



SUSTAINABLE **FOREST** MANAGEMENT IN BRITISH COLUMBIA



A Secondary School
Teachers' Resource

Science 10

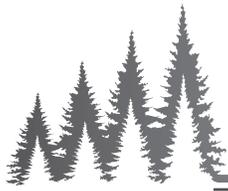
Social Studies 10

Social Studies 11

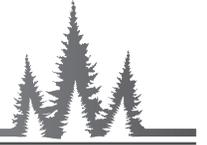
Sustainable Resources 11 & 12

Geography 12

BC First Nations 12



SUSTAINABLE FOREST MANAGEMENT IN BRITISH COLUMBIA



Dear Teachers,

Forestry Innovation Investment (FII) is a British Columbia government agency that delivers the facts about British Columbia's forests and how they are managed. The Council of Forest Industries (COFI) is the voice of the B.C. interior forest industry.

In recent years FII and COFI have collaborated to create and distribute several comprehensive kits to assist teachers in achieving learning outcomes specified by the B.C. Ministry of Education for various grade levels and subject areas. Each kit has focused on a certain aspect of the B.C. forest sector, namely:

- British Columbia's Mountain Pine Beetle: Today and Tomorrow,
- BC Forest Products for the World, and
- Climate Change: Our Forests Our Future.

Each of these kits remains available upon request from either FII or COFI.

We are now pleased to offer you a fourth teacher's kit focused on sustainable forest management in British Columbia. As with the previous kits, it includes teacher background information, a DVD providing an overview of the topic area, lesson plans, posters, and suggested optional activities. We hope it will help you stimulate classroom discussion and activities that students can do in class or at home, all aimed at the learning outcomes of specific courses.

We welcome your feedback about the new kit and have included a short evaluation form for this purpose.

For more information about our two organizations, please see our respective websites:

- www.bcfii.ca – FII's corporate website that provides market research, an image gallery and other marketing tools related to the B.C. forest sector.
- www.cofi.org – COFI's website that provides information about its members, and links to numerous sources of data about the forest industry.

For more information about B.C. forests, sustainable forest management, and our forest sector, please visit www.naturallywood.com.

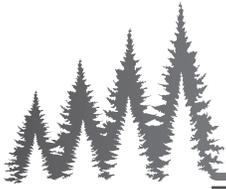
Yours truly,

Ken Baker

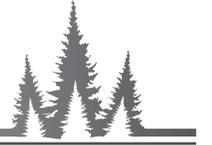


Chris Lear





**SUSTAINABLE
FOREST
MANAGEMENT** IN BRITISH COLUMBIA



Evaluation

Please fax this form to 604-685-5373 or e-mail your comments to info@bcfii.ca

Is this an effective resource for use in your classroom?	Yes	No
Is this of value in helping you meet the learning outcomes in your curriculum?	Yes	No
Have you used similar forest resources kits in your classroom?	Yes	No
Will you use this resource again?	Yes	No
Are there other tools/resources related to our forests that would assist you?	Yes	No

Please rate the following components of the Sustainable Forest Management resource binder based on usability.

1 = poor 2 = below average 3 = average 4 = good 5 = excellent

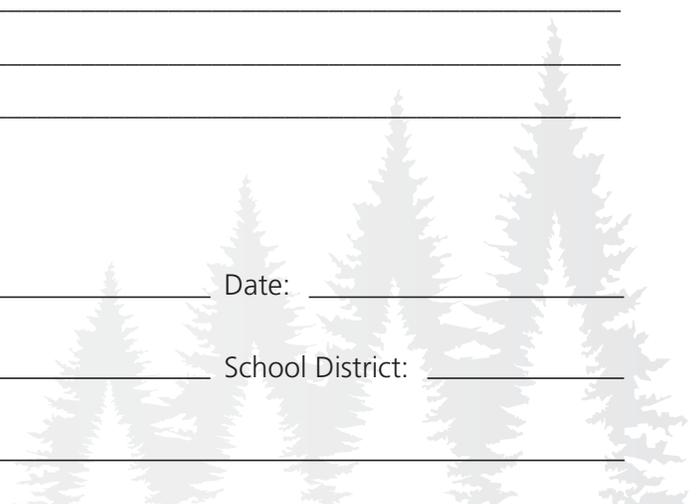
Lesson Plan, glossary and background information	1	2	3	4	5
Activities and Optional Extension Activities	1	2	3	4	5
DVD	1	2	3	4	5
Posters	1	2	3	4	5
Web links	1	2	3	4	5

Additional comments (please use additional pages if necessary)

Name: _____ Date: _____

School: _____ School District: _____

Grade Level / Subject: _____



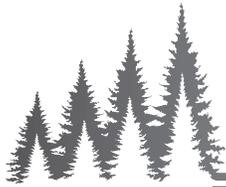
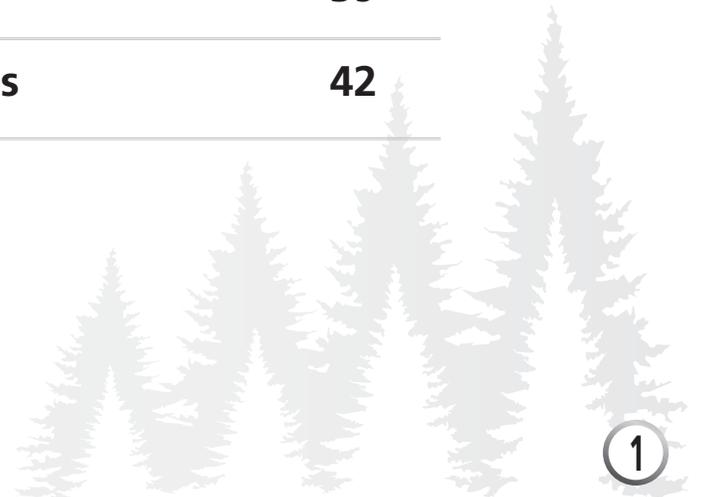
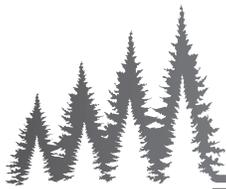


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Curricular Connections

Grade 10

Social Studies 10

- Define stewardship and sustainability with respect to environmental considerations and social responsibility.
- Compare past and present resource development practices in BC, such as forestry (e.g., clear-cutting, hand logging, single plank removal).

Science 10

Life Science: Stainability of Ecosystems

- explain the interaction of abiotic and biotic factors within an ecosystem.
- explain various ways in which natural populations are altered or kept in equilibrium.

Grade 11

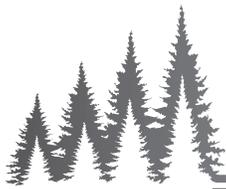
Social Studies 11

- Assess environmental challenges facing Canadians, including: global warming, ozone layer depletion, fresh water quality and supply.

Sustainable Resources 11

- Assess current practices related to the management of sustainable forest resources in British Columbia.
- Analyse challenges and opportunities faced by forest industries in British Columbia.





Curriculum Connections ...continued

Grade 12

Sustainable Resources 12 Forestry

- Assess the importance of forest resources to British Columbia and Canada.
- Examine management needs and practices related to forest resources.
- Analyse current forest management practices.
- Outline the challenges impacting the health and sustainability of forest resources in British Columbia.

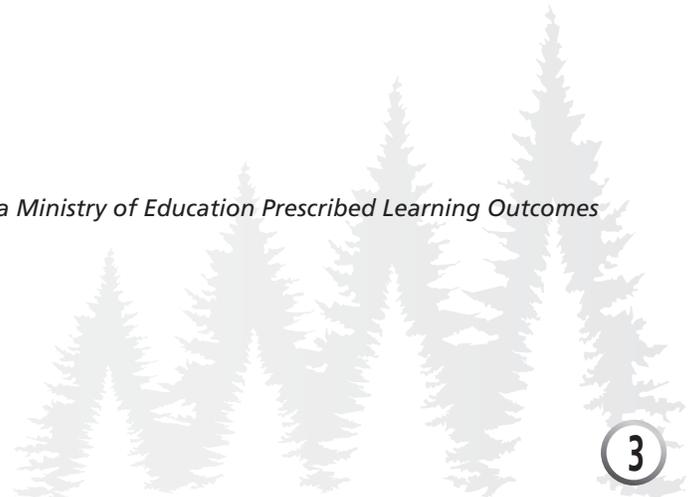
BC First Nations Studies 12

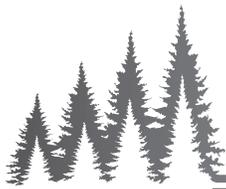
- Identify characteristics of current and traditional First Nations resource use and management practices (e.g., no-waste resource use, as in harvesting of cedar; cultural protocols such as requesting permission to harvest; boundary marking such as cultural modification of trees; stewardship).

