2009

ALBERTA WOODLANDS
STEWARDSHIP REPORT

- Alberta Plywood Ltd.
- Blue Ridge Lumber
- Hinton Wood Products
- Slave Lake Pulp
- Sundre Forest Products
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West Fraser Timber Co Ltd. is an integrated forest products company producing lumber, wood chips, fibreboard, plywood, pulp, linerboard, kraft paper, newsprint and treated wood products.

**Alberta Operations**

This Stewardship Report describes and reports on the sustainable forest management activities during 2009 for West Fraser’s four Alberta woodland divisions. Associated with each of these four woodland divisions is a tenure agreement with the Alberta government, called a “Forest Management Agreement”. A Forest Management Agreement is an area-based tenure – the area associated with each Forest Management Agreement is called the Forest Management Area (FMA). Each FMA has an Annual Allowable Cut (AAC) that has been calculated by the tenure holder and approved by the Alberta government.

West Fraser manages over 3.5 million hectares of public land in Alberta through five of these Forest Management Agreements with the provincial government. Of these five Forest Management Agreements, four are managed wholly by West Fraser divisions, while the other one is managed jointly.

The four wholly managed West Fraser FMAs are located in or near the communities of Sundre, Hinton, Whitecourt, and Slave Lake and are respectively managed by Sundre Forest Products, Hinton Wood Products, Blue Ridge Lumber, and Slave Lake Pulp. The joint Forest Management Agreement and its associated FMA is also located near Slave Lake and is managed together with Alberta Plywood (a division of West Fraser Mills Ltd.), Tolko Industries, and Vanderwell Contractors.

In addition to timber secured through Forest Management Agreements, three of West Fraser’s woodland divisions also hold “Timber Quota” within Alberta. A Timber Quota is a renewable tenure that gives a company the right to harvest a specified volume of timber each year from a specified geographical area called a “Forest Management Unit”. Forest Management Agreements and Timber Quotas are renewable tenure agreements that give West Fraser divisions the rights to establish, grow, and harvest Crown timber; in return the Company must maintain manufacturing facilities, provide employment and carry out all the necessary development and required planning under each tenure type.

Managing public land comes with a great responsibility – our ability to continue to operate on public land is dependent on the public’s trust that we are managing their land conscientiously and responsibly. Towards that goal, it is the responsibility of each of West Fraser’s four Alberta woodlands divisions to ensure compliance with all government legislation, regulation and policy. In addition, each division is also voluntarily registered to the Sustainable Forestry Initiative (SFI) Standard – an internationally recognized sustainable forest management standard.

West Fraser’s ten wholly owned Alberta manufacturing facilities produce a diversified range of products including lumber, plywood, pulp, medium density fibreboard, laminated veneer lumber, and treated wood such as fence posts and decking. In addition, West Fraser has a 50% interest (but is not the managing partner) in the Alberta Newsprint Company (ANC), whose mill in Whitecourt produces newsprint for the North American market.

Mill outputs, tenure type, AAC, and FMA locations for West Fraser’s Alberta operations can be found on the adjacent map and accompanying tables.
### Alberta Mill Capacity

<table>
<thead>
<tr>
<th>Mill</th>
<th>Primary Product(s)</th>
<th>Annual Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alberta Newsprint Company*</td>
<td>Newsprint</td>
<td>269,000 tonnes</td>
</tr>
<tr>
<td>Alberta Plywood - Edmonton &amp; Slave Lake</td>
<td>Plywood</td>
<td>292 MMsf (3/8&quot; basis)</td>
</tr>
<tr>
<td>Blue Ridge Lumber</td>
<td>Lumber</td>
<td>340 MMfbm</td>
</tr>
<tr>
<td>Hinton Wood Products</td>
<td>Lumber</td>
<td>225 MMfbm</td>
</tr>
<tr>
<td>Hinton Pulp</td>
<td>Pulp</td>
<td>360,000 tonnes</td>
</tr>
<tr>
<td>Ranger Board</td>
<td>MDF</td>
<td>155 MMsf (3/4&quot; basis)</td>
</tr>
<tr>
<td>Slave Lake Pulp</td>
<td>Pulp</td>
<td>247,000 tonnes</td>
</tr>
<tr>
<td>Sundre Forest Products</td>
<td>Lumber</td>
<td>268 MMfbm</td>
</tr>
<tr>
<td>Sundre Forest Products</td>
<td>Treated Wood</td>
<td>82 MMfbm</td>
</tr>
<tr>
<td>West Fraser LVL</td>
<td>LVL</td>
<td>1.65 MMcf</td>
</tr>
<tr>
<td></td>
<td>GVL</td>
<td>89 MMsf (3/8&quot; basis)</td>
</tr>
<tr>
<td></td>
<td>DVL</td>
<td>76 MMsf (3/8&quot; basis)</td>
</tr>
</tbody>
</table>

*Joint Venture

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### Annual Allowable Cut

<table>
<thead>
<tr>
<th>Woodlands Division</th>
<th>Tenure</th>
<th>FMA Area (ha)</th>
<th>AAC Coniferous (m³/yr)</th>
<th>AAC Deciduous (m³/yr)</th>
<th>Total AAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Ridge Lumber*</td>
<td>FMA</td>
<td>662,392</td>
<td>735,032</td>
<td>117,640</td>
<td>852,672</td>
</tr>
<tr>
<td></td>
<td>Timber Quota</td>
<td>n/a</td>
<td>275,908</td>
<td>n/a</td>
<td>275,908</td>
</tr>
<tr>
<td>Hinton Wood Products</td>
<td>FMA</td>
<td>984,076</td>
<td>1,535,000</td>
<td>169,449</td>
<td>1,704,449</td>
</tr>
<tr>
<td></td>
<td>FMA</td>
<td>629,284</td>
<td>n/a</td>
<td>558,869</td>
<td>558,869</td>
</tr>
<tr>
<td></td>
<td>Joint FMA</td>
<td>n/a</td>
<td>200,244</td>
<td>n/a</td>
<td>200,244</td>
</tr>
<tr>
<td>Alberta Plywood**</td>
<td>FMA</td>
<td>666,321</td>
<td>200,244</td>
<td>n/a</td>
<td>200,244</td>
</tr>
<tr>
<td></td>
<td>Timber Quota</td>
<td>n/a</td>
<td>575,470</td>
<td>n/a</td>
<td>575,470</td>
</tr>
<tr>
<td>Sundre Forest Products***</td>
<td>FMA</td>
<td>554,932</td>
<td>1,180,189</td>
<td>95,696</td>
<td>1,275,885</td>
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<tr>
<td></td>
<td>Timber Quota</td>
<td>n/a</td>
<td>19,514</td>
<td>10,640</td>
<td>30,154</td>
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<tr>
<td>Total</td>
<td></td>
<td>3,497,005</td>
<td>4,521,357</td>
<td>952,294</td>
<td>5,473,651</td>
</tr>
</tbody>
</table>

* BRL FMA carry over of 56,775 m³/year of conifer is incorporated into the MPB FMP Amendment (AAC effective May 1, 2008).
** Approval is also pending on the S20 MPB plan and the New Joint FMA FMP, which will add an additional 105,169 meters of AAC.
*** The Sundre AAC was amended effective May 2007 to address MPB Prevention Strategy.
The Mountain Pine Beetle (MPB) epidemic will remain the largest influence on our forest management activities in Alberta for the foreseeable future.

During the summer of 2009 major in-flights of mountain pine beetle attacked extensive areas in our Slave Lake and Blue Ridge tenures as well as the northern fringe of our Hinton Forest Management Area (FMA). Coordinated regional planning and harvesting operations are addressing these attack areas in an attempt to slow the spread of the epidemic. Elsewhere on our Alberta tenures we remain focused on accelerating our harvest of pine stands susceptible to future attacks.

We are cautiously optimistic that our industry is coming out of the recession and we are very proud of being amongst the healthiest companies in the industry, having remained focused on our company’s historic commitment to cost control and operational excellence. In last years Stewardship Report, we challenged ourselves to institutionalize the forest management efficiencies found during the recession and 2009 was a very busy year on this front.

Our Alternative Regeneration Standards (ARS) were approved in May 2009, a full year ahead of regulatory requirement. This achievement, led by West Fraser, was four years in the making and the result of a partnership between industry and government; it has already resulted in improved and more economical survey techniques that will more closely link silviculture investment to forest yield. We are accelerating the use of LIDAR (Light Detection and Ranging) technology throughout our divisions with the aim of significant cost savings and improved accuracy in the areas of forest inventory updates, engineering, and watercourse identification. One major benefit of this technology is the ability to remotely identify healthy understories below mature pine stands and avoid logging these areas, thus preserving a mid term timber supply post-beetle epidemic. We have increased our reliance on staff for field work over time and the result has been significant cost savings and increased innovation in our management prescriptions. Adding to this focus has been our continued commitment to Alberta’s largest forest industry summer student hiring program; averaging 19 students over the past three years.

