Invasive Species Position Statement
Asian Long Horned Beetle
International Maple Syrup Institute
March , 2014

Executive Summary:

The maple syrup industry is worth close to $1 Billion to the overall economy of Eastern North America. “Sugaring” is a significant cultural, economic, social and community activity that has occurred each spring since European settlement and thousands of years before that by Native North Americans.

The maple syrup producers throughout the maple producing region are very concerned about the threat of the Asian Long Horned Beetle, *Anoplophora glabripennis* (ALHB), to the viability and economic health of the maple syrup industry in Canada and the United States . The industry is informed and aware of the outbreaks in both countries and the subsequent actions and reactions that have taken place in response to the presence of this pest.

The industry understands that the responsibilities are jointly shared for managing the various stages of a successful ALHB prevention program as well as any potential eradication programs. This position paper outlines the concerns, potential implications, and suggests the necessary actions that must be taken to manage this threat by both those responsible for managing any ALHB program and the maple syrup industry.

The positions outlined by the maple syrup industry are presented in four approaches: **prevent, detect, respond and manage/adapt**. Specific positions are expressed under these four categories with stated tactics under each, focusing on both the responsible government agencies and the maple syrup industry.

It is vital that a large focus of the efforts be placed on eliminating any further potential introductions of ALHB to Canada and the United States and the maple syrup industry is urging respective government agencies to aggressively pursue measures that will achieve this goal. It is extremely important that the threat to our forests and maple syrup industry is taken seriously now so that everything possible can be done to keep the situation from getting out of hand.

Further, if this species is detected anywhere, then it is the position of the maple syrup industry that aggressive action for eradication must occur, and that long term monitoring and communications must follow to ensure success.

Introduction:

The International Maple Syrup Institute (IMSI) was formed in 1975 to encourage international cooperation on issues that are relevant to the maple syrup industry. Members include representatives from 13 maple syrup producing states and 4 maple syrup producing provinces in Canada.

Purpose of Position Statement:
A threat to a 300 year old North American industry valued at over $1 Billion!

The maple syrup industry is extremely concerned about the potential direct threats to the maple forest resource, and subsequently, the maple syrup industry, that could be caused by the Asian Longhorned Beetle (ALHB). This paper is meant to articulate the issues related to the ALHB and the maple industry's respective positions on them.

The international maple industry recognizes that it needs to be part of the many potential solutions regarding invasive species such as ALHB. Ensuring that threatening insects do not significantly affect our natural ecosystems, for the interests of society, rests with government and non-government agencies.

Scope of Issue:

Considerable attention, effort and concern have been directed at invasive species within the maple syrup industry, particularly ALHB and Emerald Ash Borer (EAB). This position statement will only focus on the issues related to the ALHB due to the serious and significant threat to the maple syrup industry. The potential damage from this threat is far more serious than previous forest invasives (Dutch Elm disease, EAB, Chestnut and Butternut blights) due to the fact that it kills the dominant species in the Great Lakes/St. Lawrence forest. The previous invasives removed one secondary species from multi-species forests, allowing the forest to stay relatively intact. With the ALHB, vast forests would be lost if the climax species, maple, was killed.

The ALHB (*Anoplophora glabripennis*) has had significant effects on urban forests in the US Northeast since it was first detected in New York City in 1996. Since then, it has also been discovered in Chicago, Toronto, Ohio, Massachusetts and New York (Long Island). Efforts to eradicate this pest have resulted in the removal of tens of thousands of trees in the United States and Canada. While the eradication battle continues on several fronts, there are growing concerns that this invasive pest could become established in the natural and managed forests of Eastern North America. (1)

Industry Background:

The maple syrup industry in North Eastern North America is worth close to $1 Billion dollars to the overall economy ($776 million in Canada, $100 million in the U.S.). (2)

“Sugaring” is a significant cultural, social, and community activity that has occurred each spring since European settlement. And for thousands of years before that, Native North Americans had been utilizing the sugar made from the sap of the sugar maple as an important sweetener and food crop. It is estimated that there are over 15,000 commercial maple syrup producers in Canada and 9,000 in the United States.

In addition to direct economic benefits to maple syrup production, the potential negative impact of an outright outbreak of ALHB in hardwood forests would also have huge social, economical and environmental implications. Lumber and other forest products, fall color tourism revenue, ecological integrity of watersheds and overall aesthetic values would be severely affected, causing a devastating impact to the way of life for many citizens of Eastern North America.

