

# Forest Resource Management: A New Era



## Lesson Nine

Age range: 16-18

Time: Three 75-minute periods

Subjects: Science, Geography, World Issues, Anthropology

Resources: Maps of the boreal forest from pages 4 and 5 (photocopied for class or shown on overhead), handouts: *Forest Resource Management: A New Era - Section A and Section B* (half a class set of each), class set of handout: *Summary - Current Forest Resources and Land Management Concepts*, Internet access for first two classes

### Learning Outcomes

Students will understand concepts integral to current boreal forest resource management and the increasing involvement of Canadian Aboriginal people in land use planning by investigating the concepts of Traditional Knowledge and the management of timber harvests to emulate natural processes such as forest fires.

### Hook:

Using the maps of the boreal forest (either on the overhead or photocopied) ask students to brainstorm and name as many forest resources and forest products as possible. Examples include wood products such as paper, pencils, furniture, building materials and crafts, oil and gas products, mineral and precious metal goods, medicinal plant products, food products and others.

Discuss values placed on the forest relating to income, recreation, spirituality, culture, and intrinsic value as habitat for all living things. Also discuss the fact that all Canadians are the everyday end-users of products containing boreal forest resources.

Enjoyment of our modern lifestyles is possible because of the people who extract,

gather, transport, process and market forest resources and associated products. The protection and conservation of the boreal forest is inextricably linked to our interdependence on each other and on these forest resources. In addition, boreal forest habitats support cultural and biological diversity, which depend on intact forest to survive. Aboriginal people view the boreal forest as a 'home' system, a cultural landscape that is critical to their survival.

Ask students how decisions are made about managing human activity within forested landscapes (land use planning). That is, how forested land is managed in a given area with regard to how much is left intact and how much is subject to development. This activity investigates some of the latest concepts being put into practice today.

### Procedure

**1** Go over the handout *Forest Resource Management: A New Era*. Divide the class in half. One half will do Section A, and the other Section B. Students will do Internet research as directed on the handout.

**2** The next day, Section A students meet to discuss their research and come up with a detailed agreed-upon definition of their assigned topic along with five points/facts/concepts central to the topic. The other half of the class (Section B) does the same. The two halves then present the central concepts to each other in groups or in one main presentation.

### Extensions

Senior students will also enjoy *Fire: Agent of Change* in teaching kit Volume 7 (Science/Math prescribed burn activity)



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## Section A - Traditional Knowledge

1. In small groups, go over the information below. Underline key words and passages.
2. Visit the websites provided and read the material. After you have absorbed the basics, list 10 to 15 important points central to the topic of Traditional Knowledge. Use examples to illustrate, where appropriate.
3. In class tomorrow, gather with other Section A students and come to consensus about five important central points and how to word them. Place these on your Summary sheet.
4. Present these points to the other half of the class in small groups or in one presentation.
5. Listen to the other presentation and take notes on your Summary sheet.

All Canadians are the everyday end-users of products containing boreal forest resources. These products include wood products such as paper, pencils, furniture, building materials and crafts, oil and gas products, mineral and precious metal goods, medicinal plant products, food products and much more. Enjoyment of our modern lifestyles is possible because of the people who extract, gather, transport, process and market forest resources and associated products. Conservation of the boreal forest is inextricably linked to our interdependence on each other and on these forest resources. Forests also support social, cultural, recreational, spiritual and other values. In addition, the cultural and biological diversity found in forests depends on intact forest to survive.

Land use planning is a process where decisions are made about the management of human activities on a certain area of land. The collective wisdom of all people is needed to put sound long-term management plans in place, building on the regeneration policies and decision-making of the past.

While there are many ways to carry out effective ecosystem-based land use planning, and these methods vary widely among jurisdictions (federal, provincial/territorial, Aboriginal), some growing trends exist. One trend involves the use of Traditional Knowledge, or TK, in parallel with modern scientific forestry methods. Traditional Knowledge is knowledge held and gathered by Aboriginal people to sustain their social roles and responsibilities, cultural values, and rights in relation to traditional land use and livelihoods. Aboriginal people (Elders and other knowledge holders) contribute knowledge on such topics as natural resource use (e.g., hunting, fishing and trapping sites), burial grounds, natural resource observations over time (e.g., water levels, species numbers) and cultural and spiritual sites. Use of TK, in concert with the inclusion of TK holders in planning and decision-making processes, ensures that local Aboriginal interests and perspectives are well represented in the land use planning process.

