecological impacts of road density
- Independent auditing
- Effective tenure systems

Most importantly, the results of the evaluation show that none of Quebec’s forest management requirements are adequate for any of the indicators assessed.

Quebec’s system of forest management is out of step with current thinking about ecosystem-based forest management in Canada. If it continues on its current course, Quebec’s forest management is likely to significantly alter natural forest patterns, heavily fragment the landscape and reduce or eliminate critical habitat for key species.

Fortunately, there are key changes that Quebec can make right now to put the province’s forest management system on the road to sustainability. This report provides a set of 38 recommendations to the MRNFP on how policies and practices can be improved. These recommendations and the concerns they are based upon are summarized below.

**Complete the Protected Areas System**

Quebec lags far behind most jurisdictions in Canada in protecting key wild areas for ecological values. Protected areas exclude industrial activity and have the protection of natural processes and wildlife as the primary management goal. We recommend that the MENV and the MRNFP:

- Meet its 2005 target of protecting 8% of the province as soon as possible and achieve a minimum of 12% protection for all natural regions south of the 52nd parallel by 2008.
- Consider developing a model such as Ontario’s Room to Grow policy that provides a framework for establishing additional protected areas over time and supports voluntary protection efforts by forest companies that may arise through credible 3rd-party certification such as the Forest Stewardship Council.

**Maintain and Restore Natural Forest Landscape Composition**

Harvesting and fire suppression are combining to seriously shift both species composition and age class away from natural levels with potentially serious effects on wildlife and overall biodiversity. We recommend that the MRNFP:

- Set an objective of restoring the forest to contain more natural levels of old growth and ensure the restoration of forest types that are significantly under-represented relative to the natural condition.
Maintain and Restore Natural Forest Landscape Patterns

Harvesting and fire suppression are combining to significantly alter landscape patterns away from those that would naturally occur. This change is having serious biodiversity impacts. We recommend that the MRNFP:

- Establish patch-size targets for mature/old forests based on natural historic landscape patterns.
- Develop a landscape-planning process that integrates all forest licence holders and facilitates decisions and the implementation of objectives regarding old-growth forests, large unfragmented forests, natural forest diversity, road access, etc.
- Implement immediately the Proposed Forest Resources Protection and Development Objectives (FPDO) target of maintaining one 100 km² large mature forest area in all Boreal Forest Management Units (not just those containing spruce-moss forest) and ensure that these large mature forest areas are deferred from logging until they are replaced with equivalent areas of habitat.

Maintain Critical Habitat for Focal Species and Species of Concern

Little or no attention is currently given to ensuring maintenance, at the landscape level, of critical habitat for focal species and species of concern. We recommend that the MRNFP:

- Require that landscape-level spatial objectives be set for maintaining important wildlife habitat.
- Immediately implement a temporary moratorium in all significant woodland caribou habitat until a tested provincial recovery strategy is being implemented that includes large protected areas.
- Increase funding for research into the effects of forest management and protection strategies for species of concern.
- Require the inclusion of biological information in the pre-harvest inventory in order to identify plants and wildlife habitats that are sensitive to human activities (human presence, roads, poaching, logging activities, etc.).

Develop and Implement an Access Management System

Once built, logging roads in Quebec are forever open to public use regardless of the ecological or economic importance of maintaining remote areas. These roads, bridges and water crossings are often poorly maintained, resulting in sedimentation into streams and risk to the public. We recommend that the MRNFP:

- Allow and promote the closure and abandonment of roads to reduce ecological and environmental impacts (and to ensure no further net increase in active road density).
- Require comprehensive access-management plans that include objectives to maintain remote forests and consider the use of special land-use designations where maintaining remoteness is a priority.
• Require that the MRNFP work with the MENV to develop and implement a training and monitoring regime for water-quality impacts of forest management.

• Develop forestry requirements and planning approaches consistent with the Quebec Water Policy.

**Drastically Improve Harvesting Practices**

Quebec’s harvesting practices do not properly address the requirements for post-harvest retention of deadwood material, residual patches or islands and peninsulas of live trees. Buffers left around water bodies are also amongst the smallest in Canada. We recommend that the MRNFP:

• Require representative tree retention in all cuts based on an assessment of the amount of live residuals trees that is retained in natural disturbances.

• Minimize the removal of deadwood material by requiring delimming and processing of trees at the stump or slash redispersal rather than moving full trees to the roadside.

• Extend buffer requirements to a range of 60 to 200m to protect terrestrial shoreline habitat.

• Extend to all forest types the requirements to maintain characteristics of old-growth forests (proposed in the FPDO), such as snags, wildlife trees, etc.

**Ensure a Credible Wood Supply Calculation:**

While it has the potential to be credible and robust, Quebec’s determination of a sustainable annual harvest rate falls short in a number of areas. We recommend that the MRNFP:

• Retain responsibility for determining the allowable harvest calculation.

• Use a spatially explicit wood-supply model to forecast wood supply.

• Incorporate credible natural disturbance rates, spatial objectives, tree retention, protected-areas targets and all other spatial objectives “a priori” into the wood-supply model.

• Use a modified Maximum Sustained Yield approach (MSY). The allowable harvest level should be a percentage of the MSY based on a precautionary reduction.

• Develop and apply timber productivity curves for mixedwood forests.

• Adjust the assumptions of the production curves to incorporate discrepancies with on-the-ground observations (rates of senescence; silvicultural effectiveness).

• Subject the determination of allowable harvest levels to periodic independent audits.
Ensure Public Confidence by Establishing an Independent Forest Auditing System

There is growing national and international public, market and consumer concern over the quality of Quebec forest management. We recommend that the MRNFP:

- Ensure that the evaluation framework (forest management, environmental and industrial performance) proposed by the MNRFP should be carried out by independent auditors.
- Ensure that the evaluation framework is extended to include ecological impacts and the effectiveness of protection measures at appropriate time scales.