While the primary concern from producers is the production of maple syrup, there is also concern about the many Environmental Goods and Services (EG&S) that these forests provide. These include:

- Watershed regulation and flood control
- Conservation of water quality
- Conservation of soil quality
- Wildlife habitat
- Biodiversity conservation
- A reservoir of carbon
- Outdoor recreation
- Landscape aesthetics

These EG&S are supplied by areas of productive forests that are managed to produce maple syrup. At present, it can be argued that these EG&S are enjoyed by the public as “free goods”. The landowner receives no compensation and there is little public recognition of the value of them as provided by privately owned maple producing lands. (3)

In a study commissioned by the Wilderness Society in the United States(2001), the economic value of EG&S was analyzed on a broad basis as well as some examples on a more regional basis. This study included 8 categories for discussion, almost identical to the Canadian categories, and gave financial values for those various categories in different geographical areas . There are about 520 million acres of temperate/boreal forests in the U.S. (Pimentel et al. 1997), with an implied annual value for services of about $63.6 billion. Climate regulation, waste disposal mitigation and food production values account for approximately 75 percent of this total.

From a more regional perspective, Gilbert et al.(1992) determined that the passive value of “eastern wilderness” in Vermont and the eastern states runs from $5.7 to $167 million for all Vermont residents and all residents of the east, respectively. Further, Fausold (1999) found that in Massachusetts the cost of replacing 36 acres of public forest area to be $4.5 million. Maple and other species susceptible to ALHB are critical components of these forests and the integrity of these forests would be seriously compromised. (4)

Rationale:

The International Maple Syrup Institute, with support from the North American Maple Syrup Council (NAMSC), recognizes that the responsibility is shared by many agencies, individuals, and the maple syrup industry for ensuring that invasive species, that could be extremely harmful to the maple syrup industry, are prevented, detected and eradicated.

For the ALHB, the effort to prevent, detect and respond to any and all potential incidents of presence must be swift, all-encompassing and successful. Allowing ALHB to manifest itself is not acceptable and must be fought on all fronts.

Despite the best of intentions and respective invasive species program objectives, there continues to be policies and some key factors that pose significant challenges to preventing the ALHB from gaining a stronghold in North America. Some of these are outlined below:

- The acceleration of global trading, which when combined with the disregard by some jurisdictions for the hygiene and sanitation of wood products (crates, pallets, containers) to destroy any insects that hitch hike on those products, has moved any possible insect migration ahead by thousands of years. Human trade policies and activities have eclipsed normal environmental adaptive evolutionary stop gaps that have evolved within geographically isolated individual ecosystems over thousands of years.

- Despite the above, trade regulation and policies continue to allow the potential presence of these insects through careless importation of crates, pallets and containers. ALHB is native to China and China has no sugar maples. Elimination of the insect (if detected) must be swift and thorough.

- In North America, this insect has no natural predators nor is it susceptible to natural conditions such as extreme cold.

- Research is ongoing regarding insecticide development in both countries but trial testing and approvals are not yet complete. Results to date are not yet known and any application and effectiveness will need to be evaluated.

- The Animal and Plant Health Inspection Service (APHIS, U.S.) submitted a Notice of Intent to Prepare An Environmental Impact Statement and Proposed Scope of Study, to eradicate the Asian Longhorned Beetle on August 16, 2013. Five options were presented…from *take no action…. to integrated approach.* The IMSI formally registered their comments and supported the Integrated Approach which was a suite of aggressive actions and options if and when an infestation was detected. If an insecticide is needed, then the maple industry will support that action and assist in monitoring the potential affects.

- The arrival of ALHB to North America (NA) is not impossible to stop. It can be prevented by countries shipping goods by using non infected shipping materials.

Maple Industry Position:

Our position is broken down into four categories. Most state and provincial jurisdictions have some type of invasive species plan or strategy. There is overarching oversight by the United States Department of Agriculture (USDA) and the Canadian Food Inspection Agency (CFIA), with varying scopes of responsibilities and issue leadership. Most of the "plans" have similar strategies and tactics. While some mention the threat to the maple trees themselves, there are not many prominent strategies for the maple syrup industry.

This document is not intended to duplicate or repeat what has already been written and agreed upon by those respective responsible regulatory agencies but does incorporate the four most common areas of suggested approaches, which are as follows:

Prevent: Prevent harmful introductions before they occur.

