ASSOCIATION OF
BC FOREST PROFESSIONALS

Forest Legislation and Policy Reference Guide 2009

Chapter Fifteen

Topics of Interest

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15.1 Softwood Lumber Trade Dispute with the United States

15.1.1 Introduction

- Since 1982, Canada and the US have been involved in four lumber trade disputes (widely called Lumber I, II, III and IV). Lumber IV ended with the 2006 Softwood Lumber Agreement, which came into force on October 12, 2006.
- The first three trade disputes between the U.S. and Canada were countervailing duty cases. In Lumber IV, the US imposed both anti-dumping and countervailing duties on Canadian lumber imports.
- British Columbia, which accounts for about 50% of Canadian softwood lumber exports to the US, is the prime target of these disputes.
- This note looks at international trade rules and countervailing and anti-dumping duty investigations, gives a brief history of the Canada-US softwood lumber dispute, and gives a description of the current agreement.

15.1.2 Background on International Trade Rules

- Under world trading rules, as negotiated at the General Agreement on Trade and Tariffs (GATT) and now at the World Trade Organization (WTO), governments have in general agreed to lower trade restrictions against each other.
- In general, governments have agreed not to impose new trade restrictions such as tariffs or quotas, have capped existing levels of tariffs and have also agreed to reduce these tariffs.
- There are a number of exceptions in the WTO that allow trade restrictions to continue including:
  - anti-dumping duties to offset countries/companies selling unfairly at a low price,
  - countervailing duties to offset government subsidies, and
  - emergency trade restrictions designed to “safeguard” domestic industries.

1. Countervailing Duties (CVD)

- A countervailing duty is a tariff imposed against imports from a specific country in order to offset an unfair advantage caused by a government subsidy.
- Not all government subsidies are countervailable. Under WTO rules, the “Agreement on Subsidies and Countervailing Measures”, for a subsidy to be countervailable, it must meet certain criteria:
  - there is a financial contribution by a government;
  - a benefit is conferred;
  - the subsidy is specific to an enterprise or industry; and
  - the subsidy results in injury to the domestic industry requesting the duties.

- Each country has its own rules to investigate whether countervailing duties are justified.
- Under US law, the U.S. Department of Commerce (Commerce) investigates whether a countervailable subsidy exists and what level of duty is required to offset it, while the U.S. International Trade Commission (ITC) investigates whether the US industry has been injured. Each agency makes a preliminary and then a final determination.
- If Commerce and the ITC find that a subsidy exists and is causing injury to the US industry, then a countervailing duty order is issued and cash deposits are required on shipments.
- The cash deposit rates are preliminary, based on the prior year's information and Commerce must recalculate the duties actually owed once the information for that year is available. This is done in annual 'Administrative Reviews'; this recalculation may result in a partial refund of duties, or the requirement to pay more.

2. Anti-Dumping (AD) Duties

- If a company exports a product at a price lower than the price it normally charges in its own home market, it is said to be "dumping" the product.
- The WTO agreement does not pass judgement on whether this is unfair competition, in contrast to its position on countervailable subsidies. The WTO focus is on how governments can or cannot react to dumping.
- Similar to countervailing duty cases, US anti-dumping cases involve a determination of the level of dumping by the Department of Commerce, and a determination of injury to the US industry by the International Trade Commission.
- Since an anti-dumping allegation involves the actions of companies, rather than governments, the Department of Commerce anti-dumping investigation focuses on companies' actions and records rather than government programs.
- As with the CVD, the cash deposit rate is based on the previous year's information and annual administrative reviews set the actual duties owing.

3. NAFTA and WTO Appeals of US Determinations

- Since 1988, Canada has been able to appeal U.S. countervailing duty determinations to an arbitration panel established under the Canada-US Free Trade Agreement (now NAFTA).
- NAFTA panels can determine whether the US finding was made in accordance with US law, but not whether US law is consistent with international trading rules. NAFTA panels have the authority to require the US to change its finding.
- An appeal to a WTO panel can determine whether U.S. law is consistent with the WTO agreement. However, the WTO has no legal authority to require the US to change its decision. It does give authority for countries to employ retaliatory trade measures on imports of products from the US if the US does not comply with the WTO panel decision.

4. Roles and Responsibilities

- In a countervailing duty case, the federal government has overall responsibility for coordinating the legal defence. Provincial governments have the lead in addressing the allegations of subsidy that relate to provincial programs.
- Industry has the lead on an anti-dumping case. The federal government is not a direct participant in an anti-dumping case but has overall responsibility for international trade and monitors the investigation to ensure it is in accordance with the WTO.

  Note: More information on international trade agreements, trade dispute resolution and countervailing and anti-dumping rules can be found at the following websites:

  - WTO: www.wto.org/english/tratop_e/dispu_e/dispu_e.htm
  - NAFTA: www.nafta-sec-alena.org
  - Department of Foreign Affairs and International Trade Canada (DFAIT): www.dfait-maeci.gc.ca/tna-nac/dispute-en.asp
  - US Department of Commerce: ia.ita.doc.gov/intro/index.html

15.1.3 History of Previous Countervailing Duty Cases and Negotiated Agreements

1. Lumber I (1982-1983)

- In October 1982, at the request of a group of US sawmillers, the Department of Commerce investigated the stumpage programs of B.C., Alberta, Ontario and Quebec. In May 1983, the Department of Commerce determined that stumpage programs were not countervailable because they are not limited to a specific industry.

2. Lumber II and the MoU (1986-1991)

- At the request of the US lumber industry (the US Coalition for Fair Lumber Imports), the Department of Commerce started another CVD investigation in May 1986.
- Contrary to its Lumber I determination, in Lumber II Commerce found that stumpage programs did meet the specificity test, and levied a 15 per cent CVD in its October 1986 preliminary determination.
- The case ended when Canada and the U.S. agreed, in December 1986, to a memorandum of understanding (MoU) under which Canada imposed a 15 per cent export charge on lumber exports to the U.S. This MoU remained in place until October 1991 when Canada terminated the agreement.

3. Lumber III (1992-1994)

- Almost immediately after Canada terminated the MoU, the US Department of Commerce (DOC) started a new CVD investigation. In May 1992 the DOC set a CVD rate of 6.5%. Canada appealed Commerce's subsidy (CVD) finding and the ITC's injury finding to a bi-national panel under the NAFTA. The Panel found that Commerce had not presented sufficient evidence that Canadian exports were subsidized, nor had the ITC shown that the US industry was injured. In August 1994 Commerce finally complied with the Panel decisions and revoked the countervailing duty order.

4. The Softwood Lumber Agreement (1996-2001)

- In December 1994, Canada and the U.S. agreed to begin consultations to find an alternative to another trade dispute. These consultations led to the negotiation of the five-year 1996 Softwood Lumber Agreement (SLA) effective April 1996.
- Canada agreed to the consultations, in part because the U.S. agreed to refund a significant part of the duties collected in Lumber III (about $500 million), and the U.S. Lumber Coalition agreed to drop a constitutional challenge against the NAFTA arbitration panel process. Also, the U.S. had amended its trade law to ensure that Canada could not succeed at a NAFTA panel on the same basis as it had in Lumber III.
- The 1996 SLA allowed BC, Alberta, Ontario and Quebec to export up to 14.7 billion board feet annually, duty free. An export fee was paid on shipments over that volume. The U.S. agreed not to initiate a trade case for the duration of the agreement.
- The SLA quota system was difficult to administer and seriously hampered many segments of the Canadian lumber industry. BC coastal companies were especially disadvantaged as they did not have quota to ship to the U.S. market when the Japanese market collapsed in 1997-1998. New entrants and growing companies also had difficulties accessing quota.

