

CANADA/U.S.

FOREST HEALTH SUMMIT II



March 26-27, 2013
Ottawa, Ontario CANADA

One Continent; One Forest; One Threat:
*Recommendations for Enhanced
Collaboration*

Forest Health Summit (II)

ONE CONTINENT; ONE FOREST; ONE THREAT: RECOMMENDATIONS FOR ENHANCED COLLABORATION

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U.S. Endowment for Forestry and Communities

www.usendowment.org

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EXECUTIVE SUMMARY

On March 26-27, 2013 the USDA Forest Service (USFS) and the Canadian Forest Service (CFS) of Natural Resources Canada hosted a follow-up session to the first-ever Canada/U.S. Forest Health Summit held in June 2012. The follow-on meeting, hosted at the U.S. Embassy to Canada in Ottawa, like Summit I, was convened by the U.S. Endowment for Forestry and Communities (the Endowment) for the purpose of developing specific recommendations to implement a vision for enhanced, strategic collaboration to address burgeoning forest health threats across both countries.

Participants in the Canada/U.S. Forest Health Summit I agreed that foundationally:

- The forests of the two countries are among the most important and valuable natural assets in the world;
- Insects and diseases— whether endemic or exotic – move irrespective of political boundaries;
- The changing climate as evidenced by warming temperatures and longer freeze-free periods exacerbated by longer periods of drought is resulting in levels of forest loss and associated wildfires that far exceed the norm for the past several decades;
- The challenges are of such magnitude and the speed of change is occurring at such a pace as to overwhelm traditional methods of pest detection and response; and,
- Canada and the U.S., as well as our rich forests and our collective citizens will be well served by a more open, collaborative, shared holistic approach to forest health management.

Therefore, the respective leaders from the public and private sectors assembled agreed that:

- Past collaboration between and among our scientists and organizations provides a sound footing upon which to build a more strategic and holistic plan using the expertise and resources of respective organizations to respond to the continent’s burgeoning forest health challenges “at the speed of need”;
- Such response will be further fleshed out with specific plans and actions that start with perhaps a single issue to help establish a model for broader application;
- Sound information that is readily available to all who need it is vital to success;
- We must, using this sound information, establish early detection and responses to limit the number of issues that rise to the level of continental threat;
- Such work will be founded on a systems approach with a commitment to reduce duplication by increasing collaboration and taking advantage of differing capabilities, skills, and talents to segment problems to speed learning and response;
- We will include funders, performers, and users of scientific information in planning;
- We will, to the maximum extent practicable, seek to develop a “one plan; one voice” approach that is committed to persistence and clear prioritization of need;
- We will use a common sense of urgency;
- We will acknowledge the importance of applying adaptive management approaches that recognize we must learn by and while doing, thereby adjusting as we learn; and
- We must draw lessons from the human health sector in focusing on prevention versus treatment.

Summit II began with six broad issues under consideration and one “over-arching topic” (communications). To ensure a common understanding a brief background paper had been developed for each topic (Appendix) and provided two weeks in advance of the session. On day one the group opted to remove one topic – agroforestry -- from near-term consideration, and to restate two others – communications and genomics -- as vehicles to advance other work. Thus, participants focused their deliberations and prioritization on four topics: markets; wildland fire; forest inventory; and pests.



The teams developed the following suite of recommendations.

Agroforestry

While an important focal area with significant potential, participants agreed that it did not rise to equivalency with other topics as an agenda for enhanced strategic collaboration at this time.

Communications & Genomics

Without fail across all topics and issues being considered, there were significant communication/education/advocacy needs identified. That said, the group agreed that communications was not a stand-alone issue; rather, it was a vehicle to help advance other more tangible and specific objectives. Similarly the group concluded that while vitally important, genomics too should be imbedded as an enabling vehicle or tool in other issues. Thus, while teams invested a great deal of time digging into the topics, at the end each was nested within most of the remaining four focal initiatives.

Specific priority recommendations in the four consensus areas of focus were:

Markets

- Increase the use of wood
 - Near-term
 - Create a “Coalition for the Advancement of a North American Green Bio-economy”
 - Synthesize current work and identify gaps
 - Announce specific plans to address information gaps
- Set specific growth targets
 - Mid-term
 - Increase the market pie by 20%
 - Showcase the “mid-rise and tall wood building” -- >5 stories
 - Assess the potential for wood-based nanotechnology to produce value-added products from low-value wood

- Communication
 - Don't focus on "wood" – speak to attributes that the market is looking for including landscape restoration; energy conservation; safety, costs, and reduced environmental footprint
- Other Areas of Opportunity
 - Gap analysis
 - Life cycle analysis (LCAs) of key products
 - Demonstration projects
 - Glean and republish information comparing wood products to substitute products

Forest Inventory & Analysis

- Road-map to faster, cheaper and better information
 - Near-term
 - Gather information on current and promising technologies, projects, and applications
 - Convene key scientists to assess and build the road map for advancement at the North American scale
- Identify breakthrough technologies and techniques to advance objective
 - Mid/Longer-Term
 - Create an "I Prize" (Inventory)
 - Create an affordable, real-time assessment of stand- and tree-level data on a very frequent updatable basis (monthly, weekly, quarterly, semi-annually, annually?)

Wildland Fire

- Catastrophic Fire Response Plan
 - Near-term
 - Conduct a "desk top analysis" of capacity and "stress test" limits
 - Craft a North American response plan to deal with a catastrophic fire that goes beyond all current resources
- Integrated Fire Danger Rating System
 - Mid-term
 - Using current staffing and budgets, produce a single, simplified "high/medium/low" rating system backed by deep algorithms.
- Assessment of Awareness & Preparedness
 - Longer-term
 - Assess the breadth of community fire response awareness/preparedness plans to identify the most successful
 - Develop a best practices manual/kit

Pests

- Assess the state of the information
 - Near-term
 - Conduct a synthesis of current diagnostic/detection and forecasting tools and capacities
- Develop a “Tool Box” approach to aid local jurisdictions with response
 - Mid-term
 - Use Emerald Ash Borer as target
- Develop a diagnostic detection tool for plant pathogens using genomics
 - Longer-term
 - Set “pest free zones” where the intent is to keep pests from becoming established
 - Assess the potential of genomics and modern biotechnology to serve as a response tool to forest health issues

Next Steps

This report will be shared with the respective Chiefs of the two Forest Services. In collaboration with their staffs they will determine the most appropriate targets to advance. To aid the process, each agency has committed a sum of \$100,000 to aid in advancing identified priorities. The Endowment has agreed to match those funds with at least \$50,000 so that a total of \$250,000 will be available.

Specific Actions to Be Developed

Topic	Near Term	Mid-Term	Long Term	Other areas of opportunity
Markets	<p>Increase the use of wood</p> <ul style="list-style-type: none"> • Create a “Coalition for the Advancement of a North American Green Bio-economy” • Synthesize current work and identify gaps • Announce specific plans to address gaps 	<p>Set specific growth targets</p> <ul style="list-style-type: none"> • Increase the market pie by 20% • Showcase the “mid-rise and tall wood building” -- >5 stories <p>Communication</p> <ul style="list-style-type: none"> ▪ Don’t focus on “wood” – speak to attributes that the market is looking for including landscape restoration; energy conservation; safety, costs, and reduced environmental footprint • Assess the potential for wood-based nanotechnology to produce value-added products from low-value wood 		<ul style="list-style-type: none"> • Gap analysis • Life cycle analysis (LCAs) of key products • Demonstration projects • Glean and republish comparative information vs. substitute products
Forest Inventory & Analysis	<ul style="list-style-type: none"> • Road-map to faster, cheaper and better information • Gather information on current and promising technologies, projects, and applications • Convene key scientists to assess and build the road map for advancement 	<ul style="list-style-type: none"> • Identify breakthrough technologies and techniques to advance objective <ul style="list-style-type: none"> ▪ Create an “I Prize” (Inventory) <ul style="list-style-type: none"> ▪ Create an affordable, real-time assessment of stand- and tree-level data on a very frequent updatable basis (monthly, weekly, quarterly, semi-annually, annually?) 		
Wildland Fire	<p>Catastrophic Fire Response Plan</p> <ul style="list-style-type: none"> • Conduct a “desk top analysis” of capacity and “stress test” limits • Craft a North American response plan to deal with a catastrophic fire that goes beyond all current resources 	<p>Integrated Fire Danger Rating System</p> <ul style="list-style-type: none"> • Using current staffing and budgets produce a single, simplified “high/medium/low” rating system backed by deep algorithms. 	<p>Assessment of Awareness & Preparedness</p> <ul style="list-style-type: none"> • Assess the breadth of community fire response awareness/preparedness plans to identify the most successful • Develop a best practices manual/kit 	
Pests	<p>Assess the state of the information</p> <ul style="list-style-type: none"> • Conduct a synthesis of current diagnostic/detection and forecasting tools and capacities 	<p>Develop a “Tool Box” approach to aid local jurisdictions with response</p> <ul style="list-style-type: none"> • Use Emerald Ash Borer as target 	<p>Develop a diagnostic detection tool for plant pathogens using genomics</p> <ul style="list-style-type: none"> • Set “pest free zones” where the intent is to keep pests from becoming established 	<p>Assess the potential of genomics and modern biotechnology to serve as a response tool</p>

OVERVIEW

The USDA Forest Service (USFS) and the Canadian Forest Service (CFS) of Natural Resources Canada hosted an invitation-only “summit” on June 28, 2012, to examine ways to enhance cross-border collaboration and improve response to the continent’s forest health crises. The day-long event hosted at the Embassy of Canada in Washington, DC, was convened by the U.S. Endowment for Forestry and Communities (the Endowment). A planned follow-on event designed to drill-down and identify specific recommendations for action was held March 26-27, 2013 at the U.S. Embassy to Canada in Ottawa.