Reform the Tenure System

Quebec’s volume-based tenure system and approach to developing forest-management plans presents serious challenges to implementing good forest-management practices and meeting the growing demand for independent certification. We recommend that the MRNFP:

- Promote the creation of independent and multidisciplinary management boards, which have the primary responsibility of developing forest management plans for identified forest management units.
- Establish different tenure systems that will enable credible third-party certification and allow co-management activities, such as with First Nations communities, and a better balancing of different priorities like wildlife/recreational management with logging activities.

Finally, in response to some of the broader questions raised by the Commission, we recommend that:

- The social and economic impacts resulting from an inevitable decrease in wood supply be offset through the promotion of FSC certification and through forest-sector diversification and investment, including value-added manufacturing and non-timber industries.
- MRNFP should approach results-based management with great caution. The validity of the approach depends entirely on the indicators that are developed and the feasibility of measuring outcomes. Depending on the value being considered, a results-based approach may or may not be advisable.
- The “Triad” approach should be considered very carefully and should involve extensive public consultation. If Quebec were to apply this approach, the guiding principles should be the maintenance of environmental and ecological protection requirements and a clear mechanism for increasing protection and decreasing pressure on areas outside of intensive forest management.
Introduction

This report was written by CPAWS and WWF-Canada to provide insight and forest policy recommendations to the Commission for the scientific, technical, public and independent study of public forest management in Quebec (the Coulombe Commission).

Working with industry leaders in Canada, our organizations have developed approaches to forest management that reconcile the different visions of development – of forests as a source of wood supply and of forests as a public and natural heritage – that the Commission is meant to resolve.

We believe that the national perspective and extensive experience of CPAWS and WWF-Canada in forest conservation, forest policy and forest certification provides us with important insights on how the Commission can meet its goal of defining “an overall vision of sustainable development for Quebec’s public forests.” We want to help the Commission with its important work.

The report is written in two parts. The first part is a national comparison of the status of forest policy with respect to key conservation indicators. In this section Quebec’s regulatory framework for forestry is compared to Canada’s other two large forestry economies – British Columbia and Ontario. The certification requirements of the Forest Stewardship Council’s (FSC) Canadian National Boreal Standard are also included in this comparison as a broadly supported national measure of sound forest policy and practice.

The second part of the report contains specific forestry policy recommendations to the Coulombe Commission.

National Comparison of Forestry

Quebec’s Crown land forest management requirements were compared to the requirements of British Columbia, Ontario and the FSC’s National Boreal Standard using 17 indicators of ecological and environmental protection.3 (These indicators are described in Appendix 2 on page 25.)

British Columbia and Ontario were selected for comparison because, together with Quebec, they comprise the three largest forestry jurisdictions in Canada.
The FSC National Boreal Standard was included in the comparison because it was completed early in 2004 with support from all chambers of FSC Canada (Aboriginal, economic, environmental, social), the four-chamber steering committees of all participating regions (Quebec, Ontario, Alberta, British Columbia, Yukon), a large number of Environmental Non-Governmental Organizations (ENGOs), Aboriginal organizations (National Aboriginal Forestry Association), labour and major forest industry companies (Tembec, Domtar, Alberta Pacific). Thus the FSC National Boreal Standard represents an up-to-date and broad consensus on forestry approaches that balance economic, social and environmental objectives. It is also a source of insight for jurisdictions undertaking reviews of their forest policy.

To evaluate the outcome of the assessment, a scoring system was developed that rates the indicator assessments on a scale from 0 – 3:

0 - The indicator is not addressed;
1 - The indicator is broadly addressed, but only partly covered;
2 - The indicator is specifically addressed but the requirement is inadequate or optional; and
3 – The indicator is specifically addressed, adequate direction is provided and adherence to the direction is mandatory.

The final percentage scores for each system of forest management were:

Quebec: 43.1%
British Columbia: 56.9%
Ontario: 60.8%
FSC National Boreal Standard: 82.2%

In the overall assessment, Quebec receives a failing grade for ecological and environmental protection requirements. Quebec lags significantly behind both other provincial jurisdictions, while the FSC National Boreal Standard scores significantly higher than any of the three provinces.

The main areas in which Quebec lags behind both British Columbia and Ontario are:

- Protected areas
- Maintenance of natural landscape patterns
- Managing the ecological impacts of road density
- Independent auditing
- Effective tenure systems

More importantly, the results show that none of Quebec’s forest-management requirements are adequate (score of 3) for any of the indicators of ecological and environmental protection.
# Results of National Evaluation and Comparison of Forestry Requirements

<table>
<thead>
<tr>
<th><strong>Indicator</strong></th>
<th>British Columbia</th>
<th>Ontario</th>
<th>Quebec</th>
<th>FSC National Boreal Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Protected areas</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2. Maintenance of old growth</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
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<tr>
<td>3. Maintenance of natural forest diversity</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Maintenance of natural landscape patterns</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>5. Maintenance of large, unfragmented forests</td>
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<td>3</td>
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<tr>
<td>6. Protection of wildlife habitat</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Managing the ecological impacts of road density</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>8. Protection of water quality and quantity</td>
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<td>9. Tree retention in clearcuts</td>
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<td>10. Dead wood retention</td>
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<td>11. Uneven aged forest management</td>
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<tr>
<td>12. Protection of shoreline habitat</td>
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<tr>
<td>13. Use of spatial models in planning</td>
<td>2</td>
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<td>14. Sustainable harvest levels I: Ecological values</td>
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<td>15. Sustainable harvest levels II: Growth rates</td>
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<tr>
<td>16. Independent auditing</td>
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<td>3</td>
<td>1</td>
<td>n/a</td>
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<tr>
<td>17. Effective tenure systems</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>29/51 = 56.9%</td>
<td>31/51 = 60.8%</td>
<td>22/51 = 43.1%</td>
<td>37/45 = 82.2%</td>
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</tbody>
</table>

For details on scoring-evaluation, please contact the authors of the report

**See appendix for explanations**
Policy Recommendations to the Commission for the scientific, technical, public and independent study of public forest management.

