

more than trees

A Citizen's Guide to Making Conservation a Bigger Part of Forest Management



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Green Living Communications for additional writing and editing and production coordination

The Richard Ivey Foundation for generously supporting this project



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THE WILDLANDS LEAGUE

Learn more about our organization by visiting our website: wildlandsleague.org



ABOUT US AND THIS GUIDE

The Wildlands League's mission is to protect wilderness through the establishment of protected areas and the promotion of natural resource use that is sustainable for nature and communities.

Citizens concerned about Ontario's oldest park, Algonquin, formed the Wildlands League, a charitable conservation organization, in 1968. Our mandate has since grown to include wilderness protection through the establishment of protected areas and the promotion of more sustainable approaches to resource management. The League works to protect Ontario's wilderness through science-based conservation and collaborative efforts with conservation organizations, government, industry, communities and First Nations.

The Wildlands League became a chapter of the Canadian Parks and Wilderness Society (CPAWS) in 1980.

We believe that we must develop new approaches to forestry and land use that better protect ecosystems, habitat, wild species, indigenous culture and resource-dependent communities. We are deeply

engaged in efforts to reshape current forest policy and practices and we are pointing the way toward better methods of caring for the land and managing our resources. Fundamentally, we believe we must stop eroding the natural capital of our forests that provides us with so many different benefits.

You can learn more about our organization by visiting our website: www.wildlandsleague.org

Why this guide is for you

Have you ever wondered what the rules were that companies have to follow when they are logging our public forests? Have you ever wanted to know how to make sure something of value to you in the forest is protected? Have you ever felt at a loss to know what the most important steps were to address forestry plans or how to take them? Have you ever questioned whether the company was following these rules or whether the government was properly enforcing compliance? If you answered yes to any of these questions, this guide was written for you.

How to use this guide

You can use this guide in different ways:

- You can use it while a Forest Management Plan (FMP) is being developed to increase the chances of good decisions being made.
- You can use it to assess a proposed or approved Forest Management Plan to see whether good decisions were made or the rules were followed.
- You can use it to go out into the forest to see if the company is following environmental protection rules while they log.

We have drawn on our knowledge of conservation and Ontario's forestry rulebook to pick out the topics that we think are the most important for citizens to address – topics like protecting old-growth forests and how a company decides how much wood they can cut.

We've also picked what we think are the most important things to ask for while a Forest Management Plan is being developed and given you advice about how to ask for them. As well, we've highlighted the easiest and most important rules for you to check to make sure they are being followed.

The forest management planning process is complicated and involved. Some of the rules are too. We've tried to offer advice about all of the important aspects, but you will have to decide what you can and cannot tackle and how much effort you want to make to engage a forestry plan or operations. Steps that anyone should be able to take we've labeled as **[BASIC]**. Other parts that are really challenging – usually because it involves the use and understanding of computer models – are labeled as **[EXPERT]**. There's also lots of stuff in between. The topics have been arranged in order from most basic to most challenging.

The guide is written in several parts:

- introductory information (like this)
- a listing of more resources from the Wildlands League
- a How-To section, which gives you advice on how to be effective while trying to influence decisions
- Advice Fact Sheets that tell you the rules for different topics and tell you what to ask for during the planning process
- Compliance Checklists that tell you how to assess company compliance with the Forest Management Plan and of actual logging operations with the rules
- a section for you to record your results
- a glossary of important terms and forestry jargon.

More Wildlands League Resources

The Wildlands League is a leader in making conservation a priority in forestry and providing public information on forestry. We have extensive information about forest planning, forestry issues and forest values on our website, www.wildlandsleague.org.

Our *Forestry in Ontario* fact sheet series covers issues ranging from *Boreal Forest Certification* and *Good Boreal Forestry* to *Shoreline Forests* and *Control of Public Forests*.

Our *Forest Diversity – Community Survival* fact sheet series, produced in the late 1990s, looks at many of the economic aspects of forestry, from the impact of mechanization on employment in the forestry industry to the potential of value-added wood products or other forest-based businesses like ecotourism.

The Road Less Traveled? Is a report written in conjunction with Sierra Legal Defence Fund on the effectiveness of controlling motorized access in remote areas of Ontario.

Other reports, including an assessment of the feasibility of the Forest Tenant model, a report on the management of the Whiskey Jack Forest and a look at the future of forestry in Ontario, are also available.

For all these resources, go to www.wildlandsleague.org, click on *Caring for the Forest* and *Resources*.

The Wildlands League works closely with other organizations involved in forestry issues, including the Forest Stewardship Council (FSC) and Global Forest Watch Canada. You can get more information about these organizations at www.fsccanada.org and www.globalforestwatch.ca or follow the links from our website.

If you do not have web access or would like to order printed copies of any of our publications, please call 1-866-510-WILD (9453) x46 toll free. (In Toronto, please call 416-971-9453 x46.)

INTRODUCTION

Learn more about our organization by visiting our website: wildlandsleague.org



THE BIG PICTURE

Ontario's forests

We are lucky to live in a province with vast sweeps of forest, thousands of lakes, wetlands and rivers and many unique ecosystems, ranging from arctic coastlines to sun-loving prairies and alvars. Ninety percent of Ontario's land is publicly owned – shared by all citizens of Ontario and home to Ontario's Aboriginal people who have lived here for thousands of years. At more than 70 million hectares, this public land area is larger than many countries.

Few places in the world can boast the diversity and extent of wild forests that still exists in Ontario. Across much of our planet, forests and the animals, plants and ecosystems that are part of them have long since been dramatically changed or destroyed by urban development, agriculture or industrial uses.

Similar changes have reduced forest cover in southern Ontario to a fragment of the majestic

deciduous forests that covered these lands when European settlers arrived. Half-a-century of industrial logging has also had an impact on much of the forest in the central and near northern parts of the province. But north of an imaginary line at around 51 degrees latitude, Ontario's forests are still off-limits to logging and remain intact and mostly unchanged.

Ontario's forests are home to people and communities who use them for everything from recreation – including camping, cottaging, birding, and fishing – to hunting, plant gathering and firewood collecting. These forests also play a large economic role, supporting activities ranging from forestry to remote tourism. In 2001, the Ontario forest industry produced \$5.7 billion worth of wood products and \$11.1 billion worth of paper products, while also supporting hundreds of tourism operations, from fly-in fishing lodges to canoe outfitters.

We need to manage our forests carefully – protecting intact ecosystems and wildlife, preserving traditional lifestyles and livelihoods, and by balancing the public interest in public forests with resource activities like mining, hydroelectric power generation, logging and road building.

A citizen's right to be involved

With the vast bulk of our wild forest landscape in public hands, it is critical that members of the general public be able to express their views about the care and stewardship of some of the world's most important forest areas.

But while 90% of Ontario's lands and forests may still be in public hands, an equally high percentage of our most productive forestlands have been licensed to industry for logging. Ontario's operational forest zone, stretching roughly from just north of Peterborough to the

current cutting limit at 51 degrees latitude, has been divided into large Forest Management Units (FMUs). Although the Ontario Ministry of Natural Resources (OMNR) retains the ultimate authority over managing these lands, they have delegated responsibility over forest management to forest companies through Sustainable Forest Licences (SFLs).

There are 49 FMUs in Ontario, ranging in size from 1,718 to 20,163 square kilometres (see Appendix I). In Ontario, seven large forestry companies have been allocated close to three-quarters of the annual allowable cut (the amount of wood that can be harvested from public lands each year). One FMU continues to be directly controlled by the Ministry of Natural Resources and one (the French-Severn FMU) is held by a community-controlled co-operative, known as Westwind Forest Stewardship.

This system does not transfer ownership of the land or forests to companies. Rather, companies are given the right to cut trees in these licence areas if they agree to take on the responsibility of developing Forest Management Plans (FMPs), follow government regulations and policies and properly undertake logging and regeneration activities. In return for access to public lands, companies pay the Crown (the government of Ontario on behalf of the people of Ontario) a tax, or stumpage charge based on the volume and value of the wood they harvest.

Many citizens may believe that it is up to government or industry to decide how to manage

licence areas, but, in fact, the public has a right to help shape forest management plans and to have their concerns about forests and wildlife addressed. For example, companies developing forest management plans must hold public open houses and consider submissions from the public and interest groups when developing their FMPs. As well, companies operating in each licence area must also consult with a Local Citizens Committee (LCC) made up of members representing the general public and interest groups in the region.

But while there are clear requirements for public participation in forest management planning, many obstacles remain. The technical nature of the planning process can make it difficult for citizens to understand and comment effectively, while requirements for companies to act on public submissions are weak or non-existent. Other hurdles include the difficulty of gathering information about forest resources and

companies' operational performance and the time and effort required to analyze large and complex planning documents.

We hope this Citizen's Guide will help to reduce some of these barriers.

Conservation has an important place

Forest management planning, done properly, is about much more than what trees to cut when and where. In fact, it is really about protecting forest systems and species to ensure that healthy and diverse forests continue to cover our vast public lands.

In the 1990s, Ontario and many other jurisdictions underwent a shift toward what is called "Sustainable Forest Management". The premise of Sustainable Forest Management is to take a more holistic approach to forest management planning and to plan for how to maintain healthy forest ecosystems rather than to meet specific harvest levels. At its best, this approach looks first at the forest values that must be protected – such as old-growth areas, caribou calving grounds, wildlife corridors or areas around waterways – and then determines how much wood can be harvested without endangering these qualities.

In Ontario, the shift toward this new approach began with the Class Environmental Assessment for Timber Management, which set out 115 terms and conditions for forest management on public lands

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starting in 1994. In 1995 the *Crown Forest Sustainability Act* (CFSA) also came into effect and increased the emphasis on planning for species, ecosystems and other forest values in addition to timber. The CFSA is implemented through a collection of manuals and guidelines that lay out forestry regulations and procedures.

In 1999, Ontario crossed another important threshold in its efforts to make forestry more ecologically sustainable. The signing of the Ontario Forest Accord by government, industry and conservation group representatives triggered a number of important landscape and policy changes. The most obvious of these was the creation of 378 new provincial parks and conservation reserves covering roughly 2.4 million hectares of public land.

But the Accord also included many other lower profile but equally important undertakings, including a commitment to streamline the forest-management planning guides and regulations created under the CFSA, a plan for mitigating wood-supply impacts on industry from the creation of the new protected areas and the creation of a trust fund (the Living Legacy Trust) to fund further research around sustainable forestry and land-use planning issues.

One of the most important commitments in the Forest Accord is to use future increases in wood supply to address both the needs of industry and the need to continue to expand our protected-areas system. This process, now called Room to Grow, sets an international precedent for balancing industrial and ecological needs when planning for our forests.

Forest management planning

What's a Forest Management Plan?

A Forest Management Plan (FMP) is the sustainable forest licence (SFL) holder's plan for the forest. (SFLs are usually controlled by large forest companies or groups of large forest companies.) It defines objectives for the forest, a desired future forest condition, and strategies for achieving these outcomes. It also describes the balance of benefits that are to be derived from the forest, including wood supply, wildlife habitat, tourism, recreational opportunities, etc.

Forest management planning, done properly, is about much more than what trees to cut when and where. In fact it is really about protecting forest systems and species to ensure that healthy and diverse forests continue to cover our vast public lands.

A FMP is a huge document and it's a huge task to create one, usually taking more than two years. The *Forest Management Planning Manual* (FMPM) outlines the process that companies have to follow in developing the plan. It also dictates the type of information that has to go into each FMP, so they all look pretty much the same. The content of FMPs, however, can vary greatly from one Forest Management Unit (FMU) to the other.

The process of writing a FMP starts very broadly and then gets very specific. It begins by updating the inventory of the forest, collecting information such as the location of important wildlife habitat, current tourism activities and the success of past logging and regeneration. Then objectives are set. The objectives can relate to any number of aspects of what is desired from the forest, from wood supply to old-growth areas and wildlife habitat.

After setting objectives, a strategy is developed to meet the objectives. This is done using computer models that predict the forest condition for different levels of logging and silviculture (replanting, tending of regenerating areas, etc.). The management strategy dictates the level of harvest that will be allowed.

Once the harvest level is arrived at, specific locations for cutting are identified and prescriptions for the forestry operations are developed – what kind of logging, what kind of regeneration after logging, etc. There are also prescriptions developed for how to protect sensitive values like nest sites, calving areas or waterways from the impacts of logging.

All of these decisions are governed by rules laid out by OMNR, including several forest management guides that restrict logging activities in order to protect wildlife habitat and other environmental values.

What are the rules?

The *Crown Forestry Sustainability Act* is the primary piece of legislation that guides all forest management on public lands in Ontario. Specific directions for planning and operations are laid out in four main manuals:

- 1) the *Forest Management Planning Manual* (FMPM) (1996) (2004 new)
- 2) the *Forest Information Manual* (FIM) (2001)
- 3) the *Forest Operations and Silvicultural Manual* (1995)
- 4) the *Scaling Manual* (2001).

PHASE I STAGES

Highlights of what happens while the planning team is organizing for planning:

- The planning team is created.
- Background information is collected.
- Draft maps showing different values of the forest are created (cabins, eagle's nests, portages, etc.)

After organizing for planning, OMNR will issue a public invitation to participate in developing the FMP. This is called the Stage 1 Public Consultation. At this stage, you should provide background information (Where's the portage trail? Where's the trapper's cabin?) and start providing input on the long-term management direction.

Highlights of what happens while the planning team is developing a long-term management direction:

- Changes are made to the background information and values maps based on public input.
- The desired future forest condition is identified – what should the forest look like in a hundred years? What mix of benefits do you want to see?
- Objectives, indicators and targets for the FMP are developed. These objectives are supposed to provide the overall direction to the FMP. How much wildlife habitat should there be? How much old growth? How much wood is needed for local mills?
- Management strategies to achieve the objectives are developed.
- Approaches to protecting and/or maintaining habitat for species like caribou, marten and pileated woodpecker are developed.
- Computer models are used to predict the outcome of potential management strategies and assess each one for sustainability before a strategy is chosen.
- Possible locations of new permanent roads are identified.
- Areas available for logging are identified.

After developing a long-term management direction, OMNR will issue a public invitation to review the proposed long-term management direction. This is called Stage 2 Public Consultation. At this stage, you should start providing input on operational planning (e.g., road and cutblock locations) and seek formal issue resolution for topics you have been unable to resolve in discussions with the company. See How-To section.

Highlights of what happens while the planning team is planning proposed operations:

- Changes are made to the long-term management direction based on public input.
- Areas for operations are chosen – which areas will be logged or planted or treated with herbicides or brush cutting?
- Prescriptions (method, amount, species) for logging are developed, including prescriptions in Areas of Concern (AOCs).
- Strategies for road use and management are developed and documented.

After the planning of proposed operations, OMNR will issue a public invitation to review the proposed operations. This is called Stage 3 Public Consultation. At this stage, you should continue to comment on the long-term management direction and provide comments on proposed operations. Seek formal issue resolution for topics you have been unable to resolve in discussions with the company.

Highlights of what happens during preparation, submission and review of the draft FMP:

- Changes to planned operations and prescriptions are made based on public input.
- The draft plan is prepared.
- The draft plan is reviewed by OMNR and the LCC.
- OMNR provides the plan author with a list of required changes.

After the draft FMP is prepared, OMNR will provide a public opportunity to review the draft plan. This is called Stage 4 Public Consultation. At this stage, you should continue to comment on long-term management direction and planning for operations. Seek formal issue resolution for topics you have been unable to resolve in discussions with the company.

How long is the plan good for?

Although they are called 20-year plans, FMPs are actually rewritten more frequently. They used to be rewritten every five years, but the new 2004 FMPM changed the planning cycle from five to 10 years. That means that starting with 2007 plans, a new plan will be written every 10 years. The new 10-year plans are written in two phases.

In Phase I, the long-term management direction for the 10-year period is decided upon and the logging areas are chosen according to the stages described above for the first five-year period.

In Phase II, logging areas are chosen and operations are prescribed for the second five-year period. The long-term management direction may also be changed if the plan author believes that is necessary.

Highlights of what happens during revision and approval of the FMP:

- Final changes are made to the draft FMP.
- FMP is approved by OMNR.

After finalizing the FMP, OMNR will provide a public opportunity to inspect the approved FMP. This is called Stage 5 Public Consultation. If there are any issues you have not been able to resolve through formal issue resolution, you should request an individual environmental assessment (EA) of the FMP to further consider these issues. (Requests for individual EAs are rarely granted, but will bring attention to your outstanding concerns.)

PHASE II STAGES: Phase II of 10-year plans

Highlights of what happens while the planning team is planning proposed operations:

- The three-year annual report is written by a professional forester. This report reviews the past year of operations and also recommends whether or not the long-term management direction developed during Phase I can remain the same, requires changes or needs to be replaced.
- Background information for the FMU is updated.
- Logging areas proposed in Phase I are confirmed or adjusted.
- Road locations proposed in Phase I are confirmed or adjusted.
- If necessary, new prescriptions for logging, including prescriptions in Areas of Concern (AOCs), are developed.

After planning of proposed operations for the second five-year term, OMNR will invite the public to review the proposed operations. This is called Stage 1 Public Consultation for Phase II. During this stage, you should comment on proposed operations and seek formal issue resolution for issues you have been unable to resolve in discussions with the company.

Highlights of what happens during preparation, submission and review of the draft proposed operations:

- Changes are made to planned operations and prescriptions based on public input.
- The draft plan is prepared.
- The draft plan is reviewed by OMNR and the LCC.
- OMNR provides a list of required changes.

After the draft FMP is prepared, OMNR will provide a public opportunity to review the draft plan. This is called Stage 2 Public Consultation for Phase II. During this stage, you should continue to comment on proposed operations and seek formal issue resolution for issues you have been unable to resolve in discussions with the company.

Highlights of what happens during revision and approval of the FMP:

- Final changes are made to the draft FMP.
- FMP is approved by OMNR.

After finalizing the FMP, OMNR will provide a public opportunity to inspect the approved FMP. This is called Stage 3 Public Consultation for Phase II. If there are any issues you have not been able to resolve through formal issue resolution, you should request an individual environmental assessment of the FMP to further consider these issues.

You will mainly be concerned with obtaining and using a copy of the *Forest Management Planning Manual*. It is the main rulebook for writing a forest plan. This document is in the process of being revised and updated and certain aspects of the new manual will be phased in over the next few years. The 1996 FMPM will be used for all plans earlier than 2007. All 2007 plans and beyond will use the new FMPM.

The FMPM describes how planning should be organized; the actual planning process; the required contents of a plan; the opportunities for public consultation; and the processes for plan review and approval.

The various guidelines that must be considered for developing and applying forest management plans are catalogued in the *Forest Operations and Silviculture Manual*. These guidelines give instructions on the proper methods of conducting forest operations, including silviculture approaches, road construction, the protection of habitat for wildlife and fish and protecting cultural heritage sites.

The complete set of forest management guidelines is listed on OMNR's website, along with other useful publications at ontariosforests.mnr.gov.on.ca/publications.cfm. You can obtain copies of most of the guidelines on this site. The Advice Fact Sheets in this Citizen's Guide will also tell you what some of the key rules are in the various guidelines.

Who writes the plan?

According to the law, OMNR or an organization authorized by the OMNR may write an FMP. In practice, the company that holds the Sustainable Forest Licence (SFL) for the management unit is usually responsible for preparing the plans. The plan will be prepared by the plan author, who must be a registered professional forester. The plan author is usually a company employee. A planning team guides the development of the plan. The planning team is made up of foresters, biologists, parks specialists and other natural resource personnel from OMNR or the forest industry or a combination of both. A member of the Local Citizens Committee (LCC) may also be a planning team member.

The planning team doesn't do all the work. Usually task teams are set up to do background analyses and suggest decisions. Task teams could be created to deal with specific considerations, such as habitat protection for caribou or marten, road planning, identifying tourism values, etc.

The OMNR local district manager and the OMNR regional manager must both approve the plan once it is complete.



Who can provide input to the plan?

Anyone can provide input to the FMP. OMNR provides a formal public consultation process, but that does not limit you. You can have direct dealings with any member of the planning team, the plan author or OMNR staff at any time to express your views, comments and recommendations.

When should you provide input to the plan?

The FMP develops through several stages. It's best to give your input when the planning team is considering the topics that interest you. Earlier is better. Our Advice Fact Sheets advise you when to make specific input. The fact sheets refer to three stages:

"Organizing for planning," "Developing long-term management direction" and "Planning of proposed operations." The two final steps in the development of a plan are writing the draft FMP and finalizing the FMP. OMNR issues public notices calling on people to provide input to the FMP during each of these stages.

The stages of FMP development and the stages of public consultation are summarized on pages 148-178 of the 1996 FMPM and pages 101-142 of the new FMPM. A schedule for the planning process for each FMPM is in Appendix II.

Computer models in forest management planning

A model is a simplified version of reality. Computer models use real-world data and the best guesses of experts to construct a virtual world whose characteristics can be depicted in graphs or charts, on maps or, in more sophisticated models, in three-dimensional landscape images.

Computer models are used for complex calculations involving lots of highly variable information,



large geographic areas and long timelines. They enable managers to create approximations of real-world situations that are outside of our ability to measure on the ground, either because they are too complex, too large (like extensive forest areas) or too distant in the future. These models can be used to conduct virtual experimental studies on forests and can produce results within minutes or hours instead of months or years.

A forest manager can then evaluate several different scenarios of natural and human-caused changes to the forest based on how models forecast the forest's response. In this way, models can be used to better understand biological systems like forests and can provide guidance in making management decisions. **However, the results of models should be treated with caution and are not a substitute for real-world verification through proper monitoring, reporting and controlled experiments.** Computer models are only as good as the data that is entered. Often this data is flawed, limited or unavailable. Even with the best data, the real world is too complicated and unpredictable to be forecast with accuracy.

Common computer models used in forest management planning in Ontario include SFMM, SEIM, NDPEG Tool, Marten Analyst, RHESS, PWPHSM and other models used for wildlife habitat (such as OWHAM).

SFMM is the Strategic Forest Management Model. It allows large areas of forest to be studied through time to predict future wood supplies, habitat amounts and general changes to the forest as a result of both natural and human forces. Results from SFMM can be used together with other models to define areas of harvest on a map and to create summary reports of different management scenarios (alternatives). The ultimate purpose of SFMM is to allow managers to predict long-term changes and assess the long-term sustainability of forest management practices.

SEIM is the Socio-Economic Impact Model. It is a computer program that helps determine the economic, social and environmental impacts of different forest-use scenarios.

NDPEG Tool (also called "Gilligan") is the computer model that is used to implement the Natural Disturbance Pattern Emulation Guidelines. These guidelines call for forest logging practices to mimic the amount, shape and distribution of disturbances that fire would create across the landscape. The program gets its nickname from the classic '60s TV show "Gilligan's Island" because it is used to map out "islands" and peninsulas of uncut forest within areas to be clearcut in order to emulate the way that fire or windstorms might disturb the forest.

Marten Analyst is a model that is used to help implement the marten guidelines. It helps planners decide the size, arrangement and distribution of marten core habitat areas on the landscape, based on habitat quality and quantity.

RHESS is the Regional Hydro Ecological Simulation System. RHESS measures two indicators of landscape processes. It is used to determine the carbon balance (how much carbon from carbon dioxide is taken in by the forest in photosynthesis minus how much is given off in respiration and decay). This is a measure of how productive the forest is. RHESS also measures how water flow is impacted by the amount of area clearcut.

PWPHSM or the Pileated Woodpecker Habitat Supply Model is derived from the Ontario Wildlife Habitat Analysis Model (OWHAM). It is used in conjunction with SFMM. SFMM can predict total amounts of habitat on the forest unit over time, but cannot assign any particular area to be preserved as useful wildlife habitat. PWPHSM can help figure out how big areas of habitat need to be, where they can be located and how close they should be to each other in order to provide sufficient woodpecker habitat. OWHAM is also used to determine the areas needed for other forest wildlife.

All these models are used while developing the long-term management direction of the FMP.



Aboriginal involvement in forest management planning

A separate, parallel consultation process is provided for Aboriginal peoples by the FMPM. It is summarized in Section 3 (pages 148-178) of the 1996 FMPM and Section 4 (pages 143-153) of the new FMPM.

The new FMPM directs OMNR and the planning team to develop a tailored consultation approach with each First Nation community. However, it also allows the use of OMNR's standard process if no agreement is reached.

It is widely felt among Aboriginal organizations and First Nations communities that OMNR's system of forest management and consultation is woefully inadequate and a violation of Ontario's obligations to First Nations.

Comments made in 2003 on OMNR's draft new FMPM by four Aboriginal organizations (Ontario Aboriginal Forestry Coalition; Nishnawbe Aski Nation; Sagamok Anishnabek; Mitigaawaaki Forestry Marketing Co-operative) describe this perspective. To give you a sense of what the issues are, we have summarized a number of the key points made in these submissions.

- Forest management in Ontario is a violation of Aboriginal rights and Treaty rights. Despite the fact that forest management planning and logging has a direct impact on Treaty-protected activities such as hunting, trapping, fishing and gathering, OMNR routinely and systematically excludes discussion of Aboriginal and Treaty rights from forest management planning and consultation. Ontario does this in contradiction of the constitutional duty to "recognize and affirm existing Aboriginal and treaty rights."
- For over a decade OMNR has ignored and evaded its legal obligation to create "more

equal participation of Aboriginal Peoples in the benefits provided through timber management planning." This was originally condition # 77 of the Environmental Assessment Board's 1994 Class Environmental Assessment for Timber Management on Crown Lands in Ontario (Timber Class EA). Although this condition has been upheld through the renewal of this EA in 2003, OMNR refuses to incorporate its requirements into the FMPM.

- OMNR does not provide funding to support meaningful consultation with Aboriginal communities. Meaningful consultation is one of the duties of the province in recognition of Aboriginal and Treaty rights.
- The ability to proceed with the standard OMNR native consultation approach in the absence of agreement to a community-tailored approach does not give communities enough leverage to negotiate their preferred consultation process.

Although some of the advice given in this guide will likely be useful, the Wildlands League is not in a position to give specific advice on how to address the concerns or aspirations of Aboriginal peoples in forest management planning. If you are looking for advice on how to address concerns related to Aboriginal values, rights or Treaty rights, the following organizations have expertise in this area:

Grand Council of Treaty 3 (www.treaty3.ca)
 Nishnawbe Aski Nation (www.nan.on.ca)
 North Shore Tribal Council (www.mamaweswen.ca)
 National Aboriginal Forestry Association
 (www.nafaforestry.org)
 Ontario Aboriginal Forestry Coalition
 (www.theoafc.com)
 Union of Ontario Indians
 (www.anishinabek.ca/uoii)

How-To

This section gives you practical advice on how to get involved in the forest management planning process and tips on how to influence decisions effectively.



GETTING DOWN TO BUSINESS

Getting information

General information

The complete set of forest management guidelines is listed on OMNR's website, along with other useful publications at ontariosforests.mnr.gov.on.ca/publications.cfm. You can obtain a copy of most guidelines on this site. You can find out about specific guidelines in the Advice Fact Sheets of this guide.

For a list of OMNR local and regional offices go to www.mnr.gov.on.ca/MNR/csb/message/mnrroffices.html

In response to requests to make their products more accessible, the Ministry of Natural Resources has recently developed a good online store at mnr.stores.gov.on.ca/mnr

For up-to-the-minute information about Ontario's laws, check www.e-laws.gov.on.ca. This website makes Ontario's source law available within two

business days of a change in the law and provides consolidated law up to date within 10 business days of a change in the law.