5. Lumber IV (2001-2006)

a. US Department of Commerce

- Immediately following the expiration of the Softwood Lumber Agreement in March 2001, the U.S. Coalition for Fair Lumber Imports filed a countervailing duty petition and an anti-dumping petition against Canadian softwood lumber.
- On May 22, 2002, the US Department of Commerce published its final CVD and AD orders. As a result, the U.S. Customs Service required cash deposits for duties on all softwood lumber imported from Canada on or after May 22, 2002. The final duties enacted May 22, 2002 were set at 27% of the value of lumber entering the US.
- These rates fell to 20.3% on December 20, 2004 after the first annual Administrative Review by the US Department of Commerce. The second Administrative Review reduced the duties to 10.8% in December 2005. On May 31, 2006 Commerce released a preliminary determination in the third administrative review with a country-wide CVD/AD rate of 11.2%. This preliminary rate did not come into effect as the 2006 Softwood Lumber Agreement came into effect on October 12, 2006 leading to termination of the CVD/AD litigation.

b. WTO, NAFTA and US Court of International Trade (CIT) Challenges

- Canada filed numerous appeals against the imposition of softwood lumber duties at NAFTA, the WTO, and the US Court of International Trade. In addition, members of the forest industry also launched challenges.

Note: More detailed histories and background information on Canada's NAFTA and WTO challenges are available at the following websites:

- BC Ministry of Forests and Range: www.for.gov.bc.ca/het/softwood/
- Random Lengths: www.randomlengths.com/base.asp?s1=In_Depth&s2=U.S.-Canada_Trade_Dispute
- Department of Foreign Affairs and International Trade Canada (ITCan) : www.dfait-maeci.gc.ca

6. The 2006 Softwood Lumber Agreement (2006-)

a. Background

- Because of the length, expense and uncertainty associated with the legal cases, the US and Canada made several attempts during Lumber IV to achieve a negotiated solution to the softwood lumber trade dispute. British Columbia and other Canadian provinces participated in these discussions.
- In 2003 it seemed that a long-term settlement based on British Columbia's market oriented forest policy changes might be possible. Under a long-term, policy-based solution, BC and other provinces would make forest policy changes, and Commerce would assess the changes using its 'changed circumstances' provisions. If Commerce determined that the new policies met certain criteria, then it would revoke the CVD order.
- Other possibilities for a negotiated solution that were discussed were an export tax and export quota.
- On April 27, 2006, Canada and the United States agreed to a Basic Terms sheet laying out the framework for an agreement. The agreement allows provinces to choose between an export quota or tax.
- On July 1, 2006, a final legal text was initialled by The Honourable David Emerson, the federal Minister of International Trade, and Ambassador Susan Schwab, United States Trade Representative.
- After further discussions, some key outstanding issues were addressed in 'side letters' to the Agreement. On August 22, 2006, the federal government reported that a majority of Canadian companies supported the agreement.
- The agreement was signed, and came into effect on October 12, 2006. On December 14, 2006, the *Softwood Lumber Products Export Charge Act*, 2006 received Royal Assent in Parliament.

b. Key Features of the 2006 Softwood Lumber Agreement

- The Federal government is responsible for the administration and operation of the system.
- The agreement will be for a term of seven years with an option to renew for an additional two (2) years.
- The United States and Canada will end all litigation over softwood lumber, including the revocation of the United States countervailing and anti-dumping duty orders.
- Canadian exporters were refunded US$4.3 billion in duties collected by the United States since 2002. Over US$2 billion was returned to British Columbia companies before the end of 2006.
- US$1 billion of the duties remained in the United States.
  - US$ 500 million was distributed to the U.S. Coalition for Fair Lumber Imports;
  - US$ 50 million was distributed to the bi-national industry council, composed of representatives from the Canadian and the U.S. lumber industries; and
  - US$ 450 million was set aside for "meritorious initiatives" in the U.S. identified by the U.S. in consultation with Canada. The three organizations that received this funding were: U.S. Endowment for Forestry & Communities Inc. (US$ 200 million), American Forest Foundation (US$ 150 million), and Habitat for Humanity (US$ 100 million).
- Canadian regions choose between Option A, an export tax with a surge penalty and Option B, an export quota with a lower in-quota tax rate. Regions may switch Options at year 3 and year 6 of the agreement. The first time regions will have the opportunity to switch options will be in 2010. BC's Coast and Interior regions are treated separately in the agreement, and both are currently under the export tax regime. BC is examining the possibility of adopting Option B in its two regions. Analysis is under way, and further consultation with industry is expected before a final decision.
- Both Options run on a monthly basis. The tax and quota rates to be applied during a month are determined based on the level of the industry standard Random Lengths Framing Lumber Composite Price in the four week period ending three weeks prior to the month.
- Under Option A, the tax rates for different ranges of the Random Lengths Composite are as follows:
  - If the Random Lengths Composite is greater than US$355 per thousand board feet, then no tax is applied.
  - If the composite is between US$336 and US$355 per thousand board feet, then the tax rate is 5%.
  - If the composite is between US$316 and US$335 per thousand board feet, then the tax rate is 10%.
  - If the composite is below US$315 per thousand board feet, then the tax rate is 15%.
- The surge penalty is a retroactive increase of 50% of the monthly tax rate if exports from a region are above 111% of historical levels. The Coast and Interior are subject to separate surge calculations.
- Revenues from the export tax stay in Canada and are remitted to the provinces. To date, total tax revenue of $606 million has been remitted to British Columbia, covering October 2006 to December 2008.

- Remanufacturers who meet certain criteria are charged the export tax on the "first mill" value of their lumber. In other words, there is no export charge on the value-added component of their products. To obtain "first mill" treatment, remanufacturers must not own tenures (including BCTS timber sale licensees) and must not be associated with tenure holders.
- Products selling for over US$500 per thousand board feet are charged the export tax as if their value were US$500 per thousand board feet.
- One of the side letters stated the US was willing to discuss further the treatment of lumber produced from timber on privately owned lands. However, the US has not agreed to set up a working group on this topic to date.
- The agreement also lays out a process, where the Governments of Canada and the United States, in consultation with the provinces, will develop criteria for determining when a region's forest policy system could qualify for exemption from export measures and provide the basis for a long-term resolution of the dispute. However, the US has not agreed to set up a working group on this topic either.
- Neither party will take action to circumvent commitments set out in the agreement. The anti-circumvention provision means governments are prevented from actions that offset the export measure. The agreement explicitly exempts British Columbia's MPS market-based pricing system, and tenure compensation payments from anti-circumvention challenges. It also exempts payments to First Nations to settle claims, and environmental or other measures so long as they do not undermine market pricing of timber.

c. Circumvention and Dispute Settlement

- Neither party will take action to circumvent commitments set out in the agreement. The anti-circumvention provision means governments are prevented from actions that offset the export measure. The agreement explicitly exempts certain types of policies from circumvention claims, including policies that were in place on July 1, 2006, policies that improve the market orientation of timber pricing, policies for environmental management, tenure compensation payments and payments to First Nations to address or settle claims. New policy proposals are examined closely to assess and minimize any softwood lumber risk associated with them.
- Disputes relating to the agreement are resolved through a dispute settlement process outlined in the agreement. Arbitrations are handled by the London Court of International Arbitration (LCIA). To date, two matters have been referred to the LCIA. These cases are the first time the LCIA has arbitrated between two governments.
  - The first case was initiated by the US on August 13, 2007, relating to an adjustment to be applied to the calculation of Expected U.S. Consumption under the agreement.
    - The LCIA ruled that the adjustment only applies to Option B (export quota) regions, not to Option A (export tax) regions such as BC, and that it applies as of January 1, 2007. The award is final and binding, and is not subject to appeal.
    - On February 26, 2009, the LCIA ruled that a remedy is necessary to cure the breach, and that an additional export charge of 10% be applied to export quota regions until $68.26 million (or US$54.8 million) has been collected.