We have made a number of observations regarding forestry requirements in Quebec, Ontario, British Columbia and the FSC standard. These observations highlight key requirements, deficiencies in these requirements, examples from other management systems and other contextual information. They are the basis of our policy recommendations to the commission.

Protected areas

Quebec score: 1

Observations:

- The network of representative protected areas in Quebec is far from complete. Quebec reports that 5.3% of the province is currently protected. However, only about 3% legally prohibits all industrial activity.
- The Ministère de l’environnement of Quebec is currently implementing the Quebec Protected Areas Strategy (QPAS). The approach being taken to identify gaps and candidate protected areas is sound, but the 8% target by 2005 will not move Quebec to a competitive position with B.C. and Ontario and will still fall far short of commitments made by the Quebec government more than 10 years ago.
- Protected areas resulting from the QPAS have several deficiencies:
  - There is no system of connectivity between them;
  - They are often too small to maintain essential ecological processes or viable populations;
  - They lack special management zones to protect them from adjacent industrial activity.
- Although examples of special management zones around parks are rare in Canada, there are two important recent precedents. The protection of Muskwa-Kechika in British Columbia includes legislated special management areas; The Ministry of Natural Resources in Ontario recently announced a special management area for wolves around Algonquin Provincial Park.
- To date, QPAS has located most of the new protected areas in unallocated northern boreal forests and has made slower progress in the southern allocated forests.
- FSC certification in Quebec is resulting in cooperative protected area proposals from ENGOs and forest companies.
• The Room to Grow policy framework in Ontario provides an example of how new protected areas can be established in forests with heavy industrial allocation. Under this framework, wood volumes are “shared” between industrial use and protected area creation. This sharing is triggered by new wood allocations and increases in wood supply. For example, if wood supply is increased through increased forest productivity, if additional wood supply exists for traditionally under-utilized species (e.g., birch) or if wood supply becomes available through mill closures, the Room to Grow process is triggered. Rather than allocating the full amount of wood supply to industrial use, some of it is used to create space for new protected areas by offsetting the wood supply impacts of withdrawals from the landbase available to forestry. Protected areas are created based on an accepted provincial gap analysis and cooperative identification of candidate protected areas with industry, government and ENGOs.

Recommendations:

1. Reach the 2005 target of 8% for the protected-areas network as soon as possible. Improve the protected-areas network by implementing a minimum protection goal of 12% for every natural region south of the 52nd parallel before 2008. Ensure the ecological integrity of future and existing protected areas.

2. Create through the QPAS, protected areas that are large enough to maintain ecological processes, have natural boundaries and that enjoy the additional protection of special management zones that buffer adjacent industrial activity.

3. Support protected areas candidates resulting from FSC certifications because they represent conservation gains that are economically acceptable to the forestry industry.

4. Explore models such as Ontario’s Room to Grow policy framework as opportunities to facilitate the creation of protected areas in the allocated forests of Quebec.

Maintenance of old growth

Quebec score: 0 1 2 3

Observations:

• There are currently no approved requirements related to this indicator in Quebec. However, the FPDO does include relevant requirements.

• Quebec has determined that natural old-growth levels range from 52–70% of the forest area depending on the bioclimatic zone. The FPDO proposes to maintain 33% of natural levels. It recommends two percent of natural levels to be maintained in biological refuges (permanent protection). Ten percent of natural levels is to be maintained through lengthened rotations. The rest of the target will be achieved through adapted silvicultural practices to maintain old growth characteristics in managed stands.
• The estimate of naturally occurring levels of old growth appears to be ecologically sound. However, the target of 33% of natural levels is arbitrary and will likely have negative ecological consequences resulting from the loss of two-thirds of this important habitat component.

• Ontario requires the protection or restoration of natural amounts of old growth forests. However, insufficient direction is given on how to achieve this objective.

• The FSC standard contains an approach that requires the maintenance of near-natural levels of old growth in most cases, but allows departures of 25% from the mean to reflect natural variability, practical constraints and competing objectives. To address socio-economic concerns, a 50% departure is allowed in places like eastern Quebec where natural proportions of old growth forest exceed 60%.

• The proposal in Quebec to lengthen rotation ages by 15-20 years will most likely not be adequate to attain or maintain old-growth characteristics, as natural stands are often decades or centuries older than this.

• Quebec’s adapted silvicultural practices intended to maintain old-growth characteristics have not been adequately developed (currently identified generically as CPSMT; shelterwood and selection). The intent is laudable, but the MNRFP’s confidence in the planned results is questionable.

Recommendations:

5. Immediately and fully implement the FPDO target of retaining 33% of the natural level of old growth. The long-term objective should be to restore the forest condition to at least 50% of the full natural level of old growth.

6. Wherever possible, integrate old-growth reserves with larger existing or new protected areas, to increase ecological integrity.

7. Develop the adapted silvicultural practices with specific forest structural targets and an accompanying monitoring system. However, these modified approaches should not contribute towards old-growth objectives until their effectiveness can be verified.