Detect: Detect and identify invasive species before or immediately after they become established.

Respond: Respond rapidly to invasive species before they become more established or spread.

Manage and Adapt: Implement innovative management actions and take practical steps to protect against impacts of invasive species.

We will discuss each strategy in the following charts along with our positions for both the industry and the agency(s) that we feel should be responsible or take appropriate action.

PREVENT:	
It is incumbent on society and responsible agencies and organizations to prevent the introduction of any invasive species. We feel that one of the most important aspects is to educate people on the importance of natural ecosystems and protecting them. There is a need to communicate on a continual basis on the potential threats to those ecosystems and to engage citizens in preventing the introduction and/or spread of invasive species.	
The maple industry will:	▪ Communicate and educate on the importance of the maple ecosystem on our landscapes to our members and to the public. ▪ Ensure that all maple associations have prominent education material on their websites that inform readers about the risks of invasives. ▪ Work with multi-level government agencies to incorporate Geographic Information System (GIS) tools to visually demonstrate the potential impacts of a devastated forest. ▪ Continue to liaise with government agencies to ensure that monitoring at any suspected areas of entry for invasives are vigilant and ongoing. ▪ Support the public in identification when any insect "sample" is brought in for identification.
The maple industry	▪ Provide communication and education tools to ensure that the messages on how to identify and prevent the introduction of invasive species are

requests that appropriate responsible government agencies:	shared widely. ▪ Provide links to maple association websites from their invasive species information websites and support cross links back. ▪ Provide support, through Geographic Information System (GIS) technology, to visually demonstrate what an impacted, devastated forest can look like. ▪ Strongly enforce pallet treatment regulations, especially from countries known to harbor ALHB. ▪ Continue monitoring at "dockside" and at shipping, airline, and trucking terminals to prevent introduction to North America. ▪ Continue to monitor the movement of firewood and communicate the actual and inherent risks of moving firewood. ▪ Continue to invest in research to determine appropriate approaches to prevent introduction of invasive species. ▪ Ensure that the response to the public for the identification of any potential invasive is quick and efficient.

DETECT:	
Ideally, any efforts at detection of invasives would not be necessary if all prevention worked successfully. However, if and when invasives are detected, action needs to be swift and thorough.	
The maple industry will:	▪ Work cooperatively with their respective agencies and monitor to ensure that detection capabilities are adequate. ▪ Continue to update and inform members of the maple syrup producing community on issues, progress and action on respective initiatives. ▪ Continue to provide information tools to members so that quick detection occurs if an invasive is found in their forest. ▪ Outreach to like minded NGO's and to urban forestry professionals on our issues and concerns, to share relevant information and to partner on education and awareness. ▪ Support an early detection reward program for those that self-declare that ALHB is in their forest.
The maple industry requests that appropriate responsible government agencies:	▪ Monitor for invasives at an appropriate level to ensure early detection. ▪ Ensure that the response to the public for the identification of any potential invasive is quick and efficient. ▪ Continue to be available to maple association workshops and meetings to share relevant information on ALHB and other invasives that may affect the maple ecosystem. ▪ Work with maple associations and other like-minded NGO's on detection processes and engage their cooperation. ▪ Develop a reward compensation program that would financially reward a landowner for self-declaring very early that ALHB is in their woodlot.

RESPOND:
Should this stage occur, communications, roles, responsibilities and potential responses can quickly get complicated. Immediate questions come up regarding "what is the cure?" A host of

items can be utilized to combat an outbreak, some with little widespread impact, some with a lot. The maple industry respects that the use of the appropriate insecticide, and the proper timing of its use on ALHB, may have negative effects on other insects, such as honey bees, and may render impacted maple trees untappable. However, the impact of an epidemic of ALHB in the hardwood landscape is unthinkable and unacceptable. Other natural catastrophic events in the past (hurricanes, tornadoes, severe ice storms) in our society have resulted in an influx of technical, management and financial support for the individuals impacted. We are suggesting something similar is required, one that rewards early and quick response for those that self-declare.	
The maple industry will:	▪ Cooperate with any approved response action plan set out by the respective authority. ▪ Support an early response reward incentive for those that agree to respond quickly and to allow the respective authorities to implement the necessary measures. ▪ Assist in communicating the designated action plan, with the respective authority(s), to the public and to association members. ▪ Provide feedback to the respective agencies for monitoring and containment programs when and if detection occurs. ▪ Explore maple crop insurance programs with their members.
The maple industry requests that appropriate responsible government agencies:	▪ Develop an early response financial incentive program for landowners who detect and respond quickly to ALHB on their land. In this way, the invasive is contained appropriately before it can become an epidemic. ▪ Communicate the appropriate messages on action, progress and prognosis of success in a timely manner to the respective associations, members and general public. ▪ Explore all aggressive options for eradication of the invasive, including the use of appropriate approved insecticide and/or pesticide tools. ▪ Continue to monitor after successful eradication for an appropriate time period.