Geography 12

- Assess the various considerations involved in resource management, including:
 - sustainability
 - availability
 - social/cultural consequences
 - economic consequences
 - political consequences.

Source: British Columbia Ministry of Education Prescribed Learning Outcomes





Lesson Plan

Main Idea

Sustainable forest management seeks to conserve the natural biodiversity, productivity and ecosystem health of BC's forests while still providing for ongoing economic and social needs of British Columbians.

Learning Outcomes

- Describe the diversity and dynamics of BC's forest ecosystems.
- Describe the importance of conserving ecological, social and economic values.
- Describe the principles of sustainable forest management.
- Identify stakeholders and their importance to comprehensive land use planning.
- Describe the roles played by government legislation in sustainable forest management.
- Outline the management responsibilities of companies required in Forest Stewardship Plans.
- Describe the independent oversight provided by the Forest Practices Board.
- Describe the importance of voluntary third-party sustainable forestry certification.
- Describe and compare international certifications.

Materials

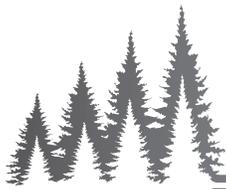
- Lesson plan
- Teacher background information
- Suggested activities
- Curricular connections
- Web links
- DVD
- Glossary
- Posters

Teachers Note:

***Prior to starting the lesson,
review the Teacher Information
provided on pages 21 - 29***

Recommended Time

One to three class periods.



Introduction

Part 1 Discussion

Introduce the topic of our forests by asking students to discuss and list forest values: the various ways in which forests are important to people. Have students categorize their responses under the following headings: **Economic, Environmental and Social.**

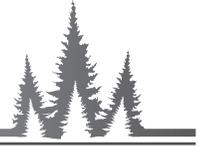
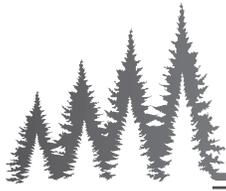
Possible Responses:

Economic

- Forests are a source of jobs and important to the economy in many communities – forestry, ranching, tourism, mining, conservation.
- Exports of forest products are important to BC's and Canada's economy.
- Forests are the source of useful manufactured products like lumber, pulp, paper, plywood, oriented strand board.
- Forests are a source for new products – biofuels, chemicals.
- Forests are a source of non-timber products like medicines, florist supplies, nature crafts, food, furs.
- Forests provide logs for building and firewood for heating homes.
- Forests are valuable because of their ability to capture and store carbon dioxide from the atmosphere.
- Forests provide resources to support health care, education and cultural activities we all enjoy.

Environmental

- Forests play an important role in building, maintaining and stabilizing soils.
- Forests are important in water and mineral cycles.
- Forests are important to help mitigate the effects of climate change through carbon storage.
- Forests provide habitats for plants and animals, and are important for maintaining biodiversity.
- Forests are important as they give us one of the most critical elements of survival - oxygen.



Introduction ...continued

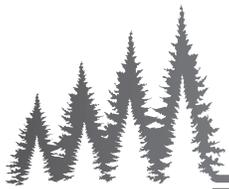
Social

- Forests are a source of revenue for governments to be able to provide health care, education and cultural activities we all enjoy.
- Forests are important to preserve as parks.
- Forests are of cultural and spiritual importance to First Nations.
- Forests are important places for recreation – hiking, fishing, hunting, snowmobiling, nature study, camping, boating.
- Forests are of historical value to Canadians – fur trade, logging, settlement patterns.
- Forests are part of the Canadian identity – maple leaf flag, Group of Seven paintings.
- Forests are scenic.
- Forests give us a sense of peace and tranquility.
- Forests are beautiful on many levels – single tree, forest grove, landscape.

Introduce the concept of stakeholders in the use of a resource. Have students brainstorm various stakeholders concerned with our forests.

Possible Responses:

- All the citizens of BC and Canada.
- Citizens of other countries.
- People who live in urban areas who value the forest.
- People who live in forest dependent communities.
- People who work in the forest industry – contractors, loggers, mill workers, truckers, tree planters, etc.
- People who value the forest for their recreation – hiking, fishing, skiing, etc.
- People who make a living in and around the forest as ranchers, miners, tourism operators, fishers, etc.
- Environmentalists and NGO's who advocate for conservation and preservation of forests and its many resources.
- First Nations who have cultural, economic and spiritual connections with the forest.
- Customers in BC, Canada and around the world who purchase our timber and non-timber resources.
- Government officials whose responsibility is to manage our forests.
- Professionals who have a role to deliver wise forest stewardship - professional foresters and forest technologists, biologists, engineers, hydrologists, ecologists, etc.



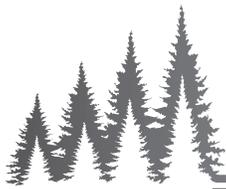
Part 1: Sustainable Forest Management

Introduce the topic of sustainable forestry by asking students what they have heard or read about sustainability in the media or other classes. At this time the purpose is to determine what prior knowledge they may have about sustainability.

Possible Responses:

- Sustainable forestry is harvesting only as much wood as is replaced by new growth.
- Sustainable forestry requires a long term commitment as new forests must grow for many years to reach maturity.
- Sustainable forestry is complicated – forest operations change the ecology of a harvested site, soils and water tables are affected.
- Sustainable forestry affects other land uses – tourism, ranching, agriculture, mining, recreation, and, spiritual and cultural heritage.
- Sustainable forestry should be the law – government practices, third party regulation.
- Sustainability is everyone’s responsibility.
- Sustainability is influenced by politics.
- Public perceptions influence views on sustainability.
- Governments, industry and organizations have different views on sustainability.





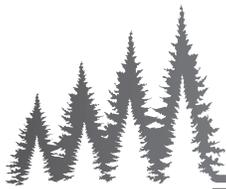
Introduction ...continued

Part 2: DVD Managing for Sustainability

Before watching the DVD:

- **Discuss with students** that the vast extent of British Columbia and its great variation in topography, climate and physical environments, plus the long history of natural and human disturbances have led to a great variation of forests, their physical environments and biodiversity. (Please refer to the **Teacher Background** for key information)
- **Point out** that there are increasing and often conflicting viewpoints amongst stakeholders using our forested lands. Examples of stakeholders would be: residents of forestry communities, government, loggers, ranchers, First Nations, trappers, guide outfitters, tourists, naturalists, environmental groups, international customers, political parties.
- **Highlight** that reaching the compromises needed to use our forest lands sustainably requires the efforts of both citizens and government. Given all the various uses and values in BC's forests and the various perspectives of what is important, sustainability is not something that can be achieved in any one spot on the ground at any one point in time. Sustainability is however something that can be achieved across the landscape over time, that time frame being the life cycle of the forest.





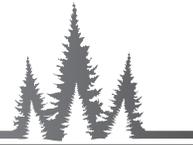
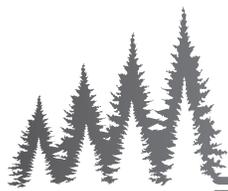
Part 2: DVD Managing for Sustainability ...continued

Suggestions for watching the DVD:

Tell students that you are going to show the 8 minute video *Managing for Sustainability* that outlines forest sustainability issues and solutions in British Columbia.

- While watching the video have students record five observations they have made about using forests sustainably in British Columbia.
- After viewing the video, discuss and record student findings collectively. As a group seek consensus on the requirements of managing forests sustainably.
- Hand out the student worksheet **Managing for Sustainability** and have students attempt to respond to the queries using the information they have learned from the first viewing and subsequent discussion of the video contents.
- Watch the video a second time, halting at points that allow students to add the appropriate information to their worksheets to reinforce their understanding of the process and details of sustainable forest management.





Part 3: Suggested Activities

1. Stakeholders

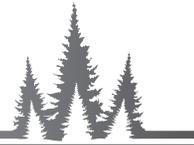
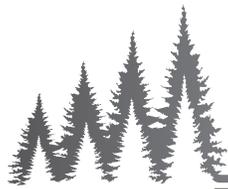
Review the concept of sustainable forest stewardship and list the peoples, agencies, and/or organizations responsible for or having a vested interest in forest stewardship.