The use of Traditional Knowledge is occurring as part of a larger shift in thinking about land use. Instead of proceeding with development in a given area (e.g., mining, timber harvest or oil extraction) with a focus on how much land can be conserved afterwards, there is movement towards a planning process wherein all knowledge and information on the ecology, geology, history, cultural and social values of an intact area is considered, with an eye to how much development should be permitted and in what context. The focus is on what to leave, not what to take, in order to keep ecosystems at all scales fully functional over time (known as Ecosystem-Based Management).

With regards to forestry, current forest land use management practices emphasize the use of methods that emulate vital natural disturbances, such as forest fires.

### Websites:

- [http://www.sfmnetwork.ca/docs/e/SR\\_200405stevensonmtrad\\_en.pdf](http://www.sfmnetwork.ca/docs/e/SR_200405stevensonmtrad_en.pdf) (pages 5-10)
- <http://www.innovationalberta.com/article.php?articleid=129> (also available in audio)
- <http://www.innovationalberta.com/article.php?articleid=207> (also available in audio)

### Examples:

- <http://www.kfrsc.ca/> - On left side, select Kaska Traditional Knowledge and Planning Tools
- [http://www.dehcholands.org/about\\_land\\_use\\_planning.htm](http://www.dehcholands.org/about_land_use_planning.htm)
- [http://www.cpaws-sask.org/boreal\\_forest/athabasca\\_lup.html](http://www.cpaws-sask.org/boreal_forest/athabasca_lup.html)





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## Section B - Forestry practices that emulate natural disturbances

1. In small groups, go over the information below. Underline important passages.
2. Visit the websites provided and read the material. After you have absorbed the basics, list 10 to 15 important points central to the topic. Use examples to illustrate these points where appropriate.
3. In class tomorrow, gather with other Section B students and come to consensus about five important central points and how to word them. Place these on your Summary sheet.
4. Present these points to the other half of the class in small groups or in one presentation.
5. Listen to the other presentation and take notes on your Summary sheet.

All Canadians are the everyday end-users of products containing boreal forest resources. These include wood products such as paper, pencils, furniture, building materials and crafts, oil and gas products, mineral and precious metal goods, medicinal plant products, food products and others. Enjoyment of our modern lifestyles is possible because of the people who extract, gather, transport, process and market forest resources and associated products. The protection and wise use of the boreal forest is inextricably linked to our interdependence on each other and on these resources. However, forests also support social, cultural, spiritual, recreational and other values. In addition, the cultural and biological diversity found in forests depends on intact forest to survive.

Land use planning is a process where decisions are made about the management of human activities with respect to a certain area of land. The collective wisdom of all people is needed to put sound long-term management plans in place, building on the regeneration policies and decision-making of the past.

While there are many ways to carry out effective ecosystem-based land use planning and methods vary widely among jurisdictions (federal, provincial/territorial, Aboriginal), some growing trends exist. One of these trends is implementing forestry practices that emulate natural disturbances, such as forest fire, insect attacks, flooding and wind. While forest management practices will never exactly replicate these disturbances, techniques are available that emulate disturbance processes. The use of techniques that emulate fire, such as deliberate controlled burns (known as prescribed burns) creation of irregularly-shaped clearings, and leaving live and dead standing and downed trees and coarse woody debris behind, leaves the harvested forest habitat in a state that is similar in some respects to what would be observed after a natural disturbance had occurred. By recognizing the patterns that fires and other natural disturbances create, and the fact that they leave large undisturbed areas, these techniques help to attain sustainability of resources and biodiversity.

The use of forestry methods that emulate natural disturbances such as forest fires, are occurring as part of a larger shift in thinking about land use. Instead of proceeding with development in a given area (e.g., mining, timber harvest or oil extraction) with a focus on how much land can be conserved afterwards, there is movement towards a planning process wherein all information on the ecology, geology, history, cultural and social values of an intact area are considered, with an eye to how much development should be permitted and in what context. The consideration of Traditional Knowledge in planning and decision-making processes is part of this trend. Traditional Knowledge includes knowledge about natural resource use (e.g., hunting, fishing and trapping sites), burial grounds, natural resource observations over time (e.g., water levels, species numbers) and cultural and spiritual sites. The inclusion of TK and TK knowledge holders in land use planning ensures that the cultural and biological diversity of Canada's forested landscapes is preserved. Aboriginal rights, roles and responsibilities must be considered in planning and management of the boreal forest.