Maintenance of natural forest diversity

| Quebec score: | 0 | 1 | 2 | 3 |

Observations

• Quebec’s Ministerial Directive #15 identifies changes in forest composition and structure as an issue and requires that strategies must be implemented to prevent further changes on 10% of the annual area of susceptible forest type receiving forestry treatments. These silvicultural strategies must be included in the next General Forest Management Plans (2005-2010) and also be accounted for in the calculation of the annual harvest rate. However, the strategies for achieving this goal are not well developed.
• The natural forest composition in Quebec has been changed by industrial forestry. Although restoring natural forest composition in the short-term is not ecologically or economically feasible, the FSC standard\textsuperscript{10} presents a feasible alternative of focusing on the restoration of those forest types that are significantly under-represented relative to the natural condition.

Recommendations:

8. Require the restoration of forest types that are significantly under-represented relative to the natural condition.

Maintenance of natural landscape patterns\textsuperscript{11}

| Quebec score: | 0 | 1 | 2 | 3 |

Observations:

• There are currently no requirements directly related to this indicator in Quebec.

• The objective of maintaining a more natural landscape pattern may be partially achieved by FPDO’s proposed requirements to retain large core forest areas (100 km\textsuperscript{2}) in each forest management area and by the old-growth requirements. However, the even distribution of cuts resulting from Quebec’s new Mosaic Cut approach (which is meant to distribute cuts and leave larger patches for wildlife) may contradict natural patterns and exacerbate forest fragmentation.

• Both British Columbia and Ontario currently have requirements to emulate the natural landscape pattern of disturbances (usually fire) using clearcut size and location. However, focusing on disturbance size as an ecologically meaningful measure is misguided. Both the FSC standard\textsuperscript{12} and the new Ontario Landscape Guide (in development) partially correct this problem by focusing on overall landscape patterns, including contiguous patches of undisturbed forest. Ideally, patch size of disturbances shouldn’t be planned for as explicit targets, but can form part of the management approach to maintaining a distribution of patch sizes of mature forest over time.

Recommendations:

9. Develop a landscape-planning process that brings together all forest licence holders and facilitates decisions and implementation of objectives regarding old-growth forests, large unfragmented forests, natural forest diversity, road access, etc.

10. Establish patch-size targets for mature/old forests based on natural historic landscape patterns.
Maintenance of large, unfragmented forests\textsuperscript{13}

<table>
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<tr>
<th>Quebec score:</th>
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Observations:

- There are currently no approved requirements related to this indicator in Quebec; however, the proposed FPDO does contain requirements.
- The FPDO #5 has an objective to protect one area of large mature forest (100 km\textsuperscript{2}) in every forest management unit containing spruce-moss forest, subject to modification based on local conditions and circumstances. However, management can occur in these areas. Therefore intactness will not be maintained because of the fragmentation caused by roads and cutblocks.
- Ontario has a similar requirement to maintain 10-20\% of suitable habitat in every forest management unit as core forest areas (30 km\textsuperscript{2} – 50 km\textsuperscript{2}) for martens. These are not static protected areas, but in practice long-term deferrals are in place until these cores can be replaced with other forest in a suitable condition.
- The FSC standard\textsuperscript{14} sets a general target of 20\% of the forest-management unit in large (thousands of hectares) unfragmented forests, but also recommends that the specific target be based on an assessment of the natural forest condition. To “the greatest extent possible,” these unfragmented forests cannot contain roads and other linear disturbances. Although previously harvested and roaded areas may one day qualify as one of these large unfragmented forests, these areas must have a “high probability of achieving the desired condition and explicit rehabilitative actions must be taken (e.g., areas likely to be in a contiguous, roadless condition).”

Recommendations:

11. Immediately implement the FPDO target of one 100 km\textsuperscript{2} large mature forest area in all boreal FMUs, not just in those containing spruce-moss forest.
12. Ensure that these large mature forest areas are deferred from logging until they can be replaced with equivalent areas of habitat.
- See recommendations 9 and 10.

Protection of wildlife habitat\textsuperscript{15}

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<tr>
<th>Quebec score:</th>
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Observations:

- Quebec has a number of specific protection measures (no-harvest buffers) for sensitive wildlife habitat, including, for example, caribou calving areas and waterfowl gathering areas.
- Quebec does not have requirements to spatially plan for long-term maintenance of wildlife habitat at the landscape level. Requirements are in place in Ontario for both woodland caribou and American marten.
• Quebec’s Ministerial Directive #5 contains some general guidance for protecting/enhancing moose and marten habitats focusing on cut patterns and using the Mosaic Cut approach.

• The habitat of species designated as threatened or vulnerable in Quebec receive some protection from logging as a result of an administrative agreement between the Ministry of Natural Resources, the Ministère de l’Environnement (MENV) and Société de la faune et des parcs du Québec (FAPAQ).

• Ministerial Directive #16 requires special management plans for woodland caribou to be incorporated into general forest-management plans. Strategies for conserving woodland caribou can include modified clearcutting approaches, concentrating cut areas to reduce fragmentation and temporary conservation of large core forests. There is no requirement to address the impact of roads on caribou and no consistent requirement to incorporate conservation strategies into the calculation of the annual harvest rate.

• A FAPAQ directive proposes several strategies for conserving woodland caribou during forestry operations:
  o Delineating caribou management areas;
  o Temporary deferral of caribou habitat (100-250 km² of old forests) with limited road access and fragmentation;
  o Maintaining habitat connectivity;
  o Concentrating harvest blocks to minimize fragmentation;
  o Maintaining uneven-aged forest structure;
  o Ecological experimentation and adaptive management.

This approach is similar to the approach applied in Ontario’s caribou guideline. These strategies are experimental; there can be no confidence in their success.

• The requirements for developing caribou management plans in Quebec are too flexible. Temporary deferrals of habitat are likely inadequate and companies usually target the small end of the size range for these deferrals. Uneven-aged silviculture is too poorly defined and developed to be effectively applied to maintain caribou habitat.

• Woodland caribou are responding very negatively to industrial forestry in Canada’s boreal forest. No jurisdiction has an effective recovery strategy in place for this species.