Possible Responses:

- Governments – local, provincial, federal, international.
- Government departments – forestry, environment, tourism, heritage, forest protection, wildlife, regional development, fisheries, agriculture.
- Independent officials and agencies – Chief Forester of BC, Forest Practices Board, comprehensive land use planning committees.
- First Nations.
- Forest Companies.
- Professional and technological specialists in forestry, biology, engineering, hydrology, etc.
- Local Citizens – ranchers, tourism operators, hunters, fishers, trappers, naturalists, forestry workers, hikers, campers, bikers, kayakers, wildcrafters.
- Non Government Organizations – Green Peace, David Suzuki Foundation, Sierra Club, World Wildlife Federation, Guide Outfitters Association, Ranchers associations, tourism associations, local conservation groups, heritage societies, recreation organizations, fish and game clubs, recreational groups, residents associations.
- Third Party Certification Organizations - Canadian Standards Association (CSA), Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC), Sustainable Forestry Initiative (SFI).

Students select a stakeholder group to research on the internet. They prepare a list of organizations and websites that represent the views of the stakeholder group. Based on their list they prepare a report that outlines the concerns that the stakeholders have in regards to sustainable forestry.

Students select a pair of stakeholders and compare their concerns in regards to sustainability. The students prepare a chart which shows similarities, differences and areas for compromise.



Part 3: Suggested Activities ...continued

2. Sustainable Forest Management Certification

Review the topic of certification and why it is important, and ask students if they have heard of certifications of any products and practices. As a class prepare a list of reasons for certifying products or operations.

Possible Responses:

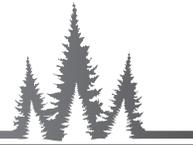
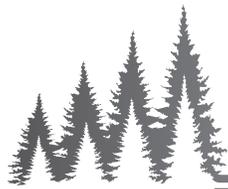
- Certification has standards that must be met.
- Certification lets us know that products are produced sustainably.
- Certification requires inspection.
- Certification tells us that the stakeholders have been consulted.
- Certification lets us know that products and practices are legal.
- Certification can help us decide which products to buy.
- Certification helps determine which products companies should sell.
- Certification tells us where our products are from.
- Certification tells us our products are safe.
- Certification gives us assurance when making purchases.
- There are different certifications for different products - certifications of contents, health safety, organic methods, non-child labour, country of origin.

Students can research the three main third party organizations that certify sustainable forest practices in BC (**see web links Pg 41**) to identify the criteria used to ensure sustainability and permit a comparison of standards.

Recommended resource: the Third Party Forest Certification pamphlet available on the naturally:wood website. (www.naturallywood.com)

3. Strategic Land Use and Resource Planning in BC

BC's Ministry of Forests, Lands and Natural Resource Operations (<http://ilmb.gov.bc.ca/>) takes a leading role in the development of land use plans for BC's Crown land and coastal and marine areas. Comprehensive land use planning and agreements promote the making of balanced



Part 3: Suggested Activities ...continued

decisions and reduce conflicts in regards to social, environmental, cultural and economic needs of the stakeholders. Students investigate strategic plans developed for various regions of British Columbia. These are listed on the website and an interactive map is found at the bottom of the page. (<http://ilmb.gov.bc.ca/>)

Students identify a strategic land use plan for a region of the province and prepare a report outlining the main social, environmental and economic concerns identified in the plan, highlighting important compromises reached through the planning process.

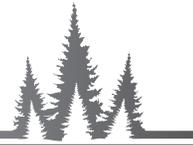
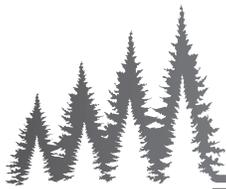
4. Innovative Use of Forest Resources

Introduce the idea that in the future forest products and other non-timber products will rely on sustainably managed forests. Brainstorm with the students the current uses of forest products in our lives.

Possible Responses:

- We use forest products for building – lumber, plywood, particle board, shakes, shingles, oriented strand board.
- We use forest products for fuel – firewood, bio-fuel, hog-fuel, distillates (ethanol, methanol).
- We use forest products for furnishing – furniture, moulding, flooring.
- We use forest products for food – birch and maple syrup, pine nuts, fruit, mushrooms.
- We rely on forest products for medicine – taxol from yew, herbal remedies, traditional healing.
- We rely on forest products for paper – wrapping, writing, packaging, cleaning, sanitation, communication.
- We use forest products for chemicals – fuels, turpentine, oils, cellulose, medicines.
- We use forest products for beauty – art work.
- We use forest products for tools – bowls, handles, canes, bows, fishing rods, barrels, gunstocks, spoons.
- We use forest products for cultural and spiritual needs – smudging, carving.
- We use forest products as a means of carbon storage – carbon credits from new growth.

Students select a category of forest products and research innovations that have and are being made. A presentation, report or poster could be the result.



Part 4: Optional Extension Activities

1. Field Trip

In almost every community in British Columbia there are forest companies, consulting firms, Ministry of Forests, Lands and Natural Resource Operations offices and/or a post-secondary institution with a natural resource management department. Contact one of these and see if they will arrange for someone to provide a tour of a local forest site to explain the challenges of sustainable forest management. (The tour could be of an urban forest, park or a community or private woodlot.)

2. BC Forest Companies and Sustainable Forest Management Plans

The status of certified forest management in British Columbia may be explored at a number of scales through the interactive map at the Forest Products Association of Canada website (<http://www.certificationcanada.org/maps/>).

By following the links students can access company websites and find information on their sustainable forestry initiatives.

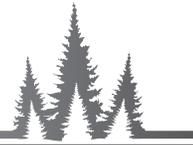
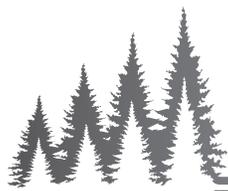
Contact a company and ask if they would provide a speaker to explain their sustainable forestry policy and procedures.

3. Simulated Land Use Planning

Divide your class into 5 or 6 different stakeholder groups i.e. First Nations, fishers, environmentalist, forest company, guide outfitter, rancher, etc.

Have each group develop a set of values that are important to their stakeholder group (students may want to use the internet to research their group's values).

Select a forest area near your school (this could be a park, woodlot, etc.) and have students come up with a land use plan that embodies sustainable forest management. Students must keep in mind their stakeholder's values and needs across all three of the sustainability legs - environmental, social and economic.



Part 4: Optional Activities ...continued

4. Biodiversity: Biogeoclimatic Zone Report

There are fourteen biogeoclimatic zones in BC, each different in their biologic, geologic and climatic ecosystem characteristics. A student can be assigned a specific biogeoclimatic zone to research. Students prepare a poster or short computer presentation for a specific zone. This can be presented orally to the class as a way of familiarizing all the students in the class with the great range in biodiversity across our province. The report can include: location, climate, ecosystems, wildlife, and natural resources.

Very useful individual brochures for each biogeoclimatic zone can be opened from the interactive biogeoclimatic zone maps found at the following websites:

The Tree Book

(www.for.gov.bc.ca/hfd/library/documents/treebook)

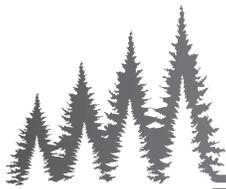
Biogeoclimatic Zones

(www.for.gov.bc.ca/hfd/library/documents/treebook/biogeno/biogeno.htm)

5. Species and Ecosystems at Risk: Report/Presentation

Students research and report on wildlife species and ecosystems that are considered at risk in BC. Information in this regard can be obtained through the BC Ministry of Environment (www.env.gov.bc.ca/atrisk/index.html). Information on Identified Wildlife Management Strategies can be found at (www.env.gov.bc.ca/wld/frpa/iwms). A list of regional wildlife biologists or ecosystem specialists is available on that site. It might be possible for a person from your region to make a presentation to your class.





Managing For Sustainability

DVD Activity Sheets

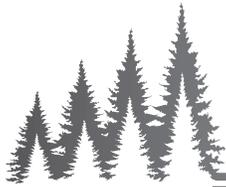
Name: _____ Date: _____

1. The land area covered by BC's forests is immense, comprising some ____ million ha (_____ million acres).
2. The public owns _____% of British Columbia's land base. Forestry management decisions made for these public, or Crown, lands must reflect public _____.
3. How much of BC's forested lands are harvested commercially each year?