We continued to strengthen our partnerships with multi-stakeholders in the management of our forest tenures. From our key role in the Foothills Landscape Management Forum, where we are jointly developing integrated landscape plans; to the Foothills Stream Crossing Program, where we are managing stream crossing integrity on the east slopes; we continue to place our highest priority on maintaining the sustainability of our resource. We also continue to play a key role in numerous partnerships throughout our tenures aimed at minimizing our footprint on the landscape, providing multi-use opportunities such as recreation, and conserving resources such as water, caribou and grizzly bear. Despite the difficult economy, we maintained our research investments at over 80% of historic average. The knowledge and tools generated will ensure innovative and sustainable management of our forest and land resources.

The continued MPB epidemic, emerging bio-products and carbon policy, Land Use Plans, Water For Life Strategy, amongst many other pressures and opportunities, will ensure that we face constant change ahead. Our employees continued focus on cost control, operating excellence, and innovation will ensure we are well positioned to prosper from the opportunities that our sustainable public forest resource provides.
Operational Highlights

Operational highlights and initiatives at Blue Ridge Lumber (BRL) during 2009 included the following:

- BRL continued to implement its strategy of being a low cost producer, while still maintaining high environmental standards, in order to endure the global economic recession for another year.
- BRL participated in the cooperative development and implementation of the Alternative Reforestation Standards, allowing us to better link regeneration performance on a particular site to future annual allowable cut projections.
- BRL staff and contractors persisted in pursuing an assertive log quality program, which ensures every log delivered is as defect free as possible, while at the same time ensuring compliance with BRL's Operating Ground Rules.
- In 2009, BRL and Alberta Sustainable Resource Development (ASRD) staff completed a thorough review of the BRL’s Operating Ground Rules (OGRs). It is anticipated that BRL’s new OGRs will be approved in early 2010 and be ready for the next operating season.
- Silviculture staff undertook a systematic and methodical review of BRL’s silviculture accrual rates – these are the dollars set aside for future reforestation obligations. Due to the new Alternate Reforestation Standards, BRL was able to considerably reduce, and more accurately reflect, its reforestation costs.

There were a number of significant events and/or business objectives that were met in 2009 by Hinton Wood Products’ Woodlands Department, including:

- An ever increasing amount of Mountain Pine Beetle attack was detected in various locations across the Forest Management Area (FMA) – the heaviest attack occurring in the northeast corner of the FMA. Considerable effort was put into locating and identifying the level of attack so that crews could fall and burn the attacked trees. Three cut blocks were also laid out to take in the heaviest attacked areas for harvest in 2010.
- An extension was given to HWP's Forest Management Plan Mountain Pine Beetle Amendment from December 31, 2009 to April 30, 2010.
- The timeline for submitting our next Forest Management Plan was extended from September 30, 2009 to September 30, 2014 to allow the company more time to consider various issues that could impact planning on the FMA. These issues include mountain pine beetle, Caribou and Grizzly Bear Recovery Plans, and a new Land Use Framework.
- FMA Operating Ground Rules were amended and approved by ASRD in October 2009.
- A new spatial, live web-based road use billing system was developed by West Fraser which will be more transparent and equitable to our energy clients (see page 17).
- HWP, in conjunction with the Hinton RCMP, conducted several check stops on the FMA. Vehicle safety inspections (CVSA) were conducted to ensure that commercial vehicles were road worthy and met provincial safety standards.
- FRIAA FireSmart proposals for the communities of Carlisle and Robb were submitted and accepted. The FireSmart work will be carried out in 2010.

### Actual Cut versus Annual Allowable Cut

<table>
<thead>
<tr>
<th>Woodlands Division</th>
<th>Tenure</th>
<th>AAC* Coniferous (m3/yr)</th>
<th>AAC* Deciduous (m3/yr)</th>
<th>Actual Cut (Coniferous)</th>
<th>Actual Cut (Deciduous)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Ridge Lumber</td>
<td>FMA</td>
<td>735,032</td>
<td>117,640</td>
<td>876,488</td>
<td>84,384</td>
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<tr>
<td></td>
<td>Timber Quota</td>
<td>275,908</td>
<td>n/a</td>
<td>149,903</td>
<td>n/a</td>
</tr>
<tr>
<td>Hinton Wood Products</td>
<td>FMA</td>
<td>1,535,000</td>
<td>169,449</td>
<td>937,731</td>
<td>138,172</td>
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<tr>
<td></td>
<td>n/a</td>
<td>558,869</td>
<td>n/a</td>
<td>325,239</td>
<td>336,803</td>
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<tr>
<td>Slave Lake Pulp</td>
<td>FMA</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Alberta Plywood</td>
<td>Joint FMA</td>
<td>200,244</td>
<td>n/a</td>
<td>517,958</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Timber Quota</td>
<td>575,470</td>
<td>n/a</td>
<td>325,239</td>
<td>n/a</td>
</tr>
<tr>
<td>Sundre Forest Products</td>
<td>FMA</td>
<td>1,180,189</td>
<td>95,696</td>
<td>1,046,452</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Timber Quota</td>
<td>19,514</td>
<td>10,640</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>4,521,357</td>
<td>952,294</td>
<td>3,853,771</td>
<td>559,359</td>
</tr>
</tbody>
</table>

* Annual Allowable Cut for the 2008 Timber Year – from May 08 to April 09
The year 2009 proved to be another interesting and challenging year for the Woodlands Department of Sundre Forest Products (SFP). Significant accomplishments and highlights from SFP’s Woodlands Department in 2009 included the following:

- SFP and ASRD worked together to develop new Operating Ground Rules for the FMA. The new ground rules were approved in the fall of 2009.
- As part of SFP’s cost management plan, we managed our summer logyard and bush log inventory, and year end (break-up) inventory, at historically low levels.
- A severe thunder/wind storm in August resulted in significant blowdown over much of the FMA with the most damage in the Jock Lake compartment where approximately 200,000 cubic metres of timber was blown down. SFP began recovering timber from the affected areas in the fall.
- SFP, in cooperation with ASRD, is currently completing two FireSmart projects adjacent to the Bighorn Reserve west of Nordegg. As part of the approximately 30,000 cubic metres harvest in clear-cut and crown spacing prescriptions, SFP has worked to employ around a dozen First Nations residents from the Bighorn Reserve. The ladder fuel reduction in the blocks and firewood processing at an Alberta Parks’ site will provide work for a period of about two months.

Due to severely depressed forest product markets, 2009 was another challenging year for Slave Lake Pulp (SLP) and Alberta Plywood (AP); however, with perseverance and innovation our woodlands staff completed key business objectives in a safe and environmentally conscientious manner. Highlights from the year included:

- SLP staff submitted an amendment to the Slave Lake Pulp’s Forest Management Plan to deal with mountain pine beetle (MPB) susceptibility. SLP also submitted for approval the Joint Marten Hills Forest Management Plan.
- The Sustainable Forestry Initiative (SFI) and ISO 14001 Environmental Management System (EMS) certification processes remain a high priority and focus in our Woodlands group.
- Woodlands staff continued to develop systems to optimize the cost effectiveness, quality, and recovery of the fibre fed to the veneer mill and pulpmill.
- A new set of Operating Ground Rules for the SLP FMA and the Marten Hills Joint FMA was developed in cooperation with ASRD and implemented in 2009.
- Accurate measured length log processing by our contractors is showing tremendous benefit in reducing waste delivered and increasing recovery in the veneer mill.
- Staff did a terrific job of meeting the challenge of “doing more with less” in response to ongoing weak forest products markets.
- The Woodlands Department continued to focus on safety programs as evidenced by its strong performance in the “Partners in Injury Reduction” (PIR) audit. The department ended the year with zero recordable incidents.

### Average Block Size and Road Development in 2009

<table>
<thead>
<tr>
<th>Woodlands Division</th>
<th>Average Block Size (Ha)</th>
<th>Permanent Roads Built (km)</th>
<th>Temporary¹ Roads Built (km)</th>
<th>Bridges/Major Culverts² Installed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Ridge Lumber</td>
<td>22.6</td>
<td>0</td>
<td>263.0</td>
<td>3</td>
</tr>
<tr>
<td>Hinton Wood Products</td>
<td>23.4</td>
<td>0</td>
<td>54.8</td>
<td>8</td>
</tr>
<tr>
<td>Slave Lake Pulp &amp; Alberta Plywood³</td>
<td>44.8</td>
<td>0</td>
<td>382.5</td>
<td>0</td>
</tr>
<tr>
<td>Sundre Forest Products *</td>
<td>33.7</td>
<td>84.0</td>
<td>38.0</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31.1</strong></td>
<td><strong>84.0</strong></td>
<td><strong>709.9</strong></td>
<td><strong>18</strong></td>
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</table>

¹ A temporary road is one that is only used for less than one logging season and reclaimed or any road built entirely on snow.
² Culverts greater than 800 mm in size
³ Slave Lake Pulp and Alberta Plywood conduct approximately 70% of their hauling on temporary roads built on snow and ice – often these roads use existing seismic lines.
* SFP is undertaking an accelerated capital road program to facilitate its mountain pine beetle harvest strategy.
Forest Certification

**Sustainable Forest Management Certification**

Sustainable Forest Management (SFM) certification is voluntary and began in the 1990s as a response to market concerns about forest management, particularly illegal harvesting practices in developing countries. Currently in North America, there are three SFM certification standards that are widely used – the Sustainable Forestry Initiative (SFI) Standard, the Canada Standard Association (CSA) Z809 Standard, and the Forest Stewardship Council (FSC) Standard.