• Under FSC, species-at-risk are designated as High Conservation Values (HCVs). HCVs must be managed according to the precautionary approach – management strategies to protect these values must be demonstrated to have a high likelihood of success.
Recommendations:

13. Put in place a temporary moratorium in all significant woodland caribou habitat until a provincial recovery strategy with a high likelihood of success is being implemented. Weyerhauser Canada has voluntarily imposed such a moratorium on the forests under its management in Alberta.

14. Require spatial planning for the maintenance of important wildlife habitat at the landscape level.

15. Explicitly require the protection of habitat of all species of concern through Ministerial directive or within the RSFM.

16. Increase funding for research into the effects of forest management and protection strategies on species of concern.

17. Include biological information in the pre-harvest inventory, in order to identify plants and wildlife habitats that are sensitive to human activities (human presence, poaching, logging activities, roads, etc.)

Managing the ecological impacts of road density

| Quebec score: | 0 | 1 | 2 | 3 |

Observations:

- There are no requirements related to this indicator in Quebec.
- It is illegal to close roads to public motorized access in Quebec. In Ontario and British Columbia, road closures and abandonment are used to mitigate the ecological and environmental impacts of roads.
- There are no requirements to limit road density in any of the four management systems assessed.
- The FSC\(^{26}\) requires the development of a comprehensive road-access management plan, which must balance desires for motorized access with the ecological need for remoteness. Such a process would likely make access management decisions more palatable to the public.
- Ontario created a land-use designation in 1999 called Remote Access Enhanced Management Areas. In these areas a number of restrictions on access exist, including building roads to the lowest possible standard and no new public motorized access.

Recommendations:

18. Allow and promote the closure and abandonment of roads to reduce ecological and environmental impacts.

19. Require the development of comprehensive access-management plans that include objectives to maintain remote forests.

20. Consider the use of special land-use designations where remoteness is prioritized.
Protection of water quality and quantity

| Quebec score: | 0 | 1 | 2 | 3 |

Observations:

- The majority of the requirements set out in the Regulations Respecting Standards of Forest Management (RSFM) for forests in the public domain are local in character and do not relate to the landscape or watershed level. These include specific requirements regarding road building and water crossings to minimize the impact on water qualities. However, these requirements are not always followed or monitored and interpretation of the RSFM varies.
- Older/inactive logging roads are often a significant source of sediment going into water bodies. This issue is not addressed by any requirements in Quebec.
- The proposed FPDO does suggest some requirements at the watershed/landscape level.
- Disturbance in salmon watersheds is limited to 50%. This is similar to the requirement in Ontario that limits disturbance in second-order watersheds to 50%.
- Continuous improvement plans and local targets will be developed in all other watersheds to control the impacts of logging on the peak and minimum flows of watercourses.
- The Quebec Water Policy makes a number of recommendations for reducing impacts on aquatic, riparian and wetland environments.

Recommendations:

21. Develop requirements to prevent sedimentation from old/inactive roads. This would include rehabilitation of abandoned roads (e.g. removing water crossings) to reduce sedimentation resulting from natural deterioration.
22. Work with the MENV to develop and implement a training and monitoring regime for water quality impacts of forest management.
23. Develop forestry requirements and planning approaches consistent with the Quebec Water Policy.

Tree retention

| Quebec score: | 0 | 1 | 2 | 3 |

Observations:

- There are no direct requirements related to this indicator in Quebec. However, the proposed FPDO requirements for old-growth forests recommend that large snags, coarse woody debris and wildlife trees be retained in areas contributing to old-growth targets.
• Ontario, British Columbia and FSC all have requirements for tree retention.

• Ontario and FSC require that the amount of tree retention be based on the natural amount of live residual trees and tree patches that would occur during natural disturbances. This amount will vary by forest type and bioclimatic zone.

• The FSC standard\textsuperscript{20} requires that tree retention be representative of the age and species composition of the stand before logging.

Recommendations:

24. Require representative tree retention in all cuts, based on an assessment of the amount of live residual trees in natural disturbances. This requirement should also be reflected in the determination of the allowable harvest level.

**Deadwood retention\textsuperscript{21}**

| Quebec score: | 0 | 1 | 2 | 3 |

Observations:

- There are no direct requirements related to this indicator in Quebec. However, the proposed FPDO requirements for old-growth forest recommend that large snags, coarse woody debris and wildlife trees be retained in areas contributing to old-growth targets.

- British Columbia has quantified targets for deadwood retention. It is not clear whether the prescribed amounts are adequate.

- Ontario’s Natural Disturbance Pattern Emulation (NDPE) Guide provides general direction to retain dead wood material through the life of the regenerating stand. The guide recommends that trees either be processed at the stump or that slash be redistributed from the roadside.

- Some deadwood material will be provided to the regenerating stand by live tree retention.

Recommendations:

25. Minimize the removal of deadwood material by requiring delimbing and processing of trees at the stump rather than moving full trees to the roadside.

26. Extend to all forest types the requirements to maintain characteristics of old-growth forests (proposed in the FPDO), such as snags, wildlife trees, etc.
Uneven aged forest management

Observations:

- Uneven-aged management is practiced in the tolerant hardwood forests of Quebec.
- There are currently no requirements for uneven-aged management in the boreal forests of Quebec. The proposed FPDO will require the use of adapted silvicultural practices to maintain old uneven-aged forest conditions in a portion of the areas contributing to old-growth targets. Although some available treatments may contribute toward this objective (CPSMT23, shelterwood and selection harvesting), there is no guidance on how they should be modified or applied.
- More research has been done in Quebec than anywhere else in the boreal forest regarding the ecological and economic rationale and feasibility of uneven-aged management in boreal forests.
- Ontario has developed a silvicultural guide for mixedwoods that presents uneven-aged management approaches.