4. What is the role of BC's independent Chief Forester?

5. Comprehensive forest management in BC upholds _____ environmental standards and encourages _____ and _____.
6. The recent devastating epidemic of mountain pine beetle has led government to work with industry, First Nations and other stakeholders to ensure





SUSTAINABLE FOREST MANAGEMENT IN BRITISH COLUMBIA



7. Which BC government Act sets out the rules of forest management?

8. Following consultations with all stakeholders, forest companies must prepare Forest Stewardship Plans which addresses these values:

a) _____ e) _____

b) _____ f) _____

c) _____ g) _____

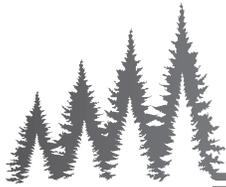
d) _____ h) _____

9. After harvesting, a forest company is responsible for planting and tending the new forest until there is _____

10. What are the positive results of a forest company planting several species of trees on a newly harvested site?

11. The independent _____ Board verifies that industry and government uphold the laws under the Forest and Range Practices Act. This board reports directly to the _____





SUSTAINABLE FOREST MANAGEMENT IN BRITISH COLUMBIA



12. Which three internationally recognized third party standards are used in Canada to assure the world that BC forest products come from legal and sustainable sources?

13. The _____ of ecological values while providing stable _____ benefits for our communities is the foundation of sustainable forest management.

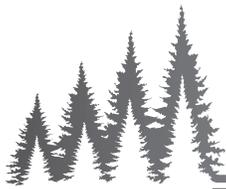
14. Comprehensive land use plans are developed with the community to share the use of BC's public lands for _____, _____ and _____.

15. _____ % of BC's land has been fully protected through community consultation.

16. In the additional 14% of lands allocated as special management zones values like _____ or _____ take precedence over other forms of development.

17. To First Nations communities, forest lands in British Columbia have been _____, _____ and _____ significant for thousands of years.

18. In the year _____ the government of BC had reached multi-year forest agreements with _____ of the First Nations with forest interests in the province. These agreements provide access to _____ million cubic metres of timber and a share in _____ million dollars of forest revenue. There is a provincial target of _____ % of annual harvest to be held by First Nations.



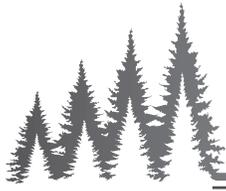
Managing For Sustainability

DVD Activity Sheets - KEY

Name: _____ Date: _____

1. The land area covered by BC's forests is immense, comprising some 60 million ha (149 million acres).
2. The public owns 95 % of British Columbia's land base. Forestry management decisions made for these public, or Crown, lands must reflect public values.
3. How much of BC's forested lands are harvested commercially each year?
a fraction of one per cent
4. What is the role of BC's independent Chief Forester?
To conduct regular reviews to determine how much timber can be harvested annually on public lands.
5. Comprehensive forest management in BC upholds high environmental standards and encourages accountability and innovation.
6. The recent devastating epidemic of mountain pine beetle has led government to work with industry, First Nations and other stakeholders to ensure
economic benefits
respect of environmental values
recovery of the forest





SUSTAINABLE FOREST MANAGEMENT IN BRITISH COLUMBIA



7. Which BC government Act sets out the rules of forest management?

Forest and Range Practices Act

8. Following consultations with all stakeholders, forest companies must prepare Forest Stewardship Plans which addresses these values.

a) ***soils***

e) ***biodiversity***

b) ***timber***

f) ***fish***

c) ***wildlife***

g) ***biodiversity***

d) ***water***

h) ***recreation***

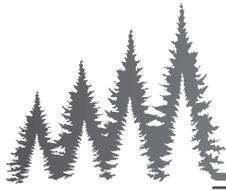
9. After harvesting, a forest company is responsible for planting and tending the new forest until there is ***assurance that it will grow into a new healthy forest.***

10. What are the positive results of a forest company planting several species of trees on a newly harvested site?

Promotion of a diverse forest ecosystem that is more resilient.

11. The independent ***Forest Practices*** Board verifies that industry and government uphold the laws under the Forest and Range Practices Act. This board reports directly to the ***public.***





SUSTAINABLE FOREST MANAGEMENT IN BRITISH COLUMBIA



12. Which three internationally recognized third party standards are used in Canada to assure the world that BC forest products come from legal and sustainable sources?

Canadian Standards Association (CSA)

Sustainable Forestry Initiative (SFI)

Forest Stewardship Council (FSC)

13. The protection of ecological values while providing stable economic benefits for our communities is the foundation of sustainable forest management.

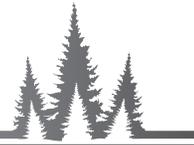
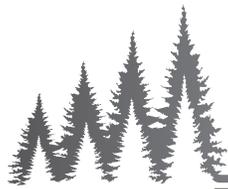
14. Comprehensive land use plans are developed with the community to share the use of BC's public lands for development, protection and use.

15. 14 % of BC's land has been fully protected through community consultation.

16. In the additional 14% of lands allocated as special management zones values like critical habitats or scenery take precedence over other forms of development.

17. To First Nations communities, forest lands in British Columbia have been economically, culturally and spiritually significant for thousands of years.

18. In the year 2007 the government of BC had reached multi-year forest agreements with three quarters of the First Nations with forest interests in the province. These agreements provide access to 30 million cubic metres of timber and a share in 190 million dollars of forest revenue. There is a provincial target of 8 % of annual harvest to be held by First Nations.



Teacher Background

Note: terms written in bold-face type can be found in the Glossary.

Overview of Sustainable Forest Management

Sustainable forest management: Management that maintains and enhances the long-term health of forest ecosystems for the benefit of all living things while providing environmental, economic, social, and cultural opportunities for present and future generations.

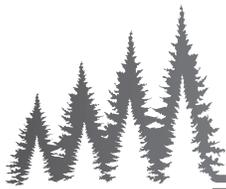
Source: Canadian Council of Forest Ministers, 2008

Management of the forested lands of British Columbia is based on the goal of sustainability across a balanced set of economic, social and environmental goals. Realization of this goal requires consultation and compromise amongst the interdependent requirements of the environment, society and the economy.

Overview of BC Forests and Their Role in the Forest Industry

Forests cover about 60 million **hectares** of British Columbia. Great variations in climate, latitude, **natural disturbances**, soils and terrain has created habitats for 40 different native tree species and diverse forests ranging from the temperate rainforests along the coast to the interior ponderosa pine forests in the southern interior and the boreal forests of the northeast. Of the 14 **Biogeoclimatic Zones** recognized in BC, only the Alpine Tundra, found above tree-line, and the Bunchgrass, found in the driest valley bottoms, are not forested.

The forests of British Columbia are dynamic ecosystems periodically disturbed by fire, pests, disease and climatic events. The result is a mosaic of young and old forest environments across the forested landscape. Forests that are greater than 250 years old on the coast are considered to be **old growth forests**. In the interior of the province where trees have shorter life spans and disturbances like wildfires are more frequent, some forests aged 120 to 140 or older can be considered old growth. Currently BC has 22.6 million hectares of forest that can be considered as old growth.



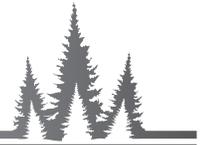
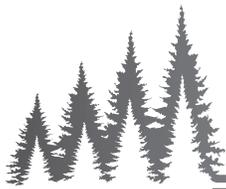
Teacher Background ...continued

Many of British Columbia's 1,100 species of birds, fish, mammals, amphibians and reptiles utilize forest habitats for at least part of their life cycle, and some of these animals are found nowhere else in Canada. BC forests are home to 1,000's of species of plants, invertebrates, fungi and other organisms. All of these species interact in complex ways and contribute to BC's rich forest biodiversity. In British Columbia, 85 species, subspecies and populations have been established as 'at risk'. Government officials designate and map critical habitat areas and establish required management practices. More than one million hectares in total has been set aside in more than 1,186 approved wildlife habitat areas. In addition, key winter habitat covering more than 6.2 million hectares have been set aside for mule deer, mountain goats, Stone sheep and other ungulates.

Forests have always been important to the peoples living on the lands that became BC. For thousands of years First Nations have relied on the forest to meet economic, cultural and spiritual needs. Early in the 1800's the forest provided masts and timbers for sailing ships, and forest ecosystems provided valuable products, fuels and construction materials to support the early fur trade, mining and agricultural settlement.

