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MAGAZINE

Winter 2010

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Editorial

by Dirk Brinkman

Offsetting Global Warming

The word "offsets" appears 524 times in the US House of Representatives Waxman Markey Act, which was passed on June 20, 2009. The Act, formed "to create clean energy jobs, achieve energy independence, reduce global warming pollution, and transition to a clean energy economy," makes the word offset sound commonplace, but it is not widely understood. "Offsets" was used most in association with the commonly understood term "forest" which appears 200 times.

In the Act, "offsetting" means to find an equivalent reduction of global warming pollution. This can include an alternative renewable energy, or four forest related offsets defined in the Act as: (1) through forest ecosystem restoration; (2) through afforestation/reforestation of deforested land; (3) through conservation of land scheduled for temporary or permanent forest clearing; and (4) through Improved Forest Management. The last is perhaps simply a mosaic of the previous three, each applied appropriately tree-by-tree across a forest landscape.

Offsets are not a new idea. This magazine's article on Habitat Conservation Banking in the Fall 2009 issue notes this offset concept has been in play in the US for over a decade. If a freeway was scheduled to destroy a wetland, an environmental entrepreneur, anticipating the development, might buy a formerly drained farm nearby, re-flood and restore the wetland, and bank it to offset the planned wetland destruction of the development to meet EPA requirements. Some wetland offsets were constructed and banked five to ten years before they were traded. It gave the restored ecosystem time to mature but required partnership between ecosystem science and speculative investment in a future ecosystem asset trade.

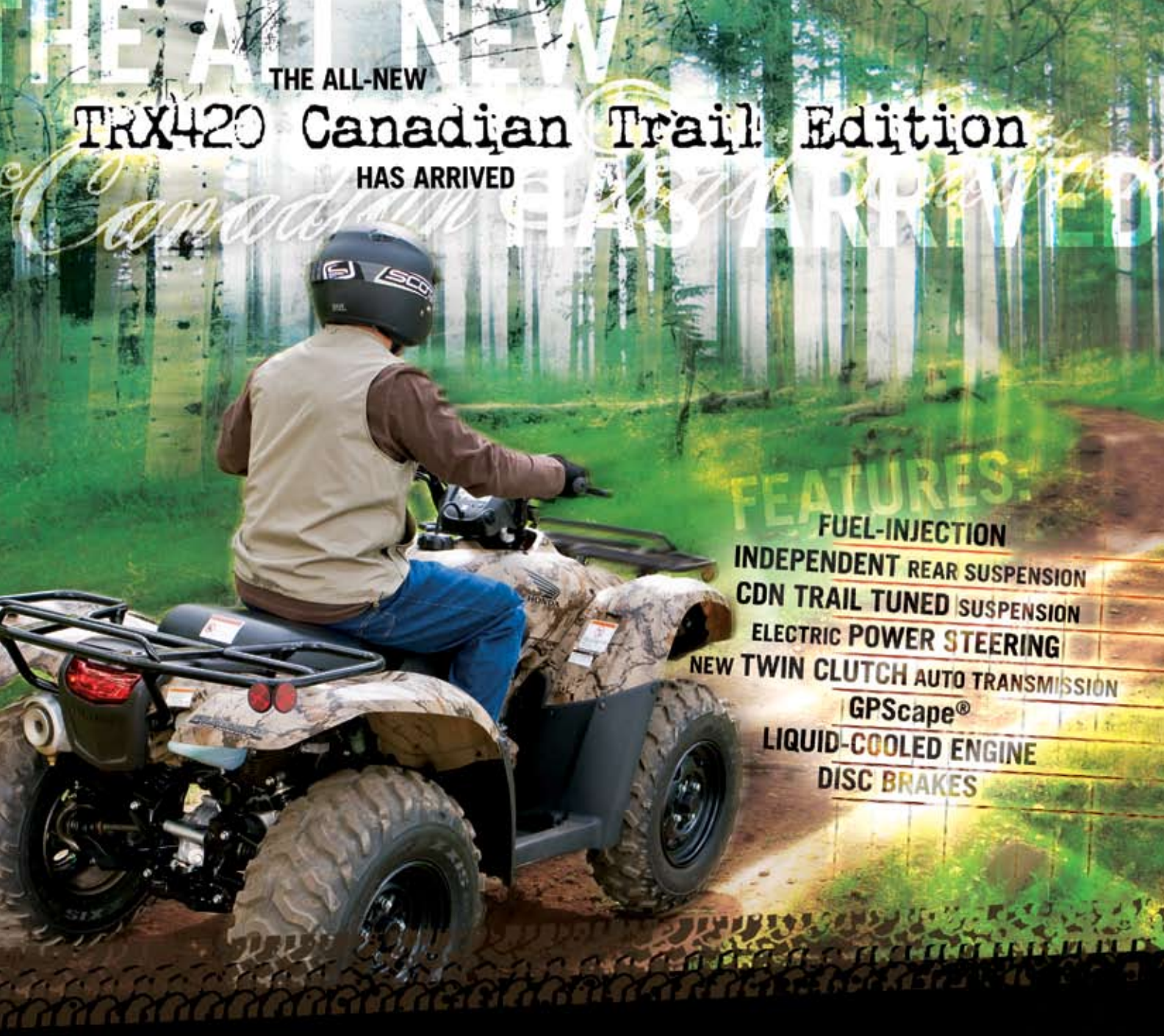
Another offset system emerged in BC in 1987 with the Reforestation Regulation. In exchange for disturbing a standing forest, the harvester is required to reforest similar species and tend them until free growing, which can take from 8 to 20 years. However, most BC ecosystems will take at least a century to mature before the reforestation fully offsets the harvested forest. Replacing an old forest with a young one is considered acceptable, because it mimics the forest's natural cycle. Forests rotate both as old trees die and young trees take over, but also as natural disturbances regenerate after fires, pests, and disease.

The Waxman Markey Act accepts the first type of climate offsets in US forests - banking credits for use once they have been proven, but it puts some restrictions on the second. Like other climate bills, the Waxman Markey Act calls replacing today's emissions with promised future growth an *ex-ante* credit. It prohibits selling projected future or *ex-ante* GHG credits. Since all reforestation projects require up-front investment, reforestation developers have argued they need *ex-ante* credits. The California Carbon Regulation and the Voluntary Carbon Standard, like the Waxman Markey Act, do not permit the trading of future credits to offset current emissions. Carbon Fix permits *ex-ante* credits to 2050 and deducts considerable buffer to account for the risk of project failure. The other standards also deduct buffers, and permit options on future credits to be purchased. These four standards encourage a wide number of land use change projects, and similar new standards are expected to emerge in other jurisdictions over the next few years.

The Natural Fix, The Role of Ecosystems In Climate Mitigation, a UN Environment Program's publication which came out the same month as the Waxman Markey Act, scopes the potential for offsets of natural systems to capture and store GHGs from the atmosphere. "Safeguarding and restoring carbon in three systems - forests, peatlands, and agriculture, might over the coming decades reduce well over 50 gigatonnes of carbon emissions that would otherwise enter the atmosphere; others like grasslands and coastal ones such as mangroves are capable of playing their part too." This could double to 100 gigatonnes with increased demand and significantly higher carbon prices.