- Canada offered a payment of $46.7 million to the U.S., which is equal to the amount of revenue that the U.S. claimed their industry lost due to the breach. The U.S. did not accept Canada's offer, and announced on April 7, 2009 a 10% ad valorem customs duty on softwood lumber imports from the Option B regions until the US$54.8 million is collected.
- Canada has requested the LCIA to confirm that the payment cures the breach in a manner consistent with the SLA. If the LCIA rules that the payment is not an adequate cure, and an additional export charge is necessary, Canada will comply as directed. The LCIA hearing was held on June 11, 2009.

– The second arbitration, initiated by the U.S. on January 18, 2008, is related to certain programs in Ontario and Quebec, which the U.S. has alleged circumvent the 2006 Softwood Lumber Agreement. Although not directly impacted, BC is closely monitoring the arbitration, since it may set precedents in how the LCIA arbitrations rule on provincial policy changes. The dispute involves significant technical and factual information, and the final hearing date is scheduled for July 20-24, 2009.

- To date, the U.S. government has not formally challenged any BC policy changes under the agreement. However, The U.S. sawmill industry association, the Coalition for Fair Lumber Imports, has released several press releases strongly alleging BC infractions. On February 12, 2009, a group of 10 American senators wrote U.S. President Barack Obama complaining that BC's recent Coast stumpage update, and lower priced beetle wood in the Interior were violations of the agreement.
- The Office of the United States Trade Representative (USTR) has informally asked questions about kiln warming of logs in BC. U.S. officials visited Prince George in August 2008 to gain more understanding of the mountain pine beetle epidemic, log grading and the science behind kiln warming. In addition, BC government officials visited Washington D.C. in March 2009 to help the U.S. government further understand those issues.

This summary is based on the BC Ministry of Forests and Range understanding of the 2006 Softwood Lumber Agreement.

Note: more information on the 2006 Softwood Lumber Agreement can be found at:

- BC Ministry of Forests and Range: www.for.gov.bc.ca/het/softwood/
- Department of Foreign Affairs and International Trade Canada (DFAIT): www.dfait-maeci.gc.ca

15.1.4 Economic Effects of the Dispute on British Columbia

- Canada supplies about one-third of US lumber requirements, and BC accounts for about half of Canada's softwood lumber exports to the US. Softwood lumber is BC's largest export, and in many BC communities, forestry is the primary income source.
- In 2008, exports of softwood lumber from BC totalled $3.61 billion. Shipments to the U.S. accounted for 61% of BC's softwood lumber exports, or $2.19 billion in 2008.
- Over the years, the US has imposed or negotiated various types of trade barriers to hamper softwood lumber imports from Canada (import tariffs, export taxes and export quotas). Economic theory suggests that these trade barriers will affect prices and quantities consumed (or used) in the North American lumber market. In particular, since Canada

supplies a major portion of US consumption, a trade barrier is expected to increase the price in the importing country (US), decrease the price and quantity produced in the exporting country, and reduce the quantity traded.

- The economic effects of trade barriers are often difficult to discern because of other factors. Some significant events over the past 20 years affecting Canada/US softwood lumber trade have been:
  - recent economic downturn triggered by the collapse of the U.S. housing market;
  - Canada/US exchange rate changes;
  - increased use of wood substitutes;
  - increase in softwood lumber supply from third countries in late 1990s and early 2000s;
  - collapse of Japanese market in the late 1990s; and
  - reduced supply of timber from US public lands in the early 1990s.

15.1.5 References

- WTO: www.wto.org/english/tratop_e/dispu_e/dispu_e.htm
- NAFTA: www.nafta-sec-alena.org
- Department of Foreign Affairs and International Trade Canada (DFAIT): www.dfait-maeci.gc.ca/
- US Department of Commerce: ia.ita.doc.gov/intro/index.html
- BC Ministry of Forests and Range: www.for.gov.bc.ca/het/softwood/
- Random Lengths: www.randomlengths.com/base.asp?s1=In_Depth&s2=U.S.-Canada_Trade_Dispute

15.1.6 Apply the Knowledge

1. What are the pros and cons of litigation vs negotiation?

2. Is the current agreement preferable to ongoing litigation?

3. Will BC's market oriented policy reforms eventually get it out of the subsidy case?

4. Are the NAFTA & WTO panels effective?

5. How will changes due to the Mountain Pine Beetle affect the softwood lumber dispute?

6. Does the current agreement hamper BC's ability to make good forest policy decisions?

15.2 Climate Change and Forest Carbon

15.2.1 Background

Globally - The Physical Science Basis

In February 2007, the Intergovernmental Panel of Climate Change (IPCC)[1]reported that, "warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global sea level." . In June 2009, a team of researchers led by Damon Matthews of Concordia University found a direct relationship between carbon dioxide emissions and global warming.[2]

According to the IPCC[3]:

- Eleven of the warmest twelve years ever recorded occurred between 1995 and 2006;
- The average global surface temperature warmed by 0.76°C during the 20th century and is projected to increase in the likely[4] range of an additional 1.1°C to 6.4°C this century;[5]
- Most of the observed increase in global temperatures in the last 50 years is very likely[6] due to observed increases in greenhouse gas concentrations;
- Atmospheric concentrations of CO_2 have increased from 280 ppm (pre-industrial levels) to 379 ppm in 2005, now far exceeding the natural range of the atmosphere has experienced in the last 650,000 years; and
- The primary source of increasing CO_2 since pre-industrial times is fossil fuel burning, with land use change providing an important but smaller contribution.[7]

Effects

How are these climatic changes affecting ecosystems, forests, and resources now, and what can we expect in the future?

The IPCC Working Group II on Impacts, Adaptation and Vulnerability outlined climate-related changes in physical and biological systems that have already occurred:

- At continental, regional and ocean basin scales, numerous long term changes in climate have been observed; and
- These include changes in arctic temperatures and ice, widespread changes in precipitation amounts, ocean salinity, wind patterns, and aspects of extreme weather including droughts, heat waves, heavy precipitation, and the intensity of tropical cyclones.

1 This group was established by WMO and UNEP in 1988 to assess scientific, technical and socio- economic information relevant for the understanding of climate change, its potential impacts and options for adaptation and mitigation. It is currently finalizing its Fourth Assessment Report "Climate Change 2007". Reports by its three Working Groups provide a comprehensive and up-to-date assessment of the current state of knowledge on climate change.

2 www.sciencedaily.com/releases/2009/06/090610154453.htm. An article published by Nature indicates that emitting one tonne of carbon dioxide will lead to a global temperature increase of 0.0000000000015 degrees C.

3 IPCC. 2007. Climate Change 2007: The Physical Science Basis. Working Group I Summary for Policy Makers.

4 Likely means a 66-90% probability

5 20th century warming here is measured from the benchmark period 1850-1899 to 2001-2005. The IPCC best estimate of the projected increase for the next century is 1.8°C to 4.0°C. For comparison purposes, the average annual temperature difference between Kelowna and Prince George is about 3.7°C. Even if greenhouse gasses were to remain at 2000 levels, past emissions are expected to induce some unavoidable warming (an additional 0.6°C relative to 1980-1999.