Growing demand for building material, rail road ties, and pulp and paper spurred development of commercial forestry in BC into the early 20th Century. At first development was concentrated on Vancouver Island and the south-western parts of the mainland along the Pacific coast where access to water for transportation and export were near. Forest harvesting moved further north along the coast as demand for BC wood products increased and new operations were started. In the interior of the province most commercial forest operations were along the rail lines where products could be easily shipped to the coast or to markets in eastern Canada and the United States.

Forestry in British Columbia grew remarkably following the end of the Second World War. New technologies and products plus growing domestic and world demand spurred development. Logs unsuitable for lumber, for example, could be chipped for pulp; sawdust and other solid wood wastes could be made into composite materials like fibreboard or used to produce bio-fuel pellets; fibre from species like trembling aspen gained value as a component of oriented strand board. Improvement and expansion of provincial infrastructure, especially in transportation and energy, led to a remarkable expansion and eventual provincial dominance of



Teacher Background ...continued

forestry in the interior of the province. The interior of the province was allocated 86.5 per cent of the **Allowable Annual Cut (AAC)** in 2011 versus the 13.5 per cent allocated to the coast.

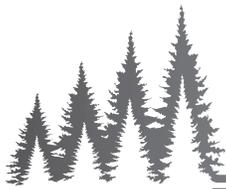
In 2009 the forest sector (made up of forestry, logging, support activities for forestry, wood product manufacturing, and pulp and paper manufacturing) made up 4.6 per cent of BC's GDP. In 2010, British Columbia produced 51 per cent of Canada's wood exports and 34 per cent of all the country's forest product exports.

Today, BC has roughly the same amount of forested area as it had before European settlement. Most of these forested areas are managed by the province as 95 per cent of BC's land is **Crown Land** and owned by the public. Only 2 per cent of the province's land base has been permanently converted to other uses such as farming, ranching or urban development.

Progression to Sustainable Forest Practices

Before the turn of the century when commercial forestry began in BC, the forests seemed limitless and there were few rules governing where and how harvesting occurred. Sometimes only the best trees of the best species were taken and the others were left standing or abandoned as waste. Harvested areas were left to recover on their own, and cleared areas suitable for agriculture or urban development may have been permanently removed from the forest land base. There were few obligations or laws requiring sites to be reforested or to minimize biological or physical impacts. Often little concern was shown for the needs of other **stakeholders** concerned with forest lands.

In 1910 the provincial government commissioned John Fulton to prepare an inventory of **timber supply** and to recommend better ways of managing BC forests. Based on his report and the Forest Act of 1912, the BC Forest Service was created with a mandate to manage and protect the forest. By late in the 1930's, though, demand for lumber had declined through economic downturns and the early boom in BC's forest was over for the time being.



Teacher Background ...continued

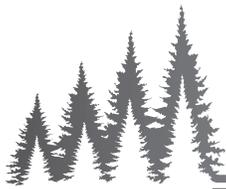
A new report on provincial forest management was provided by the Sloan Commission in 1945. The report contained a key principle for long-term forest management, that of **sustained yield**, reforestation should be undertaken which would be capable of sustaining an **annual yield** for a future industry. By the latter part of the 1970's the government of BC again responded to changes in the forest sector influenced by changing world economies and technology, as well as shifts in the views of forest use by all stakeholders. In 1978, the Ministry of Forests Act created a ministry to manage Crown forests, and, under the new Forest Act, forests were now to be considered multi-use resources. Forest professionals would now have to work closely with other government agencies and show consideration of such factors as agriculture, mining, fisheries, recreation and wildlife within their management plans.

BC's Chief Forester

The first **Chief Forester** of the province of British Columbia, H.R. MacMillan, was appointed in 1912. Today's Chief Forester is required to determine how much wood can be sustainably harvested in each of the 70 forest management units in BC. These amounts must be determined at least once every ten years through an independent timber supply review process which calls for public input and thorough analysis of current forest information, practice, and government policies regarding the environment, economy and society. In unusual situations such as a devastating insect epidemic, the Chief Forester can set a new harvest level (Annual Allowable Cut) or postpone a timber supply review.

Forest Practices Board (1994)

Evaluations of the practices of the forest industry and their government regulators are conducted by the **Forest Practices Board**. Performance audits and investigations of public complaints are part of its mandate, and all findings are reported both to government and the public.



Teacher Background ...continued

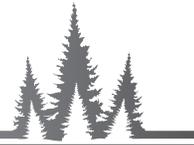
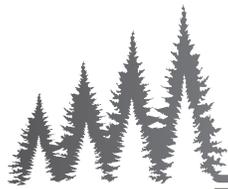
Comprehensive Land Use Planning

In response to land use conflicts amongst diverse stakeholders in present and future land and resource use on Crown land in BC, a comprehensive program of land use planning exists. The process is open, community-based and involves the public, stakeholders and governments, including First Nations. At the planning table, diverse views on the needs of the community, economy and environment are shaped into shared visions. Comprehensive land use plans have been completed in close to 90 per cent of the province. These plans which reflect the uniqueness of each region have led to the protection of biodiversity and critical habitats. Management is to be ecosystem-based and designed to ensure the well-being of natural ecosystems. Greater understanding and cooperation amongst the citizens of a region has created more stable conditions for future investment.

Forest and Range Practices Act (2004)

The Forest and Range Practices Act and its regulations govern the activities of forest and range licensees in BC. The statute sets the requirements for planning, road building, logging, reforestation, and grazing.

British Columbia's land use planning and results-based forest regulations ensure public lands provide a mix of benefits such as timber, recreational opportunities, water quality, wildlife habitat, and countless others identified through the public planning process. The Forest and Range Practices Act is designed to deliver a careful balance of environmental, economic and social benefits across the landscape simultaneously, and not one to the exclusion of the other. Each year the Forest and Range Evaluation Program exams the scientific data collected from hundreds of sites randomly selected throughout the province. From these analyses, public recommendations are made to maintain and improve sustainable forest practices.



Teacher Background ...continued

Industry Responsibilities

Forest Stewardship Plans

The Forest and Range Practices Act requires that licensees prepare forest stewardship plans that show how operations will be consistent with objectives set by government for soils, timber, wildlife, water, fish, biodiversity and **cultural heritage** resources. The plans also indicate generally where forest development will be taking place. Before government approves the plan, companies must invite and consider public and First Nation comments.

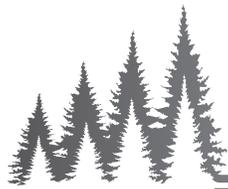
In addition, the regulatory regime specifies requirements to conserve soils, provide sustainable reforestation, and to protect **riparian areas**, fish and fish habitat, watersheds, biodiversity, and wildlife. It specifies requirements for construction, maintenance and deactivation of forest roads.

Harvesting

Harvesting is far more than maximizing economic return for a company or even economic returns for the citizens of BC. Forest management includes measures for the conservation of other important forest values such as wildlife habitat, cultural heritage resources, scenic values, natural range barriers and biodiversity and the need to protect soils and watersheds. Stands of **shade-intolerant** trees like lodgepole pine regenerate best under **clear cut harvesting** which promotes full sunlight for re-generating these forests. The result is **even aged stands** very similar to those created by the natural process that established them. Many of these stands in the interior are fire-origin.

Selection and retention silviculture systems which remove some trees and leave others behind are used where ecologically appropriate for the site, or required to conserve wildlife habitats or other forest values. The result is **uneven-aged stands** of different species and trees ranging greatly in size that mimic the stand created by the natural processes that originally established the stand.





Teacher Background ...continued

After Harvest

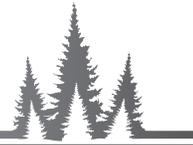
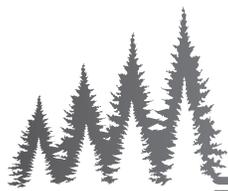
Responsibility for a harvest site continues after the trees are harvested. Forest companies are required to follow approved plans to promote forest recovery. They must reforest each site with native species that can be best expected to meet the unique conditions at each site and to respond to anticipated future ecological changes. Often several species of trees are planted on a site to ensure a diverse ecosystem more resilient to disturbance from pests or disease, and more likely able to respond to future ecological conditions resulting from climate change.

While genetically modified trees are not planted in BC, **silviculture** regulations require the selection of superior seeds and seedlings from natural wild stands and seed orchards. About 200 million seedlings are planted in British Columbia each year in areas that have been logged, burned or damaged by insects. The six billionth seedling was planted in a BC forest in 2008.