Removing or avoiding 50 billion tonnes of CO_2 equivalent would require restoring or conserving hundreds of millions of hectares. This will require a major investment through the silviculture and agriculture industries to optimize natural systems. *The Natural Fix* argues that without these sectors the world is unlikely to avoid a climate tipping point.

With the Copenhagen climate negotiations' final draft language for REDD Plus embed in the Copenhagen Accord, a new level of forest offset credits development and trading will inevitably emerge, though it will take a few years for market rules to be finalized and a robust trading market to begin.



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Conservation Easements

by Peter Stein

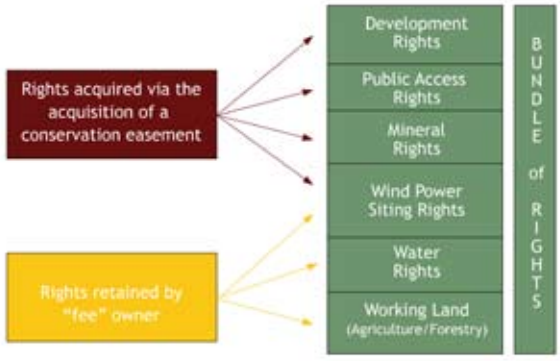
Source for map and photos: The Nature Conservancy Adirondack Chapter, Connie Prickett

For decades, conservationists in the US have been experimenting with a variety of techniques that allow for the integration of economic activities with the permanent conservation of natural resources. Americans hold dear both their private property rights and their land ethic, and have been searching for a permanent land conservation mechanism that resonates with the complex yet interrelated public and private values associated with land. Beginning in the 1930s and continuing to the present, this hybrid approach that dissembles the rights contained in property ownership and allocates them according to how the public's conservation interests can best be served remains a work in progress. The mechanism that achieves these dual purposes is known as a conservation easement.

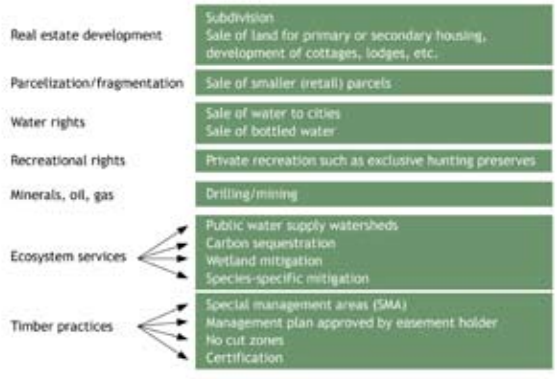
Conservation easements are legal agreements between a landowner (grantor) and an eligible organization (grantee) that restricts future activities on the land to protect its conservation values. In the US, England, and most of Canada, the concept of easements relates specifically to uses or rights that benefit a specific parcel of property. Examples include utility easements and access easements. These are generically known as "appurtenant" easements, and while they form the common law basis for conservation easements, the real differentiating attribute of conservation easements is that they benefit the public, not just a single property owner. Technically, conservation easements are easements in gross and provide a right to an outside party, the eligible recipient or grantee, which need not have a nexus or ownership interest adjoining the property affected by the conservation easement. Typically, conservation easements protect open spaces, wildlife habitat, recreational land, and historically significant landscapes by extinguishing the right to develop the property, and sometimes by providing public access. For land trusts and public land management agencies in the US, this concept of conservation easements began to have traction in the early 1980s as more state laws recognized real property interest and the US Federal government clarified the tax deductibility rules associated with the gifting of conservation easements.

Today, these "less-than-fee" interests have become the technique by which the most acreage in the US is conserved, as compared to outright acquisition by either land trusts or public agencies. This 30-year evolution has paralleled my personal career in land conservation. Early conservation easements that I worked on were smaller in scale and far from comprehensive. By contrast, recently, our private timberland investment firm has been involved in a number of conservation easement transactions that span 100,000s of acres.

What is a Conservation Easement?



Components of Value



For lands that are suitable for agricultural activities, ranching, and in particular forestry, a particular form of conservation easement has evolved that provides for discreet economic utilization of the land as well as permanent conservation. For farmland and ranchland, these types of conservation easements are known as "agricultural preservation restrictions", "purchase of development rights", or "farmland conservation easements". For forestry, the term of art is a "working forest conservation easement". A working forest conservation easement protects not only the open space values of a property, such as wildlife habitat, ecological diversity, and recreational access, but also the economic and community benefits

that arise from a forest's production of goods and services (Lind 2001).

Working forest conservation easements are acquired by gift, bequests, and purchase. The acquiring entities have included local, regional, and national land trust organizations, local government, state government, and US Federal agencies such as the US Forest Service. In a number of regions in the US, land trusts have developed sophisticated expertise in the design and application of working forest conservation easements as part of a land protection scheme that focuses on landscape scale conservation values. In the Northwest it's the Pacific Forest Trust, in Maine it's the Forest Society of Maine, in Florida and Georgia it's the Tall Timbers Research Station/Land Trust and in New Hampshire it's The Society for the Protection of NH Forests, which are all examples of land trust organizations with specialized skills and a track record of working with private forestland owners to realize both conservation and sustainable economic utility of the forestlands in that region. In the early years of putting this technique into practice, most of the deals were relatively small - less than 1,000 acres - and typically were donations of easements, not purchases. With the advent of the US Federal Forest Legacy Program, created in the 1990 Farm Bill and administered by the US Forest Service and a variety of state funding mechanisms in New York, Minnesota, Colorado, Maine, Vermont, New Hampshire, Wisconsin, California, Tennessee and Florida, the majority of the acreage conserved through the use of working forest conservation easements are now secured through purchase agreements with private timberland owners covering many parts of the US.

As the scale of conservation action on private forestlands increased in the US, the utilization of working forest conservation easements began to dramatically increase as well. The movement to landscape scale conservation was based upon a combination of factors including: better understanding of the biodiversity protection requirements of natural communities, an increase in the amount of public and philanthropic capital available for conservation, and the divestiture of land ownership by the large forest product companies. As the extent of acreage designated for conservation grew, the need to find a mechanism that allowed continued, sustainable, economic utilization of the forest resource plus permanent conservation was critical. Since the late 1990s, large-scale working forest conservation easement transactions, many accompanied by protection of core "reserves", have been successfully completed in New Hampshire, Maine, Vermont, New York, Wisconsin, Minnesota, Tennessee, California and Washington State.

Between 2000 and 2009, more than two dozen deals occurred where the acreage conserved via working forest conservation easements was greater than 75,000 acres per deal. The Nature Conservancy, the Trust for Public Land, and The Conservation Fund are all national land conservation players with vast experience in the use of working forest conservation easements. Together, these three organizations have permanently secured the conservation of more than 3 million acres of private forestlands using this easement technique. A number of these deals are profiled in the book *Investing in Nature*, by William Ginn.