Getting notified about the plan

Sign up for information

The OMNR routinely sends out notices to let interested people know about public consultation opportunities as they are coming up. Contact the local OMNR district office (see web link above for office addresses) and let them know that you want to be on the mailing list. You'll have to specify the Forest Management Units (FMU) you're interested in (see the map in Appendix 1).

Check the local newspapers

If you live near the FMU you're interested in, you may also see advertisements for public consultation opportunities in the local paper.

Check the Internet

In addition to sending out notices and placing advertisements in local newspapers, the OMNR will also post announcements on the Environmental Registry. The *Environmental Bill of Rights* requires government ministries to post proposals on this registry that might affect the environment. These are often called “EBR postings.” Do a search for the name of the Forest Management Unit you are interested in at www.ene.gov.on.ca/samples/search/Ebrquery_REG.htm

Getting your hands on approved plans

Looking at approved plans

Approved FMPs are available in several locations:

- in the local OMNR district office
- in the regional OMNR office (Thunder Bay, South Porcupine or Peterborough)
- in the Natural Resources Information Centre in downtown Toronto, located in the MacDonald Block Government Building at 900 Bay Street (at Wellesley), Room M1-72.

You are entitled to view the entire plan in each of these offices. Some companies are moving towards posting parts of their FMP on the Internet. Do an Internet search to see if you can find the plan you’re interested in or visit the company’s website and see whether there’s a link to the plan.

Ask at the local OMNR office or at the local company office if you can have a digital copy of the FMP on CD.

Reading a Forest Management Plan

FMPs are really big, consisting of several binders and maps. One binder will be the main text of the FMP and will tell you where to find all the other information that you’re looking for. The table of contents is quite good and will help you locate what you want. (The table of contents of every FMP is pretty much the same because the basic requirements for it are laid out in the *Forest Management Planning Manual*.)

Copying information from approved plans

No matter which office you visit to see the FMP, you can ask the staff to copy the parts you’re interested in. A word of caution: you will likely be charged for the copies. In the Toronto office, this can be quite expensive as the office has only a colour copier and charges more than \$1 per page. If you have a portable scanner, you could bring it to the office instead.

Tracking the FMP

Get the minutes of planning team meetings

The planning team meets often throughout the development of the FMP (often more than once a week). Ask the local OMNR office to send you the minutes of the planning team meetings. This will give you an inside perspective on what’s going on and what’s being discussed. You can also ask to see the minutes of the task teams – the small groups of people appointed by the planning team to do individual tasks (like developing options for road locations or setting biodiversity objectives).

Get the minutes of the Local Citizens Committee meetings

The Local Citizens Committee (LCC) is usually fairly active while the FMP is being developed. Ask to see the minutes of these meetings so you can see what information is being presented to the LCC and what their concerns and objectives are.

Follow decisions as they are being made

Long before the draft FMP is posted, you can find out what the planning team is considering. In response to OMNR’s notices of public participation opportunities, you should go check out the information that is on display. This will often include maps of values in the forests, maps of proposed logging areas, proposed decisions regarding the long-term management direction, objectives, harvest levels, etc. You can also get this information by contacting the plan author directly.

Get copies of maps

OMNR or the local company are both able to print maps for you, although they may decide to charge you for the service. You can also ask for a digital copy of the map – preferably a .jpg or a .tif file. These formats are good for use on a computer and can be printed out when needed, but cannot be used for actual computer analysis (e.g., calculating habitat quantities, etc.). As well, OMNR can be somewhat reluctant to provide digital information and often view it quite differently than paper-based information.

Look at a copy of the draft FMP

Copies of the draft FMP are available in all the same offices as the approved FMP. (OMNR will issue a public consultation notice when the draft FMP is ready.)



Look at OMNR's list of required alterations to the draft FMP

By the time the draft FMP is released for public comment, OMNR has already reviewed it and provided the author with a list of all the changes that it believes are required. This can be very useful reading, if you can get past its technical nature, and can tell you where some of the big problems are with the FMP. A copy of this list should be available for you to review when you look at the draft FMP. Copy anything that you find important or useful.

Doing your own analyses

[EXPERT] This advice is for readers with some biology or forestry knowledge and who also know how to run computer models and GIS applications. If this doesn't apply to you, you can still try to do this stuff, but it will be a steep learning curve!

Getting the raw data

To undertake an independent analysis using the raw Forest Resource Inventory (FRI) for the forest management unit, ask for a copy of the digital planning cover or planning inventory.

The *Forest Information Manual* (FIM) states that "The public will normally be provided access to ALL information and information products prescribed by the FIM unless otherwise determined by the Minister ...". However, it goes on to say that "the Minister may determine the conditions by which access to information is provided, may prescribe fees for providing information products...and

may determine how the information products may be used by third parties."

All this makes it more difficult and potentially more costly to get and use the raw data needed to do independent analyses. The OMNR maintains that the price for digital data is \$16 per megabyte of information. That would mean a cost of a few thousand dollars for the average FMU – prohibitively expensive and unreasonable.

If you work for a charitable or non-profit organization or don't have a lot of money, ask OMNR for a discount. Alternatively, go straight to the company that holds the forest licence. They may just give it to you for free. After all, all that is really involved is the copying of the information onto a CD. You can also request the data through the *Freedom of Information and Privacy Act*.

Getting computer models

You can do some valuable analyses of the FMU with GIS software: How much old-growth forest is there? How many kilometres of roads? Where has the last 20 years of logging happened?

More in-depth analysis will require additional computer models. You can get SFMM and most of the complementary models that are used to do wildlife habitat analysis at the SFMMstuff website www.sfmmstuff.com. You'll need a login name and password that you can request by emailing Webmaster@sfmmstuff.com. Be warned: Some of these models require a powerful computer to run. You'll also need to purchase a licence to use them and a key that sticks in the USB or serial port of your computer that allows you to run them.

Attend training sessions

The OMNR offers training sessions on the use of SFMM and the other computer models. These are primarily meant for OMNR staff, but they are often open to letting other people into the courses as well. A training course schedule is posted on the SFMMstuff website.

Get more background information

There are several sources of background information that can help you identify issues of concern for the FMP being developed.

Read the current FMP

New FMPs are written while the current FMP is being implemented. Look at the current FMP to get some context for the new one. These approved FMPs are available at OMNR offices as described earlier. You can use the Compliance Checklists in this document to see if forest management rules are being followed.

Read the *Report of Past Forest Operations* (RPFO)

Prepared for every FMP, the RPFO contains a lot of useful information about what happened during the execution of the last FMP. You can get a copy of the RPFO from Part C, Chapter 4 of the existing FMP.

Read the *Independent Forest Audit* (IFA)

An IFA is done for every FMU every five years. The auditors are independent from both OMNR and the companies and will often uncover problems with forest management. The auditors recommend whether or not to renew the Sustainable Forest Licence with the company in charge.

IFAs have to be tabled in the provincial legislature and this often results in delays for their release to the public. Ask the district manager for a copy of the most recent IFA. Check to see if the new FMP follows the recommendations made in the audit. For FMPs written after April 1, 2007, the recommendations from IFAs and any action taken to address them must be identified in Part E, Section 4.5.

Air photos

Air photos can be useful if you are interested in a specific area within the FMU.

At the time of writing, OMNR did not offer an

air photo service through their website, but plans were in the works for a new online service. Photographic images for most FMUs usually correspond with when the Forest Resource Inventory (FRI) data was collected.

These air photos can be purchased from the OMNR's Natural Resources Information Centre by calling 1-800-667-1940. You will need specific details of what you are looking for, such as the township, lot, and concession. When this information is not available, talk directly with office staff to determine the required photo area based on geographic features such as large lakes. All photo requests must be in writing and can be faxed to 705-755-1677. Air photos are \$8.50 each for most recent coverage and \$17 each for archival photos. Historic photos can be extremely useful for documenting tree species conversion (changes in the forest-species makeup due to past logging operations).

You'll have to decide on the level of involvement you want in trying to influence forest management planning decisions. You can get involved in just a single specific issue or you could dedicate nearly all of your time to engaging this complex process.

Freedom of Information Act (FOI) requests

The *Freedom of Information and Protection of Privacy Act* allows you to access public information. While this is often an effective way to gain access to information held by the government, it is generally used only as a method of last resort. FOI requests normally require a significant amount of time for processing and there is an associated fee structure for various types of requested information. Only do this if you've been unable to get the information you require in some other way, or if you can't get it for a reasonable price. More details and application forms for using the FOI to access information are available at the Information and Privacy Commissioner website at www.ipc.on.ca

Getting involved

You'll have to decide on the level of involvement you want in trying to influence forest management planning decisions. You can get involved in just a single specific issue or you could dedicate nearly all of your time to engaging this complex process.

Join a Local Citizens Committee (LCC)

LCCs are committees that are set up to communicate local interests to the planning team. They may

be established as advisory committees for a particular FMU or as a district committee that looks at all FMUs in a given OMNR district.

Membership on the LCC is meant to represent a range of interests (e.g., forest industry, trappers, tourism, environmental, Aboriginal). The complete list of interests that are supposed to be represented on an LCC is on page A-103 of the FMPM (page A-145 of the 1996 FMPM). You can try to join the LCC if seats are available. LCC members are appointed by the OMNR district manager based on nominations provided by local interest groups. OMNR should be able to provide you with a list of all advisory members on the committee and their affiliations, if any.

It is important to know that LCCs are only “advisory” in nature and any final decisions about a plan are made by the company and OMNR staff. However, LCCs also have an opportunity to appoint a representative to serve directly on the planning team. LCC members are also welcome to attend planning team meetings as “observers.”

Attending Local Citizens Committee meetings

The LCC can be an effective venue for expressing any concerns or objectives you have for the FMP. You may find allies on the LCC who can help you achieve your goals. By contacting the LCC chairperson, you can also request an opportunity to make a presentation directly to the LCC.

SIGN UP FOR INFORMATION

The OMNR routinely sends out notices to let interested people know about public consultation opportunities as they are coming up. Contact the local OMNR district office and let them know that you want to be on the mailing list. You'll have to specify the forest management units you're interested in (see the map in Appendix 1).

Frequently, many LCC “seats” remain vacant or temporarily unfilled. This is particularly noticeable when it comes to Native representatives and representatives of environmental groups. Reasons for these empty seats will vary across jurisdictions: Some individuals have expressed frustration with the extensive volunteer time commitments required, while others have cited disillusionment with the process and/or the disproportionate representation of economic interests on the committees.

Despite these shortcomings, LCCs remain a good forum that should be considered for raising your specific issue(s) when needed.

Responding to OMNR's formal consultation opportunities

Responding to the several stages of formal public consultation provided by OMNR will give you good access to information about how the FMP is developing. You should also make an effort to attend open houses to view materials. At several stages, you will also have an opportunity to make formal comments. You should always do so because a formal record of your thoughts and suggestions will be valuable to refer to later if you are unhappy with aspects of the plan.

Resource Stewardship Agreements (RSAs)

If you own or operate a registered tourism establishment, you can enter into an RSA with the SFL holder.

RSAs are voluntary business-to-business agreements negotiated between the two parties. In an RSA, the two businesses discuss their respective values and concerns and agree on certain things like tourism values, forest management prescriptions and road-use management strategies. These agreements then form part of the input into the development of the FMP.

The Memorandum of Understanding (MOU) between the tourism industry and the forest industry that led to the concept of RSAs, entitled *Tourism and Forest Industry Memorandum of Understanding*, is available at ontariosforests.mnr.gov.on.ca/publications.cfm. A guide to the development of RSAs (*Guide to Resource Stewardship Agreements*) is also available at the same web address.

If you have additional questions about the RSA process, please contact Jim Antler, RSA Coordinator, Ministry of Tourism, at 1-800-462-9906, (705) 494-4159 or email james.antler@mczcr.gov.on.ca

Meeting with the plan author/ planning team

Don't settle for just attending the official public consultation events. If you have the time and energy, correspond with and meet the plan author and the planning team directly. This will bring a higher profile to your concerns and also create a better opportunity for discussion and issue resolution.



Getting noticed

Call, write and meet often

The more profile you bring to your concerns, the more likely you are to succeed in getting them addressed. Be sure to follow up on all of your discussions to see whether your questions or proposals have been acted upon. The planning process is incredibly demanding and OMNR and company staff are very busy. You'll be forgotten if you aren't in touch regularly.

Put everything in writing

This is very important. EVERYTHING should be in writing. If you have a verbal meeting with someone, follow up with an email or letter to confirm what was said. This paper trail will be very important to demonstrate agreements that have been reached and also to document your responses and concerns. Such documentation is especially important if you later request formal issue resolution or a full environmental assessment of the FMP.

Meet with both OMNR and the company

Both the OMNR and the SFL holder are involved in writing the plan. OMNR's public invitation to participate will list the planning team members and the

roles of various other staff that are supporting the FMP's development. Meet with everyone who you think might help you.

Make presentations

Ask to make formal presentations to both the LCC and the planning team. Again, the more attention you draw to yourself and your concerns, the more successful you may be.

Build support for your position

Find other people or groups who share your views – you'll be thankful to have help in trying to get these views reflected in the FMP. Also, the bigger the constituency you have supporting your position, the more likely you are to be successful.

Getting results

You should know from the start that getting results can be VERY difficult. In the end, you may feel that your concerns have not been heard in this lengthy and complex process, but if you believe strongly in your cause, it's worth the effort. If you are smart and resourceful in engaging the process and make a dedicated effort, you'll probably enjoy at least partial success.



Know the rules

Nothing increases your likelihood of success more than having a good understanding of the rules. Carefully reading the Advice Fact Sheets in this guide will give you a great start. If you have the inclination, you can also go right to the source and read OMNR's forest management guidelines themselves. Knowledge is power.

Ask lots of questions

Always ask questions. You'll be surprised what you learn. Also, if you are submitting formal comments to the planning team or OMNR, including numbered questions is the surest way to make sure you get a response.

Be bold

It's public land! Forest management in Ontario is governed by the *Crown Forest Sustainability Act*! The forest industry's timber objectives are only one factor. Your concerns are valid and worthy of consideration. Know this and stand up for what you believe is right. Companies are increasingly sensitive to the public perspective.

Be persistent

Don't underestimate the power of persistence. Many people will go away after one or two tries and their concerns will not get addressed. Stay at it and don't lose hope. If your issue is important, stick it out and explore every possible avenue until you get a meaningful resolution.

Ask for help

Ask your friends or people who share your views for help. Ask us or other non-governmental organizations that represent your interest for assistance or advice.

Pursue issue resolution

There is a formal process to deal with issues that have not been resolved through discussion with the planning team, which is explained well on page A-134 of the FMPM (page 175 of the 1996 FMPM). There are several steps in this process culminating in a final decision by the OMNR regional manager. The step

before this is issue resolution with the local district manager. Try to get the issue resolved at this step if you can – we've found that regional managers are often reluctant to overrule their colleagues in the districts.

Ask for a full environmental assessment

This is the last opportunity for you to fix the problem within the system. If issue resolution goes against you, you can ask for the whole FMP to be subject to a full environmental assessment (EA).

You should know that the granting of a full environmental assessment virtually never happens. Despite hundreds of requests, only one request has ever been granted and that one wasn't completed because the issue was resolved outside of the process. But it is quite possible that in turning down the request, the Minister of the Environment could place conditions on the OMNR and the company requiring them to address your concern(s). This is what you should be aiming for. Write your request in a way that communicates clearly what the solution to the problem is.

If you do decide to pursue a full assessment, find out who is handling your request at the Assessment Branch of the Ministry of the Environment and convene a meeting to explain your concern. You should also meet with the staff of the Minister of the Environment and your local MPP to explain your concerns and your proposed solution.

The EA request procedure is described well on pages 141 of the FMPM (page 177 of the 1996 FMPM).

IT'S ALL IN THE PLANNING



ADVICE FACT SHEETS

This series of fact sheets explains the rules for protecting important forest values beyond just the production of wood. These other forest values, like wildlife habitat or clean water, are often referred to as non-timber values. These fact sheets can help you have a real impact during the forest management planning process by asking the right questions and pushing for attention for the right values. You don't have to tackle every area – pick out topics that you're interested in and check out the corresponding fact sheets.

You will find more detailed Compliance Checklists for these same topics in the next section. They tell you how to assess whether forest managers are following the rules described in the Advice Fact Sheets and whether they are doing their best to protect important non-timber values.

If you're interested in...

- ...setting the right priorities for forest management planning...see Advice Fact Sheet for Objectives and Indicators.
- ...protecting specific forest values or features you know about...see the Advice Fact Sheet for

Values Identification and the Advice Fact Sheet for Areas of Concern.

...the protection of shoreline or riparian forest habitat...see Advice Fact Sheet for Areas of Concern.

...the protection of nests or bird colonies...see Advice Fact Sheet for Areas of Concern.

...the impacts of roads on wilderness values or remote tourism...see the Advice Fact Sheet for Roads Planning and Access Restrictions.

...the impacts of roads on water quality...see the Advice Fact Sheet for Bridges and Culverts.

... habitat for wildlife species...see the Advice Fact Sheet for Caribou Habitat, Advice Fact Sheet for Marten Habitat and the Advice Fact Sheet for Pileated Woodpecker Habitat.

...maintaining old-growth forest...see the Advice Fact Sheet for Old-Growth Forests.

...lessening the impacts of clearcutting... see the Advice Fact Sheet for Tree Retention and the Advice Fact Sheet for Clearcut Size and Location.

...how sustainable the annual harvest is...see the Advice Fact Sheet for Harvest Levels.

VALUES IDENTIFICATION

This fact sheet describes the importance of identifying values within the forest management planning process, explains the types of values that need to be recorded on maps in the Forest Management Plan, and gives advice on what to ask for during forest management planning to ensure your values are recorded. For advice on protecting these values once they are identified, read the Advice Fact Sheet for Areas of Concern.

For advice on how to make effective comments during planning, read the How-To section of this guide.

To better understand the steps of the planning process, read the Forest Management Planning section of this guide.



Why is values identification important?

In forest management planning, “values” are specific forest features or sites that are important and require some protection from the impacts of logging. Values can be important fish lakes, trappers’ cabins, Aboriginal burial sites, canoe routes, etc.

Without an identification of values and where they are located, forestry activities could destroy or damage these important features. Identified values should get special consideration, which can lead to the modification of forest management operations (such as logging, road building or planting) that will occur near the site. Most often, an Area of Concern (AOC) will be established for the value and then a prescription will be written for how forestry activities will be modified in the AOC in order to protect the value (see Advice Fact Sheet for Areas of Concern for more information).

What are the rules?

Values and their location must be identified on a forest values map or series of maps, produced by OMNR. A list of the values commonly included in the values map(s) is found in Appendix V of the 2004 *Forest Management Planning Manual* (Appendix II of the 1996 FMPM) and is reproduced here on the next page. The requirements for values maps are described in Part A, Sections 1.4.4 of the 1996 FMPM, Part A, Section 1.1.7.7 of the 2004 FMPM and Part B, Section 4.0 of the *Forest Information Manual*.

Early in the planning process, the planning team must identify the values in the forest. The OMNR and the company will know where a lot of these values are already. But a key step in this process is getting additional information from the public about things that are valued on the landscape that may not have been identified by OMNR or the forest industry. It is very important that you let the planning team know what you value in the forest so that it can be added to the values map.

Natural resource features such as:**Fisheries**

- major fish communities by lake/stream
- bait fish lakes
- spawning areas
- nursery areas
- migration areas
- headwater lakes and streams
- food supply areas

Wildlife

- moose concentration areas (early & late winter)
- moose aquatic feeding areas
- mineral licks
- calving sites
- deer wintering areas (yards)
- raptor nests (e.g., eagles, ospreys, red-shouldered hawks, Cooper's hawks)
- heronries
- waterfowl nesting areas
- important habitats of vulnerable, threatened and endangered species *
- caribou migration routes
- caribou calving/high summer use areas
- caribou wintering areas

Forests

- tree improvement areas *
- seed orchards *
- seed collection areas
- genetic test areas *
- research plots (e.g., growth and yield plots) *

Forest resources uses/values such as:**Tourism establishments**

- main base lodges
- outpost camps
- commercial boat caches
- potential tourism areas

Cottaging/residential sites or areas

- existing development
- remote cottage sites
- proposed development (from lakeshore management plans)

Mineral/aggregate/quarry developments

- pit or quarry permits or licences
- active mining claims

Commercial fur

- registered trapline areas
- trappers' cabins

Crown land recreation

- access points
- canoe routes
- portage trails
- hiking/nature trails
- snowmobile trails
- cross-country ski trails
- approved boat caches
- land-use permit hunt camps

Bear management areas**Wild rice production areas****Existing and planned infrastructure features such as:**

- roads and railways
- utilities (pipelines, hydro lines)
- waste and sewage disposal sites
- airports/airstrips
- communications towers
- logging camps
- mills
- potable water supply sources, including sites on lakes, rivers and streams identified by any person as being used for water supplies

Cultural heritage sites and features*, such as:

- archaeological sites and resources
- cemeteries/burial grounds, including Aboriginal peoples' cemeteries
- areas of archaeological potential
- built heritage resources
- traditional use sites
- cultural heritage landscapes

Other special land uses of local significance as identified by any person, such as:

- areas of significance to local communities such as areas used for traditional or recreational activities
- reserves and other Aboriginal communities
- areas that have been identified as being required as reserve lands or for economic or capital development projects
- areas of Natural and Scientific Interest
- evaluated wetlands and evaluated wetland complexes
- registered trapline areas
- areas used for fuel wood or building materials
- sites of local archaeological, historical, religious and cultural heritage significance, including Aboriginal graveyards, spirit sites and burial sites *
- medicinal plants
- significant ecological area (e.g., significant woodland, significant flora)

Exclusions from the land base of the management unit, including:

- federal lands (e.g., Indian reserves, Department of National Defence bases, national parks)
- provincial parks, conservation reserves and approved provincial park candidates
- Crown land leases (e.g., land-use permits, licenses of occupation)
- patented lands
- cemeteries/burial grounds, including Aboriginal cemeteries and burial grounds *
- Areas of Natural and Scientific Interest that have been designated as exclusions from the management unit

*Note: "Publicizing the location of certain values[asterisk] may be detrimental to conservation, in which case information would not normally be shown on the values map(s)". (OMNR 2003)

The maps must also show sites that contain old-growth red and white pine.

Values maps must be provided at both the operational and composite scale. Operational (small scale) maps provide details about forest operations in relation to specific values. Composite (large scale) maps give general information on values and may group similar values together.

There are six composite maps required by the *Forest Information Manual*:

1. Wildlife (AOCs), Areas of Natural and Scientific Interest (ANSI) and forestry values are included on Map 4.1A, the Natural Resources Features Values Map.
2. Fisheries and Wetlands are included on Map 4.1B, the Natural Resources Features Values Map.
3. Locations of recreation areas, tourism areas, cottage/residential areas, wild rice and peat production areas, cultural heritage sites, other recognized land uses and infrastructure sites are included on Map 4.2, the Resource Uses Values Map.
4. Locations of various land ownership parcels, with licensed, and permitted land uses and tenure are included on Map 4.3, the Land Values Map.
5. Bear management areas are included on Map 4.4, the Bear Management Areas Values Map.
6. Locations of recognized trapline areas and trapline features such as cabins are included on Map 4.5, the Trapline Areas Values Map.

The Forest Management Plan (FMP) will also have text to go along with the values maps:

- a list of the kinds of information usually found on the values maps
- a brief description of the values and how the maps are organized
- references for the information on the values maps
- the methodologies used in data collection
- a list of subjects for which data is not complete and how these information gaps will be filled
- reasons why some red- and white-pine old-growth forests may not be managed for old growth values.

The map(s) should be continually updated throughout the forest management planning process.

When are the maps available to the public?

Values are collected while the planning team is organizing for planning: These should be available when OMNR issues the public invitation to participate. Values maps must be also be presented at all

information centres. However, participants in the forest management planning process can have access to these maps at other times. You can obtain a copy of the values map from the OMNR area or district office.

Where is the values information found?

The values information, collection and implications for forest management are summarized in Section 2.7 of the FMP (Section 1.4.4 in plans earlier than 2007). This section will also describe how the information is organized on maps and where to find the maps in the Supplementary Documentation of the plan.

What to ask for

Identify to the OMNR what you think is valuable

When the invitation to participate is sent out, the current version of the values map(s) should be available at the appropriate OMNR district or area office. At this point you can tell the OMNR about anything that you think should be included on the values map that is not already there. Follow up to make sure they have included your earlier input and included your values on the next draft of the maps.

Do this while the planning team is organizing for planning, or directly after the public invitation to participate is issued.

Find out what other values are in your forest

Take time to find out what other values are in your forest that you may not have been aware of. Obtain a copy of the values map(s) of interest to you. This information will help you in assessing the level of protection that is being given to important non-timber values (see the Compliance Checklist for Areas of Concern for more information).

Do this after the public invitation to participate has been issued.

Make sure that your values are being protected

Tell the planning team that you want to develop AOC prescriptions for the values that are important to you. Follow the Advice Fact Sheet for Areas of Concern to outline the steps you think need to be taken to protect the value you have identified.

Do this while proposed operations are being planned.

OBJECTIVES AND INDICATORS

What's important about objectives and indicators?

Objectives are what drive the forest management plan (FMP). The process of selecting the overall management strategy for the FMP (see Advice Fact Sheet on Harvest Levels) include the need to develop an approach that meets the greatest number of objectives. Objectives and indicators can also be used to help determine the overall sustainability of the management strategy.

If you want to have a good chance of meeting your objectives for the forest, you must make sure that they are reflected in the objectives and indicators included in the plan.

What are the rules?

According to the new FMPM, “the planning team must define objectives and indicators for the FMP. For each objective, measurable targets must also be set along with a timeframe for assessing the achievement of these targets.”

The *Crown Forest Sustainability Act* requires that objectives be compatible with the sustainability of the Crown forest (s.68(3)(c)), and that indicators of objective achievement be identified (s.68(3)(d)). The Act (s.68 (5)(b)) requires every Forest Management Plan to contain management objectives relating to:

- (a) Crown forest diversity objectives, including consideration for the conservation of natural landscape patterns, forest structure and composition, habitat for animal life and the abundance and distribution of forest ecosystems;
- (b) social and economic objectives, including harvest levels and a recognition that healthy forest ecosystems are vital to the well-being of Ontario communities;
- (c) objectives relating to the provision of forest cover for those values that are dependent on the Crown forest; and
- (d) silviculture objectives for the harvest, renewal and maintenance of the Crown forest.

Figure A-5 in the new FMPM (Figure A-2 in the 1996 FMPM) provides broad objectives consistent with the *Crown Forest Sustainability Act* and select-



This fact sheet describes the importance of objectives and indicators, explains the rules that companies have to follow and gives advice on what to ask for during forest management planning to ensure that the best decisions are made.

For advice on how to make effective comments during planning, read the How-To section of this guide.

To better understand the steps of the planning process, read the Forest Management Planning section of this guide.

ed criteria from Ontario's criteria and indicators of Sustainable Forest Management. Figure A-5 also provides a set of indicators related to the broad objectives that must be assessed. The broad objectives provide a framework for developing specific measurable management objectives.

The planning team, with the assistance of the Local Citizens Committee, must develop specific management objectives related to the indicators provided in Figure A-5. The planning team may identify additional management objectives and indicators to assess the sustainability of the forest.