Participants represented the spectrum of leadership from public and private entities concerned about the health and productivity of forests in the two countries. (See Appendix for list of participants).

Context

Canada and the U.S. have a long and successful history of collaborating on varied natural resources and resource-related issues. Much of this work has occurred at the individual researcher or project level. In an era of increasingly complex threats that span the continent and the globe and in a time of growing resource limitation (human and financial), it is critical that this foundation of collaboration be used to build effective, efficient, and results-oriented models that can better address current challenges, employing what has been called “science at the speed of need.”

Opening Challenge

Carlton Owen, President of the Endowment opened the session with a challenge to think creatively and boldly about the opportunity for enhanced collaboration and the benefits that would accrue to the forests and peoples of Canada and the U.S. if the outcomes of the session yielded systemic change.

In their opening remarks to the group the respective “Chiefs” of the two federal forest resource agencies – Tom Tidwell, Chief, USDA Forest Service; and Tom Rosser, Assistant Deputy Minister, Canadian Forest Service of Natural Resources Canada – urged all to seize the opportunity to think and operate differently as times of financial austerity were compounding the challenge in the face of ever increasing threats to the health and vitality of the continent’s forests.

Rosser, in a tip of the hat to America’s “first forester” and first chief of the U.S. Forest Service, quoted Gifford Pinchot from a speech before a Canadian audience in 1906:

“I am here to speak of American forestry. That means forestry on both sides of the line. I find the problems so absolutely alike that you have to meet here and that we have to meet in the United States because the conditions are the same, the topography and the national characteristics are the same, and consequently it seemed to me the best thing I could do was not to speak to you of things you have here, except as I describe them when I describe the things we have there.”

“The answer is in science,” said Tidwell noting that the hope of our collective work was rooted in the sciences – both biological and social – and that we must let science light our path toward a brighter future. He urged the group to be bold on the one-hand and tangible on the other by getting very specific about 2-3 things that could showcase the potential and the power of enhanced strategic collaboration.

BACKGROUND

Motivation

More than one-third of the total land area of Canada and the U.S. is blanketed with forests. The two countries share many ecological, socio-economic and other commonalities, and have similar needs with regard to forest science and forest products research. Historically the two countries have benefitted greatly from pooling their expertise on selected issues. There is now a growing imperative for shared benefit in light of more complex challenges in and around our forests, as well as comparatively fewer resources to deal with them.

Process

The Planning Team to craft the approach to Summit II was drawn from participants in Summit I.

Canadian Representatives

Lise Caron, CFS
 Jacques Gagnon, CFS
 Marie Anick Liboiron, CFS
 Jean-Pierre Martel, FPIInnovations
 Graham Thurston, CFS

U.S. Representatives

Tom Martin, American Forest Foundation
 Carlton Owen, the Endowment
 Carlos Rodriguez-Franco, USFS

The entire one and one-half-day event was managed using a workshop format where participants were divided into three groups with each considering and working the same topic concurrently. The first round of work allowed a free flow of ideas with modest amounts of ranking to determine priorities. The second morning, work group were assigned along interest lines to take one or two of the topics and winnow the list down further to potential high-value priorities for collaboration.



FOREST INVENTORY

A take-away thought: “markets are the engine to sustainability; inventory is the proof of sustainability”



Big Data

- The rapid growth (explosion) in the amount of information available is overwhelming current capabilities for analysis and yet we need to capture additional data to assess complex interactions/needs
 - Must enhance interoperability of data between regions and countries
 - Develop “scalable” standards with open access
 - Engage citizen scientists perhaps with SmartPhone apps in gathering data (e.g. North American bird counts)

New technologies

- Need to develop technologies to gather/access information that will:
 - Improve area coverage
 - Increase precision and quality
 - Enhance efficiency
 - Reduce costs
 - And shorten cycle time
- Stratify the forests to rank information needs and frequencies
- Engage the North American Forest Commission Working Group on Inventory to ensure collaboration and sharing of information.

New/Enhanced Uses of Information

- Develop new uses to address real time needs for
 - Land use change
 - To support criteria and indicators or sustainability
 - Ecological changes

PESTS AND DISEASES



Perhaps no issue offers greater opportunity to streamline processes, improve efficiencies and effectiveness, and avoid duplication of effort and resources than is true in the case of the multiple agencies that have responsibility for pest and diseases on both sides of the border.

Preparation

- Harmonize data/information on import standards
- Enhance sharing of information regarding early detections
- Develop a synthesis paper on the impacts climate change is having on expansion of pests and the economic impacts of those advances
- Ensure “open science” like that used with North American bird counts to engage citizens and scientists to help develop useful trend data
- Assess state of genomics work across North America
- Assess past response approaches for lessons learned and opportunities for improvement and enhanced collaboration

Prevention

- Better train/equip port and border agents in early detection.
- Engage “citizen scientists” in early detection
- Rank threats through a risk analysis
- Develop enhanced predictive models
- Use genomics to develop newer, faster detection tools
- Use new technologies (e.g. drones) to aid in monitoring/detection
- Complete a synthesis of current prevention capacity
- Develop common messaging for the public

Response

- Develop model processes for response to pests
 - Choose a single threat (e.g. emerald ash borers) as a current case study
 - Share information and ‘lessons learned’ from last 10 years of infestation
 - Develop a ‘toolbox’ of responses (pest control options) which could be used in both countries at a local level
 - Use 1000 canker disease as a potential/emerging case

- Use the U.S. Forest Health Initiative (with American chestnut as test organism) as a model for response
- Take a North American approach to genomics for tree traits and adaptation as a response to climate change
- Strengthen educational pipeline to ensure future scientists (e.g. entomologists)
- Model a North American Pest Commission on the successful NA Fire Commission (possible coordinated NA response processes)
- Joint Canada/U.S. regulatory reviews (potentially as relates to genomics as well) of new pest control options could shorten regulatory cycles and costs

AGROFORESTRY



- Timing
 - Could be far more significant in the future
 - Land reclamation
 - First Nations/Native Americans
 - Climate adaption
 - Bioenergy crops
 - Near-term
 - Need more information on current status
 - Information/education on potential benefits
 - Come at the topic from the “beneficiary” view (e.g. watersheds and water users)
- Prioritization
 - Not equal to other areas at this time.

APPENDIX**PARTICIPATION**

Adam Costanza	Institute for Forest Biotechnology
Alan Lucier	NCASI
Anne-Marie Thompson	Natural Sciences and Engineering Research Council of Canada
Beth MacNeil	CFS Science Program Branch, S&T Governance Division
Bob Jones	CFS Policy, Economics and Industry Branch
Cameron Duff	Canadian Food Inspection Agency (CFIA), Plant Health Science Directorate
Carlos Rodriguez-Franco	USDA Forest Service
Carlton Owen	US Endowment
Catalina Lopez-Correa	Genome Quebec
Catherine Cobden	Forest Products Association of Canada
Christopher Topik	The Nature Conservancy
Cindy Bell	Genome Canada
Ernest Cook	Trust for Public Land
Florence Colby	US Endowment
Gabe Kalmar	Sector Development, Genome BC
George Bruemmer	CFS Canadian Wood Fibre Centre
Glenn Mason	CFS Policy, Economics and Industry Branch
Graham Thurston	CFS Science Program Branch, Innovation and Integration Division
Jacinthe Leclerc	CFS Laurentian Forestry Centre
Jacques Gagnon	CFS Science Program Branch, Innovation and Integration Division
Javier Gracia-Garza	CFS Science Program Branch
Jay Farrell	National Association of State Foresters
Jean-Pierre Martel	FPIInnovations
Jim Farrell	FPIInnovations
Jim Reaves	USDA Forest Service
Joerg Bohlmann	University of British-Columbia (participant for Genome BC)
Ken Mallett	CFS Northern Forestry Centre, Strategic Policy and Planning Branch
Kim Connors	Canadian Interagency Forest Fire Centre
Lise Caron	CFS Laurentian Forestry Centre, Forest Biology Division
Lynn Wilson	Association of Consulting Foresters
Marc LePage	Genome Quebec
Marie Anick Liboiron	CFS Science Program Branch, Innovation and Integration Division
Michael Goergen	Society of American Foresters
Mike Fullerton	CFS Science Program Branch, Forest Science Division
Paul Lamirande	Ministère des Ressources naturelles du Québec (also for CCFM)
Pierre Lapointe	FPIInnovations
Robert Patzer	International Engagement, Agriculture and Agri-Food Canada

Scott Pfister	USDA Animal & Plant Health Inspection Service
Susan McCord	Institute for Forest Biotechnology
Terry Caunter	Health Canada, Insecticides Section
Terry Hatton	CFS Canadian Wood Fibre Centre
Tom Martin	American Forest Foundation
Tom Rosser	Natural Resources Canada, Canadian Forest Service
Tom Tidwell	USDA Forest Service
Tony Hopkin	CFS Great Lakes Forestry Centre
Tony Ritchie	Canadian Food Inspection Agency (CFIA), Plant Health and Biosecurity Directorate

Memorandum

Date: March 8, 2013

To: Registered Participants in Forest Health Summit II – Ottawa, March 26-27

From: Carlton Owen, President & CEO

Subject: DETAILS AND BACKGROUND MATERIALS FOR MEETING

As convener of Forest Health Summit II and on behalf of co-sponsors – USDA Forest Service and Canadian Forest Service of Natural Resources Canada -- we are pleased that you will be joining us in Ottawa!