Domtar Example

In New York, 105,000 acres in the north central portion of the Sable Highlands in the Adirondacks had long been identified by both The Nature Conservancy-US (TNC) and the New York State Department of Environmental Conservation (DEC) as a conservation target. The owner, Domtar Industries, elected to sell the property in its entirely in 2004. TNC and DEC designated 20,000 acres of this land as having ecological attributes warranting core reserve status and eventually transferred the outright ownership of this portion of the Domtar property into the Adirondack Park. The balance of the property was deemed to have important habitat and recreational characteristics, adjoined existing State conservation lands, and served as a "buffer" to the core reserve parcels. It was conserved via the purchase of a working forest conservation easement. However, since Domtar was pursuing a rapid sale of the entire 105,000 acres, a private

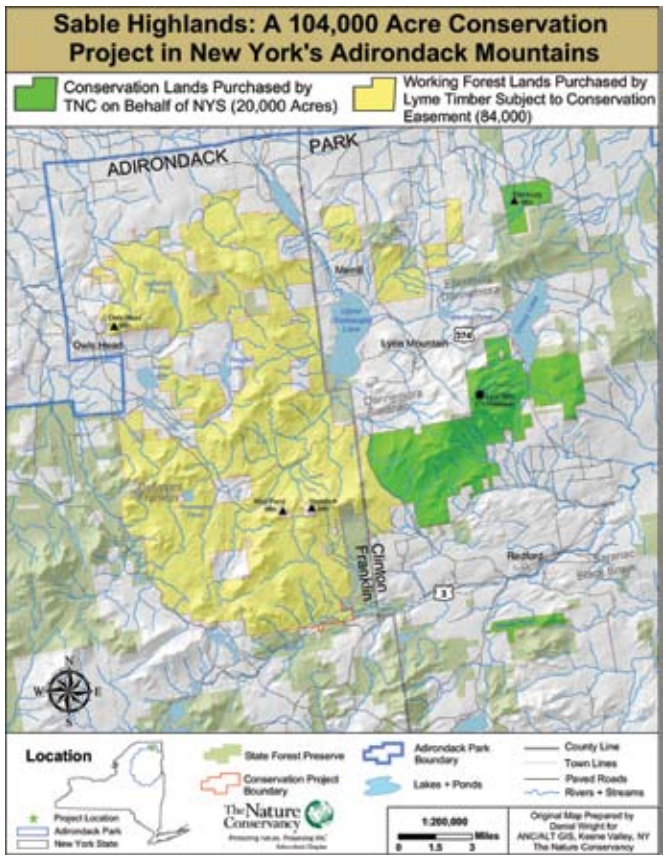
party was needed to hold the 85,000 acres that would eventually be eased. Hence, a collaboration was designed between Lyme Timber Company, a private timberland investment management organization, and the New York State Chapter of the Nature Conservancy. These two entities, one a private profit-making investment group and the other a charitable conservation non-profit, joined together to purchase all of the lands owned by Domtar in the Adirondacks in a complicated simultaneous transaction. It took almost four years, from the time of purchase in 2004, to accomplish the dual conservation outcomes for the property. In the summer of 2008, DEC acquired the 20,000 acres held by the Nature Conservancy for transfer to the Adirondack Park, and at the very end of 2008, DEC purchased a working forest conservation easement over the 85,000 acres held by the Lyme Timber Company. This public-private partnership was recognized by New York State DEC in 2006 with its "Environmental Excellence Award" noting how the collaboration demonstrated both sustainable forestry and enduring land conservation.

The extent and degree of complexity of working forest conservation easements have grown as their scale has increased. Forest stewardship was minimally addressed in the older vintage of these agreements. Now, it is commonplace to see easements containing comprehensive forest stewardship requirements including Forest Management Plans approved by the easement holder, or mandatory certification by the Forest Stewardship Council (FSC), or The Sustainable Forestry Initiative (SFI). For example:

> *5.1 Forest Management Activities on Tracts. Grantor reserves the right to conduct Forest Management Activities. However, grantor's Forest Management Activities shall comply with either: (1) a qualifying Forest Certification Program such as FSC or SFI; or (2) a Forest Management Plan approved by grantee. (New York State DEC, 2006)*

In closing, there are early examples of the use of the working forest conservation easement technique underway in BC, Ontario, and Quebec. Many of the same challenges exist on both sides of the border, including how climate change and adaptation strategies can be accommodated into this legal device.

Peter R. Stein joined The Lyme Timber Company in 1990 and serves as the managing director, providing leadership in the development and structuring of conservation-oriented forestland and rural land purchases and dispositions. Peter also manages the company's conservation advisory business.



Forest Health

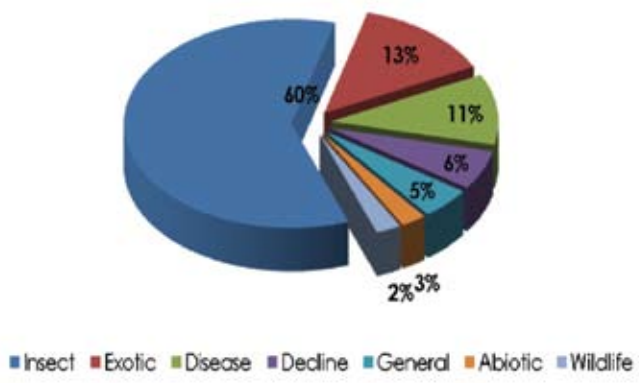
by Janice Hodge, Joan Westfall, and Tim Ebata

The National Forest Pest Strategy and Monitoring of Major Forest Disturbances: A Summary of Current National Forest Health Monitoring Surveys

In 2006, the Canadian Council of Forest Ministers (CCFM) endorsed the idea of a National Forest Pest Strategy (NFPS) to address both native and alien forest pest species. In collaboration with the provinces and territories, Natural Resources Canada and the Canadian Food Inspection Agency are working on behalf of CCFM to generate baseline knowledge for the development and implementation of a NFPS. Canada's present approach to forest pest management has been largely reactive, based on historical knowledge and focused on pest-specific stand-level management. It was recognized that a coordinated, risk-based, ecosystem, national approach was required.

The NFPS's Implementation Plan has six general components, one of which is monitoring and diagnostics. The primary objective of the monitoring and diagnostics component is to build on current information and existing capacities to develop a national pest monitoring system. Monitoring will include both native and non-native pests, and be of sufficient quality and resolution to be used for risk assessment.

The first step in fulfilling the monitoring and diagnostic objectives was a national monitoring capacity analysis, which was completed in the winter of 2008/2009. A detailed monitoring questionnaire was completed by 10 provinces, one territory and the Canadian Food Inspection Agency (CFIA). A total of 372 different activities were reported. Analysis of the responses found there are a total of 82 Major Forest Disturbances (MFDs) currently being monitored across Canada. 60% are forest insects, 13% are exotic pests, 11% are forest tree diseases, with the remaining 7% categorized as tree species decline, general surveys, and abiotic and wildlife damage.