Each of these SFM standards has the same end goal – to ensure that wood products being purchased by a customer have come from a forest that is being managed in a sustainable manner. It is West Fraser’s belief that choice between these three SFM standards is healthy and in the long run improves forest management (monopolies are rarely beneficial to the public). In West Fraser’s case, each of the Alberta woodlands divisions is certified to the Sustainable Forestry Initiative (SFI) Standard.

The SFI Standard is a fully independent, non-profit organization, with a governance structure that has equal representation across the three pillars of sustainability – social sustainability, economic sustainability, and environmental sustainability. There are currently over 54 million hectares (135 million acres) of forest certified to the SFI Standard in North America; making it the most widely applied standard.

The SFI Standard itself is based on a set of principles that promote sustainable forest management, and include measures to protect water quality, biodiversity, wildlife habitat, species at risk, indigenous people’s rights, and forests with exceptional conservation value (to name only a few). In addition, the Standard also contains objectives, performance measures and indicators, all that have been developed jointly by professional foresters, conservationists, scientists, and others.

Companies seeking SFI registration must develop procedures, policies, plans, and reporting practises to address each objective, performance measure and indicator set out in the Standard. Companies are then audited by an independent third-party to determine if they have met the requirements of the SFI Standard. Once SFI certification is achieved, companies must undergo regular third-party audits to ensure continued compliance and continued improvement. The results of all third-party audits are posted on SFI’s website ([www.sfiprogram.org](http://www.sfiprogram.org)), making the entire process transparent and readily accessible to the public, stakeholders, and customers.

**Environmental Management Certification**

Each of West Fraser’s four Alberta divisions are also registered to the ISO 14001 environmental management standard – although technically not a sustainable forest management standard, this certification scheme does help a company better manage its interactions with the environment.

The intent of the ISO Standard is for companies to closely examine their impacts and interactions with the environment; carefully developing a risk rating for each potential negative impact or interaction. Where the risk is deemed to be significant, the company must develop controls to mitigate those risks. In addition, the ISO Standard requires proper training of employees and contractors, adequate resources to implement procedures, and a written environmental policy. A third-party audit is conducted at regular intervals to determine West Fraser’s conformance with the Standard.
Chain of Custody Certification

Many of West Fraser’s customers are increasingly seeking verification that the wood products they purchase comes from: fibre that has been legally harvested from a certified sustainably-managed forest; has not resulted in the violation of traditional and civil rights; is not harvested in forests where high conservation values are threatened; is not from forests that are being converted to intensively managed plantations or a non-forest use; and is not from forests in which genetically modified trees are planted.

In order to meet these customer demands, West Fraser utilizes a system known as “Chain of Custody,” which is designed to track the legality and the certification of our timber sources. This system is based on the PEFC (Program for the Endorsement of Forest Certification) volume-credit method, which is internationally-recognized and widely-accepted. West Fraser’s PEFC Chain of Custody system has been implemented at all Canadian manufacturing operations.

As well as the PEFC Chain of Custody certification, West Fraser’s Hinton Pulp operation was registered to the Forest Stewardship Council’s (FSC) Standard for Chain of Custody Certification (FSC-STD-40-004 v2-0) and the Standard for Company Evaluation of FSC Controlled Wood (FSC-STD-40-005 v2-0) in June 2008. Certification under the same standards was granted in March 2009 to Slave Lake Pulp; followed by certification of Quesnel River pulp in July 2009 and Cariboo Pulp and Paper in August 2009.
**Forest Health**

**The “Beetle”**

Like Hollywood actors who are so famous they are recognizable by just one name, so now is the mountain pine beetle (*Dendroctonus ponderosae*); or simply the “beetle” to anyone involved in the forest industry today. Once thought of in Canada as a problem insect primarily of British Columbia, the beetle is now thoroughly established in Alberta and unfortunately, likely here to stay.

This tiny insect, about the size of a grain of rice, has wreaked havoc in British Columbia and now is poised to do the same in Alberta. The beetle kills pine trees by boring into the layer just inside the bark (called the phloem) where they feed and in which they lay their eggs. The trees only defence is to increase its resin flow to try to “pitch-out” the beetles. This results in the characteristic “pitch-tubes” that are the most identifiable feature on a beetle attacked tree. If a tree’s defences are overwhelmed; in other words, if they can’t pitch out sufficient numbers of beetles, a blue-stain fungus carried by the beetles damages the phloem layer of the tree. If this damage is sufficient, the flow of water and nutrients is cut off and the trees essentially starve to death.

Mountain pine beetle populations have reached the epidemic levels we are now seeing today for two main reasons – the first is that there are huge volumes of mature pine trees, the beetle’s main food source, in BC and Alberta. Historically, wildfires would limit the amount of mature pine making it difficult for beetles to reach outbreak numbers. In the last 50 years, we have actively fought forest fires (to protect valuable timber and infrastructure) and tried to replace those fires with harvesting. However, because it was thought to be socially unacceptable to harvest pine at the rate and size of opening necessary to accurately reflect nature, over time the result has been an over abundance of pine.

The second reason we are seeing epidemic levels of beetles is due to a warming climate. Setting aside what is actually causing the warming, the fact remains that winters in northern British Columbia and Alberta have been warmer than normal over the last 15 years. By far the largest impact on beetle mortality is the cold. Some level of cold weather (i.e. -40 Celsius and lower) is required each year in order to keep beetle populations from growing. Warm weather equals higher beetle survival.

This combination of warmer winters and an over abundance of mature pine has created conditions ideal for beetle populations to grow exponentially. Compounding an already complicated situation is the fact that beetles are difficult to kill. Methods such as using a chemical herbicide are impractical-to-impossible because the beetles live all but a few days of their lives inside the bark of a tree. There are only a few ways that beetles can be killed effectively – by physically destroying the beetle through such methods as

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**Forest Health 2009**

<table>
<thead>
<tr>
<th>Woodlands Division</th>
<th>Number of Wildfires</th>
<th>Hectares Burned</th>
<th>Large Blowdown Events (ha.)</th>
<th>Sites Identified with MPB Attack</th>
<th>Approximate Extent of MPB Attack on FMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Ridge Lumber</td>
<td>35</td>
<td>46.7</td>
<td>0</td>
<td>22,500</td>
<td>moderate</td>
</tr>
<tr>
<td>Hinton Wood Products</td>
<td>44</td>
<td>132.6</td>
<td>54</td>
<td>200</td>
<td>low-mod</td>
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<tr>
<td>Slave Lake Pulp</td>
<td>29</td>
<td>61.9</td>
<td>0</td>
<td>727¹</td>
<td>moderate</td>
</tr>
<tr>
<td>Alberta Plywood</td>
<td>21</td>
<td>1.7</td>
<td>0</td>
<td>166</td>
<td>low</td>
</tr>
<tr>
<td>Sundre Forest Products</td>
<td>7</td>
<td>41.1</td>
<td>1,280</td>
<td>3²</td>
<td>low</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>136</strong></td>
<td><strong>284.1</strong></td>
<td><strong>1,334</strong></td>
<td><strong>23,596</strong></td>
<td></td>
</tr>
</tbody>
</table>

¹ In the SLP FMA, a zone exists (approx. 82,000 ha in size) which was not surveyed because ASRD’s survey showed that MPB attack exceeded normal site counts. None of this area is being controlled, and the site numbers reflect only those sites outside this zone.

² Three sites identified with a total of eight trees with beetle hits.
falling and burning infected trees or milling infected trees in a sawmill, or by removing
enough of the beetles food source (pine trees) that they have no where to feed and
reproduce.

In Alberta, the provincial government has a multi-pronged approach to addressing the
beetle outbreak, which they call their “Healthy Pine Strategy”. The first strategy, where
beetle populations are at low levels, is to identify trees with beetles still in them and
then fall and burn those individual beetle-attacked trees. This is obviously costly and
labour intensive. Secondly, and at the same time, Alberta has directed forest
companies such as West Fraser to develop and submit for approval “Beetle Plans”. The
objective of these plans is to show how a company will reduce the amount of beetle-
susceptible pine trees in their operating areas to target levels established by the
government (i.e. a 75% reduction in susceptible pine over a 20 year period).

In addition, the government has provided other policy and direction around operating
in pine beetle infected stands, such as: putting into place restrictions on hauling pine
trees; implementing lower stumpage fees for logging in beetle invested stands; and
making funds available for surveying and controlling beetle-attacked trees.

Through the Healthy Pine Strategy, the Alberta government is encouraging the creation
of a more natural diversity of tree ages that will be more resilient to threats from not
only the pine beetle, but from other destructive insects, diseases and wildfire.

While the above noted strategies and tactics can help to delay or restrict beetle
population expansion, in the end, it is cold weather that provides the only known large
scale control of MPB. In 2008, most of Alberta did experience some significantly cold
weather, which did in turn kill a lot of beetles. Unfortunately, this same weather didn’t
impact beetle populations to the same degree in BC, and in late July 2009, Alberta
received another large influx of MPB from British Columbia. Like in 2006, these beetles
were brought significant distances (hundreds of kilometres) by the wind. They rained
down on Alberta in a wide swath from Grand Prairie to south of Hinton, with the
highest concentrations in the north; however the effects of this flight have also been
seen to a lesser extent in the Grand Cache, Hinton and Edson areas. New MPB attack
from this flight has been confirmed as far east as Chip Lake and as far south as the
Brazeau River.