6 Likely means a 90-99% probability

7 British Columbia's greenhouse gas emissions are now estimated to be 35 per cent higher than in 1990.

In the future:

- By mid-century, average annual river run-off is projected to increase by 10-40% at high latitudes and decrease by 10-30% in some dry regions;
- Crop productivity is projected to increase slightly at mid to high latitudes for local mean temperature increases of up to 1-3°C, depending on the crop, and then decrease beyond that in some regions;
- Globally, commercial timber productivity rises modestly with climate change in the short to medium term, with large regional variability around the global trend;
- Coasts are projected to be exposed to increasing risks, including coastal erosion due to climate change and sea level rise, and exacerbated by human-induced pressures;
- By the 2080s, many millions more people are projected to be flooded every year due to sea level rise..." The most vulnerable industries, settlements and societies are generally those in coastal and river flood plains, those whose economies are closely linked with climate sensitive resources, and those in areas prone to extreme weather events, especially where rapid urbanization is occurring."; and
- "The resilience of many ecosystems is likely to be exceeded this century by an unprecedented combination of climate change, associated disturbance, and other change drivers."[8]

According to the IPCC, "Impacts of climate change will vary regionally, but aggregated and discounted to the present, they are very likely to impose net annual costs which will increase over time as global temperatures increase."[9]

In 2008, scientists found that global emissions are growing faster than the worst case scenario forecast by the IPCC. If the trend continues, it puts global ecosystems at risk of a significant increase in temperature and sea level.

Many impacts can be avoided, reduced or delayed by reducing the rate of greenhouse gas emissions. "A portfolio of adaptation and mitigation measures can diminish the risks associated with climate change. [10]

Forest Carbon in Canada

Canada's forests play an important role in storing and sequestering carbon in biomass, dead organic matter, and soils. As a signatory to the 1997 Kyoto Protocol of the United Nations Framework Convention on Climate Change, Canada had the option of including forest management as a means to offset greenhouse gas emissions (through Article 3.4 of the Kyoto agreement). A decision to do so would have required Canada to account for changes in the carbon stored and for non-CO_2 greenhouse gas emissions in managed forest areas during the first 5-year Kyoto commitment period (January 2008 – December 2012).

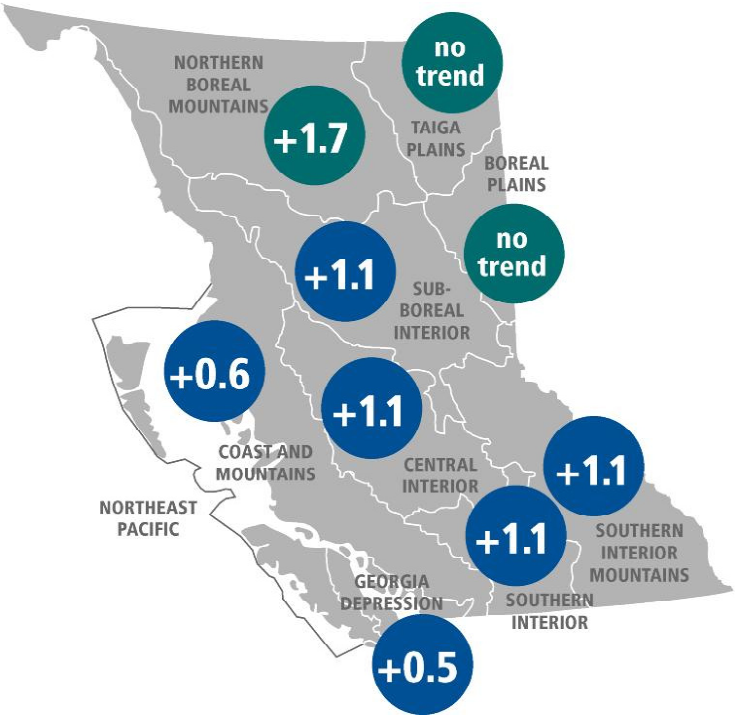
In early 2007, Canada elected not to include forest management in its greenhouse gas reduction measures for the purposes of Kyoto accounting for this period. This decision was made following a risk assessment for all Canadian jurisdictions, using the Canadian Forest Service's Carbon Budget Model. There is a significant likelihood that Canada's managed forests will be a net source of greenhouse gases in the first commitment period. This is a result of the Kyoto reporting

8 IPCC. Climate Change 2007: Working Group II Summary for Policymakers – Impacts, Adaptation, and Vulnerability.p.5
9 Ibid. p. 16
10 Ibid. P. 19

requirement to account for all emissions in the managed forest, including those of wildfire and insect disturbances that are beyond the control of forest management.

15.2.2 Climate Change in BC

As air temperatures rise, precipitation and climate variability patterns are expected to change, as will the frequency and intensity of extreme weather events. Warming is expected to be more pronounced during the winter and in northern latitudes. The following map shows temperature changes over a hundred year period in various parts of BC.[11] It shows coastal British Columbia warming at approximately the same rate as the global average, the southern interior warming at about double the global rate, and northern BC at almost three times the global rate.[12] [13]



Change in Average Temperature 1895-1995 (°C/century).
From: Indicators of Climate Change for British Columbia, 2002.
British Columbia Ministry of Water Land and Air Protection:
www.env.gov.bc.ca/air/climate/indicat/pdf/indcc.pdf

Climate Change Effects on BC Forests

Forests can evolve in response to changes in climate – they have done so for thousands of years – but not necessarily at the rate of change anticipated over the next century.[14] In a warming climate, temperate species generally expand their range northward and upward in elevation, and lose habitat in the southern end of their current distribution. Forests could encroach into BC's alpine ecosystems, and some interior forests may be replaced by grasslands. Ecosystem associations may change as species respond differently to climatic variables.

11 BC Ministry of Environment 2002. Indicators of Climate Change.
12 The trend shown has been continuing since the end of the period indicated.
13 Where the data record is relatively long (more than about 60 years) but fails to reveal a trend that is statistically significant at the 95 percent level, the report presents this as "no trend."
14 In contrast, rapid ecological and genetic adaptation by insects in response to global warming has been documented in Europe (Thomas et al 2001, as cited in NRC 2006. p. 89).

The incidence and severity of floods, droughts, fires, and pest outbreaks are also expected to increase.

While the trends are clear, the magnitude of expected changes to temperature and other climatic variables in BC are uncertain due to the variety of possible emissions scenarios and complexities including terrain in BC.

A moderate amount of warming (one or two degrees) and increased atmospheric CO_2 concentrations may increase forest productivity for some species, however such increases could be offset by damage due to insects, diseases and wildfire. None-the-less, climate change is expected to significantly change the function, distribution and structure of the forests of Canada and BC. For example, with an increase in global average temperature of 2.5°C associated with doubling of CO_2, Logan and Powell (2001) predicted that thermally benign habitats for mountain pine beetle will shift more than 7° in latitude north." [15]

BC Climate Actions

Work is underway to address both climate change mitigation and adaptation. The Provincial Government lead is the Ministry of Environment, with the Ministry of Forests and Range and other ministries partnering within there areas of responsibility.

To complement the responsibilities of professionals, the Ministry of Forests and Range is addressing the impacts of climate change on forest and range ecosystems through the Future Forest Ecosystems Initiative (FFEI). [See Chapter 13.1 on the Future Forest Ecosystem Initiative and also Chapter 10.4: FRPA Effectiveness Evaluation Program (FREP)]

The purpose (Policy Objective) of FFEI is to adapt BC's forest and range management framework (the legislation and policy that govern forest and range management planning and practices) to a changing climate. Desired outcomes of FFEI are for ecosystems to remain resilient to stress caused by climate change, human activity, and other agents of change, and continue to provide the basic services, products, and benefits society depends on and values.