The monitoring surveys themselves are very diverse and are not necessarily conducted annually. Some are specific to a geographic area, and others, such as defoliators, are monitored on an *as required* basis. Three-quarters of the surveys are ground-based, of which over a third provide information on insect populations. The remaining surveys consist of a variety of aerial survey methods. Monitoring methodologies, even for the same MFD, vary considerably across the country. These differences are in part due to differences in pest behaviour and/or host species and have been developed based on local knowledge and conditions.

The largest variety of MFDs monitored across all provinces and territories (with the exception of Ontario) are specific native or established defoliators. Eastern spruce budworm, followed by forest tent caterpillar, are the most widely monitored damaging defoliators in the country. Jack pine budworm is also widely monitored except for Western Canada (AB, BC & YT) where it is not a MFD. Conversely, western spruce budworm, Douglas-fir tussock moth, and two-year-cycle budworm are MFDs found only in Western Canada, and hence monitoring efforts are focussed in the western provinces. Non-defoliator types of surveys are less common and vary both in the type of survey and the extent to which they are conducted nationwide. The most common non-defoliator type of survey is that for bark beetles. Surveys that capture multiple MFDs are most common in Ontario where host or forest type-based pest monitoring is undertaken.

Critical data gaps were found in monitoring of the "unknown" i.e. forest health factors, including exotics, which are not currently considered MFDs. These potential MFDs can be very difficult to determine, particularly with climate change and invasive exotics' complications. Transportation of people, animals, and various goods worldwide is now commonplace and increases the risk of introduction of non-native insects and diseases. Exotics are primarily monitored by the CFIA. The CFIA has effective monitoring systems to identify alien pests in four high risk Canadian cities, but many other urban areas are at risk for undetected invasion by exotic forest health agents. Increased aerial overview survey coverage across forested areas is recommended to address this issue at the landscape level as well as increasing urban forest monitoring. For those MFDs that are not visible during aerial overview surveys, a national monitoring system using PSPs is currently being considered. These would include existing PSPs currently being monitored by the provinces and territories. The goal would be to monitor changes in pest populations, including species and behaviour changes, new species, and changes in host response/impact.

REDD: Offsetting Emissions to Save Natural Forests

by Frederik Vroom

REDD - Reduced Emissions from Deforestation and Degradation is a proposed mechanism to protect the world's remaining tropical rainforests and reduce greenhouse gas (GHG) emissions. Since the UN Framework Convention on Climate Change (UNFCCC) Conference of Parties 11 (COP11) in 2005, the REDD mechanism has had an official subcommittee negotiating its terms of reference. It has been a controversial mechanism as it can be implemented in many ways, and discussions about perverse incentives and negative side effects are fierce. The benefits scarcely need describing.

The REDD Mechanism seeks to solve two problems at the same time: deforestation with its loss of ecosystem benefits, and reduction of a major source of GHG in the atmosphere. The creation of offset credits from this mechanism can generate the financial means to remove deforestation drivers such as poverty (subsistence agriculture) and industrial agriculture (clearing for soy, corn, or cattle). Giving a standing tree a monetary value in the form of offset credits is expected to reduce the incentives to convert forests. A US analysis of the costs of emission reduction in the energy sector without and with forestry credits, found including forestry resulted in a 95% savings in the cost of mitigation.

History

The ultimate goal of the 15th Conference of Parties (COP) of the UNFCCC in Copenhagen was to get all member states to sign a binding global climate agreement - a successor of the 1997 Kyoto treaty to apply after 2012. All that was achieved was an aspirational accord, left for each party country to commit to by January 31st. The Copenhagen Accord did emphasize the REDD Plus mechanism.

During the Kyoto negotiations, avoiding deforestation was excluded as an official UN climate action mechanism. At the climate conferences in Montreal (2005), it had been put back on the agenda as the next largest contribution (15%-20%) of GHGs to the atmosphere; at the same time devastating biodiversity, water supply and quality, altering local climate patterns, affecting agriculture production, and resulting in droughts and other unexpected negative side effects. The loss of worldwide forest cover reduces forests' annual capacity to sequester emitted GHGs and acts as a buffer to global warming. The awareness of this problem led to the development of voluntary REDD projects and various financial commitments to develop methods and fund pilot projects.

The Basic REDD Mechanism

The REDD idea is simple: reduce the projected business-as-usual deforestation and increase future forest carbon stock through conservation and restoration or silvicultural treatments, and receive credits for the avoided emissions and/or increased sequestration. These credits can be sold to entities (countries or companies) that are either obliged by regulation to offset their emissions above their cap or voluntarily want to offset their emissions.

In this way the REDD mechanism saves forests and reduces emissions, creating a financial benefit for forest ecosystem values while supplying companies with offset credits to help smoothly convert their businesses into the low carbon economy.

While simple, discussions/disputes around the REDD mechanism included complex questions such as scope (what countries under which condition, definitions of deforestation, degradation, sustainable forestry), financing (regional or country fund-based, or project market-based), accounting, monitoring methods (based against average estimates, or based on detailed local data collection), leakage (effect on the market and substitution), and local stakeholder involvement (with special focus on forest communities and indigenous peoples).

In 2007, COP13's Bali Action Plan committed to resolving these complex issues and tabling new REDD rules in Copenhagen. The confusion the political accord created within the UNFCCC process prevented this, despite the fact that all parties agree on the text for an enhanced REDD, called REDD Plus.

REDD Plus

Despite Copenhagen's setback, it was satisfying after years of effort to have the mechanism filled out to become what is now called REDD Plus, which includes:

1. Reducing emissions from deforestation
2. Reducing emission from forest degradation
3. Conservation of forest carbon stocks
4. Sustainable management of forests
5. Enhancement of forest carbon stocks

Including sustainable forest management and enhancement of forest carbon stock increases the flexibility of the mechanism in practical forest operations. This permits the REDD mechanism to include most forested land that has been degraded in the past or is under unsustainable practices today.

USA and Canada

Developed countries like the USA and Canada are also instituting avoided forest conversion mechanisms. How private projects fit into a national forest cap (including programs to reduce carbon emissions) is emerging differently in each country, however, through the Western Climate Initiative there are some parallels. At the same time, both countries are working together to develop a North American Forest Carbon Standard for implementation in late 2011 or 2012, which will include its own protocols and methodologies for REDD. How these standards will fit into a national reduction strategy and whether they will be supported by a bilateral agreement or through NAFTA still has to be determined. They are expected to play a similar offset role within the NA cap-and-trade system as the REDD projects will play in the expected future international cap-and-trade system.

Living and Dead Carbon

The emission trading market sees these mechanisms as offsetting the cost of energy reduction caps until new low carbon technologies are fully deployed. There is also an emerging carbon sinks market, which expects REDD, afforestation and reforestation, and similar programs in other ecosystems such as grasslands, wetlands, and agriculture to be taken together with forests to set up a stand-alone climate initiative for "living" carbon that will work independently alongside the energy reduction market (which seeks to reduce "dead" or fossil carbon). That view sees the two parallel initiatives taken together to be the only way to prevent catastrophic +2°C warming.