The after-harvest silviculture responsibilities of a forest company don't stop after new seedlings are planted. The new forest must be tended until a forest is sufficiently restocked with trees that are taller than surrounding vegetation and **free to grow**. Regulations require that roads and stream crossings be properly maintained or deactivated to ensure that the needs of conservation, forest recovery, and stakeholders are served.

Third Party Certifications

Life-cycle assessments of construction materials consistently rate wood and wood products as the best, since wood fibre is versatile, recyclable and renewable. The carbon stored in wood is taken directly from the atmosphere, and wooden buildings, for example, can store this carbon for over a century, especially if recycled or reclaimed wood is used in new construction. Increasingly, the citizens of Canada and other countries are demanding that wood products are produced sustainably in well managed forests. Voluntary independent **third-party certification of sustainable forest** practices began in the 1990's in response to concerns about logging practices and forest loss, particularly in tropical areas. Today, sustainable forest certification is an important additional way of reassuring the public and consumer that harvested areas are reforested, that laws are obeyed and that there is no unauthorized or illegal logging. In addition, all third party certifications go beyond this by conserving biological diversity, maintaining wildlife habitat, soils and water resources, and harvesting timber sustainably, all of which are essential components of well-managed forests.



Teacher Background ...continued

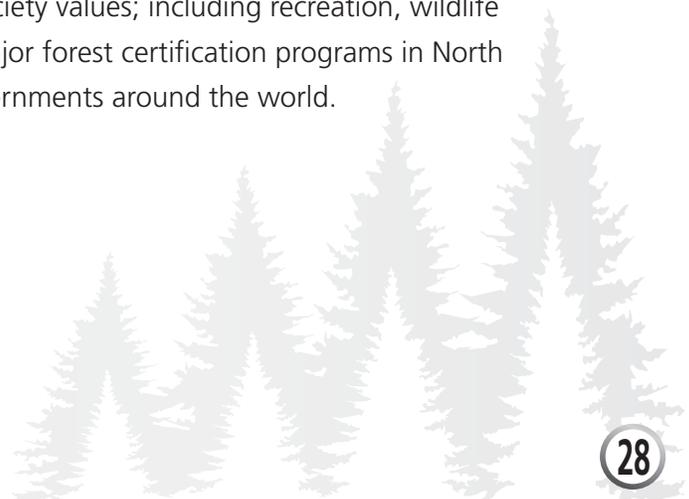
Certification often includes **chain-of-custody** provisions that track wood from a certified forest through manufacturing and shipping of the final product. Worldwide there are more than 50 independent forest certification standards.

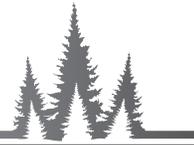
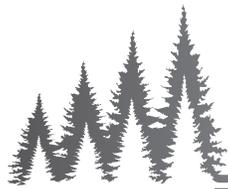
By year-end 2010, there were 53 million hectares of third-party certified forest lands in the province, placing BC's individual performance well ahead of such important forest industry countries as the USA (47 million hectares), Russia (23 million hectares), Finland (21 million hectares) or Brazil (7 million hectares). Only Canada as a whole, with its 150 million hectares has more certified lands than British Columbia.

Third Party Certification in BC

There are three internationally recognized forest certification systems presently used by forest companies in BC. Each certification system requires input from the public and environmental organizations, and rigorous performance audits of a certified company are performed at regular intervals by experienced professionals to ensure that certification standards are followed. **The Canadian Standards Association's Sustainable Forest Management Standards (CSA)** and the **Sustainable Forestry Initiative (SFI)** systems are recognized by the international non-profit Programme for the Endorsement of Forest Certification (PEFC). **Forest Stewardship Council (FSC)** certifications in BC are recognized by their own international governing body.

Canada and the United States manage forests sustainably, ensuring they are there for future generations to be used for many things that society values; including recreation, wildlife habitat, biodiversity, and forest products. All major forest certification programs in North America are recognized by companies and governments around the world.





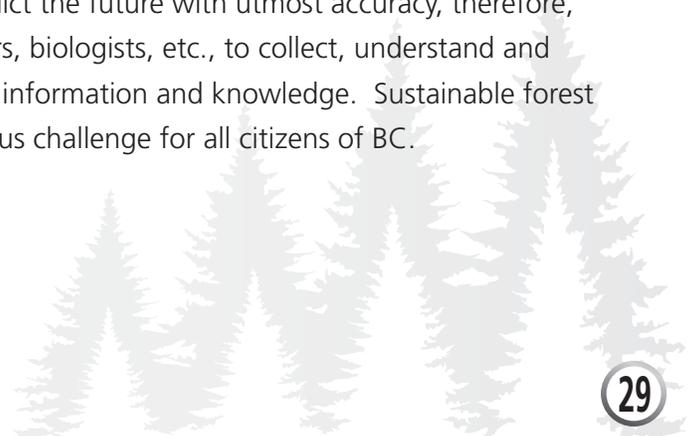
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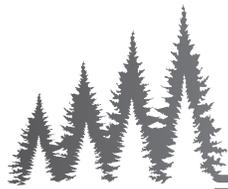
Future Challenges

Even with BC's enviable record of sustainable forest management today there are many challenges to the sustainable use of our forests since British Columbia is Canada's most biologically and ecologically diverse province. To be successful in sustained use requires a long term commitment as it takes many decades to regenerate forest lands following harvesting or natural disturbances like fires or insect attacks. The consequences of future devastating natural disturbances and new ecological conditions resulting from climate change and other environmental pressures are hard to predict. However, we can expect considerable change in the productivity, biodiversity and dynamics of provincial forests. By maintaining biodiversity we can conserve BC's species and ecosystem diversity for future generations and enable ecosystems to withstand environmental changes (such as climate change).

Material once considered unusable in forestry operations like tree tops and branches will become valuable new commodities to be harvested for use as fibre, **bio-fuel**, or as raw materials for new manufactured products. Changing demands for lands dedicated to various, possibly conflicting uses, such as mining, energy or other industrial operations, urban settlement, recreation, protected areas, agriculture and cultural and heritage preservation, will change the way we sustainably use our forest lands. BC forest products have to compete internationally with other products from other countries, which may practice forestry under regulatory and labour regimes less stringent than ours. Such competition may increase or decrease demand for our own forest goods.

Our ability to respond to change in order to be successful at sustainable forest management is and will remain challenging. We cannot predict the future with utmost accuracy, therefore, we need to rely on forest professionals, foresters, biologists, etc., to collect, understand and apply the new scientific, economic and cultural information and knowledge. Sustainable forest management is evolving and will be a continuous challenge for all citizens of BC.





DVD Script: “Managing for Sustainability”

Introduction

British Columbia has earned an international reputation for excellence in forest management through its leading-edge technology and comprehensive resource planning.

The people of British Columbia are entrusted with the conservation of these magnificent forests – an area of exceptional beauty that stretches from the Canadian Rockies to the Pacific Coast, and encompasses 60 million hectares (149 million acres).

We are unique among forest producers because 95 per cent of our land base is publicly owned. As a result, our forest management activities are driven by laws that reflect public values.

British Columbians know they are managing a global treasure, and their involvement in land use planning demonstrates their dedication to maintaining the immense ecological diversity across our vast landscape.

Forest companies must meet rigorous standards of practice that adhere to the principles of **sustainable forestry**, and most go beyond this through independent forest certification.

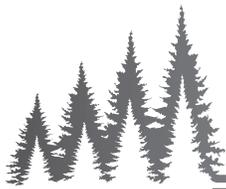
Forest Management

British Columbia is recognized as a world leader in the management of natural forest landscapes that maintain diverse values and provide an array of quality products. The province’s skilled resource professionals know they are building a long-term legacy.

A fraction of one per cent of our forests is harvested each year. The province’s independent chief forester conducts detailed regular reviews to determine how much timber can be harvested annually on public lands.

Jim Snetsinger, Chief Forester, Government of British Columbia

My passion has always been to do what is right for the forest. Those of us involved in forest management are building a long-term legacy. We are shaping forests for the future; and in many ways we are shaping the economy as well. We must respect all forest values while meeting market demands for quality products.



DVD Script: “Managing for Sustainability” ...continued

My personal goal is to be sure that we can, and do, carry out world-class forest management everywhere. We must practise sustainable forest management on all of our public lands.

It's especially important right now to have healthy, resilient forests in order to deal with the management challenges that will come with a changing climate.