Recommendations:

- See recommendation 7.

Protection of shoreline habitat

Observations:

- Twenty-metre buffers around lakes and streams are required in Quebec to protect water quality. Harvesting up to one-third of the trees in these buffers is permitted, but machinery may not operate within them.
- There are no explicit requirements to protect terrestrial shoreline habitat with buffers or reserves. The 20m buffer will not be adequate.
- British Columbia and Ontario require no-harvest reserves around lakes and streams to protect water quality and fish habitat. Ontario has rules to protect terrestrial shoreline habitat as well, but these are usually not applied because the fish habitat reserves are generally larger.
- FSC requires 20m reserves to protect water quality and an additional 45m (on average) measured from the edge of trees to protect terrestrial shoreline habitat. Partial logging is allowed to a limited extent in the 20m reserves for the purposes of meeting a demonstrated conservation need.
- Research shows that between 60- 200m is required to protect a broad range of terrestrial shoreline habitats26.
Recommendations:

27. Extend buffer requirements to a range of 60-200m to protect terrestrial shoreline habitat.

Use of spatial models in planning

Observations:
- There are currently no requirements related to this indicator in Quebec, Ontario or British Columbia.
- Spatial assessment and forecasting of wood supply and wildlife habitat is critical for sustainable forest management. Aspatial modeling will overestimate available wood supply.
- The FSC standard requires that companies are either using or making progress towards using spatial models.
- Individual companies are beginning to use spatial models to increase the reliability of their wood-supply and habitat forecasts and planning.

Recommendations:
- See recommendations 14 and 29.

Sustainable harvest levels I: Ecological values

Observations:
- Quebec’s Sylva II wood-supply model does take a number of spatial constraints into account, including river buffers, harvest block separators, inoperable slopes, site-specific wildlife habitat protections (e.g., caribou calving areas, aquatic birds waterfowl gathering areas), budworm damage, etc., by removing a percentage of available forest from the model.
- Quebec’s Sylva II wood supply model does not account for:
  - the deferral of the large core forests
  - modified operations in caribou areas
  - spatial objectives (e.g., spatial planning for future wildlife habitat)
  - tree retention
  - natural fire disturbance rates
  - the 8% protected-area objective (only regulated protected areas are accounted for)
• Ontario does not employ the Maximum Sustained Yield (MSY) approach. In Ontario, harvest rates are allowed to fluctuate above long-term sustainable levels. This is problematic because the forest has been pushed past its productive capacity. Resource-dependent communities are now under threat because the surplus wood supply has been harvested and harvest levels will decline significantly in the near future.

• In Ontario, the harvest level is calculated at the local level, taking into account all of the local objectives and constraints in the forest management plan. Wood supply commitments are adjusted when necessary to reflect the local availability of wood.

Recommendations:

28. MRNFP should retain responsibility for determining the allowable harvest calculation. (See recommendation 36.)

29. Use a spatial wood supply model to forecast wood supply.

30. Incorporate credible natural disturbance rates, spatial objectives, tree retention, protected areas targets, large core forests and all other spatial objectives “a priori” into the wood-supply model.

31. Use a modified MSY approach. The allowable harvest level should be a percentage of the MSY based on a precautionary reduction. This precautionary approach should be phased in based on the wood-supply impacts of correcting deficiencies in the current approach to determining harvest levels.

Sustainable harvest levels II: Growth rates

| Quebec score: | 0 | 1 | 2 | 3 |

Observations:

• Quebec has an extensive system of data collection.

• The production curves for uneven-aged stands used by the MRNFP take age, site conditions and relative tree density into account.

• There are no production curves specifically for mixedwoods. The MRNFP relies on adding the individual production curves for each species in the stand. This approach does not provide accurate estimates.

• Site quality is not adequately accounted for in the production curves for uneven-aged forests.

• The Auditor’s report revealed that the growth response to silvicultural activities (such as pre-commercial thinning) was over-estimated, suggesting that harvest levels have been too high.
• The MRNFP recently announced that there is a “discrepancy between some of the production curves used by MRNFP and the actual results on-site for forest stands. In some regions, the integration of new data may result in significant change to the allowable cut calculation.”

Recommendations:

32. Develop and apply production curves for mixedwood forests.

33. Adjust the assumptions of the production curves to incorporate discrepancies with on-the-ground observations (rates of senescence; silvicultural effectiveness).

Independent auditing

Observations:

• Forest management and environmental performance by agreement-holders in Quebec will be assessed for the first time in 2005, covering the 1999-2005 period.

• This assessment is based on a reasonably broad set of 12 indicators ranging from actual protection of wildlife habitat to the extent of the forest area still productive after logging. However, some of the indicators will be difficult to measure. For example, one indicator is a function of the number of known species at risk “protected” during forest management, without defining what effective protection is.

• The results of the assessment direct decisions regarding wood-supply allocation and requirements for remedial action. Unsatisfactory performance may be penalized with wood-supply reductions.

• The biggest shortcoming with Quebec’s proposed system of evaluation is its lack of independence.

• Both Ontario and British Columbia have independent auditing systems in place. Every audit in Ontario makes a recommendation to the Minister on whether or not to extend the 20-year licence.

Recommendations:

34. The evaluation framework proposed by the MNRFP should be carried out by independent auditors.

35. Extend the evaluation framework to include ecological impacts and the effectiveness of protection measures. This should be done at appropriate time scales.