Our Purpose and Expected Outcomes

As follow-up to the first-ever Canada/U.S. Forest Health Summit held in Washington, DC in 2012, this event is a convening of public/private forest scientists from across Canada and the U.S. with the intent to identify 2-3 priority recommendations (single issue or species) that the respective chiefs of the Forest Services may consider as candidates to model broader strategic collaboration and cooperation to address the continent's burgeoning forest health challenges. Specifically the goal of Summit II is identification of and agreement on specific opportunities/cross-border collaborations that in 18-36 months can help exemplify and quantify potential gains from enhanced strategic collaboration/cooperation that could lead to a binational science/research plan to target limited resources and align interests to address forest health challenges.

Details of the Event

We anticipate that all participants who do not reside in the Ottawa area will arrive on the afternoon or evening of Monday, March 25th. Day one of Summit II will be held at the U.S. Embassy to Canada with a starting time of 9:00 a.m. on the 26th. (Plan to arrive between 8:30 and 8:50 a.m. to accommodate security clearances). Day two will be held at the Westin Ottawa (our event hotel) with an 8:00 a.m. start and concluding with lunch at 12:45 p.m. to accommodate travel. (SEE ATTACHED AGENDA)

Event Hotel

The Endowment has negotiated an event rate with the Westin Ottawa – just a short walk away from the U.S. Embassy – that meets guidelines for government rates for both countries. Please use the following link to make your reservation ASAP with the block cut-off date of March 13th. For your convenience use the following link [US Endowment for Forestry Canada](https://www.starwoodmeeting.com/StarGroupsWeb/res?id=1303066201&key=9354C) or copy and paste the following link into your browser <https://www.starwoodmeeting.com/StarGroupsWeb/res?id=1303066201&key=9354C>

Background Materials

Included with this package are seven brief background papers that were developed to help ensure that we begin with a common understanding and can focus on limited time on the work before us. Six of the papers address broad issues/topics that have been identified as likely areas of mutual engagement and benefit. The seventh paper – communications – is designed as an overarching background piece.

Attire

This will be a working event so business casual is appropriate. You may wish to have a jacket/tie (men) or appropriate evening wear for the reception on the 26th as it MAY be hosted at the U.S. Ambassador's Residence. (Pending)

Special Provisions – Electronics

When we are meeting at the U.S. Embassy on the 26th **NO electronic devices (phones, iPads, laptops, etc.)** will be allowed in the building. Please be sure to leave ALL such equipment in your vehicle or in your office or hotel room. *This will be a real test for all...how will we survive without electronic devices for most of a day?*

Weather

Not surprisingly, we anticipate seasonably cool weather. Temperatures in Ottawa in late March should begin to suggest that Spring is coming, but, with average lows and highs of 21 / 36°F and -6 / 2°C, you'd better pack a coat and gloves!

Contact

If you experience delays or a change of plans en route please let us know by contacting Florence Colby of the Endowment via her mobile phone at: 864-915-5883 or email Florence@usendowment.org

Attachments

Agenda Background Papers

Canada-US Forest Health Summit II – AGENDA
March 26 (at the U.S. Embassy) and March 27 (at the Westin Ottawa)

DAY 1 – Tuesday, March 26 – *Scoping of opportunities and focussing on priorities*

8:30 – 8:50	Arrival of Participants at U.S. Embassy – 490 Sussex Drive
9:00 – 9:15	Welcome and Objectives (Carlton Owen, U.S. Endowment)
9:15 – 9:35	Thoughts from Tom Tidwell (USDA Forest Service) and Tom Rosser (Canadian Forest Service of Natural Resources Canada)
9:35 – 10:20	Theme discussion: Markets
10:20 – 10:30	Break
10:30 – 12:00	Theme discussions: Pests and Fire
12:00 – 12:45	Lunch
12:45 – 14:30	Theme discussion: Genomics
14:30 – 14:45	Break
14:45 – 16:15	Theme discussions: Inventory, Agroforestry and Communications
16:15 – 17:00	Preliminary list of options and linkages
Evening	Reception

DAY 2 – Wednesday, March 27 -- *Formulating of recommendations*

7:45 – 8:00	Arrival of Participants at Westin Ottawa – 11 Colonel By Drive
8:00 – 8:15	Review of day one
8:15 – 10:00	Priority setting conversation
10:00 – 10:15	Break
10:15 – 12:00	Selection of priority recommendations
12:00 – 12:15	Summary and Summit Evaluation
12:15 – 12:45	Lunch

Pre-Summit Background -- BACKGROUND PAPERS**OVERVIEW**

With support from the U.S. Endowment for Forestry and Communities, the USDA Forest Service and the Canadian Forest Service of Natural Resources Canada hosted a summit in June 2012 to examine ways to enhance cross-border collaboration and improve response to the continent's forest health issues. As a follow-up to the first Canada/U.S. Forest Health Summit, a convening of public/private forest sector representatives from across Canada and the U.S. will identify priority recommendations that the respective chiefs of the Forest Services may consider to model broader strategic collaboration.

Background papers on seven themes, identified at the first Summit, have been prepared and will serve as starting points for discussions at the second Summit, to be held on March 26 and 27, 2013. These discussions will produce priorities for collaborative work within and between the themes, and identify potential short- to long-term deliverables.

The papers are collaborative efforts, having been prepared with the assistance of many people on both sides of the border. The papers are necessarily broad in scope and will serve as jumping off points for discussion; it is likely that through the discussions other priorities and collaborative areas will be identified. Discussions will take place on the themes listed here, with attention being paid to areas that could contribute to forest health in more than one thematic area. No priorities have been assigned to the papers or to the order in which they are presented.

Markets – strengthening competitiveness through innovation, market diversification, and market acceptance activities.

Forest Inventory – enhancing forest inventory data and systems through improving efficiencies and accuracy, and developing broader applications for data.

Genomics – identifying approaches and tools for maintaining the health of forests and contributing to effective responses to climate change impacts on trees and forests.

Wildland Fire – enhancing fire management practices and science; improved fire modeling and fire danger rating systems.

Pests – strengthening detection, diagnostics and management of forest pests and pest issues common to both countries.

Agroforestry – advancing the science, practice, and application of agroforestry and land reclamation.

Communications – identified as an important component for all themes to support discussions on the role of communication in advancing forest health and bilateral science programs.

SUBJECT: MARKETS**Forest Sector Market Contributions**

Cyclical downturns in the global economy, the growth of low-cost overseas competition, and recent increases in natural disturbances from insect, disease, and abiotic causes such as drought and ice damage, have all resulted in pressures on the forest industry. The long term sustainability of the North American forest sector could be achieved through a combination of strengthening of markets for traditional products and diversification of both product lines and markets. Sustainability involves dovetailing market needs with the attributes of the evolving supply characteristics, including disturbance-killed trees.

Salvage and use of large amounts of disturbance-killed trees in a timely fashion is often problematic. Identification of potential new commercial products from downed wood, research into characterizing the fibre quality and extending the useful life of wood, and research into modification of existing processes to enable utilization of dead wood are areas that potentially can benefit from combined investigative efforts. Research directed at enhanced use of wood fibre affected by disturbances will have socio-economic advantages, including creation of commercial products, improved employment and economic activity, and environmental benefits.

With forecasted increases in climate change impacts (fire; drought; pests; windstorms; freezing rain; etc.), both gradual and abrupt, it is likely that more forest health issues will arise where enhanced coordinated responses between Canada and USA would be beneficial. Those issues will have a direct impact on the availability and acceptance of wood in traditional and non-traditional wood products markets.

It is proposed to focus efforts on two main areas that link forest health and markets, market diversification and market acceptance.

1) Innovation for Product and Market Diversification

To strengthen its competitive position, the North American forest sector must focus on innovation that generates more value from the forests than it did in the past. Value can be found in several conversion streams, including innovative building materials, biorefinery products, innovative pulp and paper products, biochemicals, specialty fibers, and bioenergy. This will allow the sector to capitalize on traditional commodities, as well as on higher margin specialized products, processes and technologies that will compete profitably in a wider array of markets. An additive benefit would be innovations enabling the more efficient and complete use of the resource, including wood from areas impacted by large scale forest disturbances. Several studies have shown that integration of new streams to the conventional industry is, by far, the best route forward to create value.

At present, use of lower quality timber (e.g. blue-stained wood or wood from salvage operations) is not occurring to the fullest extent possible. Targeted research into the uses of and markets for lower quality wood could result in a market expansion here. In addition, a rigorous comparison of the various qualities of salvaged and non salvaged wood could prove useful. . Furthermore, it is needless to emphasize that the competitiveness of wood products industries is heavily based on production costs. As such, there is an opportunity to investigate how salvaged wood can indeed foster competitiveness.

2) *Research and Outreach to Increase Market Acceptance*

There are at least three aspects to this topic:

- a. access to markets, which implies codes, standards, and phytosanitary regulations;
- b. improved research and “marketing” efforts to position wood as “the” green material of choice;
- c. securing the “social license” to harvest large areas affected by major disturbances.

a) Research and Outreach Supporting Market Access

Barriers to market access exist in many forms, including trade restrictions, tariffs, regulations and standards, phytosanitary issues, and misconceptions. These barriers often affect both Canada and the United States, and joint action to address them, whether through education, research, or monitoring, is sensible.

Certification of wood products as sustainably-sourced is becoming more important to international markets and has the potential to act as a barrier to market access while at the same time acting as a selling feature for the product. Joint Canada/US efforts at addressing certification issues and technical barriers to trade that restrict markets would benefit both countries and ensure a level playing field. Education (both of the public and of politicians) is a critical component to ensure all jurisdictions do not restrict markets unfairly; combined efforts in this regard would allow more efficient use of limited resources to achieve a common goal. Avenues for research into code and certification issues exist (e.g. investigations comparing wood products to widely accepted non-wood building materials) and, because these issues are not unique to any one country, coordinated investigations into these avenues would be appropriate.