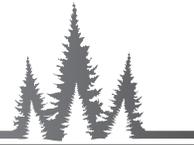
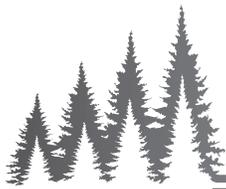
All forestry activities on public lands are guided by comprehensive forest legislation that upholds high environmental standards while encouraging accountability and innovation. British Columbia's response to a mountain pine beetle epidemic in its interior pine forests is strengthened by the fact that much of the land is publicly owned. Government is working with industry, communities, First Nations, and a wide range of **stakeholders** to secure the greatest economic benefits while respecting environmental values and helping the forests recover.

Under the **Forest and Range Practices Act**, resource professionals prepare **forest stewardship plans** that show how activities will be consistent with objectives set by government for values such as soils, timber, wildlife, water, fish, biodiversity and cultural heritage resources. Forest companies cannot begin any activities until they have invited and considered public and First Nations comments through these plans.

Forest companies are responsible for a harvested area until there is assurance it will grow into a new, healthy forest. They plant several native tree species which, when combined with natural regeneration, create a diverse forest ecosystem that is more resilient.

Mark Anderson, RPF, Ministry of Forests and Range

A forest company will identify a stand of trees and they'll put forward a plan, that plan must be vetted by the public for their input to ensure that the values that people have in the forests, of British Columbia, are incorporated into those plans; values such as recreation, water quality, wildlife and, of course, the timber resource.



DVD Script: “Managing for Sustainability” ...continued

Our forest legislation is backed by one of the toughest compliance and enforcement regimes in the world. On top of this, the independent **Forest Practices Board** verifies that industry and government are upholding these laws, and reports its findings directly to the public. British Columbia’s forest industry is a world leader in voluntary third-party forest certification. Three standards are used in the province – the **Canadian Standards Association**, the **Sustainable Forestry Initiative** and the **Forest Stewardship Council**. All three are globally recognized and accepted as providing assurance that British Columbia forest products come from legal and sustainable sources. PEFC, an independent global assessment program, has endorsed CSA and SFI.

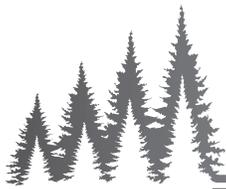
Consultation

The protection of ecological values while balancing stable economic benefit for our communities is the foundation of sustainable forest management. British Columbians develop a shared vision for the development, protection and use of our public lands through **comprehensive land use planning**.

Along the central and north Pacific Coast, this collaborative approach allowed individuals and organizations to reach agreements that ended conflict in one of the largest tracts of intact temperate rainforest on earth. Important conservation areas are fully protected and where commercial forestry is allowed, it will follow the principles of **ecosystem-based management**.

Through community consultation, British Columbia has fully protected close to 14 per cent of its total land base – and allocated another 14 per cent for special management where other important values, such as critical habitat or scenery, take precedence over development.





DVD Script: “Managing for Sustainability” ...continued

First Nations

Forests have been economically, culturally and spiritually significant to First Nations people for thousands of years.

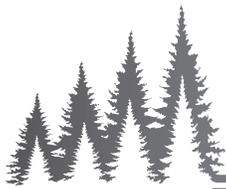
The British Columbia government is committed to increasing First Nations participation in the forest sector. By mid-2007, it had reached multi-year agreements with nearly three-quarters of First Nations with forest interests in the province, providing access to more than 30 million cubic metres of timber and sharing more than \$190 million in forest revenues. The government’s target is to eventually have eight per cent of the province’s annual harvest held by First Nations.

Larry Johnson, Economic Development Manager, Huu-ay-aht First Nation

The Huu-ay-aht First Nation being a participant in the forest industry; first of all, we’re involved in the forest management and have management say. Secondly we’ve created economic circumstances where different companies, like the silviculture companies, shake companies, so we’re creating employment; employment being a very big factor for First Nations because of the fact that if you go back five to seven years ago we had as high as 80 per cent unemployment and I believe we’re at 10 or below 10 per cent now.

Conclusion

Thorough planning and comprehensive laws backed by enforcement and certification maintain British Columbia’s position as a world leader in sustainable forest management. A recent academic study that compared environmental forest practice regulations in 39 forest jurisdictions around the world found British Columbia’s were among the toughest. The British Columbia forest sector is accountable to the people of this extraordinary province and to the rest of the world for our forests. It’s a responsibility British Columbians welcome with pride.



Glossary

Allowable Annual Cut (AAC)

The AAC is the volume of timber that may be harvested sustainably from an area in a year. The AAC for public lands is set by the Chief Forester following an independent review process.

Annual yield

Annual yield is a measure of the productivity of a forested area over the course of a year. Based on detailed assessments of forest productivity over time in a particular area, the Chief Forester determines an annual yield that can be sustainably harvested from an area. (see AAC)

Biodiversity

The species, ecosystem and genetic diversity of an area and the processes that maintain that diversity.

Biofuel

Fuel that is produced from a renewable biological resource.

Biogeoclimatic zones

The Biogeoclimatic Ecosystem Classification (BEC) system recognizes fourteen biogeoclimatic zones in British Columbia, each with different forest types. The system considers biology (bio), geology (geo) and climate (climatic) factors.

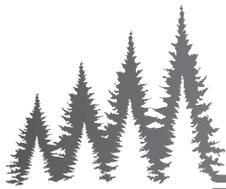
Canadian Standards Association (CSA)

The CSA standard of sustainable forest management is one of the three third party certifications used in Canada.

Chain of custody (COC)

Chain-of-custody certification is a mechanism used to track wood from a certified forest until it is manufactured into a certified sustainable forest product and shipped to market.





Glossary ...continued

Chief Forester

The Chief Forester is appointed by the government of BC as its senior professional forestry executive. The Chief Forester oversees the on-going implementation of the Forest and Range Practices Act and is responsible for developing plans and programs to manage provincial forest and range lands. The Chief Forester is required to determine how much wood can be harvest from each of the provinces 70 management units.

Cultural heritage

Traditional customs, values, places and practices of a community or stakeholder group.

Clearcut harvesting

This harvest practice removes most of the trees from an area but leaves patches and buffers of trees to protect other forest values such as streams or wildlife needs.

Comprehensive land use planning

A land management planning process for public lands that involves participation from stakeholders to form a consensus and balance of environmental, economic and social concerns.

Crown land

Land owned by the public and managed by either the provincial or federal governments.

Ecosystem based management

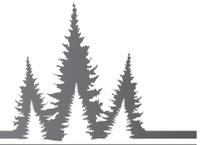
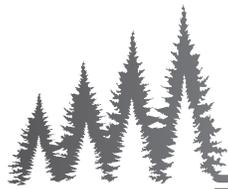
An adaptive approach to managing human activities that seeks to ensure the coexistence of healthy, fully functioning ecosystems and human communities.

Even-aged stands

A forested area consisting of trees of similar age and size. These stands occur naturally when a forest recovers following wildfires or other severe events which kill most of the mature individuals. A single tree species like lodgepole pine often dominates the stand.

Forest Practices Board

An independent board which audits the forest management practices of government and industry.



Glossary ...continued

Forest and Range Practices Act

The BC legislation which governs the use of public lands for forestry and grazing.

Forest Stewardship Council (FSC)

One of three third party organizations certifying sustainable forest practices in BC and Canada.

Forest Stewardship Plans

Required plans filed by forest licensees to show where forest operations will occur and that practices will conform to the regulations of the Forest and Range Practices Act.

Free-to-grow

Forest companies are responsible for the reforestation of public lands following harvest until the trees reach a stage that ensures the development of a healthy new forest.

Hectares /acres

One hectare is equivalent to an area measuring 100 m x 100 m (10,000 m²) or about 2.5 acres.

Life-cycle assessments

An examination of the environmental impacts of a product over the whole course of its production, use and disposal.

Licensees

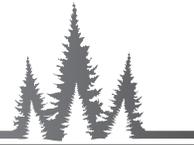
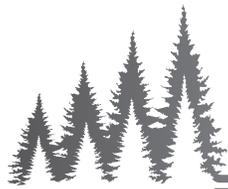
Persons or companies authorized by the provincial government to harvest trees from Crown Land.

Natural disturbances

Fires, windstorms, pests and diseases are the main natural periodic factors which disturb the make-up and dynamics of BC forests. Depending on the severity and extent, natural disturbances can greatly alter the nature of a forest.

Natural range barriers

A naturally occurring feature like a rock face, forest or river which stops or significantly hinders the movement of livestock to and from an adjacent area.