15.2.3 Current Policy

15.2.3.1 Current Policy – Climate Change Mitigation

BC has introduced a number of climate change mitigation measures to reduce Greenhouse Gas Emissions to the atmosphere[16].

In November 2007, the BC government introduced the *Greenhouse Gas Reduction Targets Act*. The act puts into law British Columbia's target of reducing greenhouse gas emissions (GHG) by at least 33 per cent below 2007 levels by 2020. It also requires that realistic, economically viable interim targets for 2012 and 2016 be set by the end of 2008, and further establishes an emission reduction target of 80 per cent below 2007 levels by 2050. The legislation is set to come into force during 2008.

On December 3, 2008, BC's Emission Offsets Regulation[17] received royal assent. This regulation under the provisions of the *Greenhouse Gas Reduction Targets Act* (GGRTA) is the first addressing the quality of GHG offsets in B.C. In 2009, protocols to guide forest carbon offset projects

15 NRC 2006. p. 89
16 Legislative Assembly of British Columbia www.leg.bc.ca/38th4th/votes/progress-of-bills.htm
17 www.env.gov.bc.ca/epd/codes/ggrta/offsets_reg.htm

are being developed for afforestation, genetic improvement (using select seed), and fertilization. These protocols are being administered by the Pacific Carbon Trust[18].

On April 29, 2008 British Columbia introduced legislation introduced to cut vehicle emissions. Bill 31, the *Greenhouse Gas Reduction (Emissions Standards) Statutes Amendment Act* received Royal Assent May 29, 2008. It focuses on reducing greenhouse gas emissions from certain types of industrial operations (e.g. coal and electricity) while opening opportunities in the bio-energy sector through changes to the *Forest Act* and *Forest and Range Practices Act*.

On April 3, 2008 Government moved forward in the fight against climate change by introducing the *Greenhouse Gas Reduction (Cap and Trade) Act* (Bill 18). The Act received Royal Assent May 29, 2008 and will make British Columbia the first Canadian province to introduce legislation authorizing hard caps on greenhouse gas emissions. The legislation provides the framework to participate in the Western Climate Initiative cap and trade system (under development).

To help reduce B.C.'s greenhouse gas emissions by one-third by 2020, Bill 37, the Carbon Tax Act received Royal Assent May 29, 2008. Effective July 1, 2008, British Columbia introduced a fully revenue-neutral carbon tax with built in protection for lower income British Columbians. The tax began at a low rate and will increase gradually to give individuals and businesses time to adjust. It applies to virtually all fossil fuels, including gasoline, diesel, natural gas, coal, propane, and home heating fuel – making it among the broadest and most comprehensive in the world.

Legislation requires a plan to be tabled in the legislature each year, showing how the revenue raised will be returned to businesses and individuals. None of the carbon tax revenue will be used for expenditure programs. The carbon tax is forecast to generate approximately $1,849 million over three years.

15.2.3.2Current Policy – Climate Change Adaptation

Effective April 1, 2009, Chief Forester Standards for Seed Use were amended to raise the upper elevational seed transfer limits for some species[19]. These amendments to seed transfer limits will address forest health and productivity impacts of climate change.

15.2.4 Looking Ahead

15.2.4.1 Climate Change Mitigation

The Ministry of Environment is currently developing a detailed guidance document to the Emission Offsets regulation. Publication of the guidance document is expected in the first half of 2009.

BC is a partner in the Western Climate Initiative[20], a collaboration between several western states and provinces in which partner jurisdictions are developing a joint strategy to reduce greenhouse gas emissions in the region. The centerpiece of the WCI strategy is a regional cap-and-trade program. Other elements could include an offset system, within which the potential exists to include forest-based offsets.

BC is currently exploring options for reducing net deforestation. This initiative pertains to human-induced (permanent) change of land use from forest to non-forest. Legislation is planned to be introduced by 2010 and in force by 2015.

18 www.pacificcarbontrust.ca/
19 www.for.gov.bc.ca/code/cfstandards/amendmentNov08.htm
20 www.westernclimateinitiative.org/

15.2.4.2 Climate Change Adaptation

To enhancing ecosystem resilience in light of climate change, the Future Forest Ecosystem Initiative is undertaking research, forecasting, monitoring, policy analysis and adjustments to the forest policy framework. Starting in 2008-2009, the Ministry of Forests and Range has been examining options for developing interim policies in furtherance of FFEI objectives. Included in the topic areas under consideration are seed transfer standards, species selection, land deletions from the Provincial Forest, prescribed burning, carbon accounting in timber supply reviews etc.

15.2.5 Tools and Resources

- The Ministry of Forests and Range Adapting to Climate Change website: www.for.gov.bc.ca/mof/Climate_Change/
- ClimateBC is a software application developed at UBC that can be used for identifying past, present, or future climate projections for locations in BC: www.genetics.forestry.ubc.ca/cfgc/ClimateBC/Default.aspx
- The Canadian Climate Impacts and Adaptation Research Network (C-CIARN) was established by Natural Resources Canada in 2001 to promote and encourage research on climate change impacts and adaptation. A number of useful C-CIARN publications relating to forests, fisheries and water are archived on a website maintained by Natural Resources Canada: www.c-ciarn.ca/.
- Other collaborative organizations, such as BioCap, support research and development of sustainable biofuels (including wood-based products) as alternatives to fossil fuels. These and other federal and provincial climate change initiatives will be used to inform BC's forest and range practices and policies in the coming years.

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15.2.7 Apply the Knowledge

1. What, if any, indications of climate change have been observed in the area where you live or work?

2. What measures could be undertaken to improve the resilience of forest, range and water resources, infrastructure and communities to climate change?

15.3 Inventory

15.3.1 Policy Objective statement

Government, as the stewards of Crown land on behalf of the people of BC, undertakes, funds, or obligates others to collect, manage and use information about many forest resources. Inventory topics vary from archaeology (e.g. Archaeological Impact Assessments) of critical importance to the protection of First Nations rights and title and respect for their ancestors. Other topics include wildlife (population studies, habitat classification) critical for protecting rare and endangered species, location and extent of mountain pine beetle attack and other major forest health issues, to the collection of data representing biological, ecological and physical features of a defined area. Several ministries and agencies share responsibilities for the stewardship of Crown Land and therefore share responsibility for inventory of the resources above, on or under that land.

There is no absolute or perfect answer to questions about the location, quality or quantity of forest resources. There is information based on good science (e.g. derived from peer reviewed, tested and accepted standards and procedures) but it is only a model of reality, an estimate which in many cases is one expert's interpretation; in a few cases may have some statistical validity (e.g. Phase 2 vegetation resources inventory - VRI). As such, inventories must be used with caution, intelligence and in concert with other sources of information such as local knowledge and ground truthing with field surveys. The better one knows an area and the inventory parameters, the more effectively the inventory information can be used.

The key concept for successful use of resource inventory information is that the professional must not consider information he/she does not understand, nor misrepresent the information (ABCFP Bylaw 11, Code of Ethics 11.3.1, 11.3.7, 11.3.9 and 11.4.4).
See: www.abcfp.ca/regulating_the_profession/bylaws/bylaw_package.asp

Due diligence requires that forest professionals be able to demonstrate to others that they have made a reasonable effort, commensurate with the (1) standards of practice set by the profession and (2) the requirements of the resource steward (typically government) and (3) those appropriate for meeting the needs of the licensee/client (in that order), to acquire and use information to support forest management decision-making.