With increased trade and a warming climate comes the increased risk of the introduction, establishment, and spread of invasive alien species into the forests of North America. Likewise, the risk of introduction of North American pests into overseas markets is increased. The movement of goods between Canada and the US can be hindered by the presence of pests. Phytosanitary measures and policies to reduce the risks are likely to become more important. While critical for protecting forests, they can act as impediments to trade and limit access to and expansion of markets. Anything that can be done bilaterally to limit the impact of required phytosanitary measures while maintaining the security of forests in both countries is worthwhile. Research into more effective, less costly sanitation methods could be considered.

Key to protecting the forest industry from alien invasive species is effective monitoring. Research into monitoring techniques is ongoing in both countries (specifically for wood boring beetles) and might potentially be expanded to address other groups of organisms. Effective development of rapid genetic material-scanning processes is an area of research and development that would benefit these programs.

b) Research and Outreach Supporting Market Development

Wood is recognized as a green product but that recognition is not sufficient to ensure its acceptance. Environmental concerns have become important market access issues in recent years. Sustainable forest management certification is a market requirement in some countries, but even so, barriers may exist due to public pressure or failure to recognize differing certification systems. Despite the environmental credentials, the wood products industry has been vulnerable to international environmental campaigns

that characterize forest practices as unsustainable. The public's *perception* of environmental practices creates challenges to expanded market access.

Marketing efforts could also be directed to addressing the perception that wood is not a suitable material for certain construction uses. Barriers to market access include building codes and standards that limit wood use in construction, and an ongoing failure to educate and train professionals on the use of wood in construction.

The non-residential construction market is dominated by steel and concrete. Designers are often forced by code to specify those materials even though wood products could be used. By jointly addressing this barrier, Canada and the US could enhance the use of wood products in non-residential construction world-wide. Beyond demonstrating suitability of wood products, education of officials and designers is critical for success.

In conjunction with addressing the issues raised above, targeted research and development programs could be established to identify how wood can be an effective competitor in applications where it is currently not used.

c) Awareness and Communication

As noted in each of the above sections, awareness and communication efforts are important factors in the discussion. Education is critical in addressing many of the issues confronting markets for forest sector products today. Part of the education efforts will include communication of research results from both countries and, at times, demonstration of the validity of that research. In addition, effective communication is required to help ensure that policy makers are informed of all applicable R&D results.

SUBJECT: FOREST INVENTORY**Introduction**

Reliable and up to date forest inventory information is important for assessing commitments to sustainable forest management, satisfying mandated reporting requirements, monitoring forest change, and informing sustainable development of the forest sector. In a climate where natural disturbance impacts on the resource are increasing in frequency and intensity, forest inventory data provides information for addressing emerging issues, and managing risks associated with disturbance. Consideration of the associated risks and management benefits to forests and society are key to decision making.

The forest inventory systems of Canada and the United States have developed along different lines to fill somewhat different needs but still serve the same ends. Both systems are continually being developed and refined. They are useful tools that are evolving, allowing new uses in an increasing range of applications.

Many traditional forest health concerns can be informed using inventory data. The forest inventory process is becoming capable of providing many sorts of relevant data, for example: monitoring climate change effects over time, understanding the risks and impacts of natural disturbances, and quantifying shifts in species composition.

To increase usefulness, the forest inventory systems in Canada and the United States should be able to easily and transparently share information and incorporate tools that enhance the reliability and utility of the data produced. Maintenance and ongoing development of existing system linkages are critical. In addition, and perhaps more importantly, the development of diverse shared map products from the data is a focus that could benefit both countries.

Current Status

The forest inventory programs of Canada and the United States operate independently. Collaboration and knowledge exchange is primarily in the form of informal, ad hoc, responses to requests, but more formal communication takes place through the North American Forest Commission and the Montreal Process.

In general, workers in the forest inventory programs in each country know who to talk to across the border because of connections made at meetings; maintaining and improving those opportunities for knowledge exchange is important.

At present, forest inventory data are useable in other jurisdictions after 'calibration' or conversion. To improve the transfer of information the harmonization of the data needs to be completed/simplified. The joint development of inventory information and spatial/map products could provide further impetus for harmonization efforts.

There is a long time lag between sample collection dates for any one location in both countries' inventory systems. This data collection schedule provides information suitable for many needs but possibly not sufficient to furnish information around impacts of climate change on forests (stand structure, species distribution, and related disturbances such as dieback or drought). To be useful in monitoring change, inventories must be up to date and the data collected at regular intervals over long periods of time. Addition of Earth observation tools and incorporation of data from other sources to the base data collected

in the existing forest inventories could provide more frequent assessments and more information related to disturbances.

Increasing the “market” for the product by linking it with other data could provide more tools for researchers, more useful data for planners and policy makers, and overall better understanding of the long term state and health of the continent’s forests and forest ecosystems.

Possible avenues for discussion

1. Improve access to data

To enhance the use and value of inventory data to the widest possible market, the data need to be as open and accessible as possible. Analysis of institutional barriers to Open Data and of operational constraints by US and Canada would bring opportunities for two-way knowledge exchange and collaborative development of solutions. Improved knowledge exchange would enhance collaborations and result in greater value attained from the collected data, thereby increasing the relevance of the data.

2. Improve compatibility of data and information standards between Canada and US

The separate evolution of the two countries’ inventory programs has resulted in different methodologies being used. Developing methods to seamlessly produce compatible estimates and spatial products from non-standardized data (harmonization) will allow simple and timely exchange of meaningful data between jurisdictions. Clear definitions of data thresholds and parameters in each jurisdiction along with the development of data conversion tools will allow for more direct use of each other’s data. The development of more products that use the inventory data would facilitate the data harmonization process. This work will allow a broader-scale analysis of forest trends and will feed directly into and support the NAFC inventory project and the associated Forest Resource Assessments.

3. Support research into enhancing inventory data gathering efficiency and accuracy, and applications of the resultant data.

LiDAR is an example of a recent technological advance that can provide enhanced inventory data; other remote sensing options also exist. These options may provide cost savings. Bilateral cooperation in support of research directed at improving data collection techniques and improving the utility of the resultant tools, and assessing the potential cost savings that could accrue would be an appropriate direction for the Summit to head. The identification and support of other research activities on emerging technologies that could improve forest inventory data acquisition and use would produce benefits for both countries.

4. Incorporate other data sources to augment the inventory data and make it more “responsive”.

To be sufficiently responsive to demands for information from, for example, politicians, policy makers, or the forest industry (e.g. – “what impact will this insect outbreak have on the forest industry in my jurisdiction?”), links between the measurements of those impacts and the inventory data need to be made. Out of necessity, forest inventory data acquisition is ‘slow’, being on a 5- to 10-year re-sampling cycle and updated as needed for catastrophic events.

As one example, linking forest inventory data to the forest pest monitoring activities conducted annually in each province or state with layers of data concerning scale and intensity of impacts of pest disturbances

would create a much more useful and responsive inventory picture at regional levels. This will require data on what the impact of the disturbance is (in terms of forest health – tree growth rate, stand structure changes, etc.), but this sort of data on the major forest insect pests is increasingly becoming available and better refined.

This sort of information will allow us to track disturbance impacts and frequency and what they mean to the forests and the forest industry in the long term, and contribute new data for research on aspects of climate change science and disturbance cycles, and respond to emerging issues.

SUBJECT: GENOMICS AND FOREST HEALTH

Many of the pressures facing the forest sectors in Canada and the United States can be addressed through various avenues of genomics research and development. Opportunities exist for bilateral projects to contribute to the viability and diversification of the forest industry and the vigor and health of our forests. Possible areas of work include enhanced forest productivity, development of value-added processes, climate change adaptation, disease resistance, diagnostics for pest species identification and wood provenance issues, and improved pest management.

Genomics has potential to improve forest health a number of different ways, and the more we understand about genomes, the more options will be available. Areas where genomics science can help us with our understanding and management of forest health issues include:

- identify key genes that confer adaptive traits to trees,
- understand the relationship between trees, pests and environmental factors, and the impacts on the wider forest ecosystem,
- identify genes or genetic features that provide accurate diagnosis of invading organisms,
- identify targets for treatment and control of infestations,
- monitor for invasive pests and diseases,
- support risk assessment and regulation.

The direct impacts of climate change are just beginning to be seen; however, indirect impacts are evident as host-pathogen relationships are being altered. A clear example of this is the mountain pine beetle epidemic in the interior west of the US and Canada. The combination of drought stress and a warmer climate has resulted in severe forest mortality. Genomics could possibly assist in the development of trees with improved drought hardiness and insect resistance.

Genomics can also be used to understand the mechanisms for resistance/tolerance to any biotic or abiotic stress. This could become very important with changing temperature and precipitation patterns. As we discover drought hardy or heat tolerant genes, we could deploy trees with these traits where we expect the climate to become warmer and/or drier, and facilitate assisted migration.

Major disease resistance genes have been found in some tree species (e.g., MGR in western white pine). If we can clearly identify these genes it will be possible to quickly screen trees for this trait without having to go through a time consuming testing phase. This knowledge can accelerate breeding programs. As we identify the genes that code for resistance in trees and the genes that code for virulence in diseases, we can better allocate trees to planting locations so that the appropriate resistances are being deployed in areas that have specific strains of a disease. Such techniques are being developed for loblolly pine and fusiform rust.