Following is information on the current role of the REDD mechanism as envisioned in Copenhagen:

Financing

Each REDD approach will be determined nationally, and the World Bank Forest Carbon Partnership facility has already committed to funding 25 national REDD strategies. While each country has to comply with the basic rules of the UNFCCC, these permit financing through two different mechanisms. The first mechanism funds the cost for stopping deforestation through voluntary donations raised by developed countries that are placed in a large international fund, which rewards countries that lower their deforestation rates compared to historical rates. Brazil has set up The Amazon Fund (www.amazonfund.org). The second mechanism is a market-based approach, which rewards projects that reduce deforestation by issuing offset credits into regulatory or voluntary markets. Some countries expect to use both funding options.

Controversy

Over the last few years, the REDD mechanism has been controversial, due to the risk of non-permanence (fire, pests, politics), leakage (log market and social effects), and the possible negative effect valuing forests might have on land prices, which will affect the poorest people and perhaps access to food.

Leakage is the displacement of deforestation drivers such as logging, subsistence agriculture, and industrial agriculture to a different forest area not under protection, so that there is no net benefit. Some environmental groups are opposing REDD as it would give large emitters a cheap way out of their responsibility and not reduce actual emissions. There are also fears the new added forest value will result in the dislodgement of indigenous forest people.

These issues have been taken very seriously and future protocols will have to address these potential negative effects.

The Future

How the REDD Plus mechanism will be implemented, and under which conditions, remains to be seen, as different tropical forest countries are determined to use different approaches. The negotiations in Copenhagen resulted in a framework that permits differing in-country approaches, and leaves the technical and market sides of these projects to be worked out later.

The voluntary carbon market is mainly supplying a demand created by companies to position themselves as carbon neutral. This market is valuable as it has been used to develop methodologies as well as test monitoring and verification techniques. The World Bank, large companies, and nature organizations have supported pioneering REDD projects, which has enabled the development of protocols and methods to guarantee the real offsets that reduce overall global emissions.

Though the REDD Plus draft text was tabled in Copenhagen without brackets or options, meaning it had the complete consensus agreement of all nations that had worked diligently on the REDD subcommittee for the previous two years, it was not passed by the UNFCCC during the political session. So it is unclear now if the protocol will become active in 2012 in the same form in which it was tabled.

In the meantime, funding from developed countries like Norway (that committed $450 million a year to 2020), and initiatives like the Prince of Wales Rainforest project ($250 million total), and the Congo Initiative co-directed and partially funded by former Prime Minister Paul Martin ($200 million), will use the readiness period to develop pilots that find solutions for outstanding disagreements/problems. It is not expected that these readiness projects will immediately result in a significant decrease of global deforestation, though the state of Amazonas has already demonstrated proof of that concept, reducing deforestation by over 50% from 2004 levels.

The addition of the US to the global carbon market anticipated in 2010 or 2011 is expected to mobilize REDD projects on a global scale.

Potential REDD Plus Influence on the Silviculture Industry

All of this may increase the demand for silviculture. The main deforestation driver is not timber - it is pressure from cattle grazing and other agriculture production. However, the legal and illegal logging industry contributes significantly to global deforestation. With an increase in conserved natural forests globally, and reduced legal and illegal logging, the price of wood may rise, driving an increase in investment in plantation forests, especially in tropical countries. The application of the REDD Plus mechanism to degraded forest areas will also increase the demand for forest restoration and silvicultural treatments to enhance forest carbon stock.

Both plantation and restoration treatments will increase growth rates and overall carbon stocks and be rewarded with carbon credits, so it is expected that overall, the silviculture industry will benefit from the REDD Plus mechanism.

Frederik Vroom, Forest Analyst, BARCA Panama, is presently working on the Embera Wounaan indigenous REDD Plus project in the Darien. Contact him at frederik_vroom@brinkman.ca.

Focus on Safety

by Steve Mueller

The Next Level of Safety Depends on Supervisors

My take on silviculture comes from spending most of my working life in the sector, and I want to share a few concerns about what I see from the perspective of my current job in forest safety.

Silviculture in Western Canada has made significant strides to improve safety - building awareness, conducting field research, developing training, and introducing safety management systems. The sector's hard work has paid off in better safety performance, but we seem to have hit a wall now, facing persistent injury rates that won't go down. To reach the next level of safety, silviculture needs to concentrate on its supervisors and the vital role they play.

In my experience, there is a direct relationship between quality of supervision and business outcomes. Ineffective supervisors mean poor production and injured workers, while actively engaged supervisors give us safe, productive crews. This is true whether we're talking about leading crews of five to ten workers or running projects with four or five crews and 50 people.

We need to ensure supervisors provide solid, consistent leadership because typical operations tend to be located in remote geographic areas, and the sector is increasingly reliant on a younger, inexperienced, and transient labour force.

A major consideration in supervisors' abilities to provide leadership is the increase in their responsibilities, particularly work demands that can compromise their ability to lead effectively. You know the mantra, "Do more with less." These days, what gets in the way of good supervision is the pressure of paperwork, or pixel-work. More and more, a supervisor's day can start at 5 a.m. and run well into the night - the late hours taken over by completing reports and spreadsheets and then emailing them by satellite hook-up. The supervisor's job is literally never done.

The resulting fatigue factor can be devastating. You can't count on bone-tired supervisors to consistently make good decisions or communicate clearly with co-workers. This hampers production and quality, and leads to safety outages that entail higher risks for supervisors and the people they're responsible for. I know. I have strong memories of situations when I wasn't myself because of fatigue, and it made me a safety hazard.

Silviculture can't afford risks like that. We need to recognize the downside of expanding supervisor responsibilities. It makes it harder to provide necessary leadership, to motivate people to perform, and to build a safety culture that enhances the business.

What needs to be done? Here are a few suggestions to help supervisors work better and safer.

- Simplify end-of-day reporting with electronic data collection that uses silviculture-specific software on handheld devices that can be carried in the field.
- Consider using injured workers on light or modified work programs to assist supervisors. This has significant benefits both for safety and business.
- Give supervisors silviculture-specific training that emphasizes operational requirements, leadership, and managing human factors. (A good resource is the Western Silvicultural Contractors' Association [WSCA] at www.wscacourses.ca).

Action like this is needed to meet the growing demands and challenges faced by today's silviculture supervisors. It's essential to drive down the sector's injury rates, and to keep production levels up.

Steve Mueller is the Director of Forest Worker Development Program at the BC Forest Safety Council. He joined the Council staff after 22 years as a silviculture contractor with more than 500 employees.

SUPERVISION FORMULA
Working Safely = Productivity

"Effective supervision is a leading indicator of an industry that needs to reckon with working productively despite the pressures of a seasonal enterprise that must do more, quicker, for less money," says John Betts, Executive Director of the WSCA. "Our goal is to work safely, and this makes us more productive in the long run."

