



EAB and Hemp



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We move them!

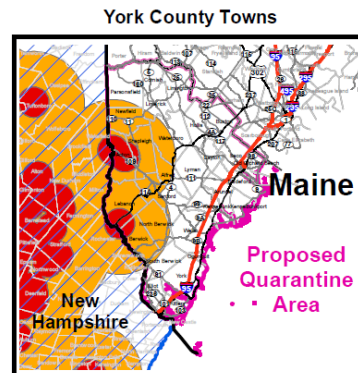
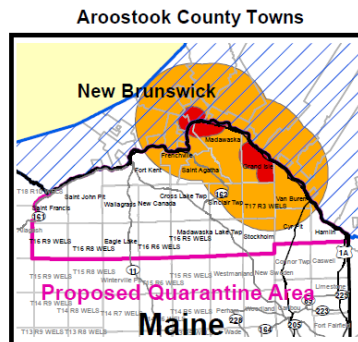
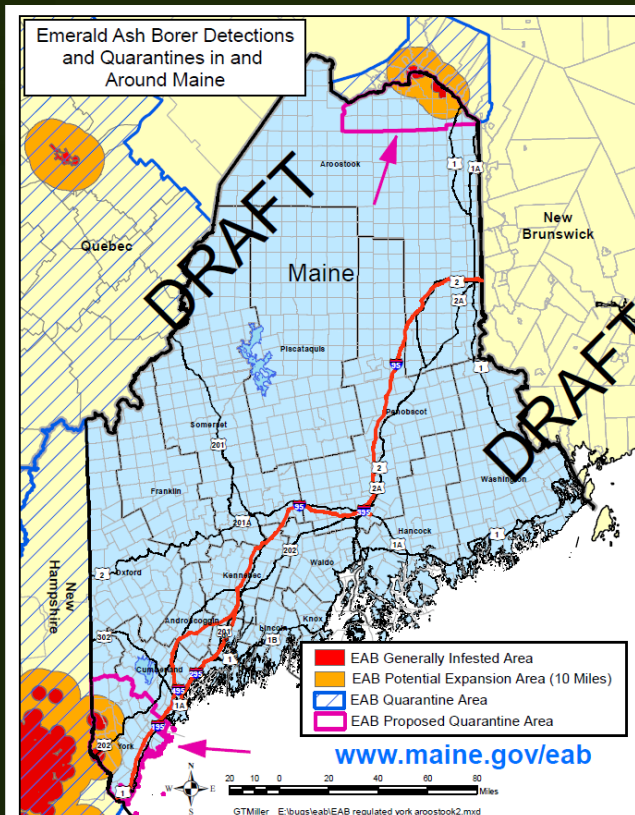


- Movement of infested ash firewood, logs and nursery stock can spread EAB much faster and further.
- Results in isolated satellite infestations hundreds of miles away.



Quarantine

- Quarantines, outreach, and BMPs all help to reduce the long-distance movement of EAB infested materials.



October 15, 2018

Department of Agriculture,
Conservation and Forestry
Maine Forest Service
Forest Health & Monitoring



DON'T MOVE FIREWOOD

Our forests are threatened by nonnative insects that can kill large numbers of trees. Three recently introduced insects—emerald ash borer, Asian longhorned beetle, and Sirex woodwasp—are wood-infesting species that can be transported long distances in firewood. Once transported into new areas, these insects can become established and kill local trees. We must **STOP THE SPREAD** of these insects and protect our forests and trees.

How you can help:

- Leave firewood at home—do not transport it to campgrounds or parks.
- Use firewood from local sources.
- If you have moved firewood, burn all of it before leaving your campsite.



HELP STOP INVASIVE PESTS

For more information, visit the following Web sites:
www.emeraldashborer.info
www.na.fs.fed.us/rip
www.aphis.usda.gov/ppq/rip



USDA Forest Service
Northeastern Area
State and Private Forestry
NA-PP-02-09
April 2006
www.na.fs.fed.us

The USDA is an equal opportunity provider and employer.

What to look for...

Woodpecker Activity "blonding"

Woodpeckers
fleck the outer
bark looking for
EAB larvae and
pupae, creating a
"blonding" effect.



(photo credits, left to right: Robert Berry, ?, Jenn Forman Orth (MDAR), Kenneth R. Law (USDA))

S-Shaped Tunnels

EAB larvae feed in
a serpentine
pattern under the
bark.



(photo credits, left to right: John Obermeyer (Purdue University), Eric R. Day (Virginia Polytechnic Institute), ?, Mike Kelly (Flickr))

D-Shaped Exit Holes

Emerging adult
beetles make D-
shaped holes to
exit the tree.



(photo credits, left to right: Cliff Sadof (Purdue University), ?, Rebecca Hargrave (Cornell Cooperative Extension))

Tree Decline & Mortality

North American ash of all sizes typically die in 3-5 years.

Epicormic Shoots

Sprouts grow from roots and trunks in an abnormal way.