This large MPB wind-driven event appears to be worse than the one in 2006. The 2009
flight was also earlier, allowing more time for the beetle’s larvae to develop, which
often leads to increased over-wintering survivability. Only time, and winter weather,
will tell what the overall effect of this large influx of beetles will do to Alberta’s forests.

**DIVISIONAL BEETLE UPDATES**

Every West Fraser Alberta division has a different vulnerability to mountain pine beetle
attack and therefore the current situation for each is different, as are the different
strategies employed. The following sections outline the status of MPB on West Fraser
managed tenures, as well as some of the strategies and tactics employed by each
division in 2009.

**Blue Ridge Lumber**

In 2009, Blue Ridge Lumber (BRL) saw another huge influx of beetles from British
Columbia rain down on the Forest Management Area (FMA). This July flight of beetles
has resulted in the highest number of beetles yet on BRL’s FMA, mainly advancing from
the west and northwest. However, as Brian Davies, Woodlands Manager at BRL, notes,
“Almost anywhere woodland staff looked, beetles were found.”

As part of its approved Beetle Plan, BRL continued the harvesting of pine stands that were ranked as being most susceptible to beetle attack.

**Hinton Wood Products**

Rick Bonar is HWP’s Chief Biologist and Planning Coordinator, and is responsible for monitoring and responding to MPB activity on the Hinton FMA. Bonar explains, “Since 2006, HWP has placed pheromone baits on a grid system (one pheromone site per township) across the FMA. Each site has three trees with chemical baits that lure MPB in from a distance of a few hundred meters. This has allowed us to monitor the level of MPB attack on the FMA.”

From 2006 to 2008, MPB attack of these pheromone baited trees remained very low; however, all that changed in 2009 with the arrival of large numbers of beetles from BC. As Bonar notes, “Previously we have been able to count the number of individual beetles that have attacked our pheromone baited trees – the most individual beetle hits we had found was 90 in 2007, which decreased to 48 in 2008. However, in 2009, the amount of individual hits on our pheromone baited trees were in the thousands (too many to count) and for the first time we had spill over of beetle attack into the non-baited trees adjacent to the trees with the pheromone baits.”

This is bad news, as it indicates a not before seen level of MPB attack within the Hinton FMA. Not only were the levels of individual MPB hits significantly higher than anything seen in the past, there were also many more pheromone baited sites that were hit. Bonar points out, “Whereas before the main concentration of MPB activity was in the northern part of the FMA, after the July 2009 MPB flight, we are now seeing some level of MPB activity across a significant portion of the FMA, although the highest concentrations are still in the north.”

HWP staff also worked hard in 2009 to develop a “Beetle Plan” to address the provincial government’s direction to significantly reduce the amount of beetle-susceptible pine on the FMA. This plan included a new landbase calculation, timber supply analysis, and a ten-year spatial harvest sequence. It will be submitted to ASRD for approval in the spring of 2010.

What does the future hold? No one knows for sure, but one thing is certain; mountain pine beetle is firmly established on the Hinton FMA and it is not likely that it will ever go away entirely. As Bonar says, “All we can do is to remove known MPB infestations, continue to harvest MPB susceptible pine (in order to remove the beetle’s food source), and hope for cold winters.”

**Sundre Forest Products**

In 2009, SFP set up MPB pheromone baits, in susceptible pine stands, in every township throughout the FMA in order to identify the extent and location of beetle spread onto the FMA. When the baits were picked up in the fall, the news was fairly positive. Tom Daniels, Forest Superintendent at SFP, notes, “There was very little evidence to date of significant MPB spread into the Sundre FMA, as only eight attacked trees were found.”

Daniels also says, “ASRD had identified a higher occurrence of MPB attacked trees along the edges of the Hwy 11 prescribed burn. Level one control operations (i.e. falling and burning) revealed a high level of mortality of adult beetles and undeveloped
larvae, therefore control operations were suspended.” Ongoing surveys of the affected areas will continue.

Just When You Thought it was Under Control...

Slave Lake Pulp and Alberta Plywood

The beetle infestation in the Slave Lake Pulp FMA appeared to be in a controllable situation in spring of 2009. There was the infamous 2006 in-flight of beetles from British Columbia, which had spread a smattering of beetles across the north central region of the province from Grande Prairie north and east into the edges of the Swan Hills. However, as Terry Kristoff, Management Forester at Alberta Plywood, notes, ”Two successful years of detection and control in the Swan Hills area seemed to have the situation in a manageable state.”

Looking good, that is, until the evening of July 23, when as Kristoff explains, ”We were bombarded by trillions of beetles riding the jet stream out of BC”. This flight hammered into the Swan Hills and surrounding area. Within weeks of the flight, ASRD reported that in areas south of the Slave Lake entire stands were turning yellow. Ground inspection confirmed the worst. Kristoff said, ”The massive flight, combined with the recent drought, seemed to have combined to create a situation where the pine trees did not have enough resources to ”pitch-out” the attacking beetles.” Blue stain set in immediately and started killing off trees. Unfortunately, not only were the mature stands impacted, some entire plantations were wiped out as well.

The provincial government spent resources all winter trying to control the outlying edges of the area with the highest attack, but in the end were forced to create a massive inaction zone in the western part of the FMA where a fall and burn strategy would be fruitless.

The Central Region Mountain Pine Beetle Planning Team is now working with ASRD, forest companies, and local municipalities to model the potential impact of the beetle. Using beetle spread rates, this modeling work will investigate the long and short term impacts on AAC, as well as the economic impacts on affected companies, communities and the region. Kristoff explains, ”The report will do sensitivity analysis around various possible outcomes or scenarios in the region and ultimately is designed to give industry and government some direction as to how the salvage, rehabilitate, and control strategies will best protect the future of the industry and communities affected.”

Needless to say Slave Lake staff are gearing up for a massive shift in harvest priorities. So much for well developed Beetle Plans...
The concept of Integrated Landscape Management, or ILM for short, has been around for a long time. ILM refers to a philosophy of land management where all associated activities of the different stakeholders on a landbase are integrated to the highest degree possible, allowing for more coordination, and by default, less overall impact to the landscape.

ILM is especially important when there are many, often competing, interests on the land. Without some degree of coordination, impacts begin to accumulate, and other values such as biodiversity, water, and aesthetics may begin to suffer. In recent years, with the rapid rise in the price of oil, gas, and coal, the activity levels on West Fraser’s Alberta tenures have substantially increased over what they were just a decade ago. In addition to the industrial user groups, there is also a wide array of other landbase users, such as: ATV enthusiasts, campers, grazing lease holders, hunters, fisherman, and berry pickers; to name only a few.

The Alberta government recognized that there needed to be a better system for ensuring Integrated Landscape Management takes place on publicly owned land. This process, called the Land Use Framework, was officially announced by Alberta in 2008 and began in earnest in 2009, with the passing of enabling legislation (Bill 36 – the Alberta Land Stewardship Act), as well as the development of two plans for the Lower Athabasca Region and the South Saskatchewan Region. West Fraser has tenures in the Upper Athabasca, North Saskatchewan, and Upper Peace regions, which are next in line for the development of land use plans – it is expected these processes will begin sometime in late 2010 or 2011, with the appointment of Regional Advisory Councils, which consist of members representing a range of perspectives and experience.

These Regional Advisory Councils will be chaired by a senior government official and will help develop a plan that will:

- Define regional outcomes (economic, environmental and social) and a broad plan for land and natural resource use for public and private lands
- Align provincial strategies and policies at the regional level
- Consider the input from First Nations and Métis communities
- Determine specific trade-offs and appropriate land and natural resource management for specific landscapes within a region
- Define the cumulative effects management approach for the region and identify targets and thresholds
- Provide direction and context for local plans within the region

### 3rd Party Land Withdrawals from the FMA Landbase 2009

<table>
<thead>
<tr>
<th>Disposition Type</th>
<th>Blue Ridge Lumber</th>
<th>Hinton Wood Products</th>
<th>Slave Lake Pulp</th>
<th>Alberta Plywood</th>
<th>Sundre Forest Products</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Area</td>
<td>Number</td>
<td>Area</td>
<td>Number</td>
<td>Area</td>
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<tr>
<td>Pipelines (PLA)</td>
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<td>476</td>
<td>246</td>
<td>413</td>
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<td>109</td>
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<td>Pipeline Installation Lease (PIL)</td>
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<td>9</td>
<td>135</td>
<td>6</td>
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<td>Seismic Lines</td>
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<td>560</td>
<td>369</td>
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<td>5</td>
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<td>Roads (LOC)</td>
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<td>117</td>
<td>201</td>
<td>387</td>
<td>26</td>
<td>34</td>
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<tr>
<td>Well Sites (MSL)</td>
<td>138</td>
<td>284</td>
<td>259</td>
<td>393</td>
<td>56</td>
<td>82</td>
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<tr>
<td>Mining (MSL)</td>
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<td>0</td>
<td>1</td>
<td>1,155</td>
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<td>Powerlines (EZE)</td>
<td>16</td>
<td>9</td>
<td>7</td>
<td>12</td>
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<td>Vegetation Control Easement</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Miscellaneous (MLL/MLP)</td>
<td>6</td>
<td>7</td>
<td>15</td>
<td>26</td>
<td>11</td>
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<td>Other (DRS/PLS)</td>
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<td>0</td>
<td>0</td>
<td>0</td>
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<td>45</td>
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<tr>
<td>Gravel Pits (SML/SMC)</td>
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<td>3</td>
<td>12</td>
<td>36</td>
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<td>0</td>
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<tr>
<td>Total</td>
<td>387</td>
<td>1,465</td>
<td>880</td>
<td>2,798</td>
<td>213</td>
<td>414</td>
</tr>
</tbody>
</table>