That approach is at the core of new WSCA supervision training. Besides operational skills and due diligence, the training stresses positive attitudinal shifts to enhance supervisors' and workers' safety performance. A two-day crew boss course is available now, and Betts expects to launch a project manager's course in 2010 for those supervising several crews.

This is part of a silviculture training series being developed by WSCA and made available with funding from the BC government's Community Development Trust. Other courses deal with ATV operations, resource road light truck driving, and power saw operations.

More information on the training series is at www.wscacourses.ca.

Impacts on Forest Integrity of Harvested Wood Products as Carbon Sinks

by Chris Henschel

A lot of thought and effort is going into the design of forest offset protocols that could be fed into regulatory carbon markets. A number of crucial decisions will determine the environmental integrity of this policy effort: how to deal with the relative impermanence of reduced forestry emissions; how to safeguard other ecological and social values from the impacts of commoditizing biological carbon; and, as for all offsets, how to maximize additionality of emission reductions.

On top of all these fundamental issues is the question of how to treat wood products. If achievement of environmental integrity is an objective, wood products should be excluded from forest carbon markets.

The approach developed by the Intergovernmental Panel on Climate Change and in use for the first commitment period of the Kyoto Protocol (2008-2012) assumes instant oxidation of carbon stored in wood when it is harvested. This assumption offends many would-be project proponents because it is untrue. In its submissions to the UN Climate Change Secretariat, the government of Canada has highlighted the need to change this approach and more accurately account for emissions from forest management.

But this approach actually has a lot of practical public policy value. First, it avoids all the particular difficulties of measuring changes in the size of this carbon pool, for example, the crude estimates of carbon stored in landfills and the difficulty of measuring the fate of wood product carbon storage in other countries.

Second, it avoids the possibility of all sorts of poor formulations that lead to bad environmental outcomes. For example, the government of New Zealand consistently argues within the UN climate negotiations on forest management accounting that only carbon in new products should be counted, ignoring the emissions coming from the existing wood product carbon pool. Another example is that a poorly set baseline would give windfall carbon credits to forest managers for simply producing wood.

Finally, assuming instant oxidation of wood upon forest harvest has the helpful effect of focusing attention on remediating a problem that has contributed to climate change: the reduction of forest carbon stocks through commercial resource extraction. This is a much more environmentally appropriate goal than the increasing wood product carbon stocks, which is proposed by some as an appropriate offset activity. Even worse, some propose that wood product carbon in landfills should be included in the accounting: this could mean using climate change mitigation dollars to cut wood and bury it.

One of the environmental costs of supplying society with wood and paper products is that managed forests are maintained at a younger age and their carbon stocks at a lower level than would naturally occur.

Sufficient incentive already exists from the marketplace for the wood and paper industry to transform trees into products. What the industry needs is a financial incentive to reduce the impact of this activity on forest carbon stocks, while continuing to meet the societal product demand.

In developing carbon market incentives for forest management, we should therefore focus on maintaining or increasing forest carbon stocks, not harvested wood product stocks. There is no inherent benefit of transferring carbon from the forest pool to the product pool. In fact, there are ecological costs to this transformation. A study published last year in Forest Ecology and Management showed that a price on forest carbon would have the effect of decreasing harvest levels, increasing rotation ages, and increasing the number of old forests. The inclusion of wood product carbon in accounting significantly diminished this effect.

Some argue that wood product carbon should be included because of the environmentally positive effects of substituting wood for products like cement and steel, which have higher embodied greenhouse gas emissions. This is a specious argument. The incentive to use wood over more greenhouse gas-intensive materials will result from a carbon price being placed on energy use by manufacturers and does not depend at all upon the inclusion of wood product carbon in forest offset projects. In fact, the forest manager can make no claim on the emission reduction achieved by someone switching from steel to wood.

Once there is a price on carbon, the substitution effect should increase the demand for wood. Having forest offset systems focused on maintaining or increasing forest carbon will help ensure that this demand is not met at the cost-lowered forest carbon stocks. These two forces pulling in different directions (price on carbon demanding more wood and an offset system rewarding more carbon in the forest) could help us find a more environmentally optimal solution. Including carbon in harvested wood products in forest offset systems will reduce the impact of incentives to maintain or increase forest carbon stocks.

For anyone concerned with environmental integrity that can't shake the idea of including wood products in carbon markets, a middle road might be to put a safeguard in place: projects must not reduce forest carbon below baseline levels. This would allow projects involving wood product carbon management without increasing downward pressure on forest carbon stocks. But the effectiveness of this approach would depend on the quality of the baseline and wood product data.

While forest offsets present the opportunity of incentives for some improved carbon management, there are many decisions to come that could severely undermine environmental outcomes. Including wood products is one such decision. Policy makers, protocol developers and project proponents should focus offsets on the real environmental problem that forest carbon stocks have been reduced by our demand for wood. Excluding wood products from forest offsets could lead to a more optimal solution - producing wood while maintaining forest carbon stocks as high as possible.

Chris Henschel is National Manager of Domestic and International Policy at the Canadian Parks and Wilderness Society (www.cpaws.org). He blogs at www.climateforests.blogspot.com.

Western Canada

Western Silvicultural Contractors Association

by John Lawrence, President

What will Copenhagen mean for BC's forests?

Premier Campbell recently travelled to Copenhagen for the 15th UN Climate Change Conference. The Premier and his government have shown exceptional leadership in terms of an agenda to address climate change. The province has implemented a carbon tax (one of the few in the world), joined with other provinces and US states in the Western Climate Initiative, established the Pacific Carbon Trust to offset the government's carbon emissions, created a Climate Change Secretariat, and the list goes on. Curiously, however, a key issue that is radically affecting BC's carbon equation remains largely unaddressed by the government. In all of the scientific literature surrounding the issue of climate change, the topic of forests and their role in the management of the global carbon equation is paramount. And yet in BC, known across the country and around the world for its forests, the government has been remarkably silent on how it will include forests in the province's response to climate change. BC is not the only jurisdiction that is struggling to deal with its forests; many others are similarly challenged to address this critical component of a real, effective climate change strategy. From a negotiating standpoint it is perhaps logical to attempt to sidestep forests, as they present some significant challenges in terms of carbon accounting. But if this exercise is truly about more than politics and positioning, then dealing with forests is fundamental. What is the Premier's plan?

> "... the topic of forests and their role in the management of the global carbon equation is paramount."