Targets for the indicators may be expressed as a specific number, a range or a trend to be achieved in the short and/or long term. Targets must be developed considering both the current forest condition and the desired forest and benefits, which reflect a balance of social, economic and environmental objectives.

How are objectives and indicators developed?

The planning team will come up with the objectives, indicators and targets based on a number of inputs:

- Objectives and indicators in the current FMP.

- Decisions about the desired future forest made by the planning team and the LCC. These decisions are based on local views of the benefits the forest should provide that are achievable based on the current forest condition.
- The results of the scoping analysis. The scoping analysis happens while the long-term management direction is being developed. In the scoping analysis, computer models are used to forecast future forest growth and response to different management approaches to see what range of objectives and targets are achievable given the current forest condition.
- Management direction established in legislation, policy, regional strategic direction, local land use and resource-management directions. This includes OMNR's various forest management guides that lay out the rules for protecting wildlife habitat and populations.

The desired future forest and the objectives, indicators and targets are all subject to public consultation.

What to ask for?

Be sure that strong objectives and targets are set to protect the values that are important to you. A good objective or target is one that is challengeable. By that we mean that it can be demonstrated whether or not it is being met. "Provide enough habitat for wildlife" is a bad management objective because it would be difficult to determine whether "enough" habitat has been provided. "Increase current amount of habitat for marten" is a good management objective because you can challenge it and measure whether or not it has been achieved.

Table 3 is a partial reprint of Figure A-5 in the new FMPM. The first three columns are the criteria, objectives and indicators for which management objectives and targets have to be developed. In the fourth column are the management objectives that we suggest you ask to be in the plan to address conservation goals. Although the format of Figure A-2 in the 1996 FMPM is different, you could still ask for all of the same objectives. Remember that the planning team can add additional indicators as well and can develop management objectives and targets for them.

TABLE 3: Objectives and indicators

Criterion	Broad objective	Indicator (measure of success)	Management objectives and targets
To conserve biological diversity in Ontario's forests	To conserve natural landscape patterns <i>Forest diversity</i>	Spatial landscape pattern	Maintain a natural amount of mature/old forests in large (thousands of hectares) patches. The natural amount should be based on an assessment of the pre-industrial condition – what the forest would have been like without major logging. (see Advice Fact Sheet for Clearcut Size and Location)
	To conserve forest structure and composition <i>Forest diversity</i>	Area of forest by forest type and age	Maintain old-growth red- and white-pine amounts at 1995 levels now and restore these forests to their natural, historic amount. Protect and restore natural amounts of old growth for all forest types. The natural amount of old-growth forests should be based on an assessment of the pre-industrial condition – what the forest would have been like without major logging. Make sure that the definition of old-growth forests used in the FMP doesn't include forests that have been or will be cut using a shelterwood harvest system. This logging system removes the canopy in a series of stages over many years. (see Advice Fact Sheet for Old-Growth Forests)
	To conserve habitat for animal life <i>Forest diversity, forest cover</i>	Area of habitat for forest-dependent provincially and locally featured species	Maintain as close to 20% of the forest in marten cores as possible. Maintain or increase current levels of marten habitat. Maintain or increase current levels of pileated woodpecker habitat. Maintain or increase current levels of caribou habitat. (see Advice Fact Sheet for Marten Habitat, Pileated Woodpecker Habitat and Caribou Habitat)
	To conserve habitat for species that are vulnerable, threatened or endangered with extinction <i>Forest diversity, forest cover</i>	Area of habitat for forest-dependent species at risk	Maintain or increase current levels of caribou habitat. Retain all significant caribou habitat in retention tracts. Ensure functional roadlessness in all significant caribou habitat. This can be accomplished by ensuring that roads are closed, physically abandoned (remove bridges and culverts) and rehabilitated after use. (see Advice Fact Sheet for Caribou Habitat and Roads Planning and Access Restrictions)

(continued)

TABLE 3 *cont.*

Criterion	Broad objective	Indicator (measure of success)	Management objectives and targets
To maintain and enhance forest ecosystem condition and productivity	To ensure that areas harvested are regenerated <i>Silviculture</i>	Percent of each forest unit area classified as free growing by harvest/ disturbance type	
To provide for a continuous and predictable flow of economic and social benefits from Ontario's forests	To provide forest cover for those values dependent upon the forest <i>Forest cover</i>	Percent of forest area in areas of operations planned for retention	Retain between 10 and 36 % of all cuts in residual tree patches for wildlife habitat. Maintain or enhance trapping opportunities. Management prescriptions should be developed with each interested trapper. Ensure that a large proportion of all traplines are undisturbed at any point in time. Protect the biodiversity of shoreline/riparian forests with no-cut reserves. (see Advice Fact Sheet for Tree Retention and Areas of Concern)
	To protect resource-based tourism values <i>Social and economic</i>	Compliance with prescriptions developed in accordance with applicable guides, for the protection of cultural heritage, recreational, tourism and other non-timber resources	Maintain and restore the area of forest in a remote condition. This can be accomplished by controlling motorized access in new logging areas and closing and rehabilitating existing roads. or Develop a road-access management plan that strikes an appropriate balance allowing for the persistence of both remote and accessed forest condition.
	To provide a continuous and predictable wood supply to facilities dependent on wood from the management unit <i>Social and economic</i>	Long-term harvest volume available by species group	Minimize differences in harvest levels between planning teams. Base inputs to the harvest model (SFMM) on locally verified information regarding forest condition, growth, yield and natural forest dynamics, including natural disturbance rates. (see Compliance Checklist for Harvest Levels)
	To utilize the available harvest area and volume to ensure that the desired benefits of the long-term management direction are achieved on the unit <i>Social and economic</i>	Available, forecast and actual harvest area by forest unit	Base volume objectives on the ability of the forest to meet all regulatory and guideline requirements.
	To maintain Crown forest area available for timber production <i>Social and economic</i>		Limit or decrease the proportion of the FMU in roads and landings to less than 1 %.
Protecting and conserving Ontario's forest soil and water resources	To minimize the adverse effects of forest practices on soil quality	Compliance with forest soil protection guidelines percentage of inspections in compliance)	Avoid soil damage in all silvicultural operations. Do not log in protection class forests, which have sensitive soils.
	To minimize the adverse effects of forest practices on water quality	Compliance with water quality and fish habitat protection guidelines percentage of inspections in compliance)	Ensure that no more than 50% of each second order watershed is cut or disturbed at any time. (see Advice Fact Sheet for Clearcut Size and Location)

(continued)

OBJECTIVES AND INDICATORS

TABLE 3 *cont.*

Criterion	Broad objective	Indicator (measure of success)	Management objectives and targets
To accept Ontario's social responsibilities for sustainable forest development	To provide opportunities for participation by Aboriginal communities in forest management planning <i>Social and economic</i>	Managed Crown forest available for timber production	
To maintain and enhance Ontario's framework for sustainable forest management	To conduct forest operations in accordance with approved plans and acceptable practices <i>Social and economic</i>	Opportunities provided and participation of Aboriginal communities in plan: – production, including identification of Aboriginal values and traditional ecological knowledge and preparing the background information report – implementation – monitoring	
		Percentage of compliance in forest operations inspections (separate minor, moderate and significant compliance as assigned by OMNR)	

AREAS OF CONCERN



This fact sheet describes the importance of Areas of Concern (AOCs), explains the rules that companies have to follow and gives advice on what to ask for during forest management planning to ensure the best decisions are made. For advice on assessing company compliance with the rules, read the Compliance Checklist for Areas of Concern as well.

For advice on how to make effective comments during planning, read the How-To section of this guide.

To better understand the steps of the planning process, read the Forest Management Planning section of this guide.

Why are Areas of Concern important?

Areas of Concern (AOCs) are buffers that are designed to protect sensitive non-timber forest values from the direct impacts of logging. These values can include lakes, streams, eagle nests, cottages, trappers' cabins, etc. If AOCs aren't established or they do not remain off-limits from logging, serious impacts may result.

What are the rules?

All important non-timber forest values are supposed to be identified through the planning process (see *Advice Fact Sheet for Identifying Values*). For every one of these values, an Area of Concern is identified, which is usually a buffer of some width around the value (e.g., nest tree, calving ground, etc.). The forest planner then has to develop a prescription, or course of action, for the AOC that will protect the value.

Different values require different AOC prescriptions. Often the prescription is determined by one of the forest management guidelines. If the guidelines don't indicate what must be done, then the planning team will develop their own prescription, preferably with public input.

A common AOC prescription is a no-harvest reserve. No trees can be removed from such reserves.

Other AOC prescriptions can also be important and effective for protecting values. For example, a prescription to reduce the impact of logging on a cottage lake might be to only log in the winter when fewer people are in the area and the disturbance will be lessened. Another example is a restriction on the type of logging that can occur – e.g., no clear-cutting.

AOC prescriptions are often applied because forest management guides require them:

Lakes and streams

The two most commonly applied guides designed to protect the riparian zone of vegetation around lakes and streams are the *Timber Management Guidelines for the Protection of Fish Habitat* and the *Code of Practice for Timber Management Operations in Riparian Areas*. At the time of writing, a new guide is being written to replace both of these. The new guide will be called the *Forest Management Guidelines for the Protection of Fish Habitat*.

The current requirements for AOCs around lakes and streams are:

- 30 – 90m AOCs on all lakes and mapped streams. The width of the reserve is dependent on the slope of the bank:
 - 01-15% slope: 30m
 - 16-30% slope: 50m
 - 31-45% slope: 70m
 - 46-60% slope: 90m
- The extent of logging allowed in these AOCs is described in Table 4. Although logging is permitted under limited circumstances, it seldom actually takes place.
- 3m no-harvest reserve on all unmapped streams.

To keep abreast of changes to protection requirements, view the new fish habitat guide when it is done at www.mnr.gov.on.ca/mnr/forests/forest-doc/guidelines.

Bald eagle nests

Wherever an eagle nest is identified it must be protected with an AOC prescription. The OMNR will know about some of these nests ahead of time, but others may be found as logging operations advance.

- There are three zones of protection required around bald eagle nests. All three zones prohibit clearcut logging and roads and landings are to be avoided if at all possible in all zones. The primary zone prohibits all logging. For other activities, such as human entry and selective harvesting, the three zones have different restrictions and different requirements for retaining super-canopy trees (trees that extend above the forest canopy) and perching sites.
 - primary zone: 100m from nest; no harvesting
 - secondary zone: 100m from primary zone; selection harvesting allowed
 - tertiary zone: 200-600m from secondary zone; selection harvesting and shelterwood harvesting allowed

Osprey nests

Wherever an osprey nest is identified, it must be protected with a no-harvest reserve. The OMNR will know about some of these nests ahead of time, but others may be found as logging operations advance.

There are two zones of protection required around osprey nests and roads and landings are to be avoided in both. Both zones also prohibit clearcut logging. The heavy development zone allows selective harvesting and some other activities outside of the breeding season.

- 200m no-harvest reserve from nest

- heavy development zone: 600m from no-harvest reserve

Moose aquatic feeding areas

- 120m no-harvest reserve

Critical caribou calving areas

- 1000m no-harvest reserve

Red-shouldered hawk or Cooper's hawk nests

There are two zones of protection required around these hawk nests. Roads and landings are to be avoided in both.

- 150m no-harvest reserve
- Additional 21 ha modified management area that allows selection harvesting

Northern goshawk nests

There are two zones of protection required around northern goshawk nests. Roads and landings are to be avoided in both.

- 50m no-harvest reserve
- additional 100m modified management area that allows selection harvesting

Peregrine falcon nests

- 3km AOC centred on the nest. Prepare a nest site management plan documenting acceptable timing, amount and proximity of forest management activities. No major disturbances during the breeding season.

Great blue heron nesting colonies

There are two zones of protection required around great blue heron nesting colonies. Roads and landings are to be avoided in both.

- 150m no-harvest reserve from the nest
- additional 150m modified management area that allows selection and shelterwood harvesting

Active broad-winged, red-tailed and sharp-shinned hawks or merlin nests

- 150m modified management area that allows selection and shelterwood harvesting

Inactive broad-winged, red-tailed and sharp-shinned hawks or merlin nests

- 20m no-harvest reserve from nest

Tourism values

There are no standard requirements for no-harvest reserves to protect tourism values. Guidance for developing prescriptions to protect tourism values is given in the *Management Guidelines for Forestry and Resource-Based Tourism*. Prescriptions may also be developed through the Resource Stewardship Agreement process that is used to facilitate agreements between the forestry and tourism

industries on how to protect tourism values. See the How-To section for more information.

Cultural heritage sites

Sites of cultural significance have to be identified and protected during forest management planning. These “cultural heritage resources” are sites that “constitute a consultable record of past human activities, endeavours or events.” These are usually associated with Aboriginal values, but not always. There are several types of cultural heritage sites described in the current *Timber Management Guidelines for the Protection of Cultural Heritage Resources*:

- cultural landscapes
- structural remains, such as cabins or trading posts
- archaeological remains
- traditional use sites, such as spiritual sites or places of worship.

An AOC must be developed for all identified sites. Although the guidelines require protection of these sites, the level of protection is left up to the planning team and a heritage planner at OMNR. Options include:

- protect the site with a no-harvest reserve
- protect the site by modifying forestry operations in the AOC
- protect the site by restricting access
- protect the site by salvaging, integrating or moving the feature.

OMNR is currently revising these guidelines and will be releasing new rules shortly. Check www.mnr.gov.on.ca/mnr/forests/forestdoc/guidelines for updates.

These AOCs are also required, but are often not applied:

There are a number of guidelines that also require no-harvest or modified harvest reserves, but are rarely if ever applied. This is because OMNR believes that they duplicate the protection requirements set out in the *Timber Management Guidelines for the Protection of Fish Habitat*. However, the new *Forest Management Guidelines for the Protection of Fish Habitat* being prepared by the OMNR at the time of writing may substantially reduce the requirement for no-harvest reserves, making these alternative guidelines more important.

It is your right to ask that the rules below be applied if you feel that these values are no longer being protected through the new fish habitat guidelines. OMNR regulations require that these guides be applied where there is local concern expressed.

Lakes and streams

- 50m no-harvest reserves are required by the *Habitat Management Guidelines for Warblers of Ontario's Northern Coniferous Forests, Mixed Forests or Southern Hardwood Forests*
- 50m AOCs that either prohibit logging or allow only selection cutting, shelterwood cutting or limited clearcutting in strips or blocks are required by the *Guidelines for Providing Furbearer Habitat in Timber Management*
- 50-90m AOCs that allow only patch cuts, strip cuts or group selection cuts and prohibit logging during the breeding season are required by the *Habitat Management Guidelines for Waterfowl in Ontario*

Sandhill crane nesting sites

- 100m no-harvest reserves around nesting sites are required by the *Habitat Management Guidelines for Birds of Ontario Wetlands including Marshes, Swamps, and Fens or Bogs of Various Types (excluding waterfowl)*

How are the rules applied?

- Decisions about no-harvest reserves will be made during planning of proposed operations.
- Reserves and other AOC prescriptions required by the forest management guides will be applied by the planning team.
- Reserves and other AOC prescriptions for values that are not covered or specified by the forest management guides will be developed by the planning team.
- Prescriptions will be available for public comment after the planning team has drafted an approach to proposed operations.
- Prescriptions may be changed, updated or newly created during Phase II of the new planning process for the second five-year term of the FMP.

What to ask for

- **[BASIC]** If you know of specific values that you believe need to be protected, first make sure that they have been identified (see Advice Fact sheet for Values Identification).
Do this as early in the planning process as possible, while the planning process is still getting organized.
- **[BASIC]** If you are interested in protecting riparian values, it is important to demand that no-harvest reserves be established around lakes and streams. This is especially true since OMNR may be making the rules more flexible in the future. The planning team needs to hear

that no-harvest reserves are needed to satisfy public concerns.

Do this while they are planning proposed operations.

- **[BASIC]** Whatever value has been identified, make sure that the prescription either prohibits roads within the AOC or requires rehabilitation of roads after logging is finished (see Advice Fact Sheet for Roads Planning and Access Restrictions). Roads can have severe impacts on many non-timber forest values.

Do this while proposed operations are being planned.

- **[BASIC]** Negotiate the level of protection that you feel is required to protect your values (tourism, cultural, recreational). Don't be shy – the planning process is meant to balance all

values. For example, your AOC prescription could prohibit logging entirely or prohibit clearcutting, restrict the timing of logging, restrict the location or roads, etc.

Do this while proposed operations are being planned.

- **[BASIC]** During Phase II of the planning process for the second five-year term of the FMP, you can ask for changes to existing AOC prescriptions or ask for new prescriptions.

Do this while proposed operations are being planned.

Request that they fix any problems with their proposed approach that you may find while assessing their proposals using the Compliance Checklist for Areas of Concern.

TABLE 4: AOC prescriptions required in forests around lakes and streams

Category of lake/stream	Harvest restrictions	Road-building restrictions
Lake trout lakes, self-sustaining brook trout lakes, aurora trout lakes	30-90m AOC. No harvest or selection harvesting only in the AOC	Roads should not be constructed in AOCs. Exceptions may be considered where it can be demonstrated that fish habitat will be protected. Roads should not be located in areas adjacent to critical fish habitats.
Other lakes	30-90m AOC. No harvest or restricted selection cutting, shelterwood, or limited clearcutting in the AOC	Same as above.
Cold-water streams	30-90m AOC. No harvest or selection harvesting only in the AOC	Roads should not be constructed in AOCs except where necessary to cross a stream.
Cool-water and warm-water streams	30-90m AOC. No harvest or restricted selection cutting, shelterwood, or limited clearcutting No shelterwood harvesting or clearcutting upstream of critical fish habitats	Roads should not be constructed within AOCs, except where necessary to cross a stream. Other exceptions may be considered where it can be demonstrated that fish habitat will be protected. Roads should not be located in areas adjacent to critical fish habitats.
Streams not identified on 1:50,000 maps	3m no harvest reserve	

ROADS PLANNING AND ACCESS RESTRICTIONS



This fact sheet describes the importance of roads planning and access restrictions, explains the rules that companies have to follow and gives advice on what to ask for during forest management planning to ensure that the best decisions are made. For advice on assessing company compliance with the rules, read the Compliance Checklist for Roads Planning and Access Restrictions as well.

For advice on how to make effective comments during planning, read the How-To section of this guide.

To better understand the steps of the planning process, read the Forest Management Planning section of this guide.

Why are roads planning and access restrictions important?

Logging roads are built whenever a company wants to log a previously wild and unaccessed forest. In addition to the environmental impacts associated with logging, roads themselves are a major source of environmental and human impacts on our forests. Some of the negative impacts of roads and motorized access include: disruption of wildlife movement and behaviour; introduction of invasive plants; unsustainable hunting and angling pressure on fish and wildlife populations; and negative economic impacts on remote tourism outfitters.

Proper roads planning and access restrictions can decrease the incidence and severity of many of these impacts.

What are the rules?

There is currently no requirement for companies to develop a comprehensive plan for the entire road network in a Forest Management Unit (FMU). There also aren't any clear regulations that require closure of roads to the public during or after logging operations.

However, there are some opportunities that can be used to ensure that good decisions about roads and access are made.

New access is supposed to be restricted in remote access Enhanced Management Areas (aEMAs)

Enhanced management areas (EMAs) are a land-use designation created in 1999 as part of the Ontario's Living Legacy (OLL) Land Use Strategy. They are areas that permit logging, but place increased restrictions on it to accommodate other values and priorities. Remote access EMAs (aEMAs) were designated to protect the remote wilderness quality of the designated areas. Check the OLL map to see if there are any EMAs in the management unit: crownlanduseatlas.mnr.gov.on.ca/supporting-docs/alus/map_c.htm

These are the rules for aEMAs according to the OLL Land Use Strategy:

- public use of new roads will be restricted
- roads should be constructed to the lowest standard possible
- new roads/trails should be built within existing access corridors where possible

- road network layout should consider aesthetics
- design and construction should facilitate access controls and closure/rehabilitation.

Unfortunately, there are no clear rules for how the planning team is to interpret and apply this land-use direction.

Should the road be open or closed to public motorized use?

Outside of EMAs, the planning team still needs to make decisions about the motorized use of roads by the public. This is an important consideration. Just as allowing motorized use on some roads is important to meet public demand, restricting motorized use on other roads is extremely important to protect remote values for wildlife or tourism.

- A use-management strategy must be in place for all existing and proposed roads.
- The use-management strategy for each road will include:
 - access provisions or restrictions with their rationale
 - abandonment, decommissioning and downgrading provisions, including potential water-crossing removals.

There is no general requirement for companies to close roads. However, roads and trails may be designated for closure to public motor vehicles during and after logging operations. Usually this is in response to concerns about sensitive values or concerns expressed by other forest users. Many types of closures are used to keep cars, trucks and ATVs off of the road:

- signs that tell people not to use the road
- gates and cables
- ditches and berms
- removal of culverts or bridges
- other obstacles like rocks or logs

Where should roads be located?

- The location of primary and branch roads (see definitions box) must be based on a consideration of a number of factors, including non-timber values and public concerns. The consultation is based on the location of a 1 km wide corridor within which the actual road will be constructed.
- The location of smaller operations roads (see definitions box) is not subject to public consultation during the plan.

What if a road passes through an Area of Concern (AOC)?

- All roads require special planning if they pass through an AOC, including any water crossings.
- In these areas, the corridor for the road must

be narrowed to 100m and based on a consideration of environmental values and public input.

- The planning team is obligated to consider preventive and mitigation measures to protect the value of the AOC.

How are the rules applied?

- Decisions about the locations of primary roads will be made while the planning team is working on the long-term management direction. Public input will then be sought on alternative corridors developed by the planning team.
- Decisions about the locations of branch roads and the use-management strategies for primary and secondary roads will be made while proposed operations are being planned. Public input will then be sought on locations and strategies developed by the planning team. Decisions about operational roads will also be made during this stage.
- Road locations and use-management strategies may be changed or updated during Phase II of the new planning process, for the second five-year term of the Forest Management Plan (FMP).

What to ask for

- **[BASIC]** If you have concerns regarding the location of proposed roads, express these as soon as possible in the planning process. The company may be reluctant to consider alternatives if it means increasing the cost of road construction (every kilometre of road costs money) but if you make your point strongly and consistently, you may succeed in having the location changed.

Do this *early in the planning of proposed operations.*

- **[BASIC]** If there is an area that you feel needs to be left in a remote condition (whether it is an EMA or any other area), be sure that every possible measure is taken to protect its remote character. You can seek to limit new roads into the area or you can ask for the use-management strategy on existing roads to be changed:
 - Choose the most effective strategies from Figure 1.
 - Don't settle for just a sign or gate on the road. This is unlikely to be effective if it is not accompanied by other strategies.
 - Make sure the road is going to be closed to public use as soon as it is built. Otherwise expectations will develop that the road will be kept open.
 - "Natural abandonment" – where the road is

left to deteriorate on its own until it becomes impassable – is generally not effective.

The degree of public support or opposition usually wins the day on access restrictions. Make sure your case for the road closure is well known and supported.

Do this while proposed operations are being planned.

For more information on the effectiveness of access restrictions see the *Road Less Travelled* report by the Wildlands League and Sierra Legal Defence Fund www.wildlandsleague.org.

- **[BASIC]** You can provide input on any of the proposed changes or updates to road location and use-management strategies that are being developed during Phase II of the new planning process for the second five-year term of the FMP.

Do this while proposed operations are being planned.

- Request that they fix any problems with their approach that you find while assessing their proposals using the Compliance Checklist for Roads Planning and Access Restrictions.

TABLE 5: New and old definitions of roads used in the FMPM

Definitions for new FMPs	Definitions for FMPs earlier than 2007
Primary road: A road that provides principal access for the management unit and is constructed, maintained and used as part of the main road system on the management unit. Primary roads are normally permanent roads.	Primary road: Permanent, all-weather roads with an expected life of over 15 years.
Branch roads: A road that branches off of an existing or new primary or branch road, providing access to and/or through areas of operations (i.e. operating blocks).	Secondary road: Branch roads off of primary roads that are intended for up to 15 years of use.
Operations road: A road within an area of operations that provides short-term access for harvest, renewal and tending operations.	Tertiary road: A road built for short-term use (up to 5 years), which is unsurfaced or thinly surfaced.

FIGURE 1

The most effective means of maintaining remoteness and restricting access, in decreasing order of effectiveness

- Avoid road building in designated areas
- Choose appropriate road locations to:
 - avoid sensitive values like remote lakes as well as other areas that are likely to attract would-be violators
 - create opportunities for effective access controls at natural barriers like water crossings
- Employ only effective access controls at appropriate locations:
 - physically abandon roads after operations by removing water crossings
 - render the road impassable through excavation and/or the use of other obstacles (boulders, berms, etc.) and/or scarifying the road bed and planting seedlings
 - close road using gates or cables at water crossings during operations; road closures and postings should be immediate to prevent the development of access expectations

BRIDGES AND CULVERTS

This fact sheet describes the importance of bridges and culverts, explains the rules that companies have to follow and gives advice on what to ask for during forest management planning to ensure that the best decisions are made. For advice on assessing company compliance with the rules, read the Compliance Checklist for Bridges and Culverts as well.

For advice on how to make effective comments during planning, read the How-To section of this guide.

To better understand the steps of the planning process, read the Forest Management Planning section of this guide.



Why are bridges and culverts important?

Bridges and culverts are built wherever a road crosses a water body (usually streams). Because they are built in such sensitive locations, poor construction or maintenance of a water crossing can result in serious ecological impacts to the water body: dirt, gravel and sand entering the water; disruption of fish habitat; disruption of fish movement, etc.

What are the rules?

The Ontario Ministry of Natural Resources has a detailed guide that tells forest companies how to build roads and water crossings to avoid or minimize aquatic impacts. It's called the *Environmental Guidelines for Access Roads and Water Crossings*. The rules and suggestions for planning water crossings are complicated and highly technical, so we haven't presented them in this guide. There are some basic rules, however, that relate to the condition of the crossings once they are installed that are worth noting.

- Is the culvert perched? Ten percent of the culvert's diameter should be below the stream bed. If it's not, the culvert could be a physical barrier to fish movement.
- Is there erosion of sediment into the water body?

There shouldn't be any dirt, sand or gravel entering the stream as a result of the water crossing.

- Is the culvert blocked? Sometimes debris will get into the mouth of the culvert blocking it and preventing waterflow. Sometimes beavers do this intentionally (it makes an easy dam), but companies are still obliged to clean it out.
- Is water flowing over the road? This can happen if the road and water crossing were poorly constructed.

The *Federal Fisheries Act* also prohibits any destruction of fish habitat. Generally this happens as a result of companies not following OMNR's guidelines.

How is the guide applied?

The guide is applied primarily during the planning and construction of the water crossing.

What to ask for

We don't recommend that you ask for any particular outcomes during the planning or design of the water crossing. Instead, we recommend making a field visit to assess the quality of water crossings. See the Compliance Checklist for Bridges and Culverts for advice on assessing compliance with these rules.

TREE RETENTION



This fact sheet describes the importance of tree retention, explains the rules that companies have to follow and gives advice on what to ask for during forest management planning to ensure that the best decisions are made. For advice on assessing company compliance with the rules, read the Compliance Checklist for Tree Retention as well.

For advice on how to make effective comments during planning, read the How-To section of this guide.

To better understand the steps of the planning process, read the Forest Management Planning section of this guide.