MANAGE AND ADAPT:	
Despite all best efforts to totally eradicate an invasive species (eg. failure to contain Emerald Ash Borer), there are times when managing and adapting approaches need to be explored. Also, any messages to the consumer must be carefully developed to ensure that existing maple markets are not negatively impacted. An outbreak could be in one isolated area and be contained with no negative impact on the overall production volume. It would be beneficial to maintain a cooperative, informed approach and to communicate all available options to landowners potentially affected.	
The maple industry will:	▪ Support any quarantine initiatives while controls are being explored and/or implemented. ▪ Support and assist in delivery of any extension work on rehabilitation and mitigation of affected properties. ▪ Assist landowners in securing/leasing other maple related properties from

	their respective State or Province in order to continue their business. ▪ Support and implement strategic communications on availability of other tappable maple land elsewhere and the continuation of maple production to meet demand. ▪ Communicate that the industry is viable despite a drawback in one area. ▪ Dialogue with the Quebec Federation regarding the strategic reserve and the role it would play in managing consumer expectations and demands.
The maple industry requests that appropriate responsible government agencies:	▪ Maintain quarantines while appropriate controls are being strategized, communicated and implemented. ▪ Provide expertise and communication tools to assist landowners in rehabilitating their sites. ▪ Cooperate in facilitating the leasing of land from State or Provincial land bases unaffected by an infestation to affected maple producers so they can continue producing. ▪ Work with the respective maple associations on communicating a constructive affirmative message regarding the overall health of the maple ecosystem and the maple syrup industry.

Conclusion:

The maple syrup industry is important. It matters a great deal to individuals, families, communities, the natural environment and the economy. "Sugaring" is a culture unique to Eastern North America and is an important part of our history and who we are. It is a sustainable industry that allows climax stands of maple to be managed for production while remaining natural forested land and thus also providing other societal benefits.

Obviously, prevention is the most efficient and cost effective way of addressing any potential invasive species introduction. Once detected, a very quick and thorough response is necessary to prevent an outbreak.

Through this document, the positions of the maple industry and the commitments that related associations are prepared to make are presented. We want our positions to be clear. Every step regarding invasive species, and the ALHB in particular, needs constant attention from the maple industry and all of the agencies and government organizations that have responsibility for preventing and eliminating invasive species from our landscapes.

References:

(1) Asian Long Horned Beetle and its Host Trees; USDA , USFS , U of Vermont NA-PR-05-12 September 2012

(2) *Economic Impact of the Canadian Maple Syrup Industry*, *Ecoressources Inc. draft 2013.*

(3) From a submission to the House of Commons (Canada) Standing Committee on Environment and Sustainable Development- National Conservation Plan- August 2010. (Refer to appendix II for broader scope)

(4) *Economic Value of Forest Ecosystem Services: A Review, Douglas J. Krieger Ph.D. Prepared for The Wilderness Society, USA (March 2001)*

Appendix I

List of websites of Associations, research centres and Universities dealing with the maple syrup Industry and Asian Longhorned Beetle:

- Beetle Busters, USDA: http://beetlebusters.info/
- USDA Forest Service: http://www.nrs.fs.fed.us/disturbance/invasive_species/alb/
- US Forest Service: http://www.na.fs.fed.us/fhp/alb/
- Don't Move Firewood: http://www.dontmovefirewood.org/blog/maple-syrup-industry-risk.html
- The Nature Conservancy: http://www.nature.org/ourinitiatives/habitats/forests/explore/asian-longhorned-beetle.xml
- Natural Resources Canada: http://www.nrcan.gc.ca/forests/insects-diseases/13369
- Canadian Food Inspection Agency: http://www.inspection.gc.ca/plants/plant-protection/insects/asian-long-horned-beetle/eng/1337792721926/1337792820836
- Ontario Ministry of Natural Resources: http://www.mnr.gov.on.ca/en/Business/Forests/2ColumnSubPage/STEL02_166979.html
- Ontario Maple Syrup Producers Association: http://www.ontariomaple.com/pages/asian_longhorned_beetle/
- University of Vermont: http://www.uvm.edu/albeetle/
- Massachusetts Introduced Pests Outreach Project: http://massnrc.org/pests/alb/
- The National Invasive Species Council: http://www.invasivespecies.gov/
- Cornell University Cooperative Extension: http://www.nyis.info/?action=invasive_detail&id=26
- Vermont Invasives: http://www.vtinvasives.org/news/what-does-maple-syrup-have-common-invasive-insect
- Penn State University and US Forest Service, Using Traps to Detect ALHB: http://ento.psu.edu/publications/Using%20Traps%20to%20Detect%20Asian%20Longhorned%20Beetle-Final.pdf