The on-the-ground capacity to implement a strategy that will preserve the potential of BC's forests to continue as a carbon reserve as well as sequester additional carbon is fast disintegrating. Although it would be hard to know it from the lack of media coverage of the issue, BC's forests are succumbing to a host of climate-related catastrophes, the most notable being the Mountain Pine Beetle infestation. In turn, these catastrophes are creating further problems for the environment through increases in fires, floods, and carbon emissions from dead and dying trees. The many, many forest workers across BC, both those laid off and the few who continue to find work, are disheartened by the lack of effort to deal with the threat to the health of the forests that they have worked hard to manage and sustain for many years. Energy conservation, green technologies, cap-and-trade systems, carbon credit schemes, and conferences are no doubt, each in their own way, important to address the problem of climate change. But they will never be enough without taking into account the very real effect on the carbon equation of the precipitous decline in forest health, such as BC's forests are currently experiencing. BC has always been a leader in terms of natural forest management and forest restoration, with a proven capacity to implement large scale programs. It is time for the Premier and his government to bring the federal government onside, and go beyond the rhetoric of "zero net deforestation" and a 33% reduction in greenhouse gas emissions, and clearly outline how they plan to address the threat to the health of BC's forests, and to its much-heralded climate action agenda.

Ontario

Ontario Forest Renewal Co-operative Inc.

by Bill Murphy, Executive Director

Additional Funding for Regeneration

Northern Development Mines and Forestry Minister, the Honourable Michael Gravelle, announced in mid-November that there was $6 million available to grow approximately 13.5 million tree seedlings as well as do the appropriate site preparation, etc. This announcement was very sudden and proposals were to be into the Forestry Futures Trust by November 27, 2009, with decisions to be made on the successful applicant by December 4, 2009.

It is a feather in the government's cap to fund this type of regeneration as the field of forestry is hurting in Ontario. This funding is strictly for northern Ontario and will provide additional work for some of the contractors and the growers.

In the announcement made to the public, it was said that growers and contractors would be able to access this fund to enhance their growing and planting capacities if selected. However, this is not entirely true. The fund, since it was put into the hands of the Forestry Futures Trust Committee, can only allocate the funds to the Sustainable Forest Licensees (SFL), and the Ontario Ministry of Natural Resources (OMNR) in charge of Crown forests.

The caveat with this type of arrangement is that the SFLs and the OMNR, as they are the only entities that can benefit from this funding, do not have to partner with any other entity and can simply add the funding to their existing format for the 2009 regeneration program. So again we have additional funding, opportunity for expansion or new businesses to begin, and we are still left with a bidding system to select the final partnership. In other words, same old, same old.

> "It is a feather in the government's cap to fund this type of regeneration as the field of forestry is hurting in Ontario."

The program was hastily constructed and this is evident in the proposal timeline. It did not give all SFLs and OMNR staff time to react and apply for the funding. When a proposal is made, the requirements are stiff and exact, as well they should be, but lead time of two weeks is insufficient time to put a viable operational proposal together and to have any input by the smaller operators to try to partner with the larger receivers of the funding.

I would like to see additional funding for 2010, however, let's propose the funding with enough lead time to have all entities have a chance at submitting a proposal. There is the issue that Forestry Futures Trust Committee is set up to make and approve these types of proposals, but why can't it be changed for special funding announcements to allow the smaller contractors and growers to partner with the SFLs and OMNR directly, so this won't be a competition but rather a true partnership? If these arrangements cannot be made, then perhaps another agency can have the funding directed through them.

Québec
Association des Entrepreneurs de Travaux Sylvicoles

par Shanie Levesque

Une Saison de Travaux Sylvicoles Satisfaisante

Au début du mois de décembre dernier, les membres de l'AETSQ se sont réunis à Québec et ont profité de l'occasion pour procéder à un bilan partiel de leur saison. De façon générale, les entrepreneurs ont résumé la saison positivement, ajoutant qu'ils avaient évité l'effondrement de la structure entrepreneuriale, situation redoutée en début de saison. Cette structure est primordiale pour le secteur forestier puisqu'elle relie les acteurs de tous les niveaux et est un pilier important de l'économie des régions ressources.

> "...les programmes d'aide aux entreprises sylvicoles ont rencontré leur objectif..."

Malgré un départ très lent, les programmes d'aide aux entreprises sylvicoles ont rencontré leur objectif de maintenir l'activité économique dans les régions les plus durement touchées par la crise. Dès son arrivée en poste, en juin 2009, Madame Nathalie Normandeau, ministre des ressources naturelles et de la faune, a réellement accéléré la cadence de la mise en place des programmes. En effet, dès le début de son mandat, la ministre a signifié sa préoccupation pour les travailleurs forestiers et l'importance de supporter l'emploi en forêt pendant cette période difficile.

Rappelons que lors du printemps dernier, l'inquiétude des entrepreneurs de travaux sylvicoles québécois était palpable, puisqu'au mois de mai, la plupart d'entre eux n'avaient toujours pas de contrats de travaux signés et cette situation tendue s'est maintenue jusqu'à quelques jours avant le début de la saison.

Crise économique, crise forestière, situation précaire des industriels, les circonstances semblaient prédire une catastrophe pour des dizaines d'entrepreneurs et des centaines de travailleurs. Suite à des interventions musclées des entrepreneurs sylvicoles et devant cette situation très préoccupante, les deux paliers de gouvernement ont travaillé conjointement afin de mettre en place un panier de programmes prêt à supporter les activités économiques dans les régions forestières.

En plus des travaux sylvicoles réguliers, les entrepreneurs pouvaient compter sur un programme d'intensification sylvicole, un programme de prévention de la tordeuse de bourgeons d'épinette ainsi qu'un fonds d'aide aux collectivités qui a été élaboré. Tous ces programmes visaient à augmenter la quantité de travaux sylvicoles disponibles pour combler les besoins en travaux des entreprises de la province. On ne peut passer sous silence l'efficacité de Rexforêt, pour avoir pris en charge certains de ces programmes, et ce, devant le délai de réalisation très court.

En date d'écrire ce texte, nous ne pouvons pas quantifier le bilan de la saison 2009, mais pouvons affirmer qu'il nous apparaît très positif. Nous sommes également assurés que sans l'implication des gouvernements provincial et fédéral, la structure entrepreneuriale sylvicole, fragile en ces temps économiques incertains, se serait effondrée ainsi que les milliers d'emplois qui en dépendent.

Le Projet de Loi 57

Notre refonte du régime forestier, que nous vous parlons depuis quelques parutions, devrait être menée à terme dans les prochains mois. En effet, pour bonifier le projet de loi mis sur la table des intervenants du milieu forestier, soit le « projet sur l'occupation du territoire forestier È, une commission parlementaire a eu lieu cet automne.

La ministre Nathalie Normandeau a, dès le départ, annoncé son ouverture à procéder à des modifications au projet de loi, si les participants en démontraient la pertinence. Suite aux nombreuses modifications demandées, la ministre a remis le projet de loi à l'écriture et à la fin du mois de novembre, le nouveau projet de loi a été déposé afin qu'il soit adopté par l'assemblée nationale. Cependant, considérant que certains éléments nécessitaient encore des travaux, le ministère des Ressources naturelles et de la Faune a mis en place des comités de travail afin d'apporter des solutions durables qui pourront être introduites dans le nouveau régime forestier. Certes, l'élaboration d'un nouveau régime est complexe et représente beaucoup de travail mais si le rythme des travaux se maintient, le Québec aura un nouveau régime forestier en début d'année 2010.