Genomics can also be a crucial tool when battling invasive insects and diseases when native species lack any resistance or tolerance. Often resistance to attack can be found in tree species that have evolved with the pest, an example being the resistance of Chinese chestnut to chestnut blight. If one can find the resistant genes in the adapted species using genomics, it is sometimes possible to move these genes to the

native species with genetic engineering, thus saving time and reducing the number of “foreign” genes that have been incorporated.

Genomics has improved our understanding of insect genetic diversity, dispersal, and interactions with their pathogens and parasites (all of which are important for designing and enhancing pest management strategies), resulting in genomic approaches leading to the identification of molecular targets for new types of pest control products. Considerable work has gone into genomics research on the eastern spruce budworm and its viral pathogens and host tree species and has resulted in advances in several areas of science. The spruce budworm is one example of a model system for forest genomics research.

Diagnostic tools for rapid detection and identification of pests are being developed with the aid of genomics techniques and will allow greater confidence that alien invaders can be caught at our borders early and with reduced disruption to the import and export of wood products. Similarly, genomics-derived wood provenance identification could contribute to easier, more timely certification processes (e.g. illegal logging issues).

Genomics research has already proven itself in forestry, with the development of several complementary management tools. For example, a kit is being used in Canada and the US to certify that nurseries are free of the pathogen that causes sudden oak death. Genomics science has also been important in characterization and commercialization of a virus as a pest management product. A modified spruce budworm virus is currently being presented as a test case for registration.

Summary

Genomics is a powerful tool in the effort to establish healthy forests for the future. Because of the large initial amount of information needed to make the full suite of benefits possible, it is logical that this work be done through partnerships among scientists, institutions and countries. To ensure ongoing genomics research capacity and intelligent direction of research there is a need for a coordinated approach to utilize existing capabilities and identify capacity gaps in genomics as it relates to forest health problems. The opportunity to build on significant existing collaborations and science should precipitate support for increased integration and funding of genomic research supporting solutions to forest health problems common to both countries.

SUBJECT: WILDLAND FIRE**Introduction**

Wildland fire is a critical component of natural resource research and management in both the United States and Canada. Both countries have large areas of forested and fire-prone land and are facing common and growing challenges that will heighten need for collaboration and knowledge-sharing in the future. Climate change and altered fire regimes, changing and increasing fuel loads on the landscape, expanding populations and growing wildland-urban interface (WUI) where human communities are vulnerable to wildfire, and the effects of ecological disturbance interactions between fire, insects and disease, rank high among these challenges. The two overarching objectives of wildland fire collaboration between the United States and Canada are to 1) enhance interagency sharing of information, training, and expertise, and 2) accelerate research in fire risk management and early warning tools that will improve protection of public health and safety.

The two countries have a long history of collaboration in wildland fire management and research. Traditionally, focus has been on fire operations and resource sharing; however, there has also been extensive and growing collaboration in fire science research.

Major Participants and Current Efforts in Wildland Fire Collaboration

Collaboration in wildland fire research between the United States and Canada occurs both formally and informally. Primary participants include fire managers and government and university fire scientists. Formal collaboration in fire management activities as well as some research is conducted through the Fire Management Working Group of the North American Forest Commission (NAFC). NAFC is one of six regional forestry commissions of the Food and Agriculture Organization of the United Nations (FAO), providing a policy and technical forum for the United States, Canada and Mexico to discuss and address North American forest issues.

As stated in its Mission, the Fire Management Working Group is “a forum for exchanging experience and technology for the protection and control of forest fires; for cooperation among the three NAFC countries to develop strategies and actions to solve technical and management problems; and to actively participate with international agencies to conduct and promote activities that will foster world-wide cooperation and development.” The Fire Management Working Group has traditionally had more of an operational than research emphasis. Among its objectives are the exchange of experiences and technological advances in prevention, wildland fire management, fire use, and mutual aid. The Fire Management Working Group, which meets annually, was established in 1962 and the current charter was ratified in 2005. Among its most successful efforts to date are regular Study Tours, which bring together scientists and managers from North America, Australia and New Zealand for idea sharing and on-the-ground learning. The biennial Study Tours, the locations of which rotate, are valuable for bolstering ties between these countries’ fire communities.

While efforts are being made by the Fire Management Working Group to increase its role in fire science and research collaboration, an extensive, more informal network of academic and government scientists and researchers in the two countries, including USDA Forest Service (USFS) and Canadian Forest Service (CFS) personnel facilitates collaboration on a continual basis. Extensive information sharing in fire science

already takes place between government research institutions (notably, the USFS Pacific Northwest Research Station, Missoula Fire Sciences Laboratory, and CFS offices), State fire organization, Canadian provincial entities, and university researchers. In Canada, most fire research focused on characterizing the fire environment for operational decision making is government-based, but efforts are being made to generate more fire research capacity at academic institutions like the Universities of Toronto and Alberta. More recently, the Western Partnership for Wildland Fire Science was established to support collaborative research between the University of Alberta, CFS, and Alberta Environment and Sustainable Resource Development (ESRD). These Canadian entities hold a workshop February 6-7, 2013 in Edmonton aimed at informing the preparation of a Wildfire Science Plan for ESRD that will provide direction for all science activities in the Wildfire Management Branch (of ESRD) for three years and beyond. This event was attended by the US for Missoula Fire Sciences Laboratory Forest Service director.

Areas for Increased Collaboration and Potential Applications

There are a number of possible areas for increased collaboration between the United States and Canada, in both fire management and fire research. The Fire Management Working Group of NAFC is one vehicle for enhanced interagency collaboration in fire management. Three wildfire compacts exist where resources, mutual aid, knowledge and experience are shared between the United States and Canada. Increased collaboration through this Working Group could enhance interagency and cross-border fire suppression and use of the Incident Command System, improving our ability to share human resources and more effectively deploy firefighting resources across borders. More collaboration would also support broader international fire management efforts of which NAFC is a participant. New global fire information systems coupled with bilateral and multilateral agreements will support efforts to coordinate international suppression-resource sharing.

In addition to improved resource sharing, enhancing the exchange of fire management expertise in terms of skills, capacity and experience is another area for increased collaboration between the United States, Canada and beyond. Examples of areas where collaboration could improve skills and capacity and yield benefits are in managing fire in the WUI and in increasing community involvement in fire prevention as well as risk mitigation. The enhanced exchange of information important to fire management is also an area for improvement.

Better sharing of the locations of active fires to support smoke production estimates used for cross-border smoke transport modeling are prime examples.

Research

There are a number of research areas in fuel classification, fire modeling, fire weather and fire danger forecasting, where more integration and sharing between the United States and Canada would be mutually beneficial. Canada has traditionally had a smaller range of focus in fire research, with particular strengths in fire behavior and danger rating systems science. The larger United States research community has a somewhat broader range of focus, including more research in fire ecology, live fuel moisture and combustion, and emerging and novel experimental approaches to fundamental wildland fire combustion processes, but Canada is stronger in boreal forest ecology and landscape modeling. These activities could be aimed to support the operational execution of wildland fire management in both countries and at the

same time that scientific information is shared will help to validate those findings at a different scale with the subsequent benefits to the users.

In the research arena, sharing information from and improving the Fire Danger Rating Systems used by the United States and Canada is one of the important areas of past and continued collaboration. Fire Danger Rating Systems have been a cornerstone of fire management research and collaboration between the United States, Canada and other nations including Australia, with significant sharing of data and experimental methods. The two countries have developed their Rating Systems with different methodological approaches, each with strengths that could benefit the other. The Canadian Forest Fire Danger Rating System is built largely on empirical data and modeling using field-based experimental burning projects, while the U.S. National Fire Danger Rating System is based more on theoretical and physical fire modeling, primarily using lab-based experimental fires. Efforts are underway to re-tool and improve both of these systems, and closer linking of physical and empirical modeling approaches will benefit both systems when used to strategically manage wildfire risk. An important step would be to establish a North American Fire Danger Rating Systems working group that can integrate and build upon common research efforts and synergies.

Fire behavior and fuels modeling are other areas where there is a long history of collaborative research and much to be gained through increased collaboration. For example, development of a common fuel type classification and map for the United States and Canada; alternatively, integration of current national fuel classification systems. Recent work in the US describes the challenges presented by both spatial and temporal variability in wildland fuel, suggesting a need for new measurement and characterization schemes. The development of medium-term fire weather forecasting and resource-sharing models is another area of potential collaborative research.

Other possible areas for expanding current wildland fire research for future collaboration between United States and Canada are:

- the development of new fire behavior models for priority fuel types such stands killed by mountain pine beetles and that allow realistic estimates of fire intensity (and risk reduction) in managed stands;
- new fuel consumption and carbon emission models to support fire, climate change and smoke and human health warning models;
- fire and climate change modeling that informs climate and fire interactions with other disturbances, impacts and management adaptations to climate change;
- Characterizing the moisture content and availability of fuels for consumption during the difference phases of combustion.”
- Risk management and resource management modeling;
- Advanced remote sensing applications in fire and fuel mapping using active and optical sensors (e.g., Landsat 8)
- Decision support frameworks that allow adaptive fire management based on consistent and integrated wildfire risk to ecosystem services, human communities, and infrastructure.
- Integrated economics and social science based applications to support adaptive wildfire management.

Challenges to Collaboration

Factors that could limit collaborative efforts are primarily limited by budgets and staff. However, tightening budgets heighten the need for collaboration. Increased sharing of information, resources and expertise is an important means of adapting to more constrained budgets. A vision of the February 2013 workshop in Edmonton is to minimize duplication of efforts at all levels, thereby maximizing returns on our collective investment.

Collaborative efforts in fire management and research are already underway and well established. The areas outlined above have significant potential for both increased collaboration and great benefits. There are opportunities to formalize and expand on existing collaborative efforts.