Why is tree retention important?

Clearcutting has long-lasting ecological impacts. Because it removes most trees from a site, the regenerating forest lacks older trees, snags (standing dead trees) and decaying materials that build up over time in natural forests and provide important wildlife habitat.

Retaining trees in clearcuts is an important way to try to retain some of this important habitat onsite. As the young forest regenerates, the trees that were left standing during harvest will provide older trees, snags and decaying woody material for wildlife.

Tree retention rules are important even when clearcutting is not being used. In more selective logging systems that do not remove the majority of the trees from the site (like individual tree selection cutting), foresters still need to be careful to leave certain trees behind that are being used or are especially valuable for wildlife.

What are the rules?

The *Forest Management Guide for Natural Disturbance Pattern Emulation* (NDPE guide) requires the retention of individual trees and patches of trees during clearcut and shelterwood harvesting.

The *Forest Management Guidelines for the Provision of Pileated Woodpecker Habitat* and the

Forest Management Guidelines for the Provision of Marten Habitat also require tree retention. Since the NDPE guide requires the retention of greater numbers of trees, the most useful aspects of these other two guides are their directions on the type and quality of trees that need to be left uncut.

Retaining patches of uncut trees:

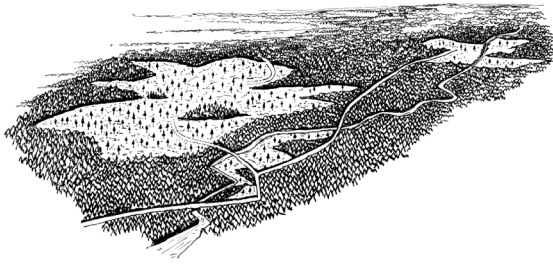
- 2-8% of the harvest area must be left in uncut patches of trees within the cut area (these are called insular patches). The actual amount depends on the forest type (see Figure 2).
- 8-28% of the harvest area must be left in “fingers” or “peninsulas” of uncut trees that extend from the cut boundary into the cut block. The actual amount depends on the forest type (see Figure 2).

Retaining individual uncut trees:

- 25 trees per hectare (living or dead) must be left uncut and dispersed individually throughout the cut area or in small clumps. At least six of these must be “high quality” potential cavity trees at least 30cm in diameter at breast height. (This rule of six “high quality” trees per hectare applies even when clearcutting isn’t the logging method used.)
- For pileated woodpeckers, there is an order of

FIGURE 2

Clearcut Emulating Natural Disturbance Pattern



preference for wildlife trees to be left to provide habitat:

- pileated woodpecker roost trees
- pileated woodpecker nest trees
- trees with other types of nest cavities
- trees with escape cavities
- potential cavity trees.
- For bald eagles, at least three super-canopy trees (trees that extend above the forest canopy) must be maintained within the 400m reserve around bald eagle nests (see Advice Fact Sheet for Areas of Concern).

Although the 25 dispersed trees and the 2-8% insular patches are permanent retention, the NDPE guide allows partial harvest of the peninsular patches:

- harvest of half of the peninsular patches after 20 years or after the forest reaches a height of 3m, whichever comes first, or
- immediate harvest of half of the outer half of peninsular patches, resulting in the harvest of 25% of the peninsular patches.

Downed woody debris

Downed woody debris (DWD) is the dead trees, tree limbs and branches that are naturally scattered on the forest floor. These structures provide important habitat for some wildlife species, including marten. The NDPE guide and the marten guide require companies to leave DWD onsite after logging. The NDPE guide suggests any of several means:

- Use cut-to-length harvest systems that delimb the tree where it is cut, rather than pulling it to the roadside (these systems cut the tree into smaller lengths where it falls instead of dragging the whole tree to the roadside to have its limbs removed and lengths cut. The result is

more woody debris left onsite instead of on the roadside)

- retain standing trees
- leave unwanted logs on the site
- redistribute the limbs and branches that are often piled at the side of the road after the tree is processed.

How is the guide applied?

Decisions about tree retention are made during the planning of proposed operations. The amount of planned retention will also need to be incorporated into the determination of the sustainable harvest level, which is part of developing the long-term management direction (see Advice Fact Sheet for Harvest Levels and Compliance Checklist for Harvest Levels). Tree retention in individual cuts may also be changed during Phase II of the new planning process, for the second five-year term of the FMP.

The planning team will make use of a computer tool called the NDPEG Tool (or “Gilligan” for short) to plan tree retention. It is a GIS-based mapping tool that allows the planners to draw different retention configurations and then automatically calculate the percentage of trees retained.

It is unlikely – unless you have a very powerful computer – that you will be able to run this program yourself. However, if you have the GIS capability and computer power, you can run it using the digital planning inventory. The program itself can be downloaded from www.sfmstuff.com. (You’ll need a login name and password that you can request by emailing Webmaster@sfmstuff.com.)

Although many of the retention decisions will be made during planning, the location of individual trees to be retained and the location of some smaller retention patches will be left to the discretion of the loggers when they are cutting the area. This is because it isn’t possible to map individual trees and because the planning team may want to retain some flexibility in the field.

What to ask for

- **[BASIC]** Because there is some variation allowed in the amount of retention, it would be valuable to request an objective early in the planning process that emphasizes retaining as many trees and patches as possible during logging.
Do this *early while the long-term management direction is being developed.*
- Request that the planners fix any problems with their approach that you find while assessing their proposals using the Compliance Checklist for Tree Retention.

MARTEN HABITAT



This fact sheet describes the importance of protecting marten habitat, explains the rules that companies have to follow and gives advice on what to ask for during forest management planning to ensure that the best decisions are made. For advice on assessing company compliance with the rules, read the Compliance Checklist for Marten Habitat as well.

For advice on how to make effective comments during planning, read the How-To section of this guide.

To better understand the steps of the planning process, read the Forest Management Planning section of this guide.

Why is marten habitat important?

Forest fragmentation is a serious impact of industrial forestry. As logging proceeds through an area, the number and size of older forest patches diminishes as the forest is cut up into a jigsaw puzzle of relatively young forest. However, many wildlife species require large areas of older forest to survive. Marten is just such a species. The purpose of the marten guide is to make sure that some large areas of old forest will always exist on the landscape. This makes the marten guide one of the most important forestry guides we currently have.

Although the guide is written to satisfy the habitat needs of marten, it is also intended to provide habitat for many other species that also require large, contiguous forest areas. Some species that may benefit from the marten guideline (depending on the exact forest type) include boreal red-backed vole, northern flying squirrel, white-tailed deer, woodland caribou, moose, black-backed woodpecker, sharp-shinned hawk, great grey owl, black and white warbler and fisher.

What are the rules?

The marten guide has two main sets of rules:

1. the requirement to defer (not log) large areas

of core habitat from logging

2. where logging does occur, requirements to retain trees and other habitat structures that are important to marten

Placing large areas of old forest in no-harvest reserves

The most important rule in the marten guide is the requirement for planners to maintain 10-20% of any forest that is capable of supporting marten in intact forest “cores” of between 3,000 and 5,000 hectares. “Capable habitat” is defined as any forest that could at some point provide suitable conditions for marten. Usually, most of a forest could be considered “capable” marten habitat. This means that the guide essentially requires that large patches of habitat making up 10-20% of the forest be off-limits to logging at any time.

However, these are not permanent protected areas. Different areas can be designated for deferral at different times as long as there are always “suitable” core areas that meet the required habitat conditions. “Suitable” refers to habitat that currently possesses attributes that make for preferred marten habitat, such as large blocks of dense evergreen cover, large trees with cavities and lots of logs and dead trees.

To satisfy this rule, the company must defer these large marten cores from logging until they can be replaced with new ones (e.g., with areas that have sufficiently regenerated to have the old-forest attributes marten require).

Desired characteristics of “marten cores” are:

- 3,000-5,000 ha in size
- mature or old forest, being at least 80 years old or 15m in height
- 75% should currently be of suitable habitat:
 - more than 40% of the volume of trees should be spruce, balsam, cedar
 - in some locales, white pine, jack pine, red pine and hemlock can also be important species for marten habitat
 - the canopy of the forest should have at least 50% closure
- they should be connected to one another by riparian reserves and other uncut areas
- Some logging can occur in up to 30% of a core, but only if the total area of coniferous trees and the canopy closure can be maintained at 50% or above. Logging usually doesn’t occur in cores and clearcutting should never be allowed.
- Marten cores aren’t permanent. A current marten core may be cut 20 years from now, as long as the total amount of suitable core area is always between 10-20 % of the forest.

Leaving trees and other habitat structures in cutovers

The structure of forest stands is also important for marten. They need old hollow trees, decaying stumps and fallen logs as part of their habitat. Rules for leaving trees and other habitat structures in cutovers are described in the Advice Fact Sheet for Tree Retention.

How are the rules applied?

The application of this guide is challenging. It involves a lot of computer modelling, mapping and professional judgement. Here are the steps that the planner should follow:

1. Set an objective for the marten population and amount of marten habitat (see Advice Fact Sheet for Objectives and Indicators).
This occurs while the long-term management direction is being developed.
2. Determine the amount of capable habitat (currently suitable and potentially suitable) on the management unit. This involves the use of the Marten Analyst software tool, which is programmed to identify marten habitat.
This occurs while the long-term management direction is being developed.

3. Model the effects of the marten habitat objectives, wood supply objectives and other objectives on each other using the Strategic Forest Management Model (see Advice Fact Sheet for Harvest Levels). This model will forecast how well these objectives can be met over time.

This occurs while the long-term management direction is being developed.

4. Use the Marten Analyst software to locate and arrange the marten cores on the management unit for each 20-year segment within a 100-year planning period. Attention must be paid to connectivity between cores. This will result in a map of proposed marten core areas that you can look at.
This occurs during planning or operations.
5. Prescriptions for retaining trees in cut blocks will be developed during planning or while operations are underway. The loggers will make the actual decisions on the ground about which trees to leave during logging. These prescriptions may be changed or updated during Phase II of the new planning process for the second five-year term of the Forest Management Plan (FMP).

What to ask for

- **[BASIC]** Request that an objective be included in the plan to maintain as close to 20% of the forest in marten cores as possible (see Advice Fact Sheet for Objectives and Indicators). Make sure this objective is set early in the planning process. This will give protection of this habitat a higher priority (and more security) if the planning team decides to start trading off values to increase wood supply. The planning team usually wants to set an objective for 10% (the low end of the range). It might help to look at the marten objectives in other approved Forest Management Plans in the area – if many of them are targeting the low end of the 10-20% range it may provide you with a stronger argument for having a higher target in the plan you’re working on.
Do this as early as possible during development of the long-term management direction. (See the Advice Fact Sheet for Objectives and Indicators for additional help.)
- Request that they fix any problems with their approach that you find while assessing their proposals using the Compliance Checklist for Marten Habitat.

PILEATED WOODPECKER HABITAT



This fact sheet describes the importance of pileated woodpecker habitat, explains the rules that companies have to follow and gives advice on what to ask for during forest management planning to ensure that the best decisions are made. For advice on assessing company compliance with the rules, read the Compliance Checklist for Pileated Woodpecker Habitat as well.

For advice on how to make effective comments during planning, read the How-To section of this guide.

To better understand the steps of the planning process, read the Forest Management Planning section of this guide.

What's important about pileated woodpecker habitat?

Industrial logging can result in the elimination of large older or dead trees that often contain wildlife cavities or are easily excavated. Such trees provide crucial nesting, roosting, denning and feeding sites that many species rely on for survival. The purpose of the pileated woodpecker guide is to make sure that enough of these old-forest characteristics are retained to support pileated woodpecker populations.

Pileated woodpeckers are the largest excavators of tree cavities and therefore create cavities for many other species. The large size of the trees they require means that all smaller cavity makers can also use trees retained under these guidelines. Through the protection of pileated woodpecker habitat, it is hoped that the habitat needs of more than 50 other species will also be provided for.

What are the rules?

There are two types of rules in the *Forest Management Guidelines for the Provision of Pileated Woodpecker Habitat*. The first type relates to tree retention, which is discussed in the Advice Fact Sheet for Tree Retention. The second type relates to long-term habitat supply for pileated woodpeckers. These requirements for pileated habitat supply are the focus of this fact sheet.

These rules must be applied in the Great Lakes-St. Lawrence forest. In the transition zone between the Great Lakes-St. Lawrence forest and the boreal forest, managers may apply the pileated woodpecker or the marten guidelines or both.

Long-term habitat supply

Companies are required to “minimize adverse effects” of logging on the supply of pileated woodpecker habitat. However, there is no clear direction

on what this means. The steps taken by the planning team to achieve this will depend on both current and projected habitat levels. Computer models are used to forecast habitat supply and the potential impacts of logging. Adjustments to the levels of logging should be made as necessary to preserve pileated woodpecker habitat.

How is the guide applied?

Predicting and planning the amount of habitat on the landscape involves the use of computer modelling. Two models are used: the Strategic Forest Management Model (SFMM) and the Pileated Woodpecker Habitat Supply Model (PWPHSM). SFMM can predict habitat supply amounts over a long planning period, but it cannot track a single stand or predict how stands are grouped on the landscape. By comparison, PWPHSM can identify individual stands and their habitat quality and how they are arranged, but it cannot predict habitat supply far into the future. The combination of these models allows for predictions of what will happen to pileated woodpecker habitat as a result of forest-management decisions. (See the Computer Models in Forest Management Planning section of the Introduction of this guide for more information on these models.)

There is a multi-step process outlined in the pileated woodpecker guide:

1. Using the computer models, the amount of pileated woodpecker habitat supply in the Forest Management Unit (FMU) is projected. Is it declining? Increasing? Stable?

This occurs while the long-term management direction is being developed.

2. A specific objective and target for pileated woodpecker habitat supply (e.g., no net loss) is set (see Advice Fact Sheet for Objectives and Indicators).

This occurs while the long-term management direction is being developed.

3. SFMM is used to forecast the effect of the different management strategies on pileated woodpecker habitat supply and other objectives. The best strategy is selected.

This occurs while the long-term management direction is being developed.

4. PWPHSM is used to identify stands eligible for harvest that are preferred pileated woodpecker habitat. If these were harvested, what would be the impacts on habitat supply?

This occurs during planning of proposed operations.

5. Based on the results for number 4, stand choices for harvesting should be modified as necessary.

This occurs during planning of proposed operations.

What to ask for

- **[BASIC]** Request that an objective be included in the plan to maintain or increase current levels of pileated woodpecker habitat. Make sure this objective is set early in the planning process. It will lend protection of this habitat higher priority if the planning team wants to start trading off values to increase wood supply.
Do this while the planners are developing the long-term management direction. See the Advice Fact Sheet for Objectives and Indicators for additional help.
- Request that they fix any problems with their approach that you find while assessing their proposals using the Compliance Checklist for Pileated Woodpecker Habitat.

OLD-GROWTH FORESTS



This fact sheet describes the importance of old-growth forests, explains the rules that companies have to follow and gives advice on what to ask for during forest management planning to ensure that the best decisions are made. For advice on assessing company compliance with the rules, read the Compliance Checklist for Old-Growth Forests as well.

For advice on how to make effective comments during planning, read the How-To section of this guide.

To better understand the steps of the planning process, read the Forest Management Planning section of this guide.

What's important about old-growth forests?

Old-growth forests have been a growing issue of concern and a point of conflict between environmentalists, the forest industry and government over the past decade. Old growth is a natural stage of forest development and one that is particularly rich in habitat values. However, forest management for the production of timber has generally resulted in the reduction of the old-growth component of our forests. As a result, old-growth characteristics are becoming increasingly scarce in the vast area of Ontario forests open to timber management.

Old growth, like all forest conditions, is temporary and transient, but can persist for several hundred years in the absence of fire or logging, depending on the species make up of the forest. In a natural landscape, old-growth stands would come and go with time and disturbance events like fire or windstorms. In a managed landscape, planning must be done to conserve existing old growth and to make sure there will be old growth in the future.

What are the rules?

Some old-growth forests are protected in the province's network of parks and conservation reserves. However, these protected areas make up only 12% of Ontario's managed forests. Within this

12% of the landscape, only a portion will ever be old-growth forest because forests are always changing naturally. Maintaining old-growth forests outside of parks is therefore critical.

Ontario's new *Old Growth Policy* was approved in 2003. A "forest management note" is supposed to provide more direction on how to apply the policy, but it has not yet been written. The new 2003 policy applies to 2006 plans and beyond. Plans for earlier years still only need to follow *A Conservation Strategy for Old Growth Red and White Pine Forest Ecosystems*.

The *Forest Management Guide for Natural Disturbance Pattern Emulation* (NDPE guide) also has some elements that you can use to get old growth protected.

Describing the amount old-growth forest

The companies must:

- determine the historic (natural, before industrial activity) amount of old-growth forests in each forest type
- identify and quantify all current stands of old growth in each forest type
- predict future amount of old-growth forests in each forest type
- identify the location of old-growth red- and white-pine forests on values maps.

Maintain old-growth forest

- The amount of old-growth red- and white-pine forests must be maintained at 1995 levels as a minimum.
- Objectives and targets must be developed to protect and/or restore the amount of each forest type towards its natural range. The comparison of the historic, current and predicted future amounts of old growth will guide the development of this objective.
- The NDPE guide also has requirements to maintain old-growth forests:
 - “Retain old growth and natural age class structures”
 - “Maintain a natural proportion of uneven-aged forest within the bounds of natural variation.” (“Uneven-aged forests” can include old forests.)
- The amount of old-growth habitat available for selected wildlife species will be a factor used to assess the sustainability of management alternatives (see the Advice Fact Sheet for Harvest Levels).
- Old growth in parks and conservation reserves within the Forest Management Unit can contribute to meeting old-growth targets.

WHAT IS OLD GROWTH?

Walking through an old-growth stand, you would expect to find some big trees along with large standing dead trees, fallen logs, tip-up root mounds and gaps in the canopy where trees have died and fallen. Well-developed lichen growth may also be present. In slow growing areas, like nutrient-poor sites or the northern boreal forest, the trees may not look big even though they are quite old. Wildlife species like woodland caribou and marten need old-growth forests to survive.

How are the rules applied?

1. Historic, current and predicted future amounts of old growth will be determined. One of the values maps will show the areas of old-growth red- and white-pine forests.
This occurs during organizing for planning.
2. Objectives and targets for protecting and restoring natural amounts of old growth will be set.
This occurs while the long-term management direction is being developed.
3. The planning team will use the Sustainable Forest Management Model (SFMM) to predict future amounts of old-growth amounts resulting from logging and natural changes.
This occurs during the development of the

management strategy (see the Advice Fact Sheet for Harvest Levels) while the long-term management direction is being developed.

4. How well the old-growth targets are met will be one factor in the assessment of the sustainability of the management alternatives (see the Advice Fact Sheet on Harvest Levels). If the targets are not being met, the planner may have to reduce harvest levels.

This occurs while the long-term management direction is being developed.

What to ask for

- **[BASIC]** Ask for a map of all current old-growth areas. They aren’t obliged to produce this map but it’s fairly easy to create and will give you a better idea of the old-growth situation.
Do this at any stage in the planning process. Earlier is better.
- **[EXPERT]** Make sure they determine historic old-growth amounts. This determination isn’t easy. To do it right it will involve quite a bit of research.
Do this during the organizing for planning.
- **[BASIC]** Make sure that there is an objective to maintain old-growth red- and white-pine amounts at 1995 levels now, but also to restore these forests to their natural, historic amount in time.
Do this while the long-term management direction is being developed. See the Advice Fact Sheet for Objectives and Indicators for additional help.
- **[BASIC]** Make sure that there is an objective to protect and restore natural amounts of old growth for all forest types in the plan.
Do this while the long-term management direction is being developed. See the Advice Fact Sheet for Objectives and Indicators for additional help.
- Make sure that the definition of old-growth forests used in the plan doesn’t include forests that have been or will be cut using a shelterwood harvest system. (The shelterwood system is most often applied in red- and white-pine forests.) This logging system removes the forest canopy in a series of stages over many years. However, once the first cut has occurred, the stand should no longer be considered old growth. You can have this included right in the objectives and targets of the Forest Management Plan.
Do this while the long-term management direction is being developed.
- Request that they fix any problems with their approach that you find while assessing their proposals using the Compliance Checklist for Old-Growth Forests.

CARIBOU HABITAT



This fact sheet describes the importance of protecting woodland caribou habitat, explains the rules that companies have to follow and gives advice on what to ask for during forest management planning to ensure that the best decisions are made. For advice on assessing company compliance with the rules, read the Compliance Checklist for Caribou Habitat.

For advice on how to make effective comments during planning, read the How-To section of this guide.

To better understand the steps of the planning process, read the Forest Management Planning section of this guide.

What's important about woodland caribou habitat?

Woodland caribou is a threatened species in Ontario. Caribou are a large ungulate like moose or deer. However, unlike moose or deer, they require large areas of older coniferous forests that are unfragmented by roads or clearcuts and relatively undisturbed by other human activity. Such areas are becoming rare on the managed forest landscape of Ontario. In fact, the southern extent of woodland caribou's range has shrunk further and further north as logging has expanded in Ontario (Map 1 – caribou range map from action plan). Woodland caribou now occupy only a small fraction of their former range in the province. As a species particularly sensitive to forest disturbance, caribou are thought to be a good indicator of forest health. Truly sustainable forestry would enable these creatures to remain a part of a managed forest landscape.

What are the rules?

The Ontario Ministry of Natural Resources (OMNR) has mapped the areas of the province that are

currently home to woodland caribou. Generally, caribou today are found north of a line running at roughly between 50 and 51 degrees latitude. Any planned forestry activities north of this line must apply the OMNR *Forest Management Guidelines for the Conservation of Woodland Caribou – A Landscape Approach* (also known as the caribou guide). The most important rules in this guide are those requiring the maintenance of large areas of old forest and the protection of calving grounds and those imposing restrictions on roads.

Maintaining large areas of old forest as winter habitat

Because caribou require large areas of old forest as winter habitat, the caribou guide tells planners to make sure there is enough of this type of habitat now and in the future for caribou survival. The planner has to make sure that at any point in time there are enough of these blocks in the right condition to meet the caribou's needs.

To accomplish this, forests that are capable of providing winter habitat for caribou are divided up into large areas on a map called a Caribou Mosaic

Proportion of land base that is capable habitat	Proportion of capable habitat in suitable condition	Low capability	Capable: 0-39 yr.	Suitable: not used 40-99 yr.	Suitable: not used >100 yr.	Used: 40-59 yr.	Used: 60-99 yr.	Used: >100 yr.	Used: any age, strategic location
Low ≤15%	Low	A/R	R2	R3	R	R1	R1	R1	R1
	High	A/R	A/R	R3	A	R1	R1	A	R1
Medium 16-35%	Low	A/R	A/R	R3	A/R	R1	R1	A/R	R1
	High	A/R	A/R	A/R	A	R1	R1	A/R	R1
High ≥36%	Low	A/R	A/R	R3	A/R	R1	R2	R2	R1
	High	A/R	A/R	A/R	A	R1	A/R*	A	R1

TABLE 6

*apply *Forest Management Guidelines for the Emulation of Fire Patterns* if adjacent to used habitat < 100 years old; otherwise retain

A/R: allocate or retain following the *Forest Management Guidelines for the Emulation of Fire Patterns*, based on disturbance event size or distance between disturbance events

A: priority for allocation (cutting in planning period)

R: priority for retention (no cutting in planning period); very high retention priority (R1), high retention priority (R2), moderately high retention priority (R3)

NOTE:

Although it seems like a good idea to have these very large areas available as caribou habitat, OMNR and forest companies usually interpret this to mean that the caribou guide also requires the creation of very large clearcuts now, which will then, in turn, become the large mature forest areas needed by caribou in 80-100 years. There is no evidence, however, that this will work.

(see sidebar above). Each of these areas, which are 10,000 hectares or greater in size, will either be designated as retention tracts and not cut or made available for logging. The caribou guide offers a “decision guidance matrix” for determining whether or not areas should be retained. This guidance is reproduced in Table 6.

Mature capable habitat that is actively used (caribou have been located in at least two of the past five years) and capable habitat located within 30km of the southern range of caribou should generally always be designated as retention tracts.

Access restrictions

Research has shown that roads and their use by motorized vehicles are a significant threat to woodland caribou. This is because of increased hunting pressure and the use of roads as travel corridors for

one of the caribou’s chief predators – the wolf. Therefore the guide sets out restrictions on roads and access:

- Snowmobile trails and mineral exploration should avoid traditional winter habitat (November – April).
- Roads should be planned to avoid traditional winter habitat and areas of potential winter habitat (sandy flats, eskers, sand hills and shallow soil with abundant rock outcrops).
- Roads built in significant habitat tracts are supposed to be temporary. This means they should be made impassable by ditching, culvert removal or site preparation and regeneration as soon as possible following completion of timber-management operations.

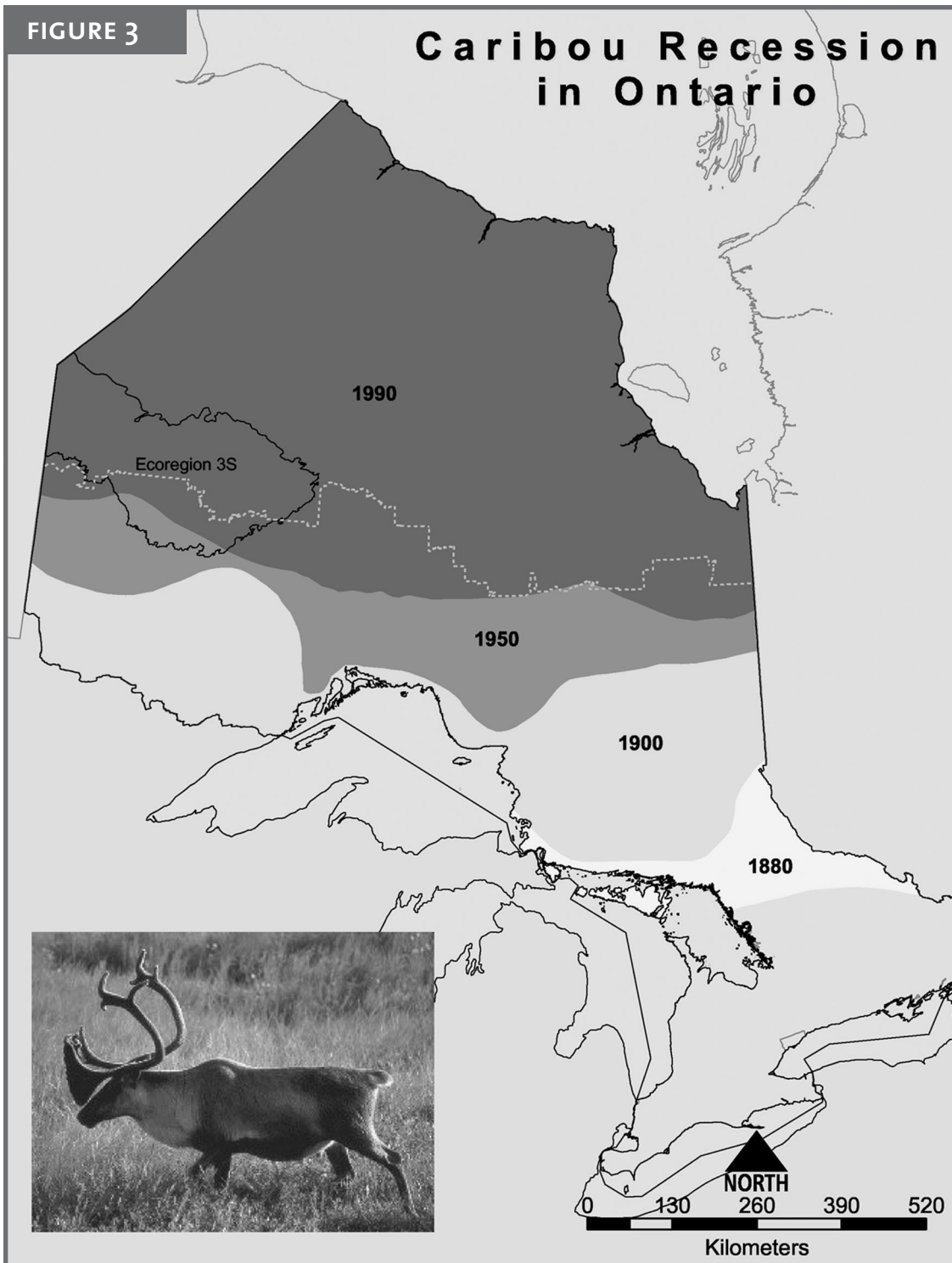
Protecting caribou calving grounds with Area of Concern (AOC) designation

Calving areas are places where large numbers of caribou come together to birth their calves. These areas possess a rare combination of features and it is important to protect them because caribou come back to these areas year after year:

- caribou calving areas must be located on the values map
- caribou calving areas must be protected by a 1,000m AOC

FIGURE 3

Caribou Recession in Ontario



- AOCs have modified harvesting, varying from no-harvest reserves to partial harvesting
- human activity may be restricted during the calving season (late spring, early summer).