15.3.2 Current Policy

There are few situations directly related to forest resource management where a legal obligation exists that specifically require a person to undertake an inventory of forest resources. One notable example is **Section 9** of the *Forest Act* where the chief forester may require the holder of a tree farm licence, at the holder's expense, to prepare and supply any plans, studies and analyses, and obtain and supply any information that the chief forester considers adequate to assist in the determination of an allowable annual cut for the Tree Farm Licence area.

In most other situations, the collection, management and use of forest resource inventory information are merely tools, albeit critical tools, used to help ensure forest management activities meet statutory, regulatory and contractual obligations, and to help demonstrate due diligence in carrying out those activities. For example, the chief forester is obligated to set the allowable annual cut in each Timber Supply Area once every five years (see Chapter 4).

The process followed, known as Timber Supply Review, relies heavily on forest inventory and growth and yield information, but it is the chief forester who determines what inventory and what quality of inventory will be considered in order to quantify risk and uncertainty in the determination.

Prior to FRPA, government made the decision regarding what, when and where it would support inventory. Government would notify tenure holders of what information was available and what Government's expectations for its use were (e.g. by declaring information to be "known", there was an expectation that any plans submitted for approval thereafter would reflect the "known" information).

Under FRPA however, the government is not obligated to declare information as known. Instead, tenure holders responsible for submitting FSPs must demonstrate due diligence that they have taken reasonable steps to acquire and use information about the forest resources within the area under the plan to ensure they will obtain results consistent with government's objectives for the area. The resource professionals contributing to the FSP have an obligation to utilize appropriate and reliable data to make informed decisions regarding measurable goals and objectives for the area under the plan (see Chapter 6).

As mentioned above, due diligence is necessary to ensure the possibility of an undesirable outcome is minimized. This includes documenting the standards to which inventory information was collected and interpreted or derived (e.g. via modelling) from other information.

Under **FPPR Sec. 86**, forest tenure holders and BCTS are required to report changes to the forest cover inventory (aka VRI) due to their harvesting (within one year of harvest) and reforestation activities (achievement of free growing).

In 2002, the provincial government established a funding mechanism known as the Land Base Investment Program under the Forest Investment Account (see Chapter 11) to provide funds to major forest tenure holders to support the acquisition of new inventory information. These tenure holders or "funding recipients" were free to determine the most appropriate investments from a list of eligible activities with established government standards. This is one example of the government's policy shift from a prescriptive regime to "professional reliance".

All resource information funded by government has a designated data custodian (ilmbwww.gov.bc.ca/risc/standards.htm) that is accountable for setting technical data collection and capture standards and for accepting, validating and storing the information and in some instances in providing access to the information. In other circumstances, a data steward provides the storage and access services on behalf of the custodian. The Integrated Land Management Bureau provides data stewardship services on behalf of many ministries and is the central point of contact to obtain digital inventory information (www.nric.ca/).

15.3.3 Looking Ahead

MFR and the Association independently completed reviews of the British Columbia Forest Inventory Program in the winter of 2006/07. Recommendations emerging from those Reviews have resulted in two significant actions:

- The establishment of the Vegetation Inventory Advisory Council (VIAC), a joint government/industry group providing strategic oversight by clarifying issues, developing and assessing options and making recommendations to the MFR chief forester regarding strategic direction. Inventory Investment and achievements of the British Columbia Forest Inventory Program.
- A decision by the Forest Investment Council to focus funds specifically to the VRI program is predicated on recommendations from the VIAC approved by the chief forester.

A decision by the Forest Investment Council to focus funds specifically at VRI predicated on recommendations from the VIAC via the Chief Forester.

These two actions enabled most of the recommendations that emerged from the two reviews to be actioned and the examination of the remaining recommendations over the next 12 to 24 months.

15.3.4 References

- ABCFP Code of Ethics: www.abcfp.ca/regulating_the_profession/bylaws/documents/ABCFPCodeOfEthics.pdf
- "Assessment of the Status of Forest Inventories in British Columbia (ABCFP February 2007)". www.abcfp.ca/publications_forms/publications/documents/report-ForestInventory(Feb2007).pdf
- Forest Investment Account website: www.for.gov.bc.ca/hcp/fia/landbase/info_gathering_eligible_activities.htm
- Ministry of Forests and Range - Inventory Program Review website: www.for.gov.bc.ca/hts/inventory_prog_rev.htm
- Vegetation Inventory Advisory Council website: www.for.gov.bc.ca/hts/VIAC/index.htm
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- Ministry of Tourism, Sports and the Arts – Archaeology Program: www.tsa.gov.bc.ca/archaeology/
- Ministry of Environment – Conservation Data Centre: www.env.gov.bc.ca/cdc/
- COSEWIC: www.cosewic.gc.ca/index.htm
- The Integrated Land Management Bureau inventory information: www.nric.ca/

15.3.5 Apply the Knowledge

1. As a professional forester responsible for developing a new Forest Stewardship Plan:

2. How would you determine what inventory information you needed to consider when developing the plan?

3. To whom would you turn to determine the quality of inventory information (currency, spatial accuracy and attribute correctness)?

4. Where would you go to obtain existing inventory information?

5. Who is ultimately responsible for accepting the use of the inventory information for timber supply review?

15.4 Strategic Fire Management Initiatives

15.4.1 Introduction

Wildfire has helped to shape the province of British Columbia. It is a natural process on much of British Columbia's landscape, maintaining ecosystem health and resilience. However, fires can have a widespread impact, substantially changing forests, threatening communities and disrupting the economy. In British Columbia, balancing the natural role and benefits of wildfire with the risk fires represent is a complex challenge, made more difficult by public expectations of the role of wildfire, increasing wildfire threat, poor forest health, increased human activity in forested areas and the increasing effects of climate change.

To address these concerns, strategic planning at local, provincial and national levels is being conducted. With wildfires having such a wide-reaching impact, partners are engaged at varying degrees and include but are not limited to all provinces and territories, the federal government, Union of BC Municipalities, First Nations, and industry. Key strategic initiatives – the Protection Program Strategy, BC Wildland Fire Strategy, Canadian Wildland Fire Strategy, and others including the Future Forest Ecosystems Initiative, the Bioenergy Strategy, the Ecosystem Restoration initiative, and the Clean Air Strategy - are being formalized to lead activities for this holistic approach to wildland fire management.

15.4.2 Protection Program Strategy

Prior to 2003, hazard inventory, prevention messages, restrictive covenants and bylaw development were ad hoc and varied regionally. The Ministry of Forests and Range (MFR) now addresses these issues provincially. The Protection Strategy, which received ADM approval in January of 2006, proposes a wider mandate, to: "Provide wildfire management and emergency response and support to protect life and assets, particularly forest and grass lands, as provided for under legislation, government plans and cost-sharing agreements." The Protection Program's vision is "Global excellence in wildfire management and response services." This program will develop an increasingly high-performing organization by investing in people and the means to deliver. It will also encourage improved wildfire management in the province by identifying needs and assigning roles and responsibilities. The Protection Program has developed strategic goals to achieve these outcomes.

Strategic Priority: Fuel management

The BC Forest Service (BCFS) supports fuel management on provincial, wildland-urban interface and First Nations lands to reduce the wildfire threat to communities. This includes areas affected by mountain pine beetle (MPB). Effective fuel management limits the threat of wildfire by reducing the fuel available in areas of slash, and by eliminating accumulated fuels in undisturbed forests. BCFS is working with communities to develop and implement Community Wildfire Protection Plans and carry out fuel treatment. It has identified fuel conditions created by both industrial activity and natural vegetative growth as potential wildfire threats. Mapping of fuel conditions has been completed; 1.72 million hectares of forest have been identified as possible wildfire threats with 65,300 ha, 970,100 ha and 684,700 ha identified as low, moderate and high threats to wildland urban interface (WUI) areas respectively.