36. Subject the determination of allowable harvest levels to periodic independent audits.
Effective tenure systems

Quebec score: 0 1 2 3

Observations:

- Volume-based tenure constitutes the vast majority of forest management agreements in Quebec.
- Private companies manage almost all of the commercially available public forests in Quebec, Ontario, and British Columbia.
- Private interests are often not aligned with the public interest. For example, a private decision to reduce silvicultural costs may result in long-term costs to the people of Quebec.
- Multiple overlapping volume-based tenure holders present an obstacle to accountability, forest certification and comprehensive forest-management planning — especially at the landscape level.
- Ontario has a system of area-based tenure with overlapping volume tenures. The holder of the area-based licence is responsible for forest-management planning decisions. Available wood supply is made available to all licence-holders, pro-rated based on their allocation.
- The Crown Forest Sustainability Act in Ontario allows for the creation of Forest Management Boards that will prepare forest-management plans for specified forest areas. There is also one example of a community-held area-based licence in Ontario as well as many in British Columbia.
- Area-based tenure facilitates comprehensive forest-management planning and certification because it forces the coordination of management activities.

Recommendations:

37. Promote the creation of independent and multidisciplinary management boards, which have the primary responsibility of developing forest management plans for identified forest-management units.

38. Put in place different tenure systems that will allow co-management activities, such as with First Nations communities, and permit different priorities like wildlife/recreational management rather than logging activities.
Our Responses to Additional Questions asked by the Commission

1.3 Given that wood harvesting and processing is one of the main driving forces behind Québec’s economy, how can the social and economic impacts resulting from a decrease in wood allocations, to allow other uses of forests, be reduced?

Independent third-party certification to a recognized performance standard can help ensure competitiveness and market access for forest companies in a climate of increasing societal concern about environmental protection and sustainability. The FSC standard provides the greatest and most secure access to this emerging market. Promoting FSC certification through support of individual certifications and through policy reform will mitigate the economic impacts of wood-supply reductions.

Based on historical trends, maintaining harvest levels is not an effective strategy for protecting jobs or the communities that depend on them. In Ontario, investments in technology have resulted in a dramatic decrease in employment even while harvest levels have been rising.

A recent report prepared by Woodbridge Associates for the Living Legacy Trust in Ontario describes the significant market opportunities that exist for growing the wood products industry through forest sector investment that shifts the product mix and significantly increases value-added manufacturing – without requiring increases in wood supply.

Encouraging growth and diversification of non-timber values, including tourism, blueberries, maple syrup, trapping, etc., could also increase the economic value of the forest.

4.3 Which accountability and reporting mechanisms would help achieve results-based management in the public forests of Québec?

Approach results-based management with great caution. The validity of the approach depends entirely on the indicators that are developed and the feasibility of measuring outcomes. Often it is more cost effective and technically feasible to prevent undesirable outcomes rather than to monitor for their occurrence.

For example, no-harvest reserves are often used around water bodies to prevent impacts on water quality, a generally effective approach. By contrast, this concern is a poor candidate for a results-based approach, which might focus simply on prohibiting water-quality impacts. How would these be measured? There are many relevant and important variables: water temperature; sedimentation; dissolved organic content; pH; water flow; impacts on fish habitat; fish population levels, etc. Not only would it be prohibitively expensive to measure all of these impacts, but some are ephemeral in nature or delayed in response. These factors make this a good example of how a results-based approach would likely be much less effective and much more expensive than the current preventative approach.
Rutting is a good counter example. Although guidelines and best management approaches to reduce rutting are a good idea, prescribing specific approaches to avoid rutting may be too restrictive. There are many approaches that a company could take to reduce rutting: seasonal restrictions; slope restrictions; modifications to equipment, etc. Because there are many different approaches that could achieve the same end, and because rutting is a simple measurement to make, a results-based approach (like the one proposed in the FPDO) would seem like a sound choice.

This balance must be very carefully considered. Depending on the value being considered, a results-based approach may or may not be advisable.

4.5 Would forest certification granted by an independent third party help achieve results-based management?

Our concerns with what is commonly referred to as results-based management are addressed above. Regarding third-party certification, the only system with consistent performance standards is the FSC. Embracing FSC certification will move Quebec significantly forward towards sustainable forest management and would demonstrate national and international leadership.

What about the Triad?

The commission solicited input on the triad approach. This approach involves zoning the forest into three management types: complete protection, extensive forest management and intensive forest management. The attractiveness of this concept lies in the possibility of making more room for protection and non-timber values in the forest by increasing forest productivity in some areas. The triad must be approached with caution; it would require zoning of the entire forest area and extensive public consultation. The following issues should be considered in discussing the merits and costs of the triad model:

- Environmental protection at the landscape and stand levels need not and should not be sacrificed to increase productivity. The Ontario government has produced a multi-stakeholder report on enhanced productivity that rules out new practices such as genetic modification, fertilization and drainage. The group found that many productivity gains could be made without recourse to these methods, but with increased investment in information and data collection.

- There must be a clear mechanism for reducing pressure on the rest of the land base. For example, the Room to Grow policy framework in Ontario commits to sharing wood-supply increases from enhanced forest productivity between industrial growth and the creation of new protected areas.
Conclusion

Quebec’s regulatory system for forest management fails to ensure economic or ecological sustainability. Quebec lags significantly behind Canada’s other two largest forest resource jurisdictions in protecting ecological and environmental values. Policy in Ontario and British Columbia, and especially direction from the Forest Stewardship Council’s Canadian National Boreal Standard, provide compelling examples for Quebec to follow in reforming its approach to forest management.

The Coulombe Commission has taken on the important task of defining “an overall vision of sustainable development of Quebec’s public forests.” This report is a call for the Commission to act decisively to develop a vision and approach to redress the serious deficiencies of Quebec’s forestry regulatory system. The recommendations of this report are a blueprint for this approach.
Appendix 1

The assessment was based on a review of the legal and policy requirements of the provinces.