*The area is the applied for area on the withdrawal application, not the actual digitized area as 2009 has not been processed yet.*
It is expected that these landuse plans will take one to two years to develop; however, in the meantime, West Fraser's Alberta operations will not sit idly around, but will continue to develop, participate in, and/or implement FMA specific ILM measures. This includes such current initiatives as:

**West Fraser/Oil & Gas Reclamation Integration** – West Fraser and some of Alberta’s oil & gas companies have started working together to accomplish superior reclamation results on energy dispositions. Participating companies have begun working with our foresters, who are experts in the field of reforestation, to better design and implement well site reclamation, resulting in a new forest, rather than a field of grass or brush.

**Foothills Stream Crossing Program** – Road crossings of watercourses can have significant impacts on aquatic ecosystems including potential entry points for sediment and pollutants, barriers to fish movement, fish habitat loss and possible failure during flood events. The Foothills Stream Crossing Program was formed in 2005 and now has 15 partners with three primary objectives:

- To develop an industry-driven association to help crossing owners manage stream crossings.
- To establish a standardized stream crossing inspection process.
- To establish a system to assist owners in identifying priorities for stream crossing maintenance/remediation.

**Long Term Access Planning** – West Fraser has started to develop and implement plans that set out long term access requirements for a particular FMA. Because all oil & gas dispositions are referred through West Fraser’s Land Use Departments before being approved by the government, long term access plans allow West Fraser to better coordinate access with the oil & gas industry. This often will result in:

- One road being built instead of two
- Fewer stream crossings
- The use of one road corridor for various dispositions (e.g. roads, pipelines, powerlines, etc.).
- Deactivation or reclamation of roads no longer in use

**Foothills Landscape Management Forum** – This is a voluntary organization dedicated to Integrated Landscape Management. The FLMF operates mainly in the ranges of the A la Peche and Little Smoky caribou herds, but expanded geographically in 2008 to cover the entire Hinton Forest Management Area.

The FLMF partnership is currently made up of twelve oil & gas

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### Returned Industrial Lands in 2009

<table>
<thead>
<tr>
<th>Woodlands Division</th>
<th>Number of Sites Returned</th>
<th>Hectares Returned*</th>
<th>Hectares Treated**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue Ridge Lumber</td>
<td>4</td>
<td>2.3</td>
<td>32.3</td>
</tr>
<tr>
<td>Hinton Wood Products</td>
<td>226</td>
<td>431.0</td>
<td>4.3</td>
</tr>
<tr>
<td>Slave Lake Pulp</td>
<td>50</td>
<td>101.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Alberta Plywood</td>
<td>61</td>
<td>89.5</td>
<td>6.0</td>
</tr>
<tr>
<td>Sundre Forest Products</td>
<td>10</td>
<td>37.5</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>351</strong></td>
<td><strong>661.9</strong></td>
<td><strong>43.4</strong></td>
</tr>
</tbody>
</table>

* This indicates dispositions that have been cancelled by the disposition holders (mainly oil & gas dispositions) but not necessarily cleared and have been returned back to the FMA holder.

** Where an area has been cleared by oil and gas and treated more than once (e.g. scarified then planted), only the initial treatment is included. Treated means any type of survey, and/or site preparation and/or seeding and/or planting or the site has ingressed naturally. The hectares treated is taken from the Abandoned Land Ledger.
companies, five forest companies, and an Aboriginal community. These partners work together to reduce the development “footprint” on the land through better planning of future footprint and restoration of existing footprint that is no longer needed.

Road Maintenance – West Fraser’s Alberta operations are responsible for the maintenance of literally thousands of kilometres of forest roads; however, it is often the case that it is other industrial users (primarily the energy sector) that represent the majority of the actual road use. In any situation where the use of the road is shared by multiple industrial users, one company will hold the License of Occupation (LOC) and enter into road use agreements with other industrial users of the road. For example, on main roads which West Fraser has constructed and holds the LOC, West Fraser allows other companies to use these roads through a road use agreement and charges a road use fee to help cover a portion of the cost of road maintenance. As one might imagine, this can be a very complicated process to implement, monitor, and bill in a transparent and fair manner. In 2009, West Fraser developed a new system to better track and bill road use – it is called the Long-Term Spatial Road Use System and implementation of this system will begin in 2010. The sidebar on this page and the next describe in detail this new system.

Proactive ILM practices, like the ones described above, can not only reduce cumulative impacts, but can also have the added benefit of creating cost-saving opportunities by coordinating use between different land users, literally resulting in a win-win situation.

Long-Term Spatial Road Use System

In 2009, as a response to the energy industry’s concerns regarding the inconsistencies in long-term road use charges being levied by West Fraser, the Company developed a new system for charging fees for long-term road use. This new system, which will officially be rolled out in 2010, will link long-term road use (LTRU) to a web-based road use system. This new LTRU fee system is a spatial system (i.e. it is linked to an exact location on a map) and will tie every producing well on a Forest Management Area (FMA) to its corresponding owner. Linking LTRU spatially to a particular well means that all producing wells will be captured; hence, all companies will be paying their fair share of the road maintenance. The energy industry will be able to see the potential cost/charge of long-term road use fees immediately, thereby making the system more transparent.

Lynn Bergeron, Land Use Coordinator at West Fraser, provides some background, “One of the first steps in the project was to update West Fraser’s Lands Data Manager to reflect the government’s Lands Standing Automated System, so that we had a comprehensive listing of all the dispositions on West Fraser FMAs. Tabular information was then matched to the spatial data using West Fraser’s Lands Provisional Layer and the Digital Integrated Dispositions, so that every tabular record had a matching spatial shape (with the exception of Temporary Field Authorizations).”

A list of dispositions (by energy company) was then produced and sent to each respective company in order for them to report on their well status (i.e. producing or not producing). Once this information was received by West Fraser, a company’s well status was loaded into the system. Producing wells by company were grouped based on their proximity to one another and/or their presence on the same access route. As Bergeron explains, “This was done in order to economize on road use fees.” The spatial element also provides West Fraser with a more realistic overview of total road usage on a particular FMA, and a more accurate measure of the total cost to maintain our roads.”

The online LTRU determination process is interactive. Companies can now view online their list of producing wells
and maintenance clusters, and the associated roads on the access routes. The production status of a well (producing or non-producing) can be updated in “real-time”, and wells can be re-assigned or re-grouped into different maintenance clusters as desired.

Bergeron says, "The LTRU rate can be equitably adjusted at any given time as it is based on an energy company’s portion of West Fraser maintenance costs divided by the total kilometres used that company.” The 2010 LTRU fees will be reflected as a price per kilometre per month ($/km/month) rate, prorated to the number of days used, and calculated by the new system based on the roads and distance traveled by each energy company to access their maintenance groupings.

West Fraser only bills road use fees for use of its mainline roads (i.e. named Class 1 and Class 2 roads). With the “real-time” system functionality, as soon as the production status of a well is revised and/or assigned, the update is reflected in the invoice calculation.

"Invoices generated from the new Long Term Road Use Spatial System will be comprehensive in that a full listing of the wells being charged will be listed,” said Bergeron. “In addition, the system will enable various reports to be generated specific to a maintenance group and/or well, and energy companies may also add their own comments to maintenance groups and/or specific wells.”

It is anticipated that this new system will significantly improve the accuracy and transparency of road maintenance billing, which in the end benefits both West Fraser and the companies being billed.
Growing trees back after logging is one of the more important roles undertaken by West Fraser’s foresters. Reforestation is the law in Alberta, as it is in the rest of Canada – once harvesting has been completed on a cutblock, a new crop of trees has to be grown and nurtured until they are well-established and free of competing vegetation.

This is no simple task. As Shane Sadoway, Silviculture Superintendent at Blue Ridge Lumber, explains, “First, we have to decide whether we should promote and allow natural regeneration, or instead plant the area. On our drier sites where we expect less competing vegetation, we prefer to let nature grow back the next crop of trees; although often we assist this process by carrying out some time of site preparation. On our moister wetter sites, it makes more sense to plant – this allows the trees to get a head start on the competing vegetation.”