Quebec
Association of Silviculture Contractors

by Shanie Levesque

A Good Season for Silviculture

In early December, members of the AETSQ met in Quebec and took advantage of the opportunity to share a partial assessment of their season. Overall, entrepreneurs have summed up the season positively, adding that they had avoided the collapse of the entrepreneurial structure, a situation feared early in the season. This structure is essential for the forestry sector as it connects players of all levels and is an important pillar of the economy in resource regions.

Despite a very slow start, programs to assist silvicultural enterprises have met their goal of maintaining economic activity in the areas hardest hit by the crisis. Upon her arrival in office in June 2009, Nathalie Normandeau, Minister of Natural Resources and Wildlife, has actually accelerated the pace of program development. Indeed, early in her mandate, the Minister has expressed her concern for forestry workers and the importance of supporting employment in the sector during this difficult period.

Recall that last spring, the concern of silviculture contractors in Quebec was palpable. In May, most of them still had not signed work contracts, and the situation remained tense until a few days before the start of the season.

The economic downturn, the forestry crisis, and the precarious position of industry – these circumstances seemed to predict a disaster for dozens of contractors and hundreds of workers. Following the urgent and forceful intervention of silviculture contractors, both levels of government have worked together to develop a number of loan programs to support economic activities in the forestry sector.

In addition to regular silvicultural work, contractors could rely on a program of intensified silviculture, a prevention effort to eliminate spruce budworm spruce and a fund to assist communities that have been affected. All of these programs were designed to increase the amount of silviculture available to meet the needs of businesses in the province. We cannot overlook the effectiveness of Rexforêt in taking on some of these programs, and achieving so much despite short deadlines.

As of this writing, we can't quantify the results of the 2009 season, but we can say that it appears very positive. We are also confident that without the involvement of provincial and federal governments, the silviculture sector, fragile in these uncertain economic times, would have collapsed along with the thousands of jobs that depend on it.

> "...programs to assist silvicultural enterprises have met their goal of maintaining economic activity in the areas hardest hit by the crisis."

Bill 57

Our redesign of the forestry regime, which we have discussed in recent releases, should be completed within the next few months. A parliamentary committee meeting was held this fall to improve the bill on the table, "Act on the Occupation of Forest Land", for all forestry players.

Minister Normandeau has expressed her willingness to modify the bill from the beginning, should the participants demonstrate the relevance of their proposed changes. Following numerous modifications, the Minister presented the bill in writing at the end of November, and the new bill awaits its adoption by the National Assembly. To address some elements that needed further work, the Ministry of Natural Resources and Wildlife has set up working committees to provide sustainable solutions that can be introduced in the new forest regime. Developing a new system is complex and requires a lot of work, but if the current pace continues, Quebec will have a new forestry regime in early 2010.

New Brunswick
AGFOR

by Gaston Damecour

The Year After the Big Cut - Private Land Silviculture in New Brunswick

In the Summer 2009 issue of *Silviculture Magazine*, the AGFOR Report outlined how the problem of the massive and sudden cut to the private land silviculture program was resolved on the eve of the launch of the 2008 silviculture program. A result of two months of intense lobbying and negotiation, this solution was the best under the circumstances: the budget was increased from the initial $4 million to $6 million, and the landowner contribution was set at 30%, down from the 50% contribution proposed by the province. The eligibility criteria for the landowner contribution component took another two more months to develop - providing a functional program at the end of June 2008.

The private woodlots represent about 30% of the provincial forest, which is for the most part accessible. According to the most recent data from the Forest Products Commission, the harvest levels are even lower than previously reported. Furthermore, some prices are so low that wood is simply not moving. This fact alone is ominous, as the traditional harvesting capacity on private lands is disappearing and the existence of several woodlot owner organizations is threatened.

As the 2009 season was winding down, AGFOR met with Troy Lifford, the assistant manager of the New Brunswick Federation of Woodlot Owners (NBFWO) to consider the following issues: The economic forces that stimulated forest management on private lands are falling short. Are we losing the forest management culture? How did the program unfold with a minimum landowner participation rate? Why would private landowners invest in silviculture?

Here is the summary of the discussions between AGFOR and Lifford:

The immediate fallout from the initial shock was swift: contractors, faced with such uncertainty, simply quit and many have left the sector or the province. Landowners, who were facing severely reduced markets, also put their plans on hold. Much of this occurred before the revised program was finalized.

Negotiations resulted in a $6 million provincial private land silviculture program for 2008, and a 30% landowner contribution. Needless to say, that uptake suffered due to the uncertainty, the late start, and the generally poor state of the forest sector. The funds left unspent in 2008 were $1,369,301 or 18% of the program budget, so a sizeable amount of cash was left on the table.

2009 saw an additional $1.75 million of new money come from the Atlantic Canada Opportunities Agency (ACOA), a federal government agency. The ACOA funding is actually a two-year $3.5 million program (2009-2010) with the possibility of a carry-over, which is particularly useful.

The 2009 program also saw the introduction of an indexed/escalating landowner participation/contribution based on the sales volume of private wood (see the Summer 2009 AGFOR Report for more detail). With private land market volumes at all-time lows, the 2009 landowner contribution was set at its lowest level of 10 %, which should stimulate uptake.

As of mid-November 2009, the private land silviculture program had used 73% of the provincial budget and 76% of the ACOA budget. There may be money left on the table as the 2009 season comes to an end.

As usual, the trend was heavier towards pre-commercial thinning (PCT). The 2008 planting activity was stymied because the provincial site preparation rates were only slightly indexed to the cost of diesel fuel, compared to other tenures. The offset came in 2009 through the ACOA funding part of the program, which better reflected site-preparation and planting costs and improved the planting uptake.

From a forestry perspective, there is a need to expand the style and range of treatments to include the first commercial thinning. This is a logical next step given the long-standing emphasis on PCT in New Brunswick.

Part of the overall lack of uptake in 2009 is due to the shortage of contractors - several forest products marketing boards now have waiting lists with no one to do the work. It is ironic given the prolonged slow-down in the forest sector and the government's cry of "Jobs! Jobs! Jobs!".

AGFOR profiled the province's silviculture contractor sector in 1995. The typical contractor then was in the early 30s with a post-secondary education and a desire to diversify, exactly the type of young entrepreneurs the Liberal government of the day was striving to develop. Today, there is no new blood in the sector - where have they gone?

Until there is a renewed interest in the private lands wood supply and the sector is given priority, the rationale for investment in forest management on private lands will continue to weaken for all but the diehards. The time that change takes to occur will be at the expense of the private landowner forest management culture.

Gaston Damecour is a registered professional forester in New Brunswick and Nova Scotia. He is the senior consultant and principal of AGFOR Inc., based in New Brunswick and serves clients from Manitoba to Newfoundland and Labrador, and France. AGFOR has been instrumental in bringing about significant changes to the forest sector by representing governments and industries on such issues as industrial relations, wood allocations and procurement, and forest management policy.