For Quebec, the following documents were reviewed:

The Forest Act, the Regulations respecting Standards of Forest Management for forests in the public domain (RSFM), the Forest Management Manual, the Ministerial directives (# 1, 2, 3, 4, 5, 6, 9, 14, 15, 16), the Quebec Forest Protection strategy adopted in 1995, the proposed Forest Protection and Development Objectives (FPDO), the Environment Quality Act, the Quebec Water Policy, Act respecting the conservation and development of wildlife (C61.1), Regulation respecting wildlife habitat, Société de la faune et des parcs du Québec (FAPAQ)’s directives for forestry management regarding woodland caribou.

For Ontario, the following documents were reviewed:

For British Columbia, the following documents were reviewed:

Appendix 2

Landscape Indicators

1. Is there a complete network of representative protected areas in place or a commitment and defined process to complete the network?

2. Are there requirements to maintain the amount of ‘late’ seral forest (old growth) consistent with levels in natural forests or to move in this direction?

3. Are there requirements to ensure the proportion of native plant and/or community types does not deviate significantly from natural levels, or that progress is being made in moving towards natural levels?

4. Are there requirements to ensure a range of patch sizes (including mature, contiguous forest) is maintained at natural levels, or that progress is made in moving towards natural levels?

5. Are there requirements to maintain contiguous relatively large unfragmented forest areas or to move towards restoring the forest to such a condition?

6. Are there requirements to maintain or enhance wildlife habitats potentially influenced by forest management?

7. Are there requirements to minimize ecological effects of road density, including the effects on remoteness?

8. Are there requirements to minimize adverse impacts on water quality, quantity, and drainage conditions?

9. Are there requirements to ensure that aggregated and/or dispersed live tree retention represents site diversity (e.g. productive and non-productive) and species diversity?

10. Are there requirements to ensure that dead wood is retained on harvested sites in sufficient quantities so as to perform relevant ecological roles?

11. Are there requirements to maintain or promote multi-cohort and/or uneven-aged stands (i.e. different sizes and ages of trees) in boreal forests where appropriate based on ecological site class?

12. Are there adequate requirements to ensure that stream and shoreline habitat are managed to protect water quality and terrestrial shoreline habitat?

13. Does the management regime require that spatial models be used to calculate wood supply and to forecast future forest conditions (species composition and age class)?

14. Are harvest rates calculated in a manner which ensures sustainability by taking account of: spatial objectives and constraints associated with ecological goals; natural disturbance frequencies and; species-based appropriate rotation ages.

15. Are harvest levels based on adequate species-specific growth estimates and ecological site class characteristics?

16. Is there an independent system of compliance auditing in place that reports publicly, with a feedback link to decisions regarding allocations or licence renewal?

17. Are tenure systems effective for representing the public interest and facilitating ecosystem-based management including the development and delivery of landscape objectives.
Endnotes

1 Ministry of Natural Resources, Wildlife and Parks
2 Ministère de l’environnement
3 This assessment was based on the forest sector assessment prepared for World Wildlife Fund Canada by Arbor Vitae Environmental Services Ltd. for the 2003 Nature Audit. This assessment was done for all jurisdictions in Canada and the FSC Maritime certification standard relative to 32 indicators. This report focuses on a subset of these indicators. Some indicators have been modified and three have been added. Many of the scores have been updated to reflect changes in policy (e.g., BC’s new Forest and Range Practices Act and regulations, Quebec’s proposed FPDO), the new FSC national boreal standard), and improved knowledge.
4 http://www.mnr.gov.on.ca/MNR/oll/ofaab/room2grow.pdf
5 These observations and recommendations answer questions 1.1 and 1.4 of the Commission’s Preparatory Document.
6 FSC National Boreal Standard, Version 3.0, indicator 6.3.5
7 CPSMT: Cutting with protection of small merchantable trees
8 These observations and recommendations answer questions 1.1 and 1.4 of the Commission’s Preparatory Document.
10 FSC National Boreal Standard, Version 3.0, indicator 6.3.4
11 These observations and recommendations answer questions 1.1 and 1.4 of the Commission’s Preparatory Document.
12 FSC National Boreal Standard, Version 3.0, indicator 6.3.6
13 These observations and recommendations answer questions 1.1 and 1.4 of the Commission’s Preparatory Document.
15 These observations and recommendations answer questions 1.1 and 1.4 of the Commission’s Preparatory Document.
16 These observations and recommendations answer questions 1.1 and 1.4 of the Commission’s Preparatory Document.
17 These observations and recommendations answer questions 1.1 and 1.4 of the Commission’s Preparatory Document.
19 These observations and recommendations answer question 1.1 of the Commission’s Preparatory Document.
20 FSC National Boreal Standard, Version 3.0, indicator 6.3.10
21 These observations and recommendations answer question 1.1 of the Commission’s Preparatory Document.
22 These observations and recommendations answer questions 1.1 and 1.4 of the Commission’s Preparatory Document.
23 Cutting with Protection of Small Merchantable Trees.
24 These observations and recommendations answer questions 1.1 and 1.4 of the Commission’s Preparatory Document.
26 See the National Foundations Report (page 11) prepared by CPAWS-Wildlands League for a review of reserve widths for terrestrial habitat values: www.wildlandsleague.org/certify.html
These observations and recommendations answer questions 2.2, 2.5 and 4.8 of the Commission’s Preparatory Document.

These observations and recommendations answer questions 2.2, 2.4, 2.5 of the Commission’s Preparatory Document.

This recommendation answers question 3.2 of the Commission’s Preparatory Document.

These observations and recommendations answer questions 2.2, 2.4 and 2.5 of the Commission’s Preparatory Document.

These observations and recommendations answer question 4.2 of the Commission’s Preparatory Document.

These observations and recommendations answer question 4.8 of the Commission’s Preparatory Document.

Question numbering appears here as listed in the Commission’s Preparatory Document for public consultation.

http://www.livinglegacytrust.org/pub_01.html


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