SUBJECT: FOREST PESTS

Forest pests, with focus on Mountain Pine Beetle, Spruce Beetle, Bark Beetles and other priority invasive species common to both countries.

Introduction

The impacts of climate change are a common problem between the United States and Canada; these impacts are changing patterns of forest pest outbreaks in both countries. Many outbreaks are occurring outside historic pest ranges and at intensities not previously observed. Increased stresses, root diseases and drought have made forests susceptible to beetle attack. Since 2000, infestations of bark beetle species have escalated resulting in more than 44.8 million acres across all ownerships in the US sustaining some level of conifer tree mortality (US Forest Service, 2012). Canada, in 2010, had about 12.7 million hectares of forest containing trees killed by beetles or defoliated by other insects—a decrease from 15.2 million hectares the year before. Climate change predictions for impacts on forest diseases vary with location and type of disease. (Sturrock et al, 2011).

Invasive species are another significant environmental and economic threat facing forest, grassland, and aquatic ecosystems in both countries. Invasive species cause billions of dollars in damage each year (Pimentel et al. 2005, Holmes *et. al.* 2009, Kovacs *et. al.* 2010, and Aukema *et. al.* 2011). Pimentel et al. (2001) in the US estimated damage from invasive species worldwide totaled more than \$1.4 trillion – five percent of the global economy. In Canada the cost of 16 selected invaders alone was estimated at between \$13.3 and \$34.5 billion CDN (Colautti *et al.* 2006). Invasive species adversely impact property values, and their damage and its management disproportionately impacts cities, counties and small landowners. They also endanger native species and threaten ecosystem services and resources and human health and safety. These adverse effects from invasive species can be exacerbated by interactions with fire, native pests, weather events, human actions, and environmental change.

Trade in live plants has been recognized worldwide as the most frequent invasion pathway for non-native plant pests. Nearly 70% of damaging forest insects and pathogens established in the US between 1860 and 2006 most likely entered on imported live plants. Canadian and US representatives at the North American Plant Protection Organization (NAPPO) have promoted the development of a common approach to reduce the risk of pests and pathogens being imported via this key pathway. The regional standard calls for a systems approach to reducing pest and pathogen risk. A pilot program was instituted that facilitates trade between our two countries. This needs to be expanded as we attempt to implement the new international standard, which was based on the NAPPO prototype.

Canada and the US both have systems in place to respond to the threat of alien invasive species. The first and most effective and economical, line of defense is to prevent the introduction of new species. Prior identification of threats is necessary if they are to be prevented by using, for example, clean nursery stock production practices supported by inspection. Detection methods for all species need to be improved, including detection of cryptic forms (eggs, spores). Early detection of pests that do manage to enter the jurisdiction is critical if eradication is to be a viable option. Eradication is generally considered less costly (ecologically and economically) than longer term management programs designed to lessen the impact and slow the spread of pests that do establish within the jurisdiction. Effective approaches for reducing the

pest risk associated with all forest products in international trade are critical. Canadian and US researchers are contributing to the development of new treatments suitable for commodities such as plants, wood chips, sawn wood, etc.

Other Invasive Species

Researchers in Canada and the USA are already collaborating on a number of studies related to forest invasive species. Prevention has been selected for targeted attention; eliminating pest entry precludes the need for costly and often unsuccessful response efforts necessary once pests become established. In addition, enhanced early detection has been identified as a research area worthy of further integrated research actions. One example is the monitoring of Asian Gypsy moth and other related moth species populations in Asia. Regulatory agencies for US and Canada are collaborating on their detection in different ports. There is also informal tracking of potential and actual infested ships between the countries. This process could be enhanced by more timely and formal reporting between countries for Gypsy moth and other defoliating insects that are attracted to lights. This could be extended to the timely sharing of data on pests detected on ships, in containers, on live plants and other trade items among countries.

Emerald Ash Borer (EAB) is a major pest of ash trees throughout its introduced range in North America. EAB was first detected in North America in 2002. Domestically EAB has spread mainly by movement of firewood. It is now found in 18 States and two Provinces and it is projected to expand its range in the future. Eradication attempts were made in the past but they have all failed. EAB causes near-certain mortality on all ash (*Fraxinus*) species native to North America. Natural resource agencies are actively trying to manage it, and significant research efforts are underway on many aspects of the biology and management of this insect. One gap in the science of EAB that is presently being filled due to a combined effort by Canadian and American researchers is the development of more effective monitoring systems incorporating a pheromone lure; other collaborative projects to enhance detection strategies are also ongoing. Research is underway in both Canada and the US to find biocontrol “tools” that would serve to manage different insect populations, resulting in slower rates of spread of the pest and improved tree survival rates in affected areas.

The Asian Longhorned Beetle (ALB) is another exotic invasive beetle from Asia that arrived in the 1990s through solid wood packing material. It has been found in five States and one Province and causes extensive damage to several hardwood tree species, most notably maples. This beetle does not seem to spread as readily as EAB and has in fact been eradicated in several locations, including Chicago. The approach to management of this pest is aggressive eradication efforts. However, efficient, reliable and cost-effective detection methods are essential for successful eradication. At present detection of ALB is limited to physical searches for infested trees. A coordinated effort to improve the surveying capability to more easily detect ALB would seem to be a very useful area of collaboration. Good collaborative links are already present between Canadian and American scientists investigating aspects of ALB management including eradication techniques, biological control, and a new systemic for protection of high value trees, treatment of infested trees and a combined effort to develop a pheromone-based detection and monitoring system could be important.

The USDA Forest Service and the Canadian Forest Service are collaborating to understand the distribution of precisely identified *Armillaria* spp., which can cause widespread Armillaria root disease of diverse forest hosts. This disease is of major concern because 1) it is causing major growth loss (loss in C sequestration)

usually in the absence of readily observable symptoms, 2) it predisposes trees to bark beetle attack, 3) it is expected to increase as trees become predisposed due to climate maladaptation, and 4) it also represents an invasive pathogen threat. Collaborations are using DNA-based diagnostics to accurately identify *Armillaria* species and document their distribution. This information is being used to predict the distribution of *Armillaria* root disease pathogens under current and projected future climates. Furthermore, DNA-based and bioclimatic analyses are evaluating the invasive threats of *Armillaria* root disease pathogens.

Potential Topics for Collaboration

- **Bark Beetles.** Identified five priority areas on which to focus future collaborative research are. 1) Understanding the relationships between bark-beetle caused tree mortality and wildfire; 2) understanding bark beetle response to vegetation treatments; 3) evaluating bark beetle and host responses to climate change; 4) quantifying the long-term outcomes of bark beetle outbreaks on ecological, economic, and social services; 5) developing new and improved chemical and pheromone strategies for bark beetle management; and 6) Risk of insect spread under a changing climate.
- **Other Invasive Species.** Identified priority research areas for collaboration are: 1) Identify new and priority species, their pathways, and effective prevention measures; 2) Develop detection and monitoring protocols; 3) Develop and evaluate risk mitigation and management treatments and assess their long-term efficacy and effects on the ecosystem; and 4) Develop tools to rehabilitate forest and rangeland ecosystems, prevent re-invasion, and regain long-term multiple uses and values.

There is very good cooperation going on currently across the two countries. What the US-Canada Endowment effort could stimulate is a further ramp up of cooperation through a high-level focus from the two Chiefs of both Forest Services. The payoffs could be substantial if we develop some tools that help prevent and manage these invasive pests more successfully. It would also be helpful to institutionalize increased collaboration because until international trade pathways of invasive pests are fully mitigated, more invasive pests will be entering North America and causing damage to our collective forests.

Timelines and Actions:

-Short Term (1-6 months)

-expert group formed and priority pest(s) selected. Led by Canadian and US leads (Gagnon and Rodriguez Franco)

- 3-6 months- expert group determines (depending upon which pest(s) selected the priorities for future collaboration.

- Medium Term (6 months-12 months)

- RFPs solicited with small start-up funding

-MOU's established between relevant parties (could be USFS, APHIS, CFIA, CFS and Canadian Provinces, etc.).

Long Term (12 months-36 months)

-Fruits of RFPs and MOUs are felt in the form of increased collaboration and results.

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SUBJECT: AGROFORESTRY**Agroforestry - Accelerating the application of temperate agroforestry systems to support sustainable farms, ranches and woodlands.****Introduction – What is Agroforestry and Why is it Important?**

The United Nations estimates that the global population will exceed 9 billion by 2050. Meeting the demand for food, fiber, and energy will be a challenge for every nation. Agroforestry can help Canada and the US meet that challenge while at the same time enhancing other environmental services.

Agroforestry is the intentional mixing of trees with crop and/or animal production systems to create economic, environmental, and social benefits. The five recognized categories of agroforestry practices/systems in North America are: 1) field, farmstead, and livestock **windbreaks** that conserve soil, water and energy while protecting crops, animals, and people; 2) **riparian forest buffers** that protect water quality, provide wildlife habitat, and offer economic potential from edible and non-edible products; 3) **silvopastures** that create multiple income streams and a wide range of natural resource benefits through co-management of livestock, trees and forage; 4) **alley cropping** that likewise provides multiple income streams and other benefits through the production of crops between rows of high-value trees and shrubs; and 5) **forest farming**, which produces food, herbal, medicinal, and decorative products under the protection of a managed forest canopy. These multifunctional practices can be used for many other purposes, such as mitigating odor, improving pollinator habitat, trapping snow, treating storm water or producing biomass feedstock.