Protecting mineral licks

Mineral licks are usually areas of soil or rock with

naturally high salt content and are important high-use areas for caribou. Mineral licks should be protected with the following:

- a minimum 120m AOC
- preferably within mature forest or adjacent to both a large stand scheduled for harvest and

one that is to be retained, so that it is adjacent to mature timber for the longest possible period

- any harvesting should have a unique prescription considering special attributes of the site.

Keeping important caribou habitat connected

Winter habitat in caribou blocks, calving grounds and spring, summer and fall habitat should be connected by maintaining uncut buffers along known caribou migration routes.

How is the guide applied?

In the boreal forest, wherever there are populations of caribou these guidelines should be applied.

Because caribou habitat needs to be managed on scales larger than a single Forest Management Unit (FMU), several FMUs and the associated Sustainable Forest Licence (SFL) holders and district and regional offices of the OMNR must be involved in the planning. The Forest Management Plan (FMP) should provide direction for the long-term provision of caribou habitat in the FMU.

The caribou guide lays out four steps to be followed in planning to protect caribou habitat:

1. Gathering background information:

- Landscape information including Forest Resource Inventory (FRI), land forms, natural disturbance information.

This occurs during the organizing for planning.

- Caribou habitat maps that show winter habitat, calving grounds, travel routes and snow-free season areas.

This occurs during the organizing for planning.

- Computer-generated analysis. Computer models are used to predict future supply of habitat and its distribution on the landscape. The Strategic Forest Management Model (SFMM) is used to predict the amount of habitat into the future.

This occurs while the long-term management direction is being developed.

2. Setting objectives and developing the management strategy.

A selected management strategy should be proposed based on the supply of caribou habitat and other objectives. This management strategy sets harvest levels and related habitat amounts for a variety of species including caribou. See Advice Fact Sheet for Harvest Levels.

This occurs while the long-term management direction is being developed.

3. Identify caribou retention habitat and areas that will be logged.

This occurs while the long-term management direction is being developed.

4. Develop prescriptions for areas that are going to be logged.

Determine the approach to the cutting and renewal practices for harvest blocks and AOCs. A prescription for an Area of Concern describes the modified approach to logging (including not logging), road-building, timing of operations, etc., that will be used to protect the value in the AOC.

The focus of the OMNR guide is on creating a more intact landscape and regenerating the natural forest condition as soon as possible to provide for future habitat needs. Critical winter habitat should be set aside (deferred) for long periods. Where cutting takes place, production of future winter habitat should be a priority. AOCs should be identified and specific prescriptions produced.

What to ask for

- **[BASIC]** Make sure that they are planning to apply the caribou habitat guide if the FMU is in the range of occupied caribou habitat.

Do this during the organizing for planning.

- **[BASIC]** Make sure there is an objective and targets to maintain or increase current levels of caribou habitat.

Do this while the long-term management direction is being developed.

- **[BASIC]** Make sure that all calving areas identified on values maps are protected with a proper AOC prescription.

Do this while planning for proposed operations is underway.

- **[EXPERT]** Make sure that all significant winter caribou habitat that is currently in use or within 30km of the southern limit of caribou range is designated for retention.

Do this while the long-term management direction is being developed.

- Request that they fix any problems with their approach that you find while assessing their proposals using the Compliance Checklist for Caribou Habitat.

CLEARCUT SIZE AND LOCATION



This fact sheet describes the importance of clearcut size and location, explains the rules that companies have to follow and gives advice on what to ask for during forest management planning to ensure that the best decisions are made. For advice on assessing company compliance with the rules, read the Compliance Checklist for Clearcut Size and Location as well.

For advice on how to make effective comments during planning, read the How-To section of this guide.

To better understand the steps of the planning process, read the Forest Management Planning section of this guide.

Clearcuts have many negative ecological impacts. Clearcutting in Ontario has led to massive changes in the species composition of our forest; has resulted in the local extinction of woodland caribou in much of Ontario; and has led to reductions in natural amounts of old-growth forests, among other impacts. Clearcutting removes the majority of habitat structures, such as old trees, dead trees and fallen trees, within forest stands that are important for wildlife and it may also lead to long-term decreases in soil fertility.

About 90% of all logging done in Ontario is clearcutting. There is a pressing need to change this approach. Although more selective approaches (such as shelterwood cutting and single-tree removal) are used predominantly in central and southern Ontario, alternatives to clearcutting are only starting to be discussed and promoted for our boreal forests. The Wildlands League recently published a report on these alternatives, which is avail-

able on our website: www.wildlandsleague.org/clearcutalternatives.pdf

Why is clearcut size and location important?

As a clearcut gets bigger, it has increased impacts on wildlife movement (especially for animals that don't like to cross large openings), on the ability of displaced animals to come back into the clearcut as it re-grows (especially small animals and plants that have a limited ability to move long distances), and on water quality of lakes and streams (as more of a watershed is cut, water quality decreases). As clearcuts get bigger they are also more likely to affect other values (for example, they may result in the cutting of an entire trapline area in one cutting cycle).

What are the rules?

The rules for clearcut size and location in the *Forest Management Guide for Natural Disturbance Pattern*

CLEARCUT SIZE AND LOCATION



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What are the rules?

The rules for clearcut size and location in the *Forest Management Guide for Natural Disturbance Pattern*

This fact sheet describes the importance of clearcut size and location, explains the rules that companies have to follow and gives advice on what to ask for during forest management planning to ensure that the best decisions are made. For advice on assessing company compliance with the rules, read the Compliance Checklist for Clearcut Size and Location as well.

For advice on how to make effective comments during planning, read the How-To section of this guide.

To better understand the steps of the planning process, read the Forest Management Planning section of this guide.

Emulation (NDPE guide) are mostly based on the idea of trying to make forest patterns more natural at the landscape level.

The biggest problem with this approach is that it is based on the idea that clearcut size and location should be planned so that the landscape pattern (as seen from a plane or satellite) of disturbances (clearcuts and burns) will look similar to the pattern that fire would have left historically (in other words, look like the landscape pattern left by forest fires and other natural disturbances before we started logging). Emulating this pattern is supposed to make the forest “more natural,” but it doesn’t. What it actually does is lead to the creation of bigger clearcuts and not to the retention of large areas of uncut older forest, which are becoming increasingly scarce on our managed forest landscape. Telling companies to make bigger clearcuts will not help us restore large core habitat areas.

The clearcut rules are complicated and difficult to figure out. Because clearcutting has been a contentious issue, some of the rules are deliberately vague and some are misleading. Others are changing. Most of the current rules come from the NDPE guide, which was approved in 2001. The NDPE guide will be replaced in the next few years with a new landscape guide that will address issues of landscape patterns, intact forests, old forests, etc. It is unclear how all these changes will affect decisions about clearcut size and location. But the changes seem to be going in the right direction.

For now, the problems with the NDPE guide have been partially fixed by changes to the *Forest Management Planning Manual* (FMPM). Although the NDPE guide still requires a focus on disturbance size, the new FMPM, which comes into effect for 2007 plans, now requires a broader objective for a more natural “spatial landscape pattern.”

This fact sheet explains both approaches.

How many clearcuts can be big?

For forest management in Ontario, 260 hectares is the threshold that has developed for calling a clearcut big. This is because of a decision by the Environmental Assessment Board in 1994 that said clearcuts had to be smaller than 260 ha unless an exception was required for sound biological and silvicultural reasons. The new *Declaration Order Regarding the Ministry of Natural Resources Class Environmental Assessment Approval for Forest Management on Public Lands in Ontario* (EA Declaration Order) has provided this additional guidance:

- 80% of the number of clearcuts in a boreal Forest Management Unit (FMU) must be smaller than 260ha

- 90% of the number of clearcuts in a Great Lakes-St. Lawrence FMU must be smaller than 260ha.

Unfortunately this rule isn’t as restrictive as it first appears. Although 80% of clearcuts might be smaller than 260 ha, the total area of forest in cuts larger than this could be far greater. For example, five cuts of 100ha each and one cut of 10,000ha would satisfy the 80% rule, even though 96% of the total forest area cut is in the single 10,000ha cut.

Companies must document why they are planning big clearcuts

- The rationale for every clearcut greater than 260ha must be documented in Table FMP-18 of the Forest Management Plan (or in the front of plans earlier than 2007).
- Don’t expect to get much out of this table as typically the rationale isn’t that meaningful: “Emulation of natural disturbance patterns” and “Provide habitat for caribou” are examples of common rationales. Often the company is planning big cuts because the NDPE guide or the caribou guide requires it or allows it.

How big should the clearcuts be?

- Natural patterns: The NDPE guide tells managers they are supposed to base their decisions on clearcut size on an assessment of what the natural disturbance pattern is. The NDPE guide cites the old FMPM, which required that the “proposed harvest allocation [move] towards the emulation of a natural disturbance pattern” (“Frequency distribution of clearcut and wild-fire sizes”). However, this requirement in the new FMPM has been replaced with a broader, more appropriate objective for conserving natural landscape patterns rather than focusing only on disturbance patterns. It is unclear how this change will affect management decisions.
- Protecting water quality: The *Forest Management Guidelines for the Protection of the Physical Environment* advise that significant impacts on water quality, water temperature and water yield may occur if more than 50% of second-order watersheds are clearcut. The size of second-order watersheds varies greatly from quite small to vast. However, the guide does not explicitly require companies to limit cutting to less than 50%.

How far apart do clearcuts have to be?

This is the most useful set of rules provided by the NDPE for planning the layout of clearcuts. There are two basic options: clearcuts must be separated geographically or in time. So a planned clearcut has to

either be physically separated from a recent clearcut or it can be adjacent to an older cut that is regenerating. The purpose of the rule is to avoid having vast freshly cut areas without adjacent older forest areas.

- Time: A clearcut can be planned next to an existing cut if the existing cut is at least 20 years old or the trees of this regenerating cut have reached at least 3m in height.
- Space:
 - Clearcuts of 10-260 ha in size must be separated by a minimum of 100m and an average of 200m.
 - For every increase in clearcut size of 100 ha, the separation distance must increase by 50m (i.e. two 560 ha clearcuts must be separated by a minimum of 250m and an average of 350m).
 - Clearcuts in different size categories must be separated by the minimum separation distance required by the smaller clearcut (i.e. a 200 ha clearcut and a 5,000 ha clearcut only need to be separated by a minimum of 100m and an average of 200 m).
- There are also rules on what the separation distances can consist of:
 - Separation distances less than 600m: At least 200m must consist of forest greater than or equal to 3m in height.
 - Separation distances greater than 600m: At least 70% of the landscape must be in forest greater than or equal to 6m in height.

What about broader landscape objectives?

The new FMPM now requires that objectives and targets be set for conserving natural spatial landscape patterns. These are overall natural patterns for the forest, including old-forest and core-forest areas. The planning team is required to do a spatial assessment of how its proposed management strategy affects these objectives and targets. Changes to preferred harvest areas and primary road corridors may be required based on this assessment. This applies to 2007 FMPs and beyond.

How is the guide applied?

Disturbance patterns:

- The first step in applying the landscape rules of the NDPE guide is to choose a natural landscape pattern that the FMP will try to emulate. **This occurs** during the organizing for planning. The NDPE guide recommends several sources of information on natural landscape patterns for the planning team:
 - Forest Management Guidelines for the

Emulation of Fire Disturbance Patterns –

Analysis Results, which is an analysis by

OMNR of 42 fires between 1921 and 1950

- the Donnelly and Harrington Fire History Maps of Ontario (1978)
- Ontario's Forest Fire History: An Interactive Digital Atlas (CD-ROM) (can be ordered at 1-800-667-1940).

- The second step is to characterize the current landscape pattern on the Forest Management Unit. The number of disturbances (cuts and burns) of different sizes is the pattern they are most concerned with.

This occurs while the long-term management direction is being developed.

- The difference between the natural landscape pattern and current landscape pattern (i.e., the difference in the number of cuts and burns of different sizes) will be the basis of decisions about clearcut size. If the natural pattern had more big disturbances than the current pattern, the planning team will plan to create bigger clearcuts. This will be part of the consideration of which areas are available for logging.

This occurs while the long-term management direction is being developed. Specific decisions about clearcut size and location (including separation between clearcuts) will be done during planning of proposed operations.

- Decisions about clearcut size, separation and tree retention (see the Advice Fact Sheet for Tree Retention) are aided by the use of the NPPEG (Gilligan) spatial planning tool.
- All planned clearcuts, their size and the rationale for cuts larger than 260ha is reported in Table FMP-18 (or in the front of FMPs earlier than 2007).
- The size and location of all clearcuts is subject to public input and the need to protect other values.

Spatial landscape patterns:

- Objectives and targets for spatial landscape patterns are developed while the planning team is developing the long-term management direction. Decisions need to be made not only about the values ("landscape measures") but also about how to measure them ("metrics").
- A spatial assessment is done to see how these spatial measures will change as a result of the planned 10 years of logging. This result is compared to what the values would be if there were no logging in the next 10 years. Changes may be made to the locations of preferred harvest areas and primary roads based on the

results. This step is also undertaken during the development of the long-term management direction.

- The spatial assessment will be redone during planning of proposed operations when more accurate information is available about harvest locations.
- The rules for providing large intact habitat areas for marten and caribou will influence the objectives and the assessment of spatial landscape patterns and deferrals of large areas of old forest (see the Advice Fact Sheet for Caribou Habitat and the Advice Fact Sheet for Marten Habitat).

What to ask for

- **[BASIC]** An objective for retaining natural levels of core forest. The requirement for objectives and targets for conserving more natural spatial landscape patterns is the best tool available to ensure that the NDPE guide's focus on clearcut size doesn't result in the loss of more of the most valuable forest we have – core or interior habitat that consists of older forest, unfragmented by other cuts and roads. The planning team may respond by saying it is too difficult to measure what the natural levels of core forests were. While this can be done, it is too complex a task for you to do yourself if the planning team is not willing. You can, however, insist on a target of no decrease in the amount of core habitat over the next 10 years.
Do this while the long-term management direction is being developed. See the Advice Fact Sheet for Objectives and Indicators for additional help.
- Limit clearcutting of watersheds. Tell the planning team that you want to ensure that cutting in individual watersheds is limited. Tell them that they should ensure that no more than 50% of each second-order watershed is cut. This should be incorporated as an indicator for the

objective to “minimize the adverse effects of forest practices on water quality.”

Do this while the long-term management direction is being developed. See the Advice Fact Sheet for Objectives and Indicators for additional help.

- Limit clearcutting of traplines. Any Forest Management Unit (FMU) will consist of many traplines. Traplines are areas managed by Aboriginal or non-Aboriginal trappers as a source of livelihood and cultural tradition. The planning team should commit to not allowing a large proportion of any one trapline to be disturbed at any one time, otherwise the ability of the trapper to use the area will be severely diminished. This should be incorporated as an indicator for the objective to “to provide forest cover for those values dependent upon the forest.”

Do this while the long-term management direction is being developed. See the Advice Fact Sheet for Objectives and Indicators for additional help.

- **[BASIC]** Change size and location of planned clearcuts to address your concerns.
If you have any concerns about the size or location of cuts, make these clear to the planning team – especially if they affect a value that you think is important for the forest. You should clearly document your concern and propose a solution.
Do this while proposed operations are being planned. Read the discussion on Advice Fact Sheet for Values Identification and the How-To section of this guide for more advice.
- Request that they fix any problems with their approach that you find while assessing their proposals using the Compliance Checklist for Clearcut Size and Location.

HARVEST LEVELS



This fact sheet describes the importance of harvest levels, explains the rules that companies have to follow and gives advice on what to ask for during forest management planning to ensure that the best decisions are made. For advice on assessing company compliance with the rules, read the Compliance Checklist for Harvest Levels as well.

For advice on how to make effective comments during planning, read the How-To section of this guide.

To better understand the steps of the planning process, read the Forest Management Planning section of this guide.

What's important about harvest levels?

The determination of how much wood can be cut sustainably from the forest is the backbone of the entire forest management process. Unfortunately it is also the most challenging part of the process to participate in and understand. It involves the use of a complicated computer models, a detailed data inventory of the forest and technical forestry knowledge.

Despite the complexity, there is immense value in getting involved in this discussion. There are some key questions to ask and some key decisions to make that will determine how well the plan will meet the many differing objectives and demands placed on the forest.

What's a sustainable harvest level?

The theory

Theoretically, this is how sustainable harvest levels should be determined:

Step 1: Determine the area that can be used for forestry. Starting with the total area of the forest management unit:

- subtract areas not available for forestry (provincial parks, conservation reserves, private land,

federal land, First Nations reserves, etc.)

- subtract areas that don't contain productive forest (water, rock, swamps, etc.)
- subtract areas that need to be protected because of potential damage to the site due to shallow or wet soils, steep slopes, etc.
- subtract areas that need to be protected as no-harvest reserves (around lakes, eagle nests, etc.)
- subtract areas made unavailable for harvest because of natural disturbance (burned areas, etc.).

Step 2: Of the area available for forestry, determine the amount of mature (harvestable) forest, the rate of forest growth and when younger stands will become mature (harvestable).

Step 3: Determine further constraints created by the need to meet other requirements and guidelines. For example, rules for permanent tree retention decrease the available wood. A requirement to maintain old-growth-forest also delays the availability of otherwise harvestable forest.

Step 4: Based on the availability of harvestable forest over time, choose a harvest level that achieves the greatest number of objectives and targets in the plan, some of which will require trade-offs.

The reality

The reality is that the determination of the harvest level is often influenced by wood-supply commitments to mills. These commitments, called Ministry Recognized Operating Levels (MROLs), are outlined in OMNR's Regional Wood Supply Strategies. The MROL for each mill is divided between the different Forest Management Units (FMUs) that supply wood to the facility. The amount for each FMU often becomes the basis of harvest level objectives in the management plan for that unit.

The commitments in the Regional Wood Supply Strategies are themselves based on the harvest level of the previous Forest Management Plan (FMP). This is a big problem because it is generally acknowledged that harvest levels in the past were too high to sustain in the long term and were really based on industrial demand, not ecological sustainability. In fact, wood-supply allocations are often larger than the actual amount of wood being used by an individual mill.

Although licences issued by the OMNR for forest harvesting clearly state that wood-supply commitments are subject to the forest's ability to sustainably produce the wood, this system still creates an unhealthy pressure on the planning process to produce a predetermined amount of wood supply. It is because of this pressure that extra care is needed to make sure that all of the steps described above as the theory of calculating wood supply are properly implemented.

The rules

In addition to the requirements for sustainability outlined in the *Crown Forest Sustainability Act*, the many forest management guides that require protection of non-timber values and the FMPM, which outlines the process that needs to be followed in determining harvest levels, there are two other OMNR documents that set out how this is to be done.

- The *Forest Resource Assessment Policy* (FRAP, 2003) provides guidance on how to input information on the Forest Management Unit into the computer model. It also requires an assessment of the ability of forest to meet current wood-supply demands and potential increases.
- The *Regional Wood Supply Strategies Appendix 2: Best Practices for Wood Supply Modeling* should be generally adhered to in the modeling process. However, one of these best practices is problematic. Under "Harvest Volume Objectives and Flow Policy," it is recommended that the planning team use figures for the management unit contained in the *Regional Wood Supply*

Strategies as timber-supply targets when constructing the model. These numbers, however, come from past FMPs as described above.

Following this advice therefore leads to the planning team taking the timber harvest levels from the last plan and using them to set targets for the

current plan. The trouble with this is that in the past it has been industry demand that has largely determined harvest levels, not sustainable ecosystem productivity. Following this advice may therefore lead to the unhealthy pressures on forest resources discussed in section above.

How are harvest levels determined?

Harvest levels are one of the outcomes of the development of the management strategy (called the management alternative in FMPs earlier than 2007). The management strategy is the chosen approach to logging, regenerating and protecting parts of the forest. The strategy is based on an attempt to meet as many of the objectives and indicators in the plan within the limits of sustainability (see Advice Fact Sheet for Objectives and Indicators). The planning team will try out many different scenarios before selecting a management strategy.

A computer model called the Strategic Forest Management Model (SFMM) is the tool used by the planning team to try out these different scenarios. The model uses an electronic data inventory of the forest along with assumptions about how forests behave and grow to create a "virtual reality" forest. It is in this virtual reality forest that foresters can try out different approaches and predict how they will affect forest conditions in the future.

SFMM predicts changes in forest age, species composition and wood volumes over time and predicts forests available for logging and other forest benefits like wildlife habitat. The model requires many pieces of information in order to do this.

There are three categories of information required: land-base definitions, forest dynamics and silvicultural options.

- **Land-base definitions**

This is where the land is divided according to land ownership (e.g. Crown or private), land use (e.g. parks or managed Crown land) and whether the land is forested or not. Ultimately the land base on which harvesting will occur is determined from this process.

- **Forest dynamics**

This is the information about how the virtual forest changes over time. This change depends

on the forest type and the type of silviculture used. Suitable habitat conditions for wildlife are also defined.

- **Silvicultural options**

This information describes results of logging and regeneration in different forest types. The ages at which forests units are harvestable, costs and benefits of different approaches (planting, seeding and thinning) and consequences of harvesting operations are included.

Selecting a management strategy

The planning team will use SFMM to predict and compare the outcomes of different strategies. The level of achievement of objectives and indicators for all of the strategies (even those that are rejected) will be described in Table FMP-14 (Table FMP-12 of FMPs earlier than 2007). The comparison between management strategies must be recorded in the Analysis Package as Appendix III of the FMP (Table FMP-13 of FMPs earlier than 2007).

Each strategy must also undergo a socio-economic impact analysis using another computer model. The impacts of each alternatives timber harvest level should be assessed here.

The planning team should select a management strategy that is best able to meet the various objectives and indicators. The assessment of sustainability of the selected strategy is based on how well these objectives and indicators are met over time. The rationale for selecting the management strategy is described in FMP Section 3.7 (FMP Section 2.3.5 of FMPs earlier than 2007).

The projected changes in several important measures of forest sustainability resulting from the selected management strategy must also be recorded for the next 100 years in several FMP tables:

- age for all forest types: Table FMP-7 (FMP-11 of FMPs earlier than 2007)
- amount of habitat for key wildlife species: Table FMP-8
- available harvest area: Tables FMP-9 and FMP-10 (FMP-15 of FMPs earlier than 2007).

What to ask for

- **[BASIC]** Make sure that strong objectives and targets are in place to protect non-timber values.
Do this while the long-term management direction is being developed. See the Advice Fact Sheet for Objectives and Indicators for additional help
- **[EXPERT]** Ask for an explanation of wood utilization – how much wood are the mills using? Some may be increasing their usage due to increased product demand while others may be decreasing usage due to better mill efficiency. Ask if any new wood-supply commitments are being considered. If they are, ask to see the associated business plan. Do you think these new commitments can be met given what you’ve found out about current harvest levels using the assessment in the Compliance Checklist for Harvest Levels?
- Ask the company and the OMNR to do a socio-economic analysis that shows the relationship between jobs and wood supply in the local area for the last 20 years and projections for the next 20. In most areas, employment has been steadily decreasing despite rising harvest levels. Insist that the manager develop a plan to deal with this problem.
- **[EXPERT]** Request that they fix any problems with their approach that you find while assessing their proposals using the Compliance Checklist for Harvest Levels.

MEASURING UP



COMPLIANCE CHECKLISTS

This collection of compliance checklists tells you how to assess whether companies are following the rules to protect important non-timber values in forests. Use the list to pick out topics that you're interested in and check out the corresponding compliance checklist. The previous section has advice fact sheets for these same topics. They explain the rules for protecting important non-timber values and give advice on how to make sure good decisions are made during forest management planning.

If you're interested in...

- ...protecting specific values or features you know about...see the *Compliance Checklist for Areas of Concern*.
- ...the protection of shoreline forest habitat... see the *Compliance Checklist for Areas of Concern*.
- ...the protection of nests or bird colonies...see the *Compliance Checklist for Areas of Concern*.

...the impacts of roads on wilderness or remote tourism...see the *Compliance Checklist for Road Planning and Access Controls*.

...the impacts of roads on water quality... see the *Compliance Checklist for Bridges and Culverts*.

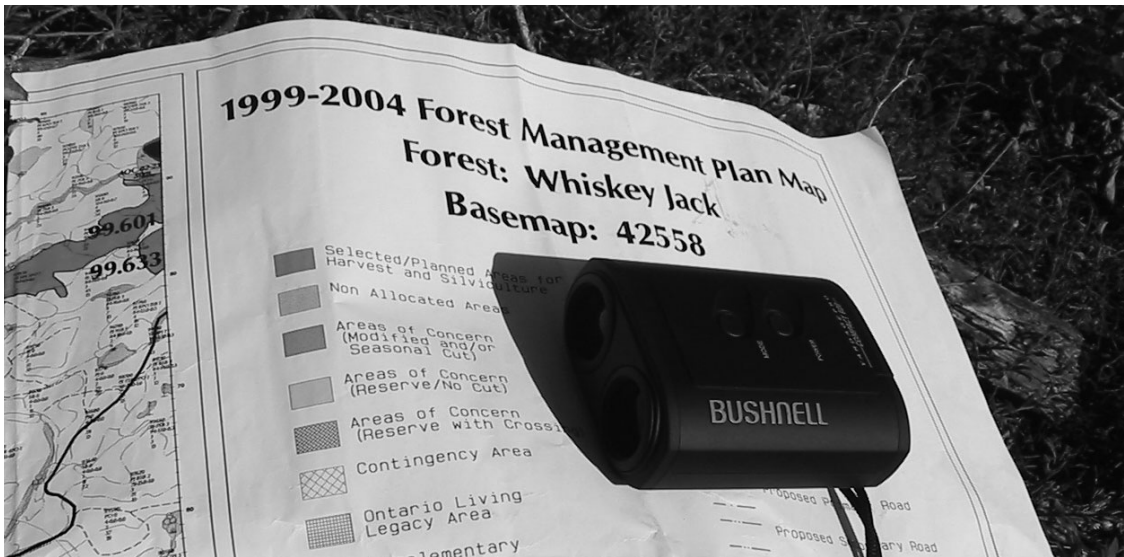
...intact habitat for wildlife species...see the *Compliance Checklist for Caribou Habitat*, the *Compliance Checklist for Marten Habitat* and the *Compliance Checklist for Pileated Woodpecker Habitat*.