### General information about forest management that emulates natural processes:

<http://www.sfmnetwork.ca/docs/e/Lauzon%20et.al.%20Fire%20Cycles.pdf> (6-16)

[http://www.sfmnetwork.ca/docs/f/SD-FR-Lauzon et al Fire Cycles.pdf](http://www.sfmnetwork.ca/docs/f/SD-FR-Lauzon%20et%20al%20Fire%20Cycles.pdf)[http://www.sfmnetwork.ca/docs/e/SP\\_kneeshaw\\_en.pdf](http://www.sfmnetwork.ca/docs/e/SP_kneeshaw_en.pdf) (pages 7 and 8, 13)

### Prescribed burns:

<http://bcwildfire.ca/>

<http://www.se.gov.sk.ca/fire/insect-disease/FACT5.htm>

Name: \_\_\_\_\_ Date: \_\_\_\_\_



# Summary - Current Forest Resources and Land Management Concepts

Traditional Knowledge	Forest Management by Emulating Natural Disturbances (e.g., fire)
<p><b>Definition:</b></p>	<p><b>Definition:</b></p>
<p><b>Central Ideas:</b></p> <ol style="list-style-type: none"><li>1.</li>          <li>2.</li>          <li>3.</li>          <li>4.</li>          <li>5.</li></ol>	<p><b>Central Ideas:</b></p> <ol style="list-style-type: none"><li>1.</li>          <li>2.</li>          <li>3.</li>          <li>4.</li>          <li>5.</li></ol>



# Teacher Answer Guide

**Note:** The “answers” presented below represent possible definitions and key points that students may present. Student answers will differ.

Traditional Knowledge	Forest Management by Emulating Natural Disturbances (e.g., fire)
<p><b>Definition:</b>            Knowledge and values have been acquired by Aboriginal people, through experience, observation, from the land, from spiritual teachings, and passed down from one generation to another. This knowledge and these values sustain social roles and responsibilities, cultural values, and rights in relation to land use and livelihoods. It includes the knowledge of Elders and other knowledge holders on such topics as natural resource use (e.g., hunting, fishing and trapping sites), burial grounds, natural resource observations over time (e.g., water levels, species and population numbers) and cultural and spiritual sites.</p>	<p><b>Definition:</b>            A sustainable forest management practice that strives—through timber removal patterns, leaving woody debris, and other methods – to emulate forest conditions after timber harvest that are similar to those observed in forests after a natural disturbance. The aim is to minimize the impacts of forestry on all forest-dwelling organisms. It recognizes that the ecosystem and the species within it are adapted to the range of natural disturbances experienced over millennia.</p>
<p><b>Central Ideas:</b></p> <ol style="list-style-type: none"> <li>1. TK is collective. Everyone’s experiences and observations from a wide variety of sources and time periods are included and valued equally.</li> <li>2. It is cumulative in that much of the information has been collected and passed down for many generations – in some cases, over many thousands of years – and often through oral transmission.</li> <li>3. TK is locally based. The observations and knowledge apply to a specific place.</li> <li>4. It is grounded in spiritual and traditional values such as respect for the land, a long-term perspective, etc.</li> <li>5. It is a way of relating to and managing the land (including timber, water and other resources) as “home” with a respect for and inclusion of cultural, spiritual and natural ecological knowledge.</li> </ol>	<p><b>Central Ideas:</b></p> <ol style="list-style-type: none"> <li>1. Instead of aiming to maintain the characteristics of the stand as it appeared before harvest, the aim is to leave the area in a similar manner to how it would be after a natural disturbance (such as fire) occurred.</li> <li>2. Timber harvesting practices try to emulate a natural disturbance through timber harvesting practices such as the size and shape of the cutblock (larger areas with non-linear boundaries that look like a burn), and retention of live and dead (standing or downed) trees emulating fire ‘skips’ or unburned areas within the cutblock.</li> <li>3. Harvesting cannot emulate all aspects of a natural disturbance. For example, fire does not remove as many trees from the stand and the burned timber itself is valuable habitat for many insects, birds and plants.</li> <li>4. Monitoring the success of the practices above is important. Indicators of success relate to elements of ecosystems affected by forestry practices, including the maintenance of soil fertility, the establishment and development of timber stands, conservation of aquatic resources and the maintenance of biodiversity. Potential indicators may be age and composition of forest (species of trees, etc.), diversity of bird populations, etc.</li> <li>5. Focusing on developing timber stock and forest composition objectives at the landscape level, and not stand by stand.</li> </ol>