Appendix II

Maple forest ecosystems provide the majority of EG&S in the settled regions of Canada and the United States. (From a submission to the House of Commons Standing Committee on Environment and Sustainable Development – National Conservation Plan - August 2010).

Environmental Goods & Services include:

- **Watershed Regulation and Flood Control:** Due to their location near settled regions, private forests often play an essential role in watershed regulation and flood control. Compared to cleared or urban land, a forested watershed has a much greater capacity to absorb water into the soil, re-charge the water table and moderate surface runoff during the heavy rains and melting snows of spring.

- **Conservation of Water Quality:** Forests help conserve two key aspects of water quality – water temperature and sedimentation. Trees provide shade to keep water cool. Cool water maintains a higher oxygen content than warm water. Insects fall off tree branches beside the watercourse and provide food for fish and other aquatic life. Erosion is the main source of sedimentation. A forested watershed has more moderate runoff patterns and less erosion. Sediment damages the gills of fish and can destroy gravel beds used for spawning. Private forests make an important contribution to the conservation of aquatic habitat and to the purity of community water supplies.

- **Conservation of Soil Quality:** Soil quality and productivity can be degraded by poor forest management and farming practices. Care must be taken to avoid soil erosion and nutrient depletion during forest harvesting and to maintain the organic and nutrient content of agriculture soils.

- **Wildlife Habitat:** With the exception of densely populated areas, Canada has maintained the majority of original forest cover. In settled areas, where most of the land has been cleared for agriculture, it is farm woodlots, and other forested lands that provide important wildlife habitats for forest dwelling wildlife: animals, birds and amphibians.

- **Biodiversity Conservation:** Many species of trees, shrubs, ground vegetation, birds, animals, amphibians and insects require a forest ecosystem to thrive. Deforestation, conversion to agriculture and urban sprawl all contribute to the loss of biodiversity. Private forest lands tend to be located in the southern regions of Canada. These areas are more productive and provide habitat that are indigenous to these regions. By maintaining their land in forest, private owners make a significant contribution to conserving biodiversity and maintaining thriving forest ecosystems. Forest owners should be provided with meaningful incentives to keep their lands in forest.

- **A Reservoir of Carbon:** It is widely recognized that forests contribute an important pool of carbon. Trees take carbon out of the atmosphere through photosynthesis and tree growth. This carbon is

stored in trees. Green wood, by weight, is about 50% water and 24% carbon. The national forest carbon reservoir is sustained by keeping forest land in a healthy growing condition. Sustainable forest management operations take place without damaging the forest carbon reservoir by ensuring prompt regeneration of harvested areas. The majority of harvested carbon is stored in solid wood products; this results in net carbon uptake.

- **Outdoor Recreation:** Forest lands, together with lakes and streams, provide an excellent resource for outdoor recreation – hunting, fishing, x-country skiing/running, kayaking and camping as well as connecting with Nature. Due to their proximity to settled areas, private forests are often widely used for recreation.

- **Landscape Aesthetics:** Forested hills and mountains provide the backdrop for Canada's tourism industry. They also provide enjoyment for all Canadians, both urban and rural. Often, the vistas we enjoy the most are the result of careful management by individual landowners. Many Canadians place special value on landscapes featuring a mixture of woodlands and well-managed agriculture land. A mixed habitat provides a variety of habitats.

These EG&S are supplied by areas of forest and agricultural lands that are managed to produce a range of products needed by society. The EG&S are enjoyed by the Canadian public as virtually "free goods". The landowners currently receive no tangible compensation and there is no public recognition of the value of these EG&S provided by privately owned land.