Site preparation is often the first treatment carried out either when planting or when allowing natural regeneration. In either case, the objective is to prepare the site for optimum tree growth. Sometimes, this is accomplished by simply disturbing the soil with big chains dragged behind a machine – this prepares a bed for the seed from the cones left on-site to germinate in. Other times site preparation is more dramatic, as is the case with mounding – where large divots are taken out of the soil and turned over next to the hole; the tree is then planted into the divot (not the hole). Mounding takes place on our very wettest sites, where trees need to be planted and they need a head-start against the often dense and tall vegetation found on these sites.

Once a new crop of trees has been established, our foresters must periodically check these trees to see that they continue to survive, are healthy, put on adequate growth, and are free of competing vegetation – they do this by conducting on-the-ground establishment and performance surveys.

Sadoway says, “If the surveys show that some trees and/or competing vegetation need to be removed; then we evaluate alternate methods of accomplishing this task. We use both mechanical and chemical methods to remove competing vegetation and we are careful to ensure that vegetation and habitat types are maintained throughout the larger forest landscape over time.”
Through the entire process, from logging a cutblock to establishing and growing the next crop of trees, West Fraser foresters must develop and implement reforestation strategies (e.g., site preparation, planting, tending, etc.) and regularly monitor the block to ensure that the strategies that were implemented are working adequately. In addition, at legislated intervals, our foresters have to report to the provincial government, by cutblock, the progress in meeting reforestation objectives. If objectives are not met (e.g., a survey is not done on time, a block is not satisfactorily restocked, a reporting period is missed, etc.), the government can impose a number of different sanctions against a company, including: a monetary penalty, a loss in Annual Allowable Cut, or the requirement to retreat an area.

Sadoway notes, "Ensuring a healthy crop of new trees is growing and thriving after a stand has been harvested is one of the most rewarding feelings a forester can have; especially as you get older and have the benefit of watching an area that you had a hand in reforesting, slowly grow over time."

The Pine Beetle has Long Reaching Effects

While some of the impacts of the impending mountain pine beetle epidemic are obvious to even a casual observer; for example, the death of millions of pine trees, other impacts may be less evident. One such unobvious impact is the effect on pine seed supply, should a large portion of pine trees in Alberta die within a short period of time.

As Diane Renaud, Senior Silviculture Forester at Hinton Wood Products, explains, "Seed must be gathered regularly from trees adapted to the specific sites we plan on planting. This seed is stored, and then as required, sent to nurseries where it is grown into the trees we eventually plant. If the beetle kills a large percentage of mature pine in West Fraser’s operating areas, our seed supplies will suffer. Our natural regeneration success may eventually also be affected. It’s imperative that we anticipate this issue, and plan accordingly."

Once the tree has been killed by the beetle, pine seed will not remain viable for long periods of time. This means West Fraser divisions need to be collecting and stockpiling pine seed now, before it’s too late.

"Making certain we have an adequate supply of seed in the long term will be an important part of ensuring the long term viability of our forest operations in Alberta," noted Renaud.

Sundre Forest Products Obstacle Forest Planting

As a result of Sundre Forest Products (SFP) moving into larger openings and second-pass operations, seedling establishment is becoming more difficult within certain higher elevation areas adjacent to the eastern slopes. Larger openings, combined with the "dry" winter weather, results in a reduction in the duration of snow cover within some openings. This, in turn, can result in dormant seedlings not having adequate insulation, increasing the possibility of winter desiccation issues (i.e. the tree dries out and dies).

"Having identified this as an issue," explains Chris Rusnak, Silviculture Supervisor at SFP, "we implemented trials aimed at increasing snow retention around seedlings in these openings."

In 2009, one such trial had planters actively placing logging debris on the downwind side of seedlings in desiccation susceptible areas. The intent was for the debris to act as a snow catch; thereby, reducing the chance of the seedling suffering from winter desiccation.

"We will continue to monitor the effectiveness of this treatment over time and will continue to adapt our strategies as required," says Rusnak.
Recreation

Recreation is, by far, the largest non-commercial use on the Forest Management Areas (FMAs) that West Fraser manages in Alberta. Each year, as spring emerges from winter’s grasp, thousands of Albertans also emerge, travelling to these same FMAs to recreate. Whether it’s hunting, fishing, camping, ATVing, hiking, horseback riding or sight-seeing, the 3.5 million hectares of public land that West Fraser manages in Alberta is well used and appreciated by the public for its recreational attributes.

Accompanying this large recreational use, is a social responsibility that each of our West Fraser divisions take seriously. As Jim LeLacheur, West Fraser’s Chief Forester for Alberta, points out, "Recreation is the avenue by which most of the public come into contact with the forest industry and form opinions about the job we are doing managing their forests. It’s important that we recognize this fact, and manage our forests accordingly.”

Each West Fraser division in Alberta has a different strategy around managing for recreation. Affecting these differing strategies is the fact that each division has varying levels of recreational use. For example, the largest recreational use is found in the Sundre Forest Products and Hinton Wood Products FMAs, which are both close to major population centres (i.e. Calgary and Edmonton) and have FMAs situated right in the recreation use can have an Uglier Side

For several years Blue Ridge Lumber (BRL) has enhanced and maintained a number of random camping sites on its FMA. This is done by visiting the most heavily used of these sites and inspecting them for fire safety. Enhancements include placing a load of gravel and a culvert collar to act as a fire pit, as well as clearing or reducing any vegetation that could easily catch fire. These random sites are reused annually by hunters, berry pickers, ATV enthusiasts and outdoor campers looking for a more rustic getaway.

This effort doesn’t appear to always be appreciated. As Brian Davies, Woodlands Manager at BRL explains, "Every year, it seems we are disappointed that sites we’ve worked on are vandalized. The signs and fire pits we set up are often shot full of holes with plenty of garbage and beer cans scattered about the sites. In many cases, the fire pits are taken by the campers. This results in subsequent users randomly selecting a spot to build a new campfire, which is more often than not in a spot that has not received fire-proofing attention.”

Says Davies, “We are sure it is the irresponsible minority who are carrying out these senseless acts. Despite our frustration with the abuse of these sites, we continue to pick up and remove the garbage and reduce the fire hazard at these random sites. We are hopeful that some of the users appreciate our efforts.”
foothills of the Rocky Mountains adjacent to large protected areas (i.e. Banff and Jasper National Parks). Examples of various ways in which West Fraser manages for and accommodates recreations use on our FMAs include:

- Operating and/or maintaining our own campgrounds, random camping areas, or government campgrounds.
- Providing and/or maintaining access to popular recreational sites (e.g. lakes, rivers, etc.)
- Managing and maintaining hiking and/or interpretive trails.
- Providing access maps to the public
- Limiting industrial activities such as harvesting or trucking to certain periods of time in order to not conflict with recreational use.

Recreational use of Alberta's forests, however, is not without issues. Similar to uncoordinated or unregulated industrial use, recreation use can also result in its own impacts. LeLacheur explains, "While recreationalists tend to think about themselves as having a low environmental impact, it has been our experience that some recreational activities, for example random camping or ATV use, can also have significant environmental impacts. By maintaining campgrounds or helping clean-up popular random camping areas, West Fraser is trying to help minimize this impact, while at the same time providing quality recreational opportunities."

One of the basic tenants of sustainable forest management is that all the values in the forest need to be managed for – not just timber. At West Fraser, each of our Alberta divisions has demonstrable examples of how we manage for important recreational values. The sidebars on this and the adjacent page provide more detail on just a few of these examples.

Partnerships are Powerful!

In 2009, Hinton Wood Products (HWP), in cooperation with Fox Creek Development Association (an Aboriginal owned and operated non-profit company) and Alberta Tourism, Parks, and Recreation (ATPR), submitted a funding proposal to the Western Economic Diversification’s Community Adjustment Fund. This federally administered fund was put in place by the Canadian government to help stimulate the economy by creating jobs during the global recession of 2008 and 2009.

Aaron Jones of Hinton Wood Products, who coordinated and submitted the proposal, explains, "In November of 2009, we were notified by our local Member of Parliament, Rob Merrifield, that our joint submission was successful." This meant that over $400,000 dollars of funding was secured from the four partners in order to carry out the following recreation projects:

- A new 28 site campground will be built at the confluence of the McLeod and Gregg Rivers.
- An additional 10 campsites will be built at HWP's Petite Lake Campground
- Upgrades (e.g. new stairs, fire-pits, etc.) to the Whitehorse and Watson Creek Provincial Recreation Areas will be implemented (Teck Coal is also a partner in this project)
- Fox Creek Development Association (FCDA) will hire two campground attendants for the summer months to work at the Whitehorse Creek and Rock Lake Campgrounds.

"This is a feel-good story for everyone and we appreciate these initiatives," said Steve Haslett, Operations Manager of Fox Creek Development. "This gives us an opportunity to move forward with capital and create jobs in our region. It’s very beneficial to the whole Hinton community and extremely beneficial to Fox Creek Development."

Jones notes, "The majority of the work associated with these projects will take place in 2010 and be carried out by FCDA, although the clearing and construction of the road for the new McLeod River Campground will be done by a HWP contractor."