On farms that struggle to compete in large commodity markets, agroforestry can strengthen agricultural operations through the profitable production of alternative crops and livestock, while providing jobs and increasing wealth in rural communities. At a landscape/watershed scale, agroforestry can help create and connect critical functions across forests, farms and urban areas, support these land uses by making management systems more resilient to extreme weather events (e.g., drought, floods), and help agricultural producers achieve financial stability while providing a wide range of other public services. Other additional benefits are that agroforestry practices are one of the best alternatives for recovering degraded lands, and rehabilitate unproductive lands. Some examples where these practices can be applied for recovering large scale disturbed landscape created by mining operations, and landscapes with marginal and low productive lands.

History and Status of Agroforestry in Canada and the United States

The history of agroforestry in Canada and the US can be traced back to the windbreaks that were established with assistance from our respective government programs during the Dust Bowl years (1930s) to reduce soil erosion in the Great Plains. More widespread interest in both countries began in the mid-1980s, informed by a growing body of agroforestry information from the international community. In 1992, agroforestry became an increasing focus in the US with the establishment of the US Department of Agriculture (USDA) [National Agroforestry Center](#) (NAC) in Lincoln, Nebraska, which is sponsored by USDA's Forest Service (USFS) and the Natural Resources Conservation Service (NRCS). In 1901, Agriculture and Agri-Food Canada (AAFC) established the forerunner of the current [Agroforestry](#)

[Development Centre](#) (ADC) in Indian Head, Saskatchewan. Both national centers work with a wide range of partners (e.g., universities, extension, provincial and state agriculture and forestry agencies, conservation districts) on research, development and technology transfer activities which provide the science and tools that help landowners/producers plan and apply agroforestry.

Despite the advancement of the science and practice of agroforestry since the 1980s and the establishment of national centers in both countries, agroforestry practices are still not widely applied, with the exception of windbreaks and riparian forest buffers. Awareness of agroforestry and its benefits are lacking, and agroforestry expertise is insufficient. Both countries lack any national inventory or assessments of agroforestry practices. This situation is exacerbated by the traditional separation of agriculture and forestry in our respective government policies and organizations, in most universities, and in practice on our agricultural and forested landscapes. We do know, windbreaks are the most common agroforestry practice in both countries, supported by a long history of government assistance. Riparian forest buffers have also been widely applied in the US with government assistance, particularly in the Mississippi River basin and Chesapeake Bay states to reduce soil erosion and nutrient runoff, and conserve natural resources such as water and wildlife. Recent high crop and agricultural land prices, driven by the demand for biofuels and exports, have provided incentives for farmers to remove these tree-based buffers and expand the acreage of row-crop agriculture. In both countries, forest farming is probably the next most common agroforestry practice. The application of silvopasture in the US is increasing, particularly in the Southeastern states, however it has limited use in Canada where research and application occurs mainly in the Interior of British Columbia and Northern Alberta. Alley cropping is probably the least applied agroforestry practice in both countries.

With the release of the [USDA Agroforestry Strategic Framework](#) in June 2011, the US has created a roadmap for advancing the science, practice, and application of agroforestry as a means of enhancing America's agricultural landscapes, watersheds, and rural communities. Seven agencies within USDA are working together to implement the Framework. The Agroforestry Development Centre of AAFC operates nationally with initiatives, such as the Agricultural Greenhouse Gases Program and in collaborative research and development programs with partners on a regional basis. AAFC also provides regional support for programs such as the [Agroforestry Industry Development Initiative](#) in British Columbia, the Alberta Agroforestry and Woodlot Extension Society, and in outreach through newsletters focused on the eastern provinces, [Agroforestry News from the Atlantic and Quebec](#).

Areas for potential collaboration with the Canadian Forest Service (CFS) and other partners:

- **Pest and climate-stress resilient plant materials** – identify species and varieties suitable for agroforestry plantings and reforestation that are resistant to common threats from invasive species (e.g., emerald ash borer, sudden oak death, white pine blister rust) and climate change.
- **Germplasm banking and preservation** – share information and germplasm, especially for species threatened with large scale loss due to insects, disease, or climate change.
- **Tree-based buffers** – share information and collaborate to advance the science and technology of designing and locating buffers on both agricultural and forest lands.
- **Land restoration** – to put into productivity lands that have been exploited for other usages than timber (oil-sand land, for instance) by planting trees with special attributes for various purposes.
- **Information Systems and Common Approaches** – Enhance capacity through common approaches to monitoring land use change and accounting for carbon in forests, agricultural and urban lands.

Timelines and Actions

- Agroforestry experts from Canada and US meet to review existing systems approaches currently utilized by both countries in land use and climate change monitoring sectors to: 1) identify areas of common interest in relation approaches, policy and reporting needs in relationship with agroforestry practices; and 2) develop action plan with priority activities and minimum budget required for increase collaborative agroforestry practices between both countries. LEADS: TBD.

SUBJECT: COMMUNICATION**NA Forest and Forest Product Campaigns: A Brief Overview and Lessons Learned****Executive Summary**

For over twenty years, North American forestry (shorthand in this brief for science of forestry, forest advocacy, and all associated businesses) has faced the same inter-connected issues - economic recession, increasing regulation and negative public opinion. Regardless of forestry sector, all have attempted, mostly in vain, to regain credibility and social license to operate.

Modern promotion and education efforts in both Canada and the United States have not succeeded in convincing the public or policy makers and regulators that managed forests are healthy forests. Some reasons include...

- Poorly defined messages
- Broad audiences
- Ineffective results tracking
- Insufficient time and money invested

While no “silver-bullet” exists, this brief provides a synopsis of the general elements required for success on pages 2 - 3. A cursory look at a few notable efforts is included on pages 5 - 7. Appendix A is a semi-complete listing of pro-forestry organizations, programs and campaigns.

Non-forestry audiences tend not to appreciate messages around the abundant or renewable nature of forests. Cassie Phillips, Weyerhaeuser Vice President of Sustainable Forests and Products, says the message that resonates is “trees are precious, forests are at risk; managers and owners are responsible.”

Most of the existing and recently expired programs with significant investment and long running times are technical in nature and aimed at specific audiences such as architects and builders.

Ultimately, public perception changing programs or campaigns will be developed not by forestry but by communication experts. This will require setting aside inherent differences and divisions as well as a significant, long-term investment. In lieu of this commitment, energy is best focused on discrete audiences and issues.

Issues and Solutions Framed

The constellation of conditions that turned public opinion against forestry reached a crescendo in the early 90s. Public outcry against clear cutting, the spotted owl debate, anti-forestry campaigns and more figure prominently.

Various sectors of the forest products industry began public education efforts dating as far back as the mid-1800s. Smokey Bear remains the longest running, most recognizable campaign, launching in 1940 and expanding North in the 1950s to feature French-Canadians in an animated advertisement. The once myriad discrete product and state associations have mostly merged, melded or otherwise gone defunct.

Campaigns and programs come in international, national, regional and province/state-based forms. They attempt to educate and influence all range of audiences from schoolchildren to elected leaders. Program categories include “place of origin” branding, sustainability, carbon-neutral, science-based, superiority of wood, benefits of managed forests, non-branded product promotion and more.

The trends that forestry must address include increased regulation, third-party certification, climate change, insects and disease, wildfire, globalization, green building standards, substitute materials, triple-bottom line capitalism and more.

Forests and forestry alike are not monolithic. By nature the business and science of forestry as well as the incredible range of products and benefits is complex to communicate. The ownership patterns, supply and distribution chains and industry structure all defy “one-liners.”

The number nor diversity of programs or complexity of message is not the problem.

The Formula for Successful Marketing and Communication Campaigns

In 2008, the U.S. Endowment for Forestry and Communities (the Endowment) commissioned Phoenix Strategic Solutions to conduct feasibility research on check-off programs for forest products. The report - *Check-Off Programs: the Potential for North American Softwood Lumber*, prepared in part by Kelly McCloskey, summarized the formula for successful efforts. Those points are combined with additional research.

1 – Time and Cost

Changing public opinion requires a sustained commitment. It took the environmental movement nearly forty years to reach the point where the average citizen, bureaucrat and judge view their statements with greater trust than the work of professional foresters, landowners and workers. Programs and campaigns will not make an impact in less than five years. Gains cannot be assumed permanent. The message must continue. Think Smokey Bear (69 years and still running).

Significant and on-going funding is critical, for example:

- Evergreen Foundation and magazine (1986) once reached 100,000 members. The operating budget has shrunk from \$300,000 to \$20,000 as of 2009.
- Project Learning Tree (1977), invests roughly \$2 million to reach about 30,000 U.S. teachers annually.
- Washington Forest Protection Association (WFPA) (1990) spent roughly \$50 million to target opinion leaders and legislators in one state. The effort is credited with saving forestry in Washington.

2 – Professional Communicators

Developing and delivering a targeted, proactive message is an art and science. Questions such as who’s our audience, what will they respond to, who needs to deliver the message and what action do we want to prompt can only be answered with the help of polling, focus groups and multi-media experiments. When the California Milk Processors Board decided in 1993 to reclaim the public’s appreciation of milk, they went straight to Goodby, Silverstein & Partners, the San Francisco based advertising agency, with an annual \$23

million marketing budget. They abandoned “milk is nutritious” for a “milk is cool” theme. The firm’s client list includes Chevrolet, Nintendo, the NBA, Corona and Haagen-Dazs. WFPA commissioned on-going focus groups/polling to create/evaluate their messages.

3 – Coalitions

Coalitions among diverse sectors of forestry have come together over the years to promote a common message.

- The Abundant Forest Alliance (2005 - 2010) included nine industry players.
- The Canadian Wood Council participates in numerous marketing efforts, including in the US with an annual budget of approximately \$8 million USD.
- American Forest and Paper Assn. (AF&PA) launched the Sustainable Forestry Initiative (SFI) communications effort in 1999 with a 3-year, \$21 million member assessment. The assessment only lasted one year. SFI later evolved into the SFI certification program.