...maintaining old-growth forests...see the *Compliance Checklist for Old-Growth Forests*.

...lessening the impacts of clearcutting...see the *Compliance Checklist for Tree Retention* and the *Compliance Checklist for Clearcut Size and Location*.

...how sustainable the annual harvest is...see the *Compliance Checklist for Harvest Levels*.

AREAS OF CONCERN



This compliance checklist gives advice on how to assess the forest company's compliance with the required actions to protect non-timber values within Areas of Concern. Whether you undertake this assessment by reading the Forest Management Plan (FMP), looking at maps or by going out into the forest depends on the rule you are checking compliance with. Assessment of the FMP and field assessment are described separately.

To find out about the rules, see our Advice Fact Sheet for Areas of Concern.

Assessing compliance with rules for Areas of Concern (AOC) is quite straightforward. Assessing the Forest Management Plan (FMP) simply involves checking to see if the AOC prescriptions meet the rules described in the *Advice Fact Sheet for Areas of Concern*. Assessing field compliance is as easy as measuring the width of no-harvest reserves with a measuring tape.

Assessing proposals/decisions

What you'll need:

- This compliance checklist and the Advice Fact Sheet for Areas of Concern.
- The following parts of the FMP:
 - Table FMP-15, Operational Prescriptions for Areas of Concern (Table FMP-17 of FMPs earlier than 2007), which will contain all the AOC prescriptions for the FMP. Look through this long table and locate the values you're interested in.
 - The composite operations map(s), which show an overview of planned cuts and roads on the Forest Management Unit (FMU) (the summary "areas selected for operations map" of FMPs earlier than 2007).

- The operational-scale operations maps, which show a close-up view of all the planned cuts and the AOCs. Find out which operational-scale maps you want by using the composite-scale map for the whole FMU ("areas selected for operations maps" of FMPs earlier than 2007).

Do the AOC prescriptions and the no-harvest reserves match the rules?

[BASIC] Compare the planned AOC prescriptions in Table FMP-15 to the rules that are described in the Advice Fact Sheet for Areas of Concern or in the guidelines themselves. Each AOC has a number associated with it. You can use this number to find the AOCs on the operations maps. There may also be additional information about the planned prescription in the supplementary documentation of the plan.

Are the AOC prescriptions adequate?

[BASIC] If there is no guideline that tells the planning team what the prescriptions should be or if the planning team has flexibility in making the decision on a certain value, you should assess whether you think the approach is adequate to protect the value in question.

Field assessment

Additional stuff you'll need:

Compass (so you don't get lost), four-wheel drive vehicle (so you don't get stuck), a companion (for safety), a handheld GPS unit if you have one, the composite-scale operations map(s) and operational-scale operations maps (just the ones you need for the areas you're visiting). Also bring along Table FMP-15 (Table FMP-17 of FMPs earlier than 2007). Use the composite-scale operations map(s) as your road map.

Did they actually leave the required no-harvest reserves?

- Drive out to the harvest blocks that you are interested in seeing.
- Find the reserve. It should be easily visible because the trees around it will have been cut down.
- Do a quick inspection to find areas where the reserve may have been violated. Often these reserves are marked with flagging tape so the operator can see where to cut. If the flagging tape is missing in some areas, the operator may have cut into the reserve. Otherwise, just find spots where the reserve seems to be the smallest.
- Using a GPS unit, hip chain or measuring tape, measure the width of the reserve, starting at the value in question or at the edge of the cut. For example, if it is a stream buffer, start measuring near the stream where the trees start or at the edge of the cut and walk towards the stream. Be sure to measure a path that is perpendicular to the direction of the stream.
- Record the width of the reserve and the location of the measurement.

Measuring reserves that weren't in the plan

- Some no-harvest reserves won't be on the maps. Smaller values that are only discernable in the field can't always be planned for ahead of time. This might include additional nest sites or small streams. Most often, these values are small streams that don't show up on 1:20,000 maps. All of these smaller streams require at least a 3m buffer zone of uncut vegetation.
- For any streams you come across that don't have planned AOCs, make sure there is a 3m no-harvest reserve. You can use the same measuring technique you used for mapped AOCs.
- Any values that are covered by the forest management guides should get the same prescription whether they were known about ahead of time or not (for example an eagle's nest).

What now?

- Record your observations using the sample checklist on page 82 as a guide.
- Provide your findings and comments to local OMNR and company staff.
- Submit your results on the Forest Guardians website at www.wildlandsleague.org/guardians
- Contact us for advice.

ROADS PLANNING AND ACCESS RESTRICTIONS



This compliance checklist gives advice on how to assess the forest company's compliance with the rules regarding roads planning and access restrictions. Whether you undertake this assessment by reading the Forest Management Plan (FMP), looking at maps or by going out into the forest depends on the rule you are checking compliance with. Assessment of the FMP and field assessment are described separately. **To find out** about the rules, see our Advice Fact Sheet for Roads Planning and Access Restrictions.

Why are roads and access important?

Access controls are put in place to protect sensitive habitat areas for wildlife and to retain the remote character of previously hard-to-reach areas. Many wild species, including woodland caribou and wolverine, require remote and inaccessible areas for survival. Opportunities for backcountry recreation and solitude can also be lost when areas become easily accessible thanks to logging roads. There are more than 33,000 kilometres of logging roads in Ontario and large, remote forest areas are becoming increasingly scarce in this province.

Assessing proposals/decisions

What you'll need:

- This compliance checklist and the Advice Fact Sheet for Roads Planning and Access Restrictions.
- The following parts of the Forest Management Plan (FMP):
 - FMP Section 4.5.1, which describes new and existing roads (FMP Section-2.4.5 of FMPs earlier than 2007).
 - FMP Section 4.5.2 and Table FMP-26, which describes road locations and conditions on road construction in AOCs (FMP Section 2.4.5.2 and Table FMP-17 of FMPs earlier than 2007).
 - The detailed analysis for each road location and use-management strategy as described in the Roads Supplementary Documentation Form. The text of Section 4.5.1 will tell you where to find this analysis in the Supplementary Information (contained in the Supplementary Documentation Section and Appendix VI of FMPs earlier than 2007).
 - The Roads Table (Appendix II of the FMP), which will list information for all roads in the Forest Management Unit, including all existing roads, all primary roads planned in the next 20 years, all branch roads planned in the next 10 years and all planned operations roads. The text of Section 4.5.1 will tell you where to find the Roads Table in the Supplementary Information (FMP-26 of FMPs earlier than 2007).
 - Table FMP-25, which discusses the

construction, maintenance and use-management for all roads that are planned for use during the 10-year FMP (FMP-26 of FMPs earlier than 2007).

- The values map, which will be located in the Supplementary Documentation Section of the FMP, and shows the location of any Enhanced Management Areas (EMAs).
- The composite-scale operations map(s) (which shows a general picture of the whole unit) and operational-scale operations maps (which provide a more detailed look at smaller areas), and shows all planned road construction (summary “areas selected for operations map” of FMPs earlier than 2007).

Are there any EMAs on the management unit?

[BASIC] Sometimes it’s hard to find out where the EMAs are in a management unit. They should be on the values map, but they often are not. Look at the provincial OLL land-use strategy map, available at crownlanduseatlas.mnr.gov.on.ca/supportingdocs/alus/map_c.htm. If it looks like there are EMAs on the management unit, contact the local OMNR office to get a map of their locations.

Have the EMAs been properly protected?

[BASIC] If there are EMAs on the management unit, you can investigate whether good decisions were made to protect their remoteness:

- Look at the operations maps to see if there are any roads planned through the EMA.
- If there were, read the full analysis for the road in the Supplemental Information.
 - Was the road built to the lowest possible standard? If it is an all-season road, could a winter road have been used instead?
 - Does the use-management strategy contain effective provisions to restrict public access and to physically abandon the road after use? Look at the advice we give for effective access controls in the Advice Fact Sheet for Roads Planning and Access Restrictions.

You can ask these same questions about any road that you believe should have been planned to retain remote conditions.

How many roads have restrictions?

[BASIC] Take a look at the Roads Table and Table FMP-25.

- What proportion of these roads has access restrictions? Does it seem like a fair balance?
- Do the planned access restrictions seem like they would be effective? Look at the advice we give for effective access controls in the Advice

Fact Sheet on Roads Planning and Access Restrictions. You can also follow this question up with a field assessment.

Were road locations and conditions of construction in AOCs effective to protect the value?

- Read Section 4.5.2 of the FMP, as well as Table FMP-26. Does it seem like the prescription to protect this value would be effective? You can also follow this question up with a field assessment.

Field assessment

Additional stuff you’ll need:

Compass (so you don’t get lost), four-wheel drive vehicle (so you don’t get stuck), a companion (for safety), a handheld GPS unit if you have one, the composite-scale operations map(s) and operational-scale operations maps. Also bring along the Roads Table from the FMP. Use the composite-scale operations map(s) as your road map.

When assessing access controls, you’re really looking to see if the access control is an effective deterrent to unauthorized use. If it isn’t, then it doesn’t properly protect the values beyond the closure. There are two ways to assess this. The first is to look for direct evidence that someone has bypassed the access control (for example, driven through or around it). The second is to check whether the access control is intact. (Is the gate broken? Is the cable down?)

Where are the access controls? [BASIC]

- Sit down with someone at the local OMNR office and make sure you know where all the access controls are. You can start by generating a list from the Roads Table and the operations maps, but these may not show all the locations. Also ask local staff what enforcement and inspection of closures has been done in the area.
- Ask local OMNR and company staff about any additional closures they know about and whether they have any enforcement or inspection records.

Are the access controls effective?

- Visit sites designated for road closures and examine the effectiveness of the closure. Look for evidence of unauthorized access such as tire tracks or ruts leading around obstacles or gates, barriers that have been shifted or run over, cut cables, fences or gates. Table 7 gives some examples of how access controls can be violated.

- Also assess whether the closure was well located. Does it take advantage of natural barriers such as rivers, difficult terrain or water bodies, to make avoidance more difficult? If it is a gate or cable, is it being maintained? If the access restriction is a sign, is there any evidence of enforcement (e.g., OMNR staff in the area).
- Take photos of the access restrictions, particularly if they have been violated, with a note of map coordinates and date visited.

- To assess water crossings, see the Compliance Checklist for Bridges and Culverts.

What now?

- Record your observations using the sample checklist on page 82 as a guide.
- Provide your findings and comments to local OMNR and company staff.
- Submit your results on the Forest Guardians website at www.wildlandsleague.org/guardians
- Contact us for advice.

Were conditions on construction of roads through AOCs effective at protecting the values?

- Develop a list ahead of time of which AOCs you want to look at. Read up on what OMNR was going to do to protect the value then go check it out. Does it seem to have worked?

TABLE 7

Ways in which control types may be violated

Control type	Violations
Gate	lock broken chain broken gate broken gate unlocked gate driven around
Cable	lock broken cable unlocked
Ditch/hole	ditch/hole filled in bridge built over ditch/hole ditch/hole driven around vehicles driving through the ditch/hole
Berm	berm flattened berm driven over berm driven around
Sign	sign removed sign ignored
Obstacles (like boulders)	obstacles driven around obstacles removed

BRIDGES AND CULVERTS

This compliance checklist gives advice on how to assess the forest company's compliance with the rules to protect water quality and fish habitat through the proper construction and maintenance of bridges and culverts. Whether you undertake this assessment by reading the Forest Management Plan (FMP), looking at maps or by going out into the forest depends on the rule you are checking compliance with. Assessment of the plan and field assessment are described separately.

To find out about the rules, see our Advice Fact Sheet for Bridges and Culverts.

Why are bridges and culverts important?

Bridges and culverts are built wherever a road crosses a water body – usually streams. Because they are built in such sensitive locations, poor construction or maintenance of a water crossing can result in serious ecological impacts such as dirt, gravel and sand entering the water body, disruption of fish habitat or disruption of fish movement.

Assessing proposals/decisions

Due to the complex and technical nature of decisions regarding water-crossing engineering, we recommend you focus on looking for compliance with some basic but important rules in the field.

Field assessment

Additional stuff you'll need:

This compliance checklist, the Advice Fact Sheet for Bridges and Culverts, compass (so you don't get lost), four-wheel drive vehicle (so you don't get stuck), a companion (for safety), a handheld GPS unit if you have one, the composite-scale operations map(s) and operational-scale operations maps. Use the composite-scale operations map as your road map.

Tips for field assessment:

- Choose the roads that you want to check for water crossings. Old roads are more likely to have problems due to poor maintenance than newer ones.
- Drive along the road, stopping to do an assessment at all water crossings.
- At each water crossing answer the compliance questions below.

Is the culvert perched?

First look for obvious signs. If the bottom of the culvert is clearly above either the streambed or the water level, then the culvert is perched. To do a more detailed assessment follow these three steps:

1. Measure the width of the culvert.
2. Measure from the top of the culvert to the streambed.
3. Divide the second measure by the first.

If the result is greater than 0.9, then the culvert has been installed improperly.



Sometimes arch culverts are used. An arch culvert is like the top half of a regular culvert and acts more like a bridge. Arch culverts have fewer environmental impacts and cannot be perched because there is no need to bury them.

Is there erosion of sediment into the water body?

Check for gullies, or other obvious signs of erosion. Sometimes significant amounts of the road will be washed out.

Is the culvert blocked?

Check to see if there is any debris clogging the mouth of the culvert.

Are there any other problems?

Check for any other signs of problems with the water crossing. For example:

- Is there water flowing over the road rather than through the water crossing?
- Is the water crossing in poor physical condition/collapsing?

What now?

- Record your observations using the sample checklist on page 82 as a guide.
- Provide your findings and comments to local OMNR and company staff.
- Submit your results on the Forest Guardians website at www.wildlandsleague.org/guardians
- Contact us for advice.

TREE RETENTION



This compliance checklist gives advice on how to assess the forest company's compliance with the rules to retain trees for habitat while clearcutting. Whether you undertake this assessment by reading the Forest Management Plan (FMP), looking at maps or by going out into the forest depends on the rule you are checking compliance with. Assessment of the plan and field assessment are described separately. **To find out** about the rules, see our Advice Fact Sheet for Tree Retention.

Tree retention is a tough thing to measure, especially in the field. The only part that is relatively easy to estimate in the field is the requirement to leave 25 standing trees per hectare. Measuring this is easy because you are basically counting trees. By contrast, measuring percentage retention in tree patches requires the measurement of area, which is much harder on the ground.

We recommend an approach to this issue that emphasizes assessment of the Forest Management Plan (FMP). If the supporting information (like aerial photos) isn't available to do a thorough job in the field, you'll have to settle for some rough estimates.

Assessing proposals/decisions

What you'll need:

- This compliance checklist and the Advice Fact Sheet for Tree Retention.
- The following parts of the FMP:
 - Section 4.3.4 of the FMP ("Planned Clearcuts"), which will describe the levels of retention for each planned clearcut and also

make reference to the relevant operations maps (there is no specific section for this in FMPs earlier than 2007).

- Table FMP-3 (Table FMP-8 in FMPs earlier than 2007).
- Table FMP-17, which will describe the total amount of planned retention for each forest type (there is no specific section for this in FMPs earlier than 2007).
- Composite map(s) and operational-scale operations maps from the Supplementary Information section of the FMP ("areas selected for operations maps" of FMPs earlier than 2007). Find out which operational-scale maps you want by using the composite-scale map(s) for the whole management unit.

[EXPERT] Ask the company for the outputs from the NDPEG Tool (also called "Gilligan"). You will get a series of computer shape files that you will need a GIS system to view. When you look at these files you'll be able to see how retention patches have been planned

TABLE 8: Translation of species symbols used in the NDPE guide

Conifer Upland (Sp, Pj, Bf)	upland spruce, jack pine, balsam fir
Conifer Lowland (Sp, Ce, La)	lowland spruce, cedar, tamarack (larch)
Upland Mixed (Sp, Pj, Bf, Po, Bw)	mixed spruce, jack pine, balsam fir, poplar and white birch
Intolerant Hardwood (Po, Bw)	Poplar, white birch
Tolerant Hardwoods (Mh, Be, Oak)	hard (sugar) maple, beech, oak etc.
GL-SL Pines ² (Pw, Pr)	Great Lakes-St. Lawrence pines (red and white pine)
GL-SL Mixedwood (P, S, M, B, O)	Great Lakes-St. Lawrence Mixwood (Pine, spruce, maple, birches (white and yellow), oak)

within the planned clearcuts and within the harvest blocks that will be logged during the term of the FMP.

Compliance questions

Are they planning to retain enough trees and patches?

[BASIC] Look at Table FMP-17 and compare the planned level of retention for each forest type with the requirements on page 12 of the NDPE guide (Table 3 of the Advice Fact Sheet for Tree Retention).

Forest types are expressed more narrowly as “forest units” in FMPs. Forest units are described for each FMU in Table FMP-3. These descriptions will help you to match “forest units” from the FMP with the “forest types” described in the NDPE guide. There may be several forest units that would fall under a forest type in the NDPE guide. For example, the NDPE guide forest type “Conifer Upland” could include the forest units “PJDOM” (jack pine dominated) and “SPDOM” (spruce dominated). Table 8 will further help decipher the forest types and species codes used in the NDPE guide.

[EXPERT] Looking at the outputs from the NDPEG Tool (Gilligan), you can see where the retention was planned. Look for how much retention they are planning to leave in the new harvest areas. This is important because retention planning is done for the whole planned clearcut, which includes past harvest areas. You don’t want all of the retention to be located in the older cuts with very little in the new cuts.

- If for any reason they plan to leave more retention patches than is shown on the map, this will be described in Section 4.3.4 of the plan.

Field assessment

Additional stuff you’ll need:

This compliance checklist, the Advice Fact Sheet for Tree Retention, compass (so you don’t get lost), four-wheel drive vehicle (so you don’t get stuck), a companion (for safety), a handheld GPS unit if you have one, the composite operations map(s), operational-scale operations maps (just the ones you need for the areas you’re visiting) and Section 4.3.4 of the FMP. Use the composite operations map(s) as your road map.

Did they actually retain enough patches?

[EXPERT] It will be challenging to assess this question. The only way to reliably assess this is with aerial photographs because it is too difficult to estimate areas on the ground. Ask OMNR or the company for aerial photographs of the harvest area you are interested in. Alternatively, you could visit the planned harvest area first and do a visual inspection. You’ve already found out how much retention the FMP requires. Does it look like they’ve done what was called for? If not, follow up by either assessing aerial photos or asking the company to provide you with evidence that they are in compliance.

Did they actually retain enough individual and clumped trees?

You can assess this one with aerial photos as well, but you can also do it in the field.

Aerial photos:

- Count the number of individual retained trees that are dispersed or clumped throughout the

harvest area. Divide the total by the size of the cut to determine whether 25 trees per hectare were retained. If the cut is really big, do this over smaller areas to estimate total tree retention. (Get the size of the cut from the label for the harvest block on the operations maps.)

In the field:

- Drive out to the clearcut. If the cut is small enough, count all the individual trees that have been retained and divide that number by the size of the harvest area.
- If the cut is too big to count all the trees, use a measuring tape to measure out square plots 100m x 100m in size. Each of these squares is one hectare in size. Count the trees in each square and then determine the average number of trees in all the squares (by dividing the total number of trees counted by the total number of squares you made). Do as many squares as you reasonably can.
- You can also check to see if the retained trees are of adequate quality. (You can do this in non-clearcut areas that have been logged more selectively as well.) Remember that at least six retained trees are supposed to be “high quality

wildlife trees” at least 30cm in diameter at breast height. Take your measuring tape and measure the circumference at your breast height of the biggest trees you can find. Dividing the circumference by 3.14 will give you the diameter.

- **[EXPERT]** Remember also that certain types of trees are supposed to be retained for pileated woodpeckers (see the Advice Fact Sheet for Tree Retention). It might be hard to identify the different types, but if you know how, you can assess this too. Check to see if you can find these types of trees in the stand. The best thing to do is to check before logging begins, because these trees should be marked with blue paint for retention.

What now?

- Record your observations using the sample checklist on page 82 as a guide.
- Provide your findings and comments to local OMNR and company staff.
- Submit your results on the Forest Guardians website at www.wildlandsleague.org/guardians
- Contact us for advice.

MARTEN HABITAT

This compliance checklist gives advice on how to assess the forest company's compliance with the rules to protect marten habitat. Whether you undertake this assessment by reading the Forest Management Plan (FMP), looking at maps or by going out into the forest depends on the rule you are checking compliance with. Assessment of the plan and field assessment are described separately. **To find out** about the rules, see our Advice Fact Sheet for Marten Habitat.



Most of your assessment will be focused on the Forest Management Plan (FMP) and whether or not decisions made in it follow the rules. This is because the most important parts of the marten guideline deal with the creation of large core habitat areas, which are much more easily viewed on a map than on the ground. Your assessment of the FMP should focus on the amount and quality of marten habitat cores that the planning team has identified.

Assessments in the field will be focused on any logging that may have occurred inside these marten cores (hopefully none).

Assessing proposals/decisions

What you'll need:

- This compliance checklist and the *Advice Fact Sheet for Marten Habitat*.
- The following parts of the FMP:
 - Table FMP-6, which describes the objectives and indicators for the plan (see Advice Fact Sheet for Objectives and Indicators) (FMP Sections 2.3.3.1 and 2.3.3.2 in FMPs earlier than 2007).
 - FMP Section 3.7, which describes the future

forest that is predicted to result from the management strategy (included in Table FMP-12 in FMPs earlier than 2007).

- Table FMP-8, which shows projected habitat levels for selected wildlife species over time based on the selected management strategy (included in Table FMP-12 in FMPs earlier than 2007).
- The Analysis Package (Appendix III), which shows habitat levels and the extent to which other objectives are achieved by the selected management strategy as well as for the other management strategies that were explored but not selected. It will also show what would happen to habitat over time if no logging occurred (called the natural benchmark). (This information is also included as an appendix in FMPs earlier than 2007.)
- The section of the FMP that discusses marten cores and their level of protection. Unfortunately, there is no clear guidance in the planning manual about where this information should be. We've seen it in sections dealing with prescriptions for

operations, in the description of the Forest Management Unit (FMU) context, comparison of harvest, renewal and tending forecasts, etc. Either search the text of the FMP for this information or ask company or local OMNR staff where it is located in the plan.

- Table FMP-15, which describes Area of Concern Prescriptions (Table FMP-17 in FMPs earlier than 2007).
- The composite-scale operations map(s), which shows an overview of all the major roads and planned logging areas. This can be found in the Supplementary Documentation of the FMP (the summary “areas selected for operations map” of FMPs earlier than 2007).
- The operational-scale operations maps, which show more detailed information about roads and planned logging areas. Find out which operational-scale maps you want by using the composite-scale map(s) for the whole management unit (“areas selected for operations maps” of FMPs earlier than 2007).
- A map showing the location of marten cores. There is no clear requirement in the FMPM for where these cores should appear. Try the composite operations map(s) and the values maps. If they are not shown on these, ask the company or local OMNR office where they are mapped.

Additional stuff:

[EXPERT] If Table FMP-8 (Table FMP-12 in FMPs earlier than 2007) doesn’t show the change in habitat levels over 160 years, ask to see the output from the Strategic Forest Management Model (SFMM) for the selected management alternative (see Advice Fact Sheet for Harvest Levels) that shows predicted levels of marten habitat over time. Also ask to see the output that shows what marten habitat levels would have been without logging (natural benchmark).

[EXPERT] Ask for a printout showing the outputs of the marten habitat analysis done using the Marten Analyst software. You’ll have to ask the company for this information, because it is not included as part of the Forest Management Plan.

What happens to marten habitat over time?

[EXPERT] Using Table FMP-8, the contents of the Analysis Package and/or the SFMM outputs, look at what happens to marten habitat levels over time. Compare this to what would happen in the absence of logging (the natural benchmark). You can also do this by looking at graphs from the SFMM outputs showing the

supply of marten habitat over time.

- Is predicted marten habitat for the selected management strategy stable, increasing or decreasing over time?
- Does it look like there is much less marten habitat available in the selected management strategy than in the natural benchmark?

There should not be an overall decline in predicted supply of marten habitat or a large gap between the predicted supply and the natural benchmark.

How does this compare to the objectives and indicators that were set for marten habitat over time?

Are enough marten cores identified?

[BASIC] Compare the objective for marten core protection with the actual area of forest that was deferred as marten cores. Are they meeting the objective? Are they meeting the requirement of 10-20% of the forest in marten cores?

[EXPERT] The Marten Analyst output will tell you what the total capable habitat is of the FMU. Have they succeeded in placing 10-20% of this in marten cores? To determine this percentage, divide the total area of marten cores they’ve identified by the total area of forest capable of producing marten habitat. Multiplying this number by 100 will give you the percentage.

Are the marten cores of adequate quality?

[BASIC] Are the marten cores big enough? They should all be 3,000-5,000 ha in size. In some cases they can’t be this size because such large areas no longer remain in the forest due to past logging operations. But wherever possible, this size requirement should be met.

[EXPERT] Look at the output of the Marten Analyst calculations. Make sure that the age and species criteria used to identify suitable habitat in the Marten Analyst analysis are in agreement with the rules (these are summarized in the Advice Fact Sheet for Marten Habitat). If the age criterion is lowered and younger forest is selected for the marten cores, the cores may end up being too young for marten or other species which require older forest habitat.

Is there any logging planned in the marten cores?

[BASIC] Look at the composite-scale operations map(s) and the map that shows the marten cores (hopefully they are on the same map). Are they planning to do any cutting in the marten cores? You’ll know that they are if the harvest areas overlap with the marten cores. There shouldn’t be any clearcutting in these

cores. If there is planned logging, it should occur in less than 30% of the core. Do a visual assessment to see if this is the case.

Is the forest reserved in marten cores removed from the available forest area in the harvest calculation?

[EXPERT] Follow the instructions in Table 9 of the Compliance Checklist for Harvest Levels to check whether or not marten cores were deferred from logging in the harvest level calculation. If they haven't been, harvest levels will be too high. Alternatively, contact the regional biologist at OMNR to ask if this has been done.

Field assessment

What you'll need:

This compliance checklist, the Compliance Checklist for Tree Retention, the Advice Fact Sheet for Marten Habitat, compass (so you don't get lost), four-wheel drive vehicle (so you don't get stuck), a companion (for safety), a handheld GPS unit if you have one, the composite-scale operations map(s), operational-scale operations maps (just the ones you need for the areas you're visiting) and Table FMP-15 from the plan if you want to check on proposed logging in marten cores. Use the composite-scale operations map(s) as your road map.

Was there any logging planned in the marten core?

If logging was planned inside the marten core, you can visit the harvest site and determine whether or not the rules were followed. Find the harvest site using the operations maps – you should be able to navigate your way to the spot using the operational-scale maps once you get close. (You can also use your GPS unit, but you should be able to find the site without one.)