Hinton Wood Products manages 14 campgrounds and eight trail systems on or adjacent to its FMA. Fox Creek Development Association looks after the day-to-day operation of these recreation sites and has done so for well over a decade.
"We’re here for the long term; so it’s in our best interest to be responsible stewards of the public lands we manage, including working hard to conserve the species within this landbase,” says West Fraser Chief Biologist Dr. Rick Bonar. “West Fraser has a three pronged approach to species conservation – be proactive, get involved, and do our part.”

1. **Be Proactive**
   For many years, West Fraser has taken a lead role in building and maintaining strong multi-stakeholder partnerships such as the Foothills Research Institute, the Foothills Landscape Management Forum, and the Foothills Stream Crossing Program. “Through these and other initiatives, we fund inventory, research, and monitoring programs,” said Bonar.

2. **Get Involved**
   West Fraser participates in government-led species conservation initiatives such as the Alberta Endangered Species Conservation Committee, and Species at Risk Recovery Plans for woodland caribou, grizzly bear, and Athabasca rainbow trout.
   
   “Another initiative West Fraser is taking on involves working with Environment Canada to develop conservation plans for migratory birds and a permit system for incidental take of migratory birds,” said Bonar. “We also lead our own species conservation programs for local values. For example, we developed a strategy in the Pinto Creek area to conserve the only canyon-dwelling mountain goat herd in Alberta. We also sponsored a local inventory to identify breeding ponds of the long-toed salamander, a species of special concern in the Foothills area.”

3. **Do our Part**
   As well as getting involved in various species conservation initiatives, West Fraser also believes that it’s important to do our part on-the-ground. As Bonar notes, “We are active in three main areas: providing habitat, reducing the human footprint, and cooperating with government-led species management initiatives.”

   - **Providing Habitat** – At West Fraser, our forest management plans are designed to provide habitat for all species. Bonar explains, “Our goal is to over time provide habitat in our managed forests that is similar to the natural habitat provided by Mother Nature. This includes ensuring there is appropriate amounts of old forest and residual forest remaining after harvesting, which approximates the biological legacies left after natural disturbances like forest fires.”

   - **Reducing Human Footprint** - Through organizations like the Foothills Landscape Management Forum (FLMF) and the Foothills Stream Crossing Program (FSCP), West Fraser is working with the government of Alberta to reduce the overall road footprint and to replace old stream crossings that don’t meet modern standards such as fish passage.

   “For example, in the range of the A la Peche and Little Smoky caribou herds, the FLMF is working with Alberta Sustainable Resource Development to develop the Berland Smoky Regional Access Plan,” said Bonar. “This plan will identify where future roads should go to minimize impact, what existing roads could be deactivated or reclaimed, and how to manage human use of the access network.”

   The FSCP is implementing a stream crossing restoration program in two key watersheds and has plans to extend the program to all priority watersheds. “Hinton Wood Products has repaired or replaced more than 700 stream crossings over the past 15 years, while at Sundre Forest Products 708 streams crossings...
were inspected in 2009, and repairs and improvements were conducted or planned as deficiencies were identified by this audit process,” said Bonar. “These programs have very positive effects on species conservation for grizzly bear, Athabasca rainbow trout, as well as many other species.”

- Cooperating with Government – At West Fraser, we try to take advantage of and participate in all government-led opportunities to further species conservation in our forest management tenures. “The Foothills Landscape Management Form is a good example of this,” says Bonar. “It was a key source of innovative ideas that were incorporated into the West Central Caribou Landscape Plan recommendations to the Government of Alberta in 2008, and in 2009 West Fraser and other FLMF members have made good progress on implementing the industry commitments in that plan.”

**Athabasca Rainbow Trout**

Athabasca rainbow trout have recently been listed as “threatened” under Alberta’s Wildlife Act. This population of trout is unique in that it is the only native rainbow trout in Alberta and occupies a relatively small geographical area (approximately 2,000 square kilometres). “Their population is primarily contained in the upper Athabasca River and its tributaries,” said Rick Bonar, Chief Biologist with West Fraser. “This includes the McLeod, Berland, Wildhay, and Freeman rivers as well as their headwater streams.”

The native Athabasca trout differs from the introduced hatchery rainbow trout in that the native trout spawn later in the spring, grow slower, and mature at a smaller size. Although there isn’t a lot of data around their population size, there appears to be a significant drop in population size over the last 50 years. “There are a number of reasons why population size may have declined,” said Bonar. “For example, they might be being outcompeted by hatchery rainbows or brook trout; their habitat may be affected by stream crossings that no longer allow fish passage or introduce sediment to their spawning habitat; or too many fish might be taken by anglers.”

The provincial government has initiated a multi-stakeholder team to prepare a recovery plan for Athabasca rainbow trout and Bonar will be on that team. “I look forward to working with other members of the recovery team in developing goals and strategies to help recovery this unique fish,” says Bonar. “I believe some of the initiatives West Fraser is currently involved in, such as the Foothills Stream Crossing Program, will be a key part of any recovery plan.”
Water Management

Good, clean and abundant water is a core value shared by the vast majority of Albertans. "This was recognized back in 1977, when the Alberta Eastern Slopes Policy identified watershed management as the highest priority for the Alberta Foothills," says Jim LeLacheur, Chief Forester for West Fraser’s Alberta operations.

"Today’s focus on climate change, mountain pine beetle invasion, and the ever-increasing demands for water make this direction more critical than ever," said LeLacheur. "West Fraser is active in three broad aspects of water conservation – water quality, water quantity, and aquatic ecosystem health."

1. **Water quality**
The primary impact of forest management on water quality is sediment originating from forest roads, mainly at stream crossings. West Fraser operations have a very active program to inspect stream crossings and schedule repairs or replacement to control erosion.

"Of course, West Fraser is not the only owner of roads and stream crossings," explains LeLacheur. "So in 2004, West Fraser founded the Foothills Stream Crossing Program (FSCP), which is a cooperative project with many partners dedicated to ensuring all stream crossings are brought up to modern standards."

While not all West Fraser divisions are members of FSCP, each division does have its own stream inspection and remediation program. Kelsey Kure, Water Resource Technician at Sundre Forest Products says, "As part of our Environmental Management System, we inspect all intermittent and permanent water crossings on our roads for...

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**Riparian Disturbance?**

In Alberta, as in most North American jurisdictions, legislation and regulations exist to protect riparian areas (i.e. those areas found adjacent to watercourses) from disturbance to reduce the risk of adversely affecting streams and aquatic ecosystems. However, in the real world, riparian zones are not immune to natural disturbance, some of which may be vitally important to maintain stream function. For example, the recruitment and retention of logs in riparian zones alters the shape and flow of a stream channel, which can result in critical habitat for invertebrates and fish.

A study, being conducted under the Foothills Research Institute’s Natural Disturbance Program, and in which West Fraser is a funding partner, is looking into the importance of large wood debris recruitment into small streams and how that recruitment affects a stream’s water quantity, quality and aquatic ecosystems.

The outcome of this research will have value to both theoretical ecology and applied forest management in the foothills of Alberta. Although counter-intuitive, it may be that totally eliminating all disturbances within riparian zones is not the right thing to do. The goal of this research is develop tools to ensure that new knowledge gained is effectively integrated into forest management practices and policy.
issues such as erosion, sedimentation, re-vegetation success, channel blockage, and condition of the crossing structure. Crossings are inspected every year until they achieve a satisfactory rating for three consecutive years, at which time the inspection frequency may be lowered.”

2. Water quantity
Forest management affects the total annual yield of water that flows out of watersheds. Dr. Rick Bonar, West Fraser Chief Biologist, explains, “Mature pine trees transpire about 70,000 litres of water into the atmosphere from each hectare of forest on an average summer day.”

“This means, that when these trees die because of a forest fire, pine beetle infestation, or harvesting, the water that would normally be transpired into the air, instead flows into the water table and out the bottom end of a watershed,” said Bonar.

Through prudent planning and complex computer modelling, West Fraser carefully manages the amount of harvesting in watersheds to keep the changes to water quantity within natural capacity limits. This approximates the natural variation in flow regimes in relation to natural disturbances such as forest fires. More recently, West Fraser is sponsoring Foothills Research Institute research to determine the likely impacts of a severe mountain pine beetle infestation on water values (see sidebar).

3. Aquatic ecosystem health
Water quality and quantity are key factors in determining aquatic ecosystem health – another key aspect is the management of riparian forests adjacent to water bodies.

“West Fraser is pioneering an innovative approach to riparian forest management that takes into account key ecological processes and interactions such as the role of fallen trees in creating aquatic habitat and storing sediment,” says LeLacheur. “We are starting to realize that totally eliminating all disturbance around streams can actually have a negative effect on aquatic ecosystem health”. Natural disturbance research at the Foothills Research Institute is looking into this interesting and somewhat counter-intuitive topic (see sidebar on the opposite page).

Recent advances in technology and tools are helping. “For example,” says Bonar, “we have developed a watershed database called 'NetMap' that greatly increases the accuracy of our stream information, and we are using a new wet areas map to assist in developing management prescriptions for riparian areas.”

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Pine Beetle Affects Water Too!

West Fraser is a founding sponsor of the Foothills Research Institute (FRI). In 2008, the Company, in cooperation from the provincial government, was instrumental in starting up a new program at FRI. This objective of this program, called the "Mountain Pine Beetle Ecology Program" is to carry out focused research related to the mountain pine beetle (MPB) outbreak in Alberta.