Glossary ...continued

Old growth forest

Forests with most large trees older than 250 years on the coast and more than 120-140 years in the interior are considered to be old growth.

Retention harvesting

Up to 80 per cent of the trees in a stand are left standing following a first harvest. When tree growth on the harvested areas reaches maturity, the trees originally left behind are harvested.

Riparian areas

These are areas that border on streams, lakes, and wetlands and serve as transitions from aquatic to terrestrial environments. Riparian areas play an important role in maintaining good water quality, and are key habitats for many aquatic and terrestrial species.

Shade-intolerant

These are tree species which grow best when exposed to full sunlight. Lodgepole pine in the interior and Douglas-fir on the coast are examples of shade intolerant species.

Shade-tolerant

These are trees that can grow in the understory shade of other trees. Western hemlock on the coast and subalpine fir in the interior are examples of shade tolerant species.

Sustainability

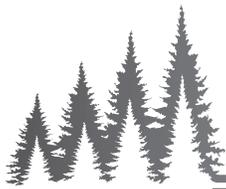
The capacity of forests, ranging from stands to ecoregions, to maintain their health, productivity, diversity and overall integrity over the long term.

Silviculture

The active management and control of the establishment, growth, species make-up, health, structure and harvest of a forest.

Sustainable forestry

Management that maintains and enhances the long-term health of forest ecosystems for the benefit of all living things while providing environmental, economic, social, and cultural opportunities for present and future generations. (Canadian Council of Forest Ministers, 2008)



Glossary ...continued

Sustainable Forestry Initiative (SFI)

The SFI certification is one of three third party certifications used in Canada.

Stakeholders

Persons, cultural groups, organizations, government, land users and industrial companies with interests in the use of a common area.

Strategic land use planning

A land management planning process for public lands that involves participation from stakeholders to form a consensus and balance of environmental, economic and cultural concerns.

Third Party Certification of Sustainable Forestry

Certification organizations independent of government or industry. There are three third party organizations that certify the sustainable forestry of BC and Canada. See: Canadian Standards Association, Forest Stewardship Council, Sustainable Forestry Initiative.

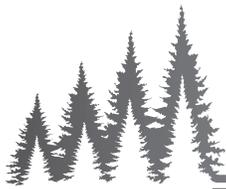
Timber supply

Timber supply takes into account the amount and quality of timber in a Timber Supply Area. Information from regular reviews of an area's timber supply is used by the Chief Forester to determine the Allowable Annual Cut (AAC).

Uneven-aged stands

A forested area with trees varying in age and size.





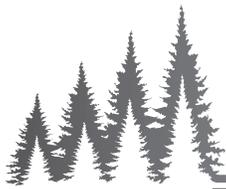
Web Links

BC Ministry of Forests, Lands and Natural Resource Operations

www.gov.bc.ca/for

- **Forest and Range Practices Act**
www.for.gov.bc.ca/code
- **Forest and Range Evaluation Program**
www.for.gov.bc.ca/hfp/frep
- **Compliance and Enforcement**
www.for.gov.bc.ca/hen
- **Forest Harvesting: harvesting considerations**
www.for.gov.bc.ca/hfp/publications/00062
- **The State of British Columbia's Forests**
www.for.gov.bc.ca/hfp/sof
- **Timber Supply Review**
www.for.gov.bc.ca/hts
- **Wildfire Management Branch**
www.bcwildfire.ca
- **Biogeoclimatic Zones**
www.for.gov.bc.ca/hfd/library/documents/treebook/bigeo/bigeo.htm
- **The Tree Book**
www.for.gov.bc.ca/hfd/library/documents/treebook
- **Certifications**
<http://www.for.gov.bc.ca/het/certification/>
- **Forest Practises Board**
www.fpb.gov.bc.ca





Web Links ...continued

Coast Forest Conservation Initiative

www.coastforestconservationinitiative.com

Council of Forest Industries

www.cofi.org

Forest Products Association of Canada (FPAC)

www.fpac.ca

Canadian Forest Service

www.cfs.nrcan.gc.ca

Canadian Council of Forest Ministers – Sustainable Forest Management in Canada

www.sfmcanada.org

Forests For Tomorrow

www.forestsfortomorrow.ca

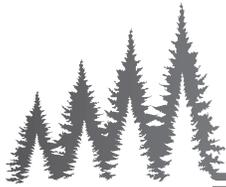
naturally:wood

www.naturallywood.com

A Cut Above: Ecological Principles for Sustainable Forestry on BC's Coast

www.davidsuzuki.org/publications/reports/2000/a-cut-above-ecological-principles-for-sustainable-forestry-on-bcs-coast



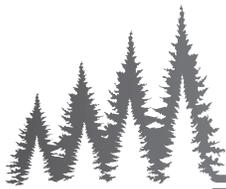


Web Links ...continued

Third Party Certifications

- **Canadian Standards Association's (CSA)
Sustainable Forest Management Standard**
www.csa-international.org/product_areas/forest_products_marking/
- **Forest Stewardship Council (FSC) Canada – British Columbia**
www.fsc.org
www.fsccanada.org/BritishColumbia.htm
- **The Programme for the Endorsement of Forest Certification Schemes**
www.pefc.org
www.pefccanada.org
- **Sustainable Forestry Initiative (SFI)**
www.sfiprogram.org





Additional Teaching Resource Kits

The following teaching resource kits are available free to all educators and can be downloaded for school use at <http://forest-education.info>.

British Columbia's Mountain Pine Beetle: Today and Tomorrow

Suitability: Science 8, Social Studies 10, Biology 11, Geography 12, Forests 11/12.

Outlines the contributing factors of the mountain pine beetle outbreak and its spread across BC's interior pine forests and takes a look at the effects it will have on the forest industry as well as local and provincial economies.

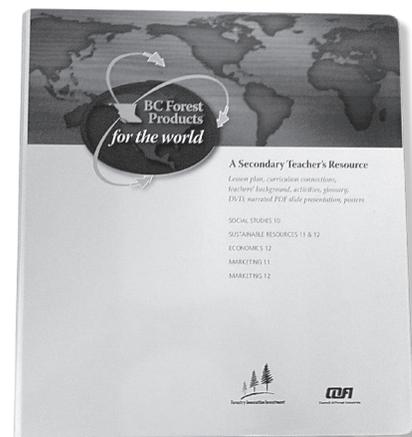
Resource kit includes: DVD, PowerPoint, lesson plans, activity sheets, posters, and samples lodgepole pine bark, mountain pine beetles and blue stained pine wood.



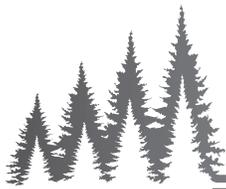
BC Forest Products for the World

Suitability: Social Studies 10, Economics, Marketing 11/12, Forestry 11, Sustainable Resources 11/12.

With over 80% of all BC wood products destined for international markets, the importance of maintaining and growing these markets is critical to the forest industry and to BC's economy. This new teaching resource will examine the development of BC's forest industry, its dependence on international markets and the challenges and opportunities the forest industry faces in maintaining markets in Asia.



This resource kit includes: DVD, PowerPoint, lesson plans, curricular connections, teacher's background information, glossary and web links.

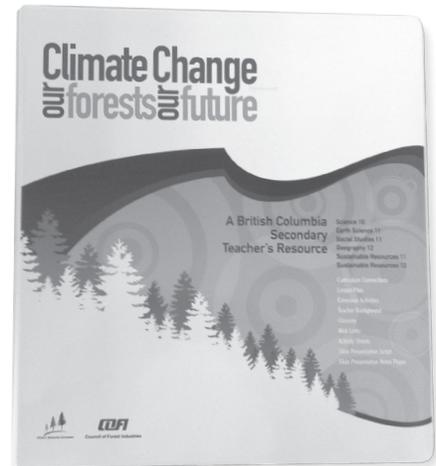


Additional Teaching Resource Kits ...continued

Climate Change: Our Forests Our Future

Suitability: Science 10, Earth Science 11, Social Studies 11, Geography 12 and Sustainable Resources 11 & 12.

Our climate is changing and we know that we must work together to mitigate its effects in any way we can. This teaching resource highlights how our forests and the forest products we produce play a key role in modifying the effects of climate change. It provides classroom project ideas to stimulate discussion and activities students can do at school and at home.



The resource includes lesson plan, activity sheets, teacher background information, extension activities, and narrated slide show.