Once you're at the harvest site, the easiest thing to look for is whether the canopy closure has been reduced below 50%. To do this, just look up as you walk. If you can see more than 50% of the sky above the forest, then too much has been cut. The other thing to look for is whether the basal area of conifer species has been reduced below 50%. You can just eyeball this as well. Basal area is just a way of measuring the total amount of trees (taking both number and size into account) in a forest stand. Does it look like half of the total amount of the mature trees are conifers? A conifer is any tree with needles instead of leaves.

Is there any unplanned logging in the marten core?

It is difficult to assess whether or not unplanned logging has occurred within a large area like a marten core. Your best bet is to ask OMNR or the company for aerial photos taken after logging in the area. Compare these to the operations maps with the marten cores on them. Did any logging occur in the marten cores?

Do all harvest areas meet the tree retention requirements

See the Compliance Checklist for Tree Retention to assess this question.

What now?

- Record your observations using the sample checklist on page 82 as a guide.
- Provide your findings and comments to local OMNR and company staff.
- Submit your results on the Forest Guardians website at www.wildlandsleague.org/guardians
- Contact us for advice.

PILEATED WOODPECKER HABITAT



This compliance checklist gives advice on how to assess the forest company's compliance with the rules to protect pileated woodpecker habitat. Whether you undertake this assessment by reading the Forest Management Plan (FMP), looking at maps or by going out into the forest depends on the rule you are checking compliance with. Assessment of the plan and field assessment are described separately. To find out about the rules, see our Advice Fact Sheet for Pileated Woodpecker Habitat.

You can assess whether the Forest Management Plan (FMP) includes necessary measures to protect pileated woodpecker habitat. You can also go out in the field and see whether the type and number of trees the loggers have left or are planning to leave satisfies the rules for protecting pileated woodpecker habitat.

Assessing proposals/decisions

What you'll need:

- This compliance checklist and the Advice Fact Sheet for Pileated Woodpecker Habitat.
- The following parts of the FMP:
 - Table FMP-6, which describes the objectives and indicators for the FMP (see Advice Fact Sheet for Objectives and Indicators) (FMP Sections 2.3.3.1 and 2.3.3.2 in FMPs earlier than 2007).
 - FMP Section 3.7, which describes the future forest that is predicted to result from the management strategy (this information is included in Table FMP-12 in FMPs earlier than 2007).
 - Table FMP-8, which shows projected habitat levels for selected wildlife species over time, based on the selected management strategy (included in Table FMP-12 in FMPs earlier than 2007).
 - The Analysis Package (Appendix III), which shows habitat levels and the extent to which other objectives are achieved by the selected management strategy, as well as for the other potential management strategies that were explored but not selected. It will also show what would happen to habitat over time if no logging occurred (the natural benchmark). (This information is also included as an appendix in FMPs earlier than 2007.)
 - The composite-scale operations map, which shows an overview of all the major roads and proposed logging areas. This can be found in the Supplementary Documentation of the plan (“areas selected for operations maps” of FMPs earlier than 2007).
 - The operational-scale operations maps,

which show more detailed information about roads, and planned logging areas (“areas selected for operations maps” of FMPs earlier than 2007). Find out which operational-scale maps you want by using the composite-scale map(s) for the whole management unit.

[EXPERT] If Table FMP-8 (Table FMP-12 in FMPs earlier than 2007) doesn’t show the change in habitat levels over 160 years, ask to see the output from the Strategic Forest Management Model (SFMM) for the selected management alternative (see Advice Fact Sheet for Harvest Levels) that shows predicted levels of pileated woodpecker habitat over time. Also ask to see the output that shows what pileated woodpecker habitat levels would have been without logging (the natural benchmark).

Is there a strong objective for maintaining woodpecker habitat?

Look at Table FMP-6.

What happens to pileated woodpecker habitat over time?

[EXPERT] Using Table FMP-8, the contents of the Analysis Package and/or the SFMM outputs, look at what happens to pileated woodpecker habitat over time for the selected management strategy and the natural benchmark. You’ll be comparing two graphs. Ask yourself these questions:

- Is predicted pileated woodpecker habitat for the selected management strategy stable, increasing, or increasing over time?
- Does it look like there is much less pileated woodpecker habitat available with the selected management strategy than with the natural benchmark?

There should not be an overall decline in the

predicted supply of pileated woodpecker habitat and no significant gap with the natural benchmark.

How do the predicted results compare to the objectives and indicators that were set for pileated woodpecker habitat over time?

Are they planning to leave the important wildlife trees for pileated woodpecker?

Follow the instructions in the Compliance Checklist for Tree Retention.

Field Assessment

What you’ll need:

Compliance Checklist for Tree Retention, Advice Fact Sheet for Pileated Woodpecker Habitat, compass (so you don’t get lost), four-wheel drive vehicle (so you don’t get stuck), a companion (for safety), a measuring tape, a handheld GPS unit if you have one, the composite-scale operations map(s) and operational-scale operations maps (just the ones you need for the areas you’re visiting). Use the composite-scale operations map(s) as your road map.

Did they actually retain enough individual and clumped trees?

Follow the instructions in the Compliance Checklist for Tree Retention.

What now?

- Record your observations using the sample checklist on page 82 as a guide.
- Provide your findings and comments to local OMNR and company staff.
- Submit your results on the Forest Guardians website at www.wildlandsleague.org/guardians
- Contact us for advice.

OLD-GROWTH FORESTS



This compliance checklist gives advice on how to assess the forest company's compliance with the rules to protect old-growth forests. Whether you undertake this assessment by reading the Forest Management Plan (FMP), looking at maps or by going out into the forest depends on the rule you are checking compliance with. Assessment of the plan and field assessment are described separately. **To find out** about the rules, see our Advice Fact Sheet for Old-Growth Forests.

Most of your investigation will be focused on the forest management plan (FMP) and whether adequate decisions have been made to protect old-growth forests. You can also go out to visit areas that have been identified and see whether they really look like old-growth forests.

Assessing proposals/decisions

What you'll need

- This compliance checklist and the Advice Fact Sheet for Old-Growth Forests.
- The following parts of the FMP:
 - FMP Section 2.2.2, which describes the historic forest condition (FMP Section 2.2.2.2 in FMPs earlier than 2007).
 - Table FMP-6, which describes the objectives and indicators for the plan (see Advice Fact Sheet for Objectives and Indicators) (FMP Sections 2.3.3.1 and 2.3.3.2 in FMPs earlier than 2007). Look for planned levels of old growth as a proportion of the current and future levels.
 - FMP Section 3.7, which describes the future forest that is predicted to result from the management strategy (included in Table FMP-12 in FMPs earlier than 2007).
 - Table FMP-7, which projects changes in forest types of all ages over time (included in FMP Section 2.3.4 and Table FMP-12 in FMPs earlier than 2007).
 - Table FMP-14, which shows how close the selected management alternative will come to meeting the objectives and targets of the FMP, including old growth (included in Table FMP-12 in FMPs earlier than 2007).
 - Values maps showing old-growth red- and white-pine areas. These can be found in the Supplementary Documentation of the FMP. The exact map will be identified in Section 2.7 (FMP Section 1.4.4 in FMPs earlier than 2007).
 - Ask for a map of all current old-growth areas. The company isn't obligated to produce this map, but it's fairly easy to do and will give you a better idea of the old-growth situation.

[EXPERT] If FMP Section 3.7 and Table FMP-7 (FMP Section 2.3.4 and Table FMP-12 in FMPs earlier than 2007) doesn't clearly show the change in old-growth levels over 160 years, ask to see the output from the Strategic Forest Management Model (SFMM) for the Selected Management Alternative (see Advice Fact Sheet for Harvest Levels) that shows predicted levels of old growth over time. This is not something that the planning team would ordinarily produce so you might have to get more technical in your request here. Specifically, what you are looking for is an Excel chart that includes "All Even-Aged Forest Age Class Distribution for All Forest Units & Sub-Units Combined" showing only those areas that meet old-growth age requirements for each forest unit.

Has the historic forest condition been characterized?

[EXPERT] Finding out how much old growth should naturally be in the forest is a crucial piece of information. Determining the historic amount is the best way to do this. Doing it right is just as important. Read Section 2.2.2 of the FMP to see whether the historic amount of old-growth forest was determined and how it was done.

Here are some key things to look for:

- The full age range of old-growth forests should be identified. For example, it is not enough to just say that there was X amount of jack pine forest over 100 years old. A 200-year-old jack pine forest is different than a 100-year-old forest. Three-hundred-year-old jack pine forests are different still. The historic condition should tell us how much old-growth forest existed in the full range of old-growth age classes. OMNR's *Old Growth Definitions for Ontario* lists an estimated age of old-growth onset and duration for different forest types. Make sure the historic characterization includes the older old growth too.
- Make sure that there is some decent evidence to support the historic condition that has been described. One of the more reliable methods for estimating historic amounts of old growth is to look at the whole forest and assess how long it has been since each stand last burned. This is called an estimate of "time since disturbance." Whatever estimates the company comes up with, it should be supported by ground-truthing – actually going out into the field to see if the numbers make sense.

- Here is some other information they could be using:
 - scientific literature and other relevant reports for similar forests
 - historical records (e.g., past inventories, past information on harvest volumes and payment of dues)
 - mill records
 - burn history
 - early surveyors' notebooks and maps
 - looking at large areas of forest that are similar and haven't been logged before (for example large parks).
- If it doesn't look like much effort has been put into finding out how much old growth is natural, the company hasn't done its job.

Are old-growth objectives appropriate?

- Remember that the rules say that old-growth objectives and targets in the FMP should be based on protecting or restoring natural amounts of old-growth forest. Check the old-growth objectives and targets in Table FMP-6 to see if this is the case. They should be planning to move back towards the historic amounts.
- Is there an objective in Table FMP-6 to maintain red- and white-pine levels at the levels that were there in 1995 as a minimum?

What will happen to old-growth levels over time?

- [EXPERT]** Using Table FMP-7, the contents of the Analysis Package and/or the SFMM outputs, look to see whether old growth is being protected or restored. The age of old-growth onset is different for different forest types and ranges from 70 to 180 years. We use 120 years as an average. If you want to be more specific, you can refer to OMNR's *Old Growth Forest Definitions for Ontario*, which is available on their website. Assess the plan to see what happens to old growth (forests older than 120 years) over time. Is the amount stable, increasing or decreasing? How do old-growth levels compare to the historic amounts described Section 2.2.2 and the objectives?
- Remember that for red and white pine these levels must not go below the 1995 amount.

Are they counting logged stands as old growth?

It's important to ensure that forest stands that have already undergone partial cutting are not still being classified as old growth and being used to meet old-growth objectives. The most common example you might encounter is calling an area old growth even though it has undergone one or more stages of a shelterwood harvest. This logging system removes

the canopy in a series of stages over many years. The FMP might still classify this as old growth because some of the old trees are still standing in the canopy. However, once the first cut has occurred it should no longer be considered old growth. Ask the company or the OMNR whether they are counting shelterwood logging areas as old growth.

Field assessment

What you'll need:

This compliance checklist, the Advice Fact Sheet for Old-Growth Forests, compass (so you don't get lost), four-wheel drive vehicle (so you don't get stuck), a companion (for safety), a handheld GPS unit if you have one, the composite-scale operations map(s) and operational-scale operations maps (just the ones you need for the areas you're visiting), the values map that shows old-growth red- and white-pine and a map showing all old-growth forests if you can get one. Use the composite operations map(s) as your road map.

What does old growth look like?

You can check out some of the identified old-growth areas and see what they look like. If you've never done this before, this will be an opportunity to pick out some old-growth characteristics so that you'll know what to look for in the future. If the stand doesn't seem to possess a lot of these characteristics, it may be that the planners shouldn't be count-

ing it towards the company's old-growth targets.

Pick an area of old growth that you want to go visit. If there's a road that runs close to the spot, follow the composite map to drive out there. Once you're there, a GPS unit would help a lot in getting to the exact location. Have a walk around and see if you can see the old-growth characteristics:

- Are there a number of standing dead or dying trees?
- Are there noticeable fallen trees, stumps or turned-up root masses?
- Are there lichens on trees and branches or on the ground?
- Are there gaps in the canopy with accompanying regeneration?
- Do you see any fire scars from previous disturbances? (These might be quite old.)
- Are there any fresh stumps from cut trees? If so, this shouldn't be classified as an old-growth forest.

What now?

- Record your observations using the sample checklist on page 82 as a guide.
- Provide your findings and comments to local OMNR and company staff.
- Submit your results on the Forest Guardians website at www.wildlandsleague.org/guardians
- Contact us for advice.

CARIBOU HABITAT

This compliance checklist gives advice on how to assess the forest company's compliance with the rules to protect caribou habitat. Whether you undertake this assessment by reading the Forest Management Plan (FMP), looking at maps or by going out into the forest depends on the rule you are checking compliance with. Assessment of the plan and field assessment are described separately.

To find out about the rules, see our Advice Fact Sheet for Caribou Habitat.



Because of the huge areas and time frames involved in caribou habitat management, your investigation will focus on the Forest Management Plan (FMP), especially maps. However, site visits of field operations can also play an important role.

Assessing proposals/decisions

What you'll need:

- This compliance checklist and the Advice Fact Sheet for Caribou Habitat.
- The following parts from the FMP:
 - FMP Section 2.2.2, which describes the historic forest condition including wildlife habitat (FMP Section 2.2.2.2 of FMPs earlier than 2007).
 - FMP Section 2.2.3.2, which includes a description of current wildlife habitat and lists any species of concern. (FMP Section 2.2.2.3 in FMPs earlier than 2007. Table FMP-5 from FMPs earlier than 2007 will show current amounts of habitat for selected wildlife species including caribou.)
 - Table FMP-6, which describes the objectives and indicators for the plan (see Advice Fact

Sheet for Objectives and Indicators) (FMP Sections 2.3.3.1 and 2.3.3.2 in FMPs earlier than 2007).

- FMP Section 3.7, which describes the future forest that is predicted to result from the selected management strategy (included in Table FMP-12 in FMPs earlier than 2007).
- Table FMP-8, which shows projected habitat levels for selected wildlife species over time, based on the selected management strategy (included in Table FMP-12 in FMPs earlier than 2007).
- The Analysis Package (Appendix III), which shows habitat levels and the extent to which other objectives are achieved by the selected management strategy, as well as for the other potential management strategies that were explored but not selected. It will also show what would happen to habitat over time if no logging occurred, called the natural benchmark. (Included as an appendix in FMPs earlier than 2007.)
- FMP Section 4.2, which should describe caribou blocks including retention areas and areas selected for logging.

- The detailed analysis for each road location and use-management strategy as described in the Roads Supplementary Documentation Form. The text of Section 4.5.1 will tell you where to find this analysis in the Supplementary Information (contained in the Supplementary Documentation Section and Appendix VI of FMPs earlier than 2007).
- The Roads Table (Appendix II of the FMP), which will list information for all roads in the Forest Management Unit, including all existing roads, all primary roads planned in the next 20 years, all branch roads planned in the next 10 years and all planned operations roads. The text of Section 4.5.1 will tell you where to find the Roads Table in the Supplementary Information (FMP-26 of FMPs earlier than 2007).
- Table FMP-15, which describes Area of Concern Prescriptions (Table FMP-17 in plans earlier than 2007). (See Advice Fact Sheet for Areas of Concern.)
- Table FMP-25, which talks about the construction, maintenance and use-management for all roads that are planned for use during the 10-year FMP (FMP-26 of FMPs earlier than 2007).
- Values map that shows caribou values including caribou habitat use, wintering areas, calving grounds, travel routes and snow-free season areas. This map will be located in the Supplementary Documentation section of the FMP.
- A map showing the caribou-mosaic blocks (areas for harvest and retention), which may be included in an appendix to the FMP.
- Composite-scale operations maps (which show a general picture of the whole unit) and operational-scale operations maps (which show a more detailed look at smaller areas) that shows all planned road construction (summary “areas selected for operations map” of FMPs earlier than 2007).

[EXPERT] If Table FMP-8 (Table FMP-12 in plans earlier than 2007) doesn’t show the change in habitat levels over 160 years, ask to see the output from the Strategic Forest Management Model (SFMM) for the Selected Management Alternative (see Advice Fact Sheet for Harvest Levels) that shows predicted levels of caribou habitat over time. Also ask to see the output that shows what caribou habitat levels would have been without logging (the natural benchmark).

What happens to caribou habitat over time?

[EXPERT] Using Table FMP-8, the contents of the Analysis Package and/or the SFMM outputs, look at what happens to the supply of caribou habitat over time for the selected management strategy and the natural benchmark. You’ll be comparing two graphs. Ask yourself these questions:

- Is predicted caribou habitat for the selected management strategy stable, increasing or decreasing over time?
- Is there a significant gap between levels for the selected management strategy and for the natural benchmark?

There should be no overall decline in predicted supply of caribou habitat or much less available than there would be for the natural benchmark.

How does this compare to the objectives and indicators that were set in the plan for caribou habitat over time?

Is high priority caribou habitat protected in retention tracts?

Although discretion is given to the planning team and OMNR biologists in deciding which areas of caribou habitat will be protected in retention tracts and which are available for logging, you can do a quick check to see if it looks like good decisions have been made. The guidance for making these decisions is in Table 6 of the Advice Fact Sheet for Caribou Habitat.

Compare the values maps that show caribou habitat with the composite operations map:

- Have any cutblocks been planned in caribou habitat within 30km of the southern edge of current caribou range?
- Have any cutblocks been planned in caribou habitat with documented use in at least two of the past five years?

If either of these situations exist, there may be a problem. It is worth following up with the OMNR and the company for a full explanation of how caribou retention tracts were chosen.

Are roads being planned through important caribou habitat?

[BASIC] Compare the values maps that show caribou habitat with the composite operations maps:

- Are any primary or branch roads planned in areas with current caribou habitat values?

If this is the case, a problem may exist. It is worth following up with the OMNR and the company for a full explanation of why this decision was made.

Are calving sites protected with no-harvest reserves?

[BASIC] The calving sites identified on the values maps should each have a 1000m AOC prescription. Check Table FMP-15 to make sure this is the case. You can also check the operational-scale operations maps to see if this reserve has been mapped.

Are new planned roads temporary?

[BASIC] Roads built in significant habitat tracts are supposed to be temporary. Look at Table FMP-25 to check the use-management strategies for any roads planned in significant caribou habitat:

- Is the road temporary?
- Is the strategy for road abandonment and rehabilitation consistent with the rules described in the Advice Fact Sheet for Caribou Habitat and the Advice Fact Sheet for Roads Planning and Access Restrictions?

Field assessment**What you'll need:**

This compliance checklist, the Advice Fact Sheet for Caribou Habitat, compass (so you don't get lost), four-wheel drive vehicle (so you don't get stuck), a companion (for safety), a handheld GPS unit if you have one, the composite-scale operations map(s), operational-scale operations maps (just the ones you need for the areas you're visiting), and Table FMP-15 and Table FMP-25. Use the composite operations map(s) as your road map.

Because of the large landscape scale required for caribou habitat management, assessing many of the issues related to caribou habitat isn't really feasible. We recommend that you focus on just a few areas.

Is there any logging in no-harvest reserves around calving areas?

- Use the values maps to find caribou calving areas in the management unit.
- Use the methodology described in the Compliance Checklist for Areas of Concern to assess compliance with the AOC prescriptions described in Table FMP-15 for caribou calving areas.

Are the access controls effective?

- Follow the assessment instructions in the Compliance Checklist for Roads Planning and Access Restrictions to see if the access controls listed in Table FMP-25 are effective. You'll need the operational-scale operations maps for the areas you want to visit and the composite operations map(s) as a road map.

What now?

- Record your observations using the sample checklist on page 82 as a guide.
- Provide your findings and comments to local OMNR and company staff.
- Submit your results on the Forest Guardians website at www.wildlandsleague.org/guardians
- Contact us for advice.

CLEARCUT SIZE AND LOCATION



This compliance checklist gives advice on how to assess the forest company's compliance with the rules for clearcut size and location. Whether you undertake this assessment by reading the Forest Management Plan (FMP), looking at maps or by going out into the forest depends on the rule you are checking compliance with. Assessment of the plan and field assessment are described separately. **To find out** about the rules, see our Advice Fact Sheet for Clearcut Size and Location.

Assessments and decisions regarding compliance with the rules for clearcut size and location are complex and challenging. We recommend asking a few basic questions about the landscape objectives and targets in the plan.

Assessing proposals/decisions

What you'll need:

- The Advice Fact Sheet for Clearcut Size and Location and the Advice Fact Sheet for Objectives and Indicators.
- The following parts of the Forest Management Plan (FMP):
 - FMP Section 1.1.7.9, which describes the historical forest condition of the forest management unit (FMU) including the size and pattern of forest disturbances (FMP Section 2.2.2.2 of FMPs earlier than 2007).
 - FMP Section 2.2.3.4, which describes the current disturbance pattern of the FMU (there is no specific section for this in FMPs earlier than 2007).
 - Table FMP-6, which describes the objectives and indicators used in developing the FMP (FMP Sections 2.3.3.1 and 2.3.3.2 in FMPs earlier than 2007).
 - Table FMP-12, which describes the projected change in the spatial landscape pattern over the next 10 years. (There is no specific section for this in FMPs earlier than 2007. Look at Table FMP-13.)
 - Table FMP-13, which describes the current and projected changes in the number and size of disturbances (clearcuts and burns). (There is no specific section for this in FMPs earlier than 2007. Look at Table-FMP 13.)
 - Table FMP-18, which lists all the planned clearcuts, their size and the rationale for cuts bigger than 260ha (front of FMPs earlier than 2007).
 - The Disturbance Pattern Map from the Supplemental Information. The text of Section 2.2.3.4 will tell you where to find this map. (There is no specific section for

this in FMPs earlier than 2007.)

Are there good objectives and targets for maintaining core forest habitat?

[BASIC] The Advice Fact Sheet for Clearcut Size and Location and the Advice Fact Sheet for Objectives and Indicators explain how there should be explicit objectives and targets for maintaining natural levels of core forest habitat. (At a minimum, there should be an objective to ensure that there is no decrease in the amount of core habitat over the next 10 years.)

- Check Table FMP-6 for objectives and targets related to core forest habitat.
- Check Table FMP-12 to see if these objectives are being met. Compare what is predicted to happen as a result of the planned 10 years of harvesting to what would happen without harvesting. This information is all in the table.

Is there an objective and target for limiting the clearcutting of watersheds?

[BASIC] The Advice Fact Sheet for Clearcut Size and Location and the Advice Fact Sheet for Objectives and Indicators tell you to ask for an objective in the plan to limit the amount of disturbance (natural and artificial) in a second-order watershed to 50%. Has this been incorporated in the plan's objectives and targets?

Has the plan met the clearcut size and location rules?

[EXPERT] Compare the description of the natural-disturbance pattern from Section 1.1.7.9 with Table FMP-13, which describes the changes in this condition.

- Is the plan moving toward a more natural-disturbance pattern as required?
- Is there an increase in the number of large disturbances (clearcuts)? If there is, you should check to make sure that these will actually help with the answers to the questions above and are not moving the forest toward an unnatural condition.

Field assessment

Because these rules are much more focused on planning decisions, we don't recommend any field assessment.

What now?

- Record your observations using the sample checklist on page 82 as a guide.
- Provide your findings and comments to local OMNR and company staff.
- Submit your results on the Forest Guardians website at www.wildlandsleague.org/guardians
- Contact us for advice.

HARVEST LEVELS



This compliance checklist gives advice on how to assess how cautiously the company has calculated the allowable harvest level for the Forest Management Unit (FMU).

To find out more about the harvest levels or how the management strategy is developed, see our Advice Fact Sheet for Harvest Levels.

To fully assess the sustainability of harvest levels is a monumental task. A full assessment would require you to have the Forest Resource Inventory, the SFMM computer model and the expertise to use it, and the informed judgement of a professional forester.

Fortunately, we've been able to identify some of the crucial factors that will make or break the sustainability of the plan's harvest levels. If you do have the SFMM model, data and know-how, you can use this checklist to do a very detailed assessment. If you don't, you can pick and choose from this checklist to check for signs that the harvest level may be too high.

Assessing proposals/decisions

What you'll need:

- The Advice Fact Sheet for Clearcut Size and Location and the Advice Fact Sheet for Harvest Levels.
- The following parts of the Forest Management Plan (FMP):
 - FMP sSection 2.2.3.1 and Tables FMP-1 and FMP-2, which describe the current forest

condition and forests available for timber production (FMP Section 2.2.2.3 and Tables FMP-1, FMP-2 and FMP-3 of FMPs earlier than 2007).

- FMP Section 2.5.3, which describes the industrial and non-industrial uses of the forest (FMP Section 2.2.3 in FMPs earlier than 2007). This will list the companies and mills that receive wood harvested from the FMU.
- FMP Section 3.7, which describes the future forest that is predicted to result from the selected management strategy (included in Table FMP-12 in FMPs earlier than 2007).
- Table FMP-6, which describes the objectives and indicators for the FMP (see the Advice Fact Sheet for Objectives and Indicators) (FMP Sections 2.3.3.1 and 2.3.3.2 in FMPs earlier than 2007).
- Table FMP-7, which projects changes in forest types of all ages over time (included in Table FMP-12 in FMPs earlier than 2007).
- Table FMP-8, which shows projected habitat

levels for selected wildlife species over time (included in Table FMP-12 in FMPs earlier than 2007).

- Tables FMP-9 and FMP-10, which show projected available harvest area (FMP-15 of FMPs earlier than 2007).
- FMP-14, which describes requirements and targets of each proposed management strategy (Table FMP-12 of FMPs earlier than 2007).
- The Analysis Package in Appendix III of the FMP, which describes the analysis of different potential management strategies (Table FMP-13 of plans earlier than 2007).
- A copy of the Sustainable Forest Licence (SFL) agreement. This is the licence that allows the company to manage this public forest. You can get a copy of this from the local OMNR office.
- **[EXPERT]** Ask to see the output from the Strategic Forest Management Model (SFMM) for the selected management strategy (see Advice Fact Sheet for Harvest Levels) that shows predicted levels of old growth as well as caribou, marten and pileated woodpecker habitat over time. Also ask to see how all these measures compare to what would have happened without logging (the natural benchmark).

Are forest companies and mills expecting a realistic amount of wood from the FMU?

Look at the mill commitments in Section 2.5.3 and in the SFL agreement. Ask your local OMNR office whether or not these commitments (based on the Ministry Recognized Operating Levels, which are defined in the Advice Fact Sheet for Harvest Levels) have been updated recently. OMNR is committed in policy to reviewing these levels and making them more realistic. It is not acceptable for these levels to be higher than what the mill actually uses (they often are) or for them to be higher than what the FMU can sustainably produce for the mill.

Does the plan have adequate objectives to protect all forest values?

[BASIC] Make sure that other forest values have been adequately protected. Check the objectives and strategies in Table FMP-6 to see what objectives were set to protect these values. See the *Advice Fact Sheet for Objectives and Indicators* for help.

Does the selected management strategy adequately protect all forest values?

[EXPERT] The harvest level is one of the outcomes of the selected management strategy. Amounts of wildlife habitat, old-growth levels and future forest condition will also depend on

the strategy that was selected. Using Tables FMP-7 and FMP-8, look at what is projected to happen to old growth (forests older than 120 years) and amounts of caribou, marten and/or pileated woodpecker habitat over time. Using the SFMM outputs, you can also compare the amounts for the selected management alternative to the natural benchmark. You'll be comparing two graphs. Ask yourself these questions:

- Is old growth and important habitat stable, increasing or decreasing over time?
- Does it look like there is much less old growth or habitat available with the selected management alternative than would have been with the natural benchmark?