“One of the current projects under this program is examining the effects of MPB attack on the hydrology of lodgepole pine forests in Alberta,” says Jim LeLacheur, Chief Forester at West Fraser and also President of FRI. “We want to have a better understanding of the impacts of MPB on water, which in turn should help us determine better management strategies.”

Research objectives from this program include:

- Determining the initial effects of a variety of MPB attack intensities on forest stand water balance including: rain/snow interception, forest floor evaporation, soil moisture storage, groundwater recharge, and water table response.
- Exploring the relationships between MPB driven changes in understory micro-climate and moisture regimes including: the initial response of the understory vegetation, opportunities for natural regeneration, and the performance of under-planting with several tree species.
- Incorporating the new relationships discovered in this research into existing forest water balance models to develop a new model that will represent the hydrologic effects of MPB attack on pine stands on the eastern slopes of Alberta.

LeLacheur concludes, “Its likely MPB is here with us to stay, so it’s in our best interest as forest managers to be prepared for its effect and develop appropriate management strategies based on sound science.”
Research is the cornerstone of all good science. At West Fraser, we strongly advocate and incorporate science into all of our forest management activities. We do this by conducting research on our own, or more commonly, in partnerships with other research organizations like the Foothills Research Institute, the University of Alberta, and FP Innovations. While interesting, research on its own is often not useful, unless the results of that research are incorporated into or influence the way we manage the forest.

At our West Fraser Alberta divisions, the research we take part in is put into practise and does influence our forest management. For example, research into grizzly bears over the last decade has resulted in new, more accurate, population data and has been able to show that road access plays a key role in grizzly bear mortality. While grizzly bears appear to prefer habitat caused by natural disturbances or harvesting, they are also more likely to be killed if they come into close contact with humans (e.g. poaching, vehicle collisions, defensive killings, or mistaken as a black bear and shot by hunters). Successfully managing grizzly bear populations will mean continuing to create disturbances, but managing road density so that access by people is somewhat restricted. Already, road density targets are being set by the provincial government, and companies such as West Fraser must figure out how to continue to harvest, while at the same time reducing access density. Strategies might include road deactivation, road reclamation, and gating. The government will need to address enforcement. All of this came out of research started at the Foothills Research Institute over a decade ago (and still ongoing).

Another prime example of research being incorporated into current forest management practises is the Natural Disturbance Project – an investigation into natural disturbance. Research findings coming out of this project have helped shape the way forests are managed across Alberta and into Saskatchewan. From the amount of old forest that should be left on the landscape; to the size of openings; to the amount and type of stand structure that should be retained during harvesting – this research has produced significant changes to the way landscapes and forests are being managed. As a result of this research, fire has been introduced back into Alberta’s national parks and new cutblocks are no longer all the same size, shape, and devoid of internal stand structure.

The year of 2009 was one of the worst years, if not the worst, in the economic history of the forest industry. Yet during this incredibly difficult time, West Fraser was still committed to continuing its support of sustainable forest management research. During 2009, the Alberta divisions of West Fraser invested more than 2.5 million dollars on forestry related research. The adjacent table summarizes the research conducted and/or supported by West Fraser in 2009. The research generally falls into one of the following six categories:

**Ecological** – All research relating to forest and aquatic ecosystems, including the flora and fauna within, natural disturbances and the effects of differing management strategies.

**Growth & Yield** – Research that helps determine how quickly and how many trees grow over time.

**Tree Improvement** – Research into improving genetic stock through tree breeding, with the end goal of producing seed to be used to grow healthier and thriftier seedlings for planting.

**Reforestation** – Research associated with how to best establish and grow trees to maturity; the effects of different silvicultural and harvesting practices.

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**Alternative Regeneration Standards (ARS)**

In 2009, ARS was implemented on all West Fraser FMAs. Richard Briand, who was West Fraser’s lead in working with the government to research and develop these standards, explains, “Surveys of regenerating stands now focuses on providing information to assess how well we are achieving the growth expectations for each type of forest stand that was used in the forest management plan to determine the Annual Allowable Cut (AAC).” Performance survey targets are forest growth estimates, not just simple surveys to determine if a stand is satisfactorily restocked or not, as was the case of standards previous to ARS.

“In May 2010, the government will be extending the ARS process, which we helped develop, to all forest operators in the province,” said Briand. “These new standards create direct linkages between the AAC and reforestation practices.
## Research 2009

<table>
<thead>
<tr>
<th>Division*</th>
<th>Research Project/Program Description</th>
<th>Research Category</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>WFM</td>
<td>Enhanced Forest Management Chair – University of Alberta (NSERC)</td>
<td>Growth &amp; Yield</td>
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<td>WFM</td>
<td>Alternative Regeneration Standards – Develop standards to link to yield curves</td>
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<td>WFM</td>
<td>Growth and Yield Projection System for Regenerated Stand Management</td>
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<td>WFM</td>
<td>Juvenile Regenerating Stand Assessment System</td>
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<td>WFM</td>
<td>FP Innovations - FERIC (forest harvesting and silviculture research)</td>
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<td>WFM</td>
<td>FP Innovations - Fortin (manufacturing research)</td>
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<td>BRL</td>
<td>Forest Watershed and Riparian Disturbance Research Project</td>
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<td>BRL</td>
<td>Forest Growth &amp; Yield Association membership and project costs.</td>
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<td>BRL</td>
<td>Use of Imazapyr (Arsenal) Herbicide for mixedwood site preparation.</td>
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<tr>
<td>BRL</td>
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<td>HWP</td>
<td>Foothills Model Forest Core Programs – Natural Disturbance, Fish and Watershed, Communications, and Project Administration</td>
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<td>HWP</td>
<td>Wildlife/Biodiversity Monitoring &amp; Research – To increase knowledge of terrestrial and aquatic species and response to management activities on the Hinton FMA</td>
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<td>HWP</td>
<td>Ecology of Forest Tending</td>
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<td>HWP</td>
<td>Foothills Growth &amp; Yield Association – Regenerated lodgepole pine trial</td>
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<td>Lodgepole Pine Fertilization – Re-measurement and Analysis</td>
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<td>Growth and Yield Projection System – Hinton FMA Validation</td>
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<td>HWP</td>
<td>Empirical Post Harvest Stand Growth Assessments – Multiple Measurements Throughout the Regeneration Phase</td>
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<td>SFP</td>
<td>Mountain Pine Beetle - Pheromone baits are deployed in every township throughout the FMA to monitor MBP and gauge population levels</td>
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<td>Foothills Growth and Yield Project – Evaluating the potential for better growing pine trees</td>
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<td>SFP</td>
<td>Development of seed sources from better growing trees</td>
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<td>SFP</td>
<td>Historical Resources Probability and Assessment</td>
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<td>SFP</td>
<td>Reforestation of past forest fires</td>
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<td>SFP</td>
<td>Development of tools to better assess stands most at threat from a Mountain Pine Beetle attack</td>
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<td>Integrated Land Management (ILM) – Supporting ILM research through the University of Alberta</td>
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<td>SLP</td>
<td>Hydrologic Analysis of the South Shore of Lesser Slave Lake.</td>
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<td>APL</td>
<td>WESBOGY – Conducts research projects that contribute to the development and dissemination of growth and yield information and modeling technology for both natural and regenerated stands</td>
<td>Growth &amp; Yield</td>
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<td>SLP</td>
<td>The Mixedwood Management Association – Primarily focus is growth and yield of mixedwood stands</td>
<td>Growth &amp; Yield</td>
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<td>SLP</td>
<td>Growth and Yield program – Development, implementation and maintenance of permanent and temporary sample plots across the SLP FMA</td>
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<td>SLP</td>
<td>Historical Resources - Development of several heritage resources programs designed to maintain compliance with the Heritage Resources Act</td>
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</tbody>
</table>

**Total**: $2,557,156

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**Historical** – Research that provides information regarding the location and extent of historical, archaeological and cultural resources on Company FMAs, so that these resources can be identified and, if necessary, conserved.

**Technological** – Research that helps the Company address operational issues such as harvest equipment design and efficiency, or improving the value recovery from the products produced from each tree harvested.
The 2009 year was a difficult one for the forest industry – lumber prices and US housing starts were at record lows; mills were shut down; and thousands of forest workers across Canada lost their jobs as a result of the global recession. In Alberta, we were on the receiving end of a massive flight of mountain pine beetle from BC, and now have the beetle firmly established in our Alberta Forest Management Areas. Through all these challenges, however, our woodlands staff, mill employees, and contractors were all committed to operating in an environmentally responsible manner and meeting production targets; all the while managing costs to the largest extent possible.

This annual stewardship report highlights just a few of the accomplishments, challenges, and opportunities for improvement that West Fraser’s Alberta operations faced in 2009. The intent of this Stewardship Report, as always, is to be transparent. We will report the good with the bad, and the challenges with the successes. We are hopeful that 2010 will be a better year, and that lumber and housing markets will at least begin the process of recovery.

If there is any feedback, questions, or comments about West Fraser and our management practises they are always welcome. For more information on the Company’s Alberta woodlands operations, forest management practises, or to ask questions or make comments, please contact:

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