Divisions around big vs. small, East vs. West, public vs. private supply, paper vs. wood, funders vs. free riders, imports vs. domestic pose challenges.

4 – Leadership

Forestry leadership must support a serious effort for not less than five years.

**see more about the examples on pages 5 – 8.*

About Commodity Check-Off Programs

The Federal Agriculture Improvement and Reform Act of 1996 (U.S. Farm Bill) explicitly added forest products to the “check-off” list overseen by the USDA Agricultural Marketing Service.

Since 2008, the Endowment has invested more than \$500,000 in topical research and analysis to evaluate the feasibility of wood product check-off programs. As of January 2012, the softwood lumber industry is the first commodity check-off. Paper and paper-based packaging as well as hardwood lumber and hardwood plywood have programs pending. Revenues would exceed \$50 million annually for all three programs. Funds are limited to research, education and promotion expenditures.

Oregon created a “dedicated harvest tax on producers of forest products” in 1991 to “enhance collaboration” and promote sustainable forestry. (www.oregonforests.org)

“Got Milk?” first ran at the behest of the [California Milk Processor Board](http://www.californiamilk.com) in 1993. According to www.gotmilk.com, the campaign has over 90% awareness in the U.S.

Print ads feature celebrities from sports, media and entertainment. The campaign recently included Spanish language versions. The logo is licensed to consumer goods, including Barbie and kitchenware items. The per capita consumption of all dairy products increased by 16 percent between 1983 and 2008. In addition, total sales of milk, cheese and yogurt grew by over 1 billion pounds.

The "Beef It's What's For Dinner" campaign launched by The Beef Council ran for 17 months at a cost of \$42 million featuring the tag line: "Nothing satisfies so many people in so many ways." The Beef Check-off promotion is funded by collecting \$1 USD on every cow, steer, and bull sold in the U.S. During the 1992

Summer Olympics and 1994 Winter Olympics, the program spent over \$2 million to run ads viewed worldwide.

Highlighted Pro-Forestry Campaigns and Programs

1944	Smokey Bear	U.S. Forest Service/Ad Council
1977	Project Learning Tree	American Forest Foundation
1986	Evergreen Magazine	Evergreen Foundation
1990	Wood: The Most Natural Resource	Wash. Forest Protection Assn.
2000 - 2005	Wood is Good and Be Constructive	Wood Promotion Network
2005 - 2010	Abundant Forest Alliance	NA Paper-Based Coalition
2007	WoodWORKS! Canada	Canadian Wood Council
2007	Don't Move Firewood	Multi-interest coalition
2011	Two Sides	Two Sides U.S. Inc.
2011	Rethink Wood	North American Coalition

Smokey Bear: 1944 *"Remember... Only YOU Can Prevent Forest Fires."*

Touted as the most successful Public Service Announcement in U.S. history, Smokey Bear was created by the U.S. Ad Council in 1944. Smokey has appeared in parades, campaign posters, comic strips, cartoons and television commercials, and even got his own commemorative stamp in 1994. His message was so powerful it had to be rewritten when foresters decided to reintroduce fire to the land. Smokey Bear is America's wildfire prevention icon. He has educated generations of Americans about their role in preventing human-caused wildfires.

Project Learning Tree (PLT): 1976

With an estimated investment of \$25 million, PLT provides "educators with the tools, training, and resources they need to teach core subjects through environmental education." To date, over 500,000 educators have attended PLT workshops to learn how to get kids outdoors and learning about the world around them. Topics include forests, wildlife, water, community planning, recycling, and energy. PLT is a program of the American Forest Foundation. Annually over 30,000 educators participate in about 1500 professional development workshops held around the country. PLT invests \$2 million/year to provide programming.

Evergreen Foundation: 1986

At its height, Evergreen Foundation raised \$300,000 annually. Since around 2009, the operating budget has been lowered to only \$20,000 annually. Evergreen, a non-profit forestry research and educational organization, produces Evergreen Magazine. The organization was modeled after the old American Forest Institute. Their mission “to help advance public understanding/support for science-based forestry and forest policy.”

They have helped launch a number of similar regional magazines and the natural resources industry-wide educational program - Provider Pals. Their website (www.evergreenmagazine.com) contains advanced search options from books and photos to science and policy.

Up until about 2009, the organization raised about \$300,000 a year from 2,000 contributing members, mainly “lumbermen and loggers around the country.” Their 100,000-member mailing list contains grass roots leaders, elected officials, media, industry employees, business and civic leaders.

The decline in forestry-oriented business in the West, their primary supporters, and the loss of previously accessible grant funds has left Evergreen with little support to continue. Jim Petersen, Evergreen’s co-founder and Executive Director, continues to manage the website and is a prolific writer and speaker regarding forestry.

Washington Forest Protection Association Programs: 1990

The Washington Forest Protection Association (WFPA) was initiated in 1908 to protect private forestland from wildfire with the help of twenty-two companies in Washington. The mission shifted and expanded in 1958. Today, WFPA works in public policy and regulations, public information, K-12 environmental education and taxation. Membership consists of “companies, individuals and families who grow, harvest and re-grow trees on about 4 million acres.”

WFPA initiated an intensive messaging program about 1990 with a \$2.5 million annual commitment. Estimates put total investment at \$50 million. The result has been what some believe the preservation of forestry on private lands in Washington. With the help of professional marketing and advertising firms, they ran a diverse media campaign. Each element of their program, aimed initially at opinion leaders and legislators, was tested by focus groups and polling. Messages have been refined over the years. Currently a video-based website called “Wood: The Most Natural Resource” offers resource tools covering sustainable forestry, economy, environment and energy.

Wood is Good and Be Constructive: 2000 – 2005

The Wood Promotion Network, created by the Wood Products Council (WPC) and now a program of the Engineered Wood Association (APA), is “a coalition of forest product companies, associations and allied interests across North America that promote wood as a building and finishing material from abundant, growing and renewable forests.” Estimated program investments are \$23 million. Additionally, a 3-year \$45 million advertising campaign called “Be Constructive” was launched in 2001. The campaign relied on cable television, print, billboard, and sports arena advertising to promote lumber in the home building market. This effort was a counter to efforts by steel and concrete manufacturers to capitalize on anti-forestry campaigns to take market share.

Abundant Forests Alliance (AFA): 2005 – 2010

AFA was initiated by nine paper and forest product companies to promote forests as abundant and foresters and companies as the professionals that ensure they will be abundant for future generations to a consumer audience. Estimated investment was \$11 million. The program was short-lived due to on-going poor economic conditions, difficulty measuring message effectiveness and a narrow list of supporters. While no longer active, three educational websites remain viable:

www.abundantforests.net, www.abundantforests.org, www.plantitforward.com

WoodWORKS! Canada – U.S. WoodWorks: 2007

WoodWorks are the market growth initiatives of the Wood Products Council (WPC). The WPC originated in 1982 for coordination of education, product promotion and market access between Canadian and U.S. industry associations. The Binational Softwood Lumber Council (BSLC) bolstered it. The Canadian and U.S. Federal governments established BSLC as part of the 2006 Softwood Lumber Agreement. The Softwood Check-Off program is responsible in part for the Initiative's growth.

WoodWORKS! Canada operated as a pilot for five years through the Canadian Wood Council, managed by then President, Kelly McCloskey for a cost of \$400,000 a year. The effort now includes successful programs in five Canadian provinces. The program evolved from pilot to full-time program as the U.S. WoodWorks initiative in 2012. Adrian Blocker, former President of the Southern Forest Products Association, is President and CEO. The program provides education, resources and technical support to make it easier and cheaper to design, engineer and construct wooden non-residential and multi-family buildings.

Don't Move Firewood:

"Don't Move Firewood" is an informational website designed to "communicate and market key ideas about protecting forests." Emphasis is placed on the insect and disease hazards associated with moving firewood around. It originated from the "Continental Dialogue on Non-Native Forest Insects and Diseases."

The Nature Conservancy owns the website. Other partners include the U.S. Forest Service, [American Nursery & Landscape Association](#), [National Association of State Foresters](#), [Partnership for Saving Threatened Forests](#), [Pennsylvania Department of Agriculture](#), [Purdue University](#), [Department of Entomology](#), [Society of American Florists](#), [Society of American Foresters](#) and many more.

Two Sides U.S. Inc. 2011

Two Sides U.S. is a replication of the Two Sides UK (United Kingdom), launched in 2011. The Two Sides network operates in 14 countries with 1,000 members to "promote the responsible production and use of print and paper, and dispel common environmental misconceptions by providing users with verifiable information on why print on paper is an attractive, practical and sustainable communications medium." Partners include the "Graphic Communications Value Chain including forestry, pulp, paper, inks and chemicals, pre press, press, finishing, publishing and printing."

Rethink Wood: 2011

The “ReThink Wood” initiative is not an organization and has no staff. It is a partnership between Binational Softwood Lumber Council, Forestry Innovation Investment and the Softwood Lumber Board. WoodWorks, American Wood Council and Canadian Wood Council help deliver the messages focused on wood performance, cost and sustainability. The intent is to create a cohesive voice and educational platform for the building products industry.

Conclusion

Completion of this cursory overview of promotion and education would not have been possible without the timely input of Jim Peterson, Evergreen Foundation; Kelly McCloskey, McCloskey and Associates; and Sandy McKellar, Tree Frog News. Much more needs to be done to understand and learn from the past as well as develop tools to create a brighter future for the greenest of all consumer products. We urge this coalition to consider commissioning a full analysis with comprehensive recommendations.

Carla Harper, West 65 Inc. 336-596-7514 or Carla@West65inc.com

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