The Protection Program has committed to finalizing the provincial fuel management strategy for the wildland-urban interface, as recommended by the Firestorm 2003 Provincial Review. Of the 1.72 M ha identified, 460,000 ha are comprised of pine (stands >20% lead species where pine is 60 years or older) potentially affected by MPB with the potential to threaten WUI. The MPB epidemic is the result of many factors and is not to be blamed on past fire suppression practices alone. Climate change has created winters that are no longer cold enough to keep an endemic beetle population in check. Fire suppression resources have been increased to protect lives, communities and to help ensure that British Columbia has a timber supply that maintains a healthy commercial forest industry.

The interactions between mountain pine beetle and fire are complicated, and currently under investigation. The degree to which fire behaviour will be affected likely depends on how the entire fuel structure and arrangement changes from a healthy green forest as the pine component of the forest is killed. It is true that the probability of ignition of dead fuels is greater than that for live fuels, and that live needles are more difficult to ignite that red dead needles. Interactions between fire and fuel in mountain pine beetle affected forests are more complicated than that. The hydrology of the forest floor has also been changed; as trees die, the water cycle is interrupted, the water table begins to rise because evapo-transpiration is no longer taking place. This in turn may increase moisture condition at the forest floor while the water table is elevated.

The general hypothesis is that in forests affected by mountain pine beetle will be more susceptible to crown fire before the red needles fall off than a healthy green forests, but the speed and intensity of these crown fires versus a crown fire in a healthy green forest has yet to be quantified. There will be many changes in the fuel structure, composition and arrangement of forests affected by mountain pine beetle over time, and all of these changes have the potential to affect fire behaviour in different ways. It is important to bring the best available science and field experience to bare when prognosticating on potential impacts, and the science on the issues at hand is still young. To address knowledge gaps, the province is working with the Canadians Forest Service, National Parks Canada, FERIC, CANFOR and others to quantify fire behaviour and post fire effects in various stages of post-beetle attack.

Filmon recommended that fuel management costs and project planning and implementation responsibilities be shared by all levels of government, including local and provincial governments. Individual homeowners also have a role to play in the implementation of FireSmart principles.

Fuel treatment is not about harvesting around all our communities. The appropriate fuel treatment depends on the forest type at hand. Treatments might involve, thinning, pile and burning, mulching, the use of prescribed fire, or stimulating the growth of less flammable species such as deciduous. At the same time, it is also very important to treat fuels but also try to optimize the balance of other resources that our communities value such as visual quality, air quality, wildlife habitat, and water.

Addressing the issues associated with wildland fire in the urban interface requires a holistic approach that includes multifaceted solutions to address not just fuel management but also Community development that adheres to FireSmart principles in high risk areas including, for example, the establishment of:

- safe access and egress for fire departments;
- emergency water supply;
- identified evacuation routes and safety zones;
- bylaws that limit the expansion of WUI areas;
- bylaws that encourage the use of FireSmart building materials for the siding, roofs, decking and fences of individual homes; and
- bylaws that encourage the use of xeric landscape, irrigation or deciduous shrubs, or other less flammable landscaping practices.

Strategic Priority: Leading wildfire planning, management and practices

Wildfire plays an important natural role in ecosystems across British Columbia. Many years of fire suppression in British Columbia have contributed to forest fuel conditions that are both undesirable and unhealthy. Historically, First Nations groups have appreciated and used fire as an important land management tool and this knowledge needs to be captured, understood, and used in future direction. Where appropriate, the BCFS will apply prescribed fire as a substitute for natural wildfire. It also recognizes that maintaining public and community safety requires a broader approach that addresses all aspects of wildfire management. Management must go beyond Crown land and include communities, private property and First Nations lands.
A stakeholder, in the context of improved fire management for British Columbia, includes a much broader range of players than just the forest industry per se. Anyone who manages land and resource values including those involved in habitat and wildlife management, tourism, those who plan for watersheds, the oil and gas sector, the ranching community, as well as those who are involved with maintaining right of ways, all have a role to play in fire prevention and mitigation activities. Professional reliance and obligations of due diligence means that forest professionals also have a significant role to play including:

- operating at a time and in a manner that does not contribute to the start or spread of a fire;
- planning and scheduling harvest and silviculture activities to mitigate the impacts of wildfire on adjacent areas and the timber supply;
- abating a fire hazard created during industrial or high risk activities;
- addressing where practicable forest health issues;
- planning to mitigate the impacts of fire in areas that are close to communities;
- having adequate emergency procedures in place; and
- implementing fire prevention measures.

15.4.3 A Wildland Fire Strategy for BC

The Protection Program has created a cross-government team to develop a Wildland Fire Management Strategy for BC. Upon government's approval and support, this will address broad land management and public protection needs, consistent with the national direction outlined in the Canadian Wildland Fire Strategy. This strategy is intended to address the need to balance fire suppression with prevention and mitigation activities, and recognizes the need to balance the use of prescribed natural or planned fire with the need to provide communities with, for example, healthy, clean air. It can be difficult to balance social, economic and ecological interests including requirements for the steady flow of wood to a stable forest industry against the need to emulate a "natural" disturbance regime, such as that of wildfire. A strong paradigm shift in fire management practices will require education and public support.

15.4.4 The Canadian Wildland Fire Strategy

There is a growing understanding that many of our forests depend on fire. Excluding fire is no longer a reasonable goal; it is neither economically nor ecologically desirable. Fire can help rejuvenate forest species, reduce the risk of insects and disease, and remove dangerous accumulations of vegetation. Allowing or starting fires in a planned way can help Canadians avoid catastrophic fire damage. In 2004 the Canadian Council of Forest Ministers (CCFM) agreed that a new risk management-based approach to wildland fire management is required. The proposed strategy, one of the most progressive in the world, is based on improving and implementing well-developed and emerging techniques and technologies from Canada and other countries. This includes public education, a national FireSmart program, fuel management through strategic fire use, and investment in training, infrastructure and technology. Proactively dealing with fire threat requires careful policy development, significant investment and broad participation. Through the Canadian Wildland Fire Strategy, Canada can lead the world in making such investments, leading to long term cost savings, increased public safety and improved management of our valuable forest resource.

The Canadian Wildland Fire Strategy, now adopted, has completed a declaration that provides a common vision, shared principles and a commitment to action. It has also completed a vision document, which provides a review of current fire management and the desired future state, and a comprehensive set of supporting documents, which provide detailed evidence and analysis regarding the issues, trends and potential risk management responses or options. The final element of the Strategy, the implementation plan, is in development. The CCFM is currently seeking funding for the Strategy, estimated at $2.3 billion over the next ten years.

15.4.5 Other Strategic Linkages

Future Forest Ecosystems Initiative

In 2006, the MFR released Future Forest Ecosystems of BC: Draft Recommendations for Review and Comment (FFEI). The report made 46 recommendations for projects designed to increase the understanding of ecological processes in order to adapt BC's forest management to a changing climate. Projects under FFEI are designed to ensure B.C.'s forest and rangeland ecosystems remain resilient to stress. The FFEI team is finalizing the direction, scientific foundation and project list supporting implementation of FFEI objectives. The ministry's Forest Stewardship Division, Protection Program and Range Branch will develop a strategic plan for implementing FFEI for the next three years, and will start work to support long-term project delivery. This is expected to involve developing a framework for assessing key resources' vulnerability to climate change; developing climate change projection models; establishing permanent sample plots and a living laboratories network to monitor ecosystems change; and developing a conceptual model for assessing the impacts of climate change on timber supply. FFEI will be implemented in collaboration with existing related initiatives, such as the Climate Change Initiative, BC Wildland Fire Strategy, Mountain Pine Beetle Action Plan, Ecosystem Restoration Initiative, and the Forest and Range Evaluation Program.