For more detail on marten, caribou, pileated woodpecker or old-growth habitat, look at the corresponding compliance checklists.

Is the harvest level credible?

[EXPERT] SFMM will make predictions about future harvest levels and other forest benefits based on information ("inputs") and assumptions that are fed into the computer by modelers. In order for the predicted harvest levels it calculates to be realistic, it is critical that these inputs be as accurate a reflection of reality as possible.

Table 9 highlights some of the critical inputs, tells you how to find out what information modelers used to develop them, and advises you what to look for when assessing their credibility. If you have the capacity to run SFMM on your own, you can look at the inputs directly. If not, you can get some information on inputs out of the FMP. For the rest, you'll have to ask the local OMNR office or the company to provide you with it.

What now?

- Record your observations using the sample checklist on page 82 as a guide.
- Provide your findings and comments to local OMNR and company staff.
- Submit your results on the Forest Guardians website at www.wildlandsleague.org/guardians
- Contact us for advice.

TABLE 9

Principle	Menu tree of where the input value is found in SFMM	Description of input value	Why is it important?	Where to find the information in the FMP	What to look for
Only use areas that are actually available for commercial forestry.	Land Base Definitions <ul style="list-style-type: none"> Initial Areas <ul style="list-style-type: none"> Deferral Selections 	These are areas of forest that are deferred (not available for harvest) for a specified time period for the benefit of wildlife species. Marten cores fall under this category.	If these areas aren't removed, harvest levels will be inflated.	Appendices (exact location depends on the individual FMP).	Make sure deferrals are included for marten or woodland caribou if these species are identified as needing special habitat protection. The amount in the SFMM inputs should equal the amount in the FMP Appendices.
	Land Base Definitions <ul style="list-style-type: none"> Initial Areas <ul style="list-style-type: none"> Initial Areas of Even-Aged Reserved Forest <p>Note: this is where these areas are defined, but a more concise summary is found in SFMM Results/Basic Results/ Forest Areas Results Menu/Reserved Forest/ Reserved Forest by Reserve Type</p>	These are areas of forest that are not available to commercial forestry because they are protected areas like parks or conservation reserves or because they are required as no-harvest reserves around forest values. This category is restricted to larger areas that can be planned or estimated in advance of forest operations. Smaller reserves are incorporated into operations planning.	If these areas aren't removed, harvest levels will be inflated.	From Table FMP-1, add the Crown 'Other' column values to get protected area totals. In FMP-4 obtain the total for unavailable production forest for AOC reserves that can be identified before operations. (For FMPs before 2007, add the Parks, Unmanaged Crown Lands and the subtotal for Protection Forest in the Total column from FMP-1. Also note the Unavailable Production Forest Total for FMP-9.)	Compare the values entered for this SFMM input category with the totals you have obtained. Make sure all reserve types identified have been subtracted from the land base in SFMM, including Ontario's Living Legacy sites and candidate protected areas. This may not be easy to decipher in the FMP: if you can't find areas that you think should be taken out of the land base in SFMM, ask the plan author where it was subtracted.
	Land Base Definitions <ul style="list-style-type: none"> Initial Areas <ul style="list-style-type: none"> Initial Areas of Uneven-Aged Reserved Forest 	These are areas of forest that are not available to commercial forestry because they are protected areas like parks or conservation reserves or because they are required as no-harvest reserves around forest values. As with the cell above, this may not incorporate smaller AOC reserves.	If these areas aren't removed, harvest levels will be inflated.	Tables FMP-1 and FMP-4 (Tables FMP-1 and FMP-9 in plans earlier than 2007). Follow the instructions for Even-Aged Reserved Forest.	Make sure all reserve types have been subtracted from the land base, including Ontario's Living Legacy sites and candidate protected areas.
	Land Base Definitions <ul style="list-style-type: none"> Initial Areas <ul style="list-style-type: none"> Initial Areas of Non-Forested Land 	These are areas that shouldn't be included when calculating how much forest there is to cut because they do not have commercial forest cover. These areas might be non-forested, like lakes or swamps, or rocky areas with few or small trees.	If these areas aren't removed, harvest levels will be inflated.	From Table FMP-1, add the Subtotals of Non-Forested, Non-Productive Forest and Below Regeneration Standards in the Total column. (In FMPs earlier than 2007, Below Regeneration Standards = B&S or barren and scattered in Table FMP-1.)	The totals you get from FMP-1 should equal the amounts in the SFMM Initial Areas of Non-Forested Land.

TABLE 9 *cont.*

Principle	Menu tree of where the input value is found in SFMM	Description of input value	Why is it important?	Where to find the information in the FMP	What to look for
Make accurate assumptions about natural changes and forest dynamics (like the impacts of fire and natural succession).	Forest Dynamics <ul style="list-style-type: none"> Natural Forces of Change in Even-Aged Forest <ul style="list-style-type: none"> Natural Forest Succession 	This is the assumption about how forest stands' species composition will continue to change even in the absence of logging.	This is important because opportunities for future logging depend on what the condition of the forest will be at that time. If this isn't done well, predictions about future availability of wood from different forest types may not be reliable.	Appendix III, Analysis Package, Section c): the part dealing with Natural Succession from one forest type to another and Appendix VI b) i: Succession. (For FMPs earlier than 2007, see Part A Section 2.3.4 Analysis of Management Alternatives/Analysis Tools. Look for Forest Dynamics Information and Rates of Natural Succession of one forest type to another. This may be in an appendix called the Strategic Planning Analysis Package.)	The FMP should elaborate on the rules of succession being used in SFMM. Are these succession rules appropriate? How were they determined? They should be based on local sample plots. Seek direction from experts if necessary.
	Forest Dynamics <ul style="list-style-type: none"> Natural Forces of Change in Even-Aged Forest <ul style="list-style-type: none"> Natural Rehabilitation of Non-Forest to Forest 	This is the assumption about how much of the land that is currently not forested will naturally develop into forest (for example a former beaver meadow now developing into forest).	If these estimates are too high, the availability of future wood supply will be over-estimated.	Appendix III, Analysis Package, Section c): the part dealing with Natural Succession from Non-Forest to Forest and Appendix VI b) ii. (See Part A Section 2.3.4 Analysis tools in FMPs earlier than 2007. Look for Forest Dynamics Information and the Rates of Natural Succession from Non-Forested to Forested Land.)	Some good modelling and planning practices include bringing back roads and landings into a forested condition over a period of time. Do they do this in SFMM? The FMP should expand on the rules being used in SFMM. Ask for expert opinion about the rate of succession from non-forest to forest.
	Forest Dynamics <ul style="list-style-type: none"> Natural Forces of Change in Even-Aged Forest <ul style="list-style-type: none"> Natural Disturbance Cycles and Succession 	This is the assumption about how much natural disturbance (like fire) will occur in the FMU over time. The important measures are the average; number of years between fires or other disturbance on any part of the FMU; and the proportion of disturbed areas succeeding to a particular forest unit.	If a reliable prediction of the rate and extent of natural disturbances isn't incorporated into the model, future wood supply may be significantly over-estimated. If the prediction of forest unit succession is poor, the predicted future species makeup of the forest will be inaccurate. Some species may be over-harvested as a result. Accounting for natural disturbances over the term of the FMP will make less forest available for logging.	Appendix III, Analysis Package, Section c): the part dealing with Forest Dynamics-Forest Disturbance and Appendix VI b) i Rates of Natural Disturbance. (Section Part A 2.3.4 in FMPs earlier than 2007. Reference should be made to the appropriate appendix for documentation.)	Are disturbance cycles reasonable? Do the natural succession rules make sense? The following sources of information should be cited to support assumptions: local and regional fire history data, related literature, other historic accounts, Forest Insect and Disease Survey reports and provincial annual reports. You may have to ask for expert opinion on these matters. A good document to look at for those with some forest science background is Bridge, 2001.*

*Bridge, S.R.L., 2001. Spatial and temporal variations in the fire cycle across Ontario. OOMNR, Northeast Science & Technology. NEST TR-043 4-1p. Contact Northeast Science & Technology, Ontario Government Complex, PO Bag 3020, Hwy 101 East South Porcupine, Ontario P0N 1H0 Phone:(705)235-1218, Fax:(705)235-1251 email:lane.wahlman@omm.gov.on.ca

TABLE 9 *cont.*

Principle	Menu tree of where the input value is found in SFMM	Description of input value	Why is it important?	Where to find the information in the FMP	What to look for
Use accurate estimates about how quickly the forest is growing.	Forest Dynamics <ul style="list-style-type: none"> • Growth and Yield <ul style="list-style-type: none"> – Growth and Yield (Growing Stock) in Even-Aged Forests 	This is the average volume of wood fibre that is produced for each hectare of forest. This information is entered for each forest unit (type), age class, and silvicultural intensity (logging and regeneration efforts).	If growth rates aren't credible, the whole basis for sustainability is in question. The future availability of forest for wood products and other benefits could be in serious question.	Appendix VI, Section b) iii (Part A Sections 2.3.3.2 and 2.3.4 Forest Dynamics / Forest Development information in FMPs earlier than 2007. The text should direct you to the appropriate appendix for documentation.)	Watch for excessively high production. What are the sources of the yield curves? They should be based on local sample plots or actual harvest data from the FMU. Will the suggested silvicultural intensity actually be applied?
	Forest Dynamics <ul style="list-style-type: none"> • Growth and Yield <ul style="list-style-type: none"> – Growth (Basal Area) in Uneven-Aged Forest 	See above.	See above.	Appendix VI, Section b) iii (Part A Section 2.3.3.2 General Strategies in FMPs earlier than 2007. There may be direction to refer to an appendix.)	Watch for excessively high production. What are the sources of the yield curves? They should be based on local sample plots or actual harvest data from the FMU. Have the results of the provincial growth and yield program been utilized, if available and applicable? Will the suggested silvicultural intensity actually be applied?
Estimate the wildlife habitat suitability of changing forest conditions.	Forest Dynamics <ul style="list-style-type: none"> • Potential Wildlife Habitat Value <ul style="list-style-type: none"> – Wildlife Habitat Suitability Indices 	These are habitat preference scores that are assigned to each forest unit at different ages. These scores are used to determine the amount of wildlife habitat in the forest.	This allows the model to keep track of the amount of wildlife habitat as it is projected to change over time. In turn, this makes it possible to predict the impact of harvest levels on wildlife habitat.	There is no standard location for this information. Ask the plan author.	How were these scores determined? What does expert opinion say about these indices? Do they seem reasonable? For example, do older forests score highly for known old-growth wildlife species? You would need to seek expert opinion on these matters.

HARVEST LEVELS

TABLE 9 *cont.*

Principle	Menu tree of where the input value is found in SFMM	Description of input value	Why is it important?	Where to find the information in the FMP	What to look for
Use accurate estimates of how much wood volume is actually removed from a site when logging.	Silvicultural Options <ul style="list-style-type: none"> Harvesting and Renewal Options <ul style="list-style-type: none"> Clearcut Growing Stock Volume Left Unharvested 	This is the amount of wood in individual trees that isn't removed from a clearcut when logged. This includes trees that are left standing onsite for wildlife habitat, to provide trees for seeding the regenerating stand or because they were not suitable for the mill (unmerchantable).	If an accurate reflection of wood volume left onsite isn't incorporated into the model, harvest levels could be significantly inflated.	There is no standard location for this information. Ask the plan author.	Records of individual tree retention are not required in the management plan. However make sure this amount is specified in SFMM and that NDPE, marten and/or pileated woodpecker guidelines are being implemented.
	Silvicultural Options <ul style="list-style-type: none"> Harvesting and Renewal Options <ul style="list-style-type: none"> Areas Reserved from Harvesting 	Defines the amount of bypass or reserves that cannot be specified in the land base definitions because the location or amount is not known ahead of operations. For example, this would include patches of trees left behind for various reasons including for wildlife habitat, inaccessibility or because the trees are not suitable for the mill (unmerchantable).	If an accurate reflection of wood volume left onsite isn't incorporated into the model, harvest levels could be significantly inflated.	Table AR-1.1. of past annual reports. The text should explain the reason for bypass. (For FMPs earlier than 2007 see Part C, Section 3.2 Table AR-1) See Section 4.2 of the Report of Past Forest Operations (RPFO-1). AR-1.1 and AR-1 summarize operations for the past year, RPFO-1 for the past 5 years.	Does the proportion of bypass specified in SFMM match that recorded from actual harvest in the Annual Report? Divide the total for Bypass This Year (ha) by the total for Harvest Area (ha)/Actual This Year to get the actual proportion. (In plans earlier than 2007, divide the Bypass Total by the Harvest Total to get the proportion of bypass.)
Make sure that logging plans are consistent with long-term objectives for the desired future forest condition (like old growth).	Management Objectives <ul style="list-style-type: none"> Desired Future Forest Condition <ul style="list-style-type: none"> Stability of Forest Unit Areas 	This is a limitation in the amount that the different forest types in the management unit are allowed to change over time. The idea is that management shouldn't be making major changes in the natural species composition of the management unit.	If forest units are not kept relatively stable, a management strategy leading to significant changes in forest composition could result. This may impact biodiversity. Keeping forest units stable could also limit attempts to maximize harvest of desirable species.	Appendix III, Analysis Package, Section h) Appendix VI d) i) Desired Forest Condition Targets for Forest Unit Area and Table FMP-7. (FMP Section 2.3.4 and Table FMP-11 in FMPs earlier than 2007)	Forest units should stay fairly stable over time unless a plausible explanation is provided, such as restoration of the historical forest condition.
	Management Objectives <ul style="list-style-type: none"> Desired Future Forest Condition <ul style="list-style-type: none"> Age Class Structure Limits by Forest Units 	This is a restriction on the change in amount of forest in a certain age range in the management unit. Specifically, there should be a minimum level of older forests, which is important for many forest species.	If limits aren't in place, management strategies could lead to significant decreases in old-growth habitat. Including these limits will result in decreased allowable harvests.	Appendix VI d) i, Desired Forest Condition Targets for Age Class Structure. (FMP Section 2.3.3.1 for FMPs earlier than 2007.)	Old-growth forests should be kept at ecoregional historic levels into the future. Red- and white-pine old growth must be maintained at 1995 levels. Specific old-growth targets should be incorporated into objectives and indicators.

FOREST GUARDIANS REPORTING FORM

Your Contact Information

Name: _____

Address: _____

Phone: _____

Email: _____

Association, Group or Club Membership: _____

Forest Management Unit: _____

OMNR office(s) involved: _____

Forest company: _____

Topic, issue of interest: (e.g., marten habitat; bridges and culverts): _____

Date(s) of assessment: _____

Location of observation from the field

GPS location: _____

Cut # from the operations maps: _____

Road name and distance: _____

Source of observation in the FMP:

Date of the FMP: _____

Relevant maps: _____

Relevant tables or sections of the FMP: _____

Other: _____

Observations: Record your observations by answering the questions in the compliance checklists. Record enough detail so that anyone could interpret your observations (e.g., How many? How big? What percentage? What evidence is provided? Was there an explanation? Who did you talk to? Did you use any other information?)

Conclusions: (Were the rules followed? If rules were violated, would you consider this a major or minor violation? In your opinion, was sustainable forest management achieved? Why or why not?)

List of contacts: (Record the name and position of people from the OMNR and company staff, consultants, clubs or other organizations. If possible, get their work contact information. Attach extra sheets as needed.)

Supplemental information: Include or attach any photographs, maps, diagrams, sketches or extra data.

APPENDIX I:

FOREST MANAGEMENT UNITS IN ONTARIO

Figure APP-1: Management Units within the Area of the Undertaking, as of April 1, 2003*

#	Management Unit Name	#	Management Unit Name	#	Management Unit Name
448	Algoma Forest	012	Iroquois Falls Forest	930	Romeo Malette Forest
451	Algonquin Park Forest	350	Kenogami Forest	853	Sapawe Forest
444	Armstrong Forest	644	Kenora Forest	868	Shiningtree Forest
220	Bancroft-Minden Forest	702	Lac Seul Forest	040	Smooth Rock Falls Forest
067	Big Pic Forest	260	Lake Nipigon Forest	210	Spanish Forest
370	Black River Forest	796	Lakehead Forest	030	Spruce River Forest
178	Black Sturgeon Forest	565	Maggie Forest	889	Sudbury Forest
173	Brightsand Forest	140	Mazinaw-Lanark Forest	508	Superior Forest
175	Caribou Forest	390	Nagagami Forest	898	Temagami
375	Cochrane-Moose River	150	Nighthawk Forest	610	Timiskaming Forest
405	Crossroute Forest	754	Nipissing Forest	120	Trout Lake Forest
177	Dog River-Matawin Forest	680	Northshore Forest	130	Wabigoon Forest
535	Dryden Forest	415	Ogoki Forest	949	Wawa Forest
174	English River Forest	780	Ottawa Valley Forest	490	Whiskey Jack Forest
360	French-Severn Forest	851	Pic River Ojibway Forest	060	White River Forest
438	Gordon Cosens Forest	765	Pineland-Martel Forest		
601	Hearst Forest	840	Red Lake Forest		

* (as designated under the Crown Forest Sustainability Act, Section 7) 7
(from OMNR 2003 [2004 FMPM] AP-2)

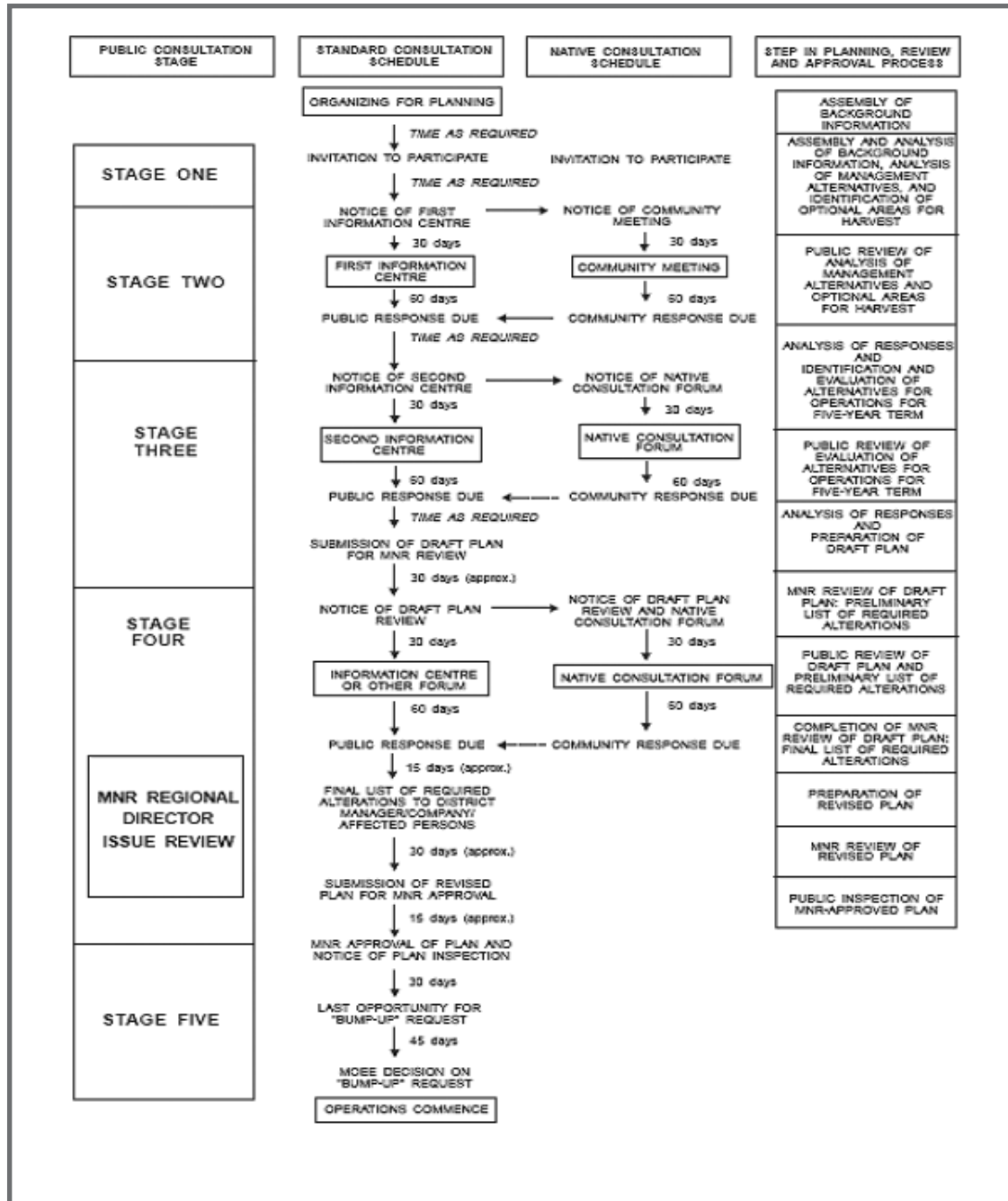


Figure APP-2: Management Units within the Area of the Undertaking

APPENDIX II:

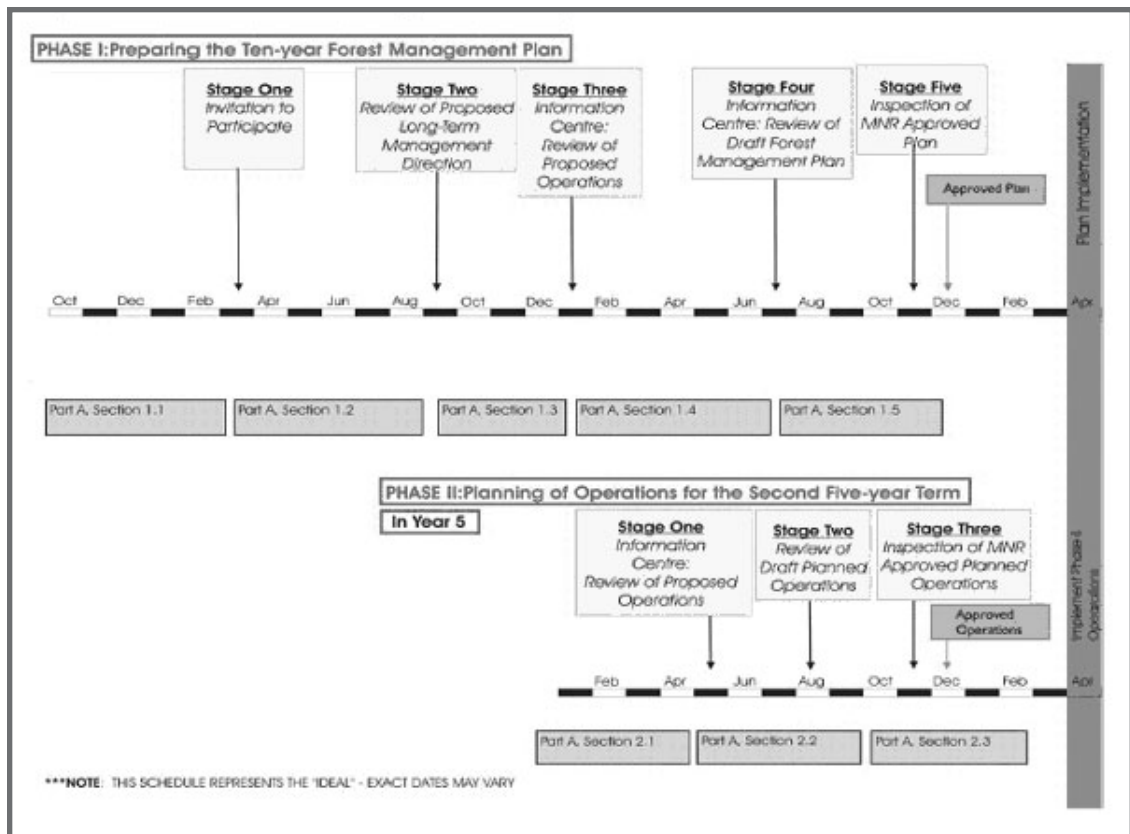
SCHEDULE OF THE PLANNING PROCESS

Figure A5: Schedule: Forest Management Plan Production, Review and Approval



SCHEDULE OF THE PLANNING PROCESS

Figure A-1: Overview of the Forest Management Planning Schedule



SELECTED ACRONYMS USED IN THIS GUIDE

AOC – Area of Concern. An area designated for special treatment or protection during logging

CFSA – Crown Forest Sustainability Act. Legislation governing forest management on public lands in Ontario.

GIS – Geographic Information System. A computer-based mapping system that allows for the spatial mapping of datasets.

FMP – The 20-year plan for forest management (harvesting and regeneration) in a FMU. Operational plans are developed for five to 10-year periods within the 20-year planning window.

FMPM – Forest Management Planning Manual. The manual describing the planning process and requirements for forest management on public lands. The FMPM is used in conjunction with a series of guides that cover specific issues, such as road construction or species habitat conservation.

FMU – Forest Management Unit. An area of public forest designated for commercial harvesting. There are 49 FMUs in Ontario's commercial forest zone.

FU – Forest Unit. Designation for a stand-level forest type, usually dominated by similar tree species.

FRI – Forest Resource Inventory. An inventory of the type, age and amount of forest within a FMU.

LCC – Local Citizens Committee. The official committee representing various community interests (hunters and anglers, First Nations, tourism operators, conservationists) that is consulted during the development and implementation of the forest management plan.

MNR – Ministry of Natural Resources. Ministry with responsibility for land-use planning and forest management in Ontario.

NDPE – Natural Disturbance Pattern Emulation Guide. This guide describes how logging operations are to emulate the forest impacts of natural disturbances like wildfire by adapting cutting patterns to match the landscape pattern left by such disturbances.

NDPEG (“Gilligan”) – Computer model used to layout cutting-area patterns to match the requirements of the NDPE Guide.

RSA – Resource Stewardship Agreement. A legal agreement negotiated by a SFL holder and a tourism operator with a business within the licence area that addresses how harvesting may be modified to reduce impacts on the tourism business (e.g., leaving increased buffers around lodges or key lakes, implementing road closures, etc.)

SFL – Sustainable Forest Licence. The legal agreement between a company (or in one case a community cooperative) and the government allowing the company to harvest trees within a FMU in return for taking on all planning, harvesting and regeneration responsibilities and paying stumpage. Actual harvesting may be carried out by other companies, but the SFL holder is ultimately responsible for their actions.

SFMM – Strategic Forest Management Model. A computer model used to project the impacts on future forest make-up of various forest management alternatives for up to 160 years into the future.

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36	Figure 2 , Clearcut Illustration	OMNR, 2001	86	Overview of FMP Process	OMNR. June 2004
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OMNR. 2001. Forest management guide for natural disturbance pattern emulation, Version 3.1. Ont.Min.Nat.Res., Queen's Printer for Ontario, Toronto.40p.

OMNR. June 2004. Forest Management Planning Manual for Ontario's Crown Forests. Toronto: Queen's Printer for Ontario. 440 pp.

Racey, G., A. Harris, L. Gerrish, E. Armstrong, J. McNicol and J. Baker. 1999. Forest management guidelines for the conservation of woodland caribou: a landscape approach. MS Draft. Ontario Ministry of Natural Resources, Thunder Bay, Ontario. 69 pp.



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