It is also important to identify and act upon possible synergies between the Bioenergy Strategy, the Clean Air Strategy, Ecosystem Restoration Initiatives and the Fuel Management Strategy. In time, for example, fuel treatments may supply bioenergy initiatives, which in turn may reduce the need for pile burning for the disposal of woody debris.

It is the collective objective of everyone involved in wildfire management in BC to manage fuels and wildfires wisely, which will create healthier forests and ecosystems, make communities safer, reduce human health impacts from smoke, and mitigate increasing suppression costs. These benefits are achievable through the adoption of and commitment to the strategies outlined and will directly support British Columbia's goal to lead the world in sustainable environmental management, with the best air and water quality, and the best fisheries management – bar none.

15.4.6 References

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  www.for.gov.bc.ca/hts/Future_Forests/FFE_Draft_Recommendations.pdf
- Filmon Report: www.2003firestorm.gov.bc.ca/

15.5 Working Safely in Forestry

15.5.1 Background

In 2003 and 2004, the work of the Forest Safety Task Force and the creation of the BC Forest Safety Council (BCFSC) helped draw considerable media, public and government attention to forest worker safety. Despite this heightened attention, the forest industry recorded 43 fatalities and 106 serious injuries in 2005. The comparable statistics for 2006 and 2007 are significantly lower, but there still is substantial room for improvement.

Numerous forest sector stakeholders, the media and the public have identified the critical need to improve forest worker safety. Emerging trends and issues also point to a need to improve the safety record of the forest sector. The forest industry is experiencing an aging workforce and encountering the challenges of attracting and retaining skilled younger workers. At the same time, the current poor economic situation facing the forest industry is applying extreme pressure to cut costs. This could compound the worker shortage problem, particularly if cost cutting measures adversely impact safety programs and results. In addition, there is some tension between the broad direction of government to a less regulated, results-based approach and the potential for increasingly prescriptive safety regulation.

Leadership and Collaboration

Forest worker safety and safe public use of the forest is a responsibility shared by government, licensees, land owners, contractors, employees, supervisors and workers when it comes to the management of safety and implementation of safe procedures. Strong partnerships, built upon effective collaboration and cooperation, are required to nurture a culture of forest worker safety. It is also essential to have clear and well-understood roles in order to enhance this culture of safety and safe practices. All partners have an important role in advocating for forest worker safety within their sphere of influence.

In 2008, the BC Auditor General (AG) and the Ministry of Forests and Range Evaluation Program (FREP) report # 12 both identify recommendations regarding safety and the current situation with serious accidents and fatalities. Another report to note that contains recommendations, released about the same time is "Not Out of the woods – Ensuring safety in BC's Forest Sector Through Recruitment, Training and Certification" – BC Forest Safety Ombudsman, January 2007.

Role of Forest Professionals

The Auditor General said "*government still has to overcome significant challenges if it is to meet the goal it set in 2003 of radically decreasing deaths and serious injuries in the forest industry.*" While the report deals mainly with government, industry and WorkSafeBC, the AG does specifically identify the ABCFP. The AG report states "*Forest professionals are not required by law to consider safety*." The association might disagree with this statement in the AG report, however, the fact is that the words "safety" or "safe" do not occur in the *Foresters' Act*. While the legislative direction from government to the profession does not mention safety, the ABCFP direction to members does identify 'safety' as the 10th canon in the code of ethics, under the collective instructions regarding responsibilities to the public.

Bylaw 11, the Code of Ethics, contains a statement "*To have proper regard in all work for the safety of others.*" This statement is a strong morale declaration that as professionals, it is a duty to ensure that the safety and well-being of all workers and work sites is a priority.

Safety starts at the planning stage, so a forest professional must constantly check their work by asking relevant questions such as; Is the plan safe to implement?; Is that road grade or switchback safe to build or use? Is this the appropriate method of harvest for this part of the block? Can the plan actually be implemented safely?

Other functions carried out, by forest professionals often require the supervision of various activities in the woods, ranging from road construction, to planting projects and mechanized harvesting to cone picking. In many cases the professionals are given the responsibility of ensuring all safety related duties and safeguards are carried out and in place. Unfortunately, many do not clearly understand the extent to which this means the forest professional could be held responsible for safety, should an incident occur. Ensuring the safety of others can be a complex undertaking and often ABCFP members may be left feeling under-informed for this very important task.

For example, under **sec. 117** (www.qp.gov.bc.ca/statreg/stat/W/96492_03.htm#section117) of the *Workers Compensation Act*, every supervisor must: " . . . ensure the health and safety of all workers under the direct supervision of the supervisor . . . and ensure that the workers under his/her direct supervision are made aware of all known or reasonably foreseeable health or safety hazards in the area where they work . . . "

Additionally, as employers, forest professionals are responsible for ensuring a safe workplace, ensuring workers are trained to do the jobs they are required to do, reporting any incidents to WorkSafeBC (WSBC), ensuring there is an adequate safety program in place, correcting unsafe acts, ensuring that there is adequate first aid available, along with the appropriate emergency response vehicles and plan, and ensuring there are safety committees and actively take part in them.

The standard of safety is a measure of practice and not a requirement to be a safety expert or to ensure safety processes are complete. Safety remains the primary responsibility of the worker, supervisor, employer, and owner. The safety standard is the profession's part in the leadership of a safety culture and the professional role in safety.

15.5.2 Looking Ahead

The active participants in forestry in BC continue to work diligently towards improving the "culture" of safety with the goal of marked reduction of serious injury and fatality. The MFR is undertaking many activities to assist in improving safety for workers in the forest sector. Some examples include the establishment of road safety committees and SAFE certification for BCTS. These initiatives continue in cooperation with other stakeholders.

The expressed concern from FREP and the AG, looking into the effects on forest worker safety, identify the ABCFP as a positive opportunity to assist a shift in culture.

The ABCFP Council and staff, through internal and external discussion, came to the decision to recommend the addition of **bylaw 12.7 Safety** as a leadership action within the scope of a forest practitioner's role.

> **12.7 Safety**
>
> *12.7.1 Members maintain safe work practices and consider the safety of workers and the others in the practice of professional forestry.*

Some important questions to contemplate in light of the recent trends and safety initiatives from an ABCFP perspective include:

- Is a statement in the Code of Ethics enough?
- Does the addition of a professional practice standard of safety go to far in setting up expectations that forest professionals can do things that they are not qualified for and have little control over the outcomes?
- By not participating is the ABCFP avoiding the opportunity to do what the public has expected all along and be leaders in forestry in BC?
- If not safety in the *Foresters Act*, if not greater prominence in bylaws, then what?

A package of bylaw amendments, including 12.7 Safety was ratified by the ABCFP membership in 2008 and is now in force. The Professional Practice Committee is currently drafting an Interpretive Guideline to accompany Bylaw 12.7.

15.5.3 References

- Association of BC Forest Professionals: www.abcfp.ca
- MFR Safety Strategy Feb 2008
- Attorney General's report: www.for.gov.bc.ca/hfp/frep/site_files/reports/FREP_Report_12.pdf
- BC Forest Safety Council: www.bcforestsafe.org
- Work Safe BC: www.worksafebc.com