(photo credits, left to right: Leah Bauer (USDA Forest Service), Daniel Herms (The Ohio State University), Edward Czerwinski (Ontario Ministry of Natural Resources), Pennsylvania Department of Conservation and Natural Resources - Forestry)

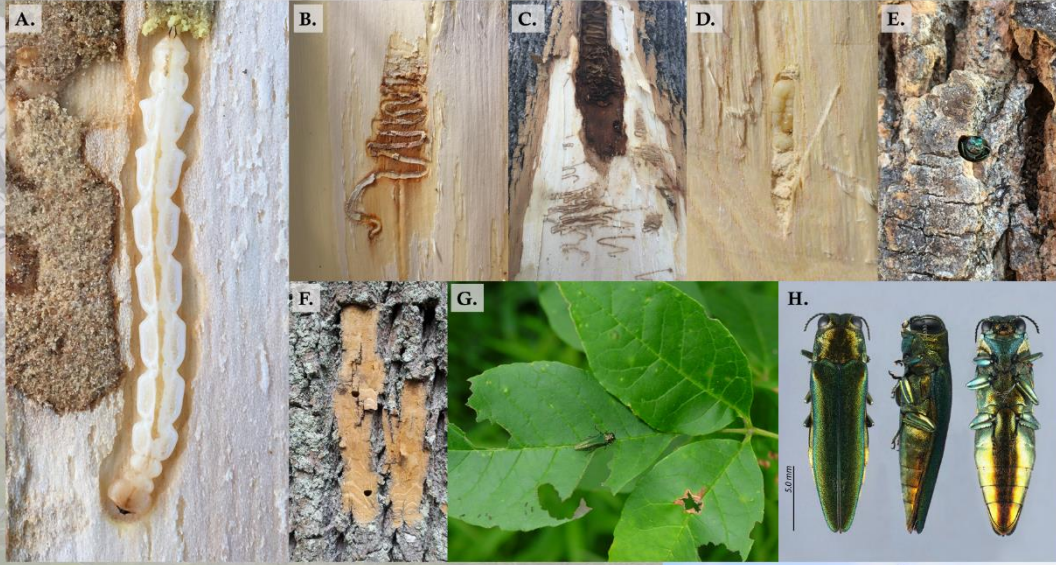
Bark Splits and Crown Dieback

Larval feeding under the bark causes the bark to split; excessive feeding causes the crown to die.



(photo credits, left to right: Michigan Department of Agriculture, Pennsylvania Department of Conservation and Natural Resources - Forestry, Daniel Herms (The Ohio State University), Eric R. Day (Virginia Polytechnic Institute))

Emerald Ash Borer (*Agrilus planipennis*)



- A. Late-instar emerald ash borer (EAB) larvae
- B. Characteristic serpentine EAB larval gallery
- C. Multiple stages of larval development are commonly present
- D. EAB larvae in sapwood prior to developing into an adult beetle
- E. Emerging EAB adult beetle
- F. D-shaped exit holes from emerged EAB adults
- G. Adult EAB on ash leaf with feeding along leaf margins
- H. Adult EAB (dorsal, lateral, & ventral views)
- I. EAB-infested ash trees with thinning crowns

Photo Credits: Photo II by M. DiGeronimo (USFS); all other images by N.W. Siegart (USFS)

www.maine.gov/eab
www.emeraldashborer.info



Maine IH program year 3

- ▶ 2018 - Third year of growing hemp
 - ▶ 105 Applications
 - ▶ 82 Signed agreements
 - ▶ +- 500 acres



2018 grower survey (n=25)

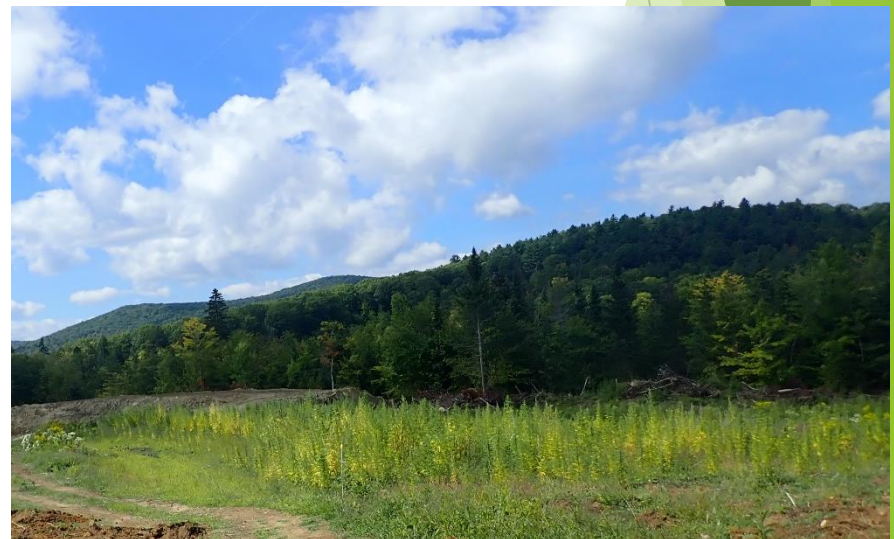
► Challenges

- Harvesting the crop
- Short growing season
- Unstable genetics
- Getting seed/seedlings
- Too many male plants
- Weeds
- Fungal disease
- Wet fall
- Drought



2018 grower survey (n=25)

- ▶ Crop marketed?
 - ▶ 52% yes - 48% no
- ▶ Planned markets
 - ▶ CBD Extraction 80%
 - ▶ Bud or leaf oil 56%
 - ▶ Seed 40%
 - ▶ Terpene extraction 20%
 - ▶ Fiber 12%
 - ▶ Seed oil 8%
 - ▶ Grain (whole or as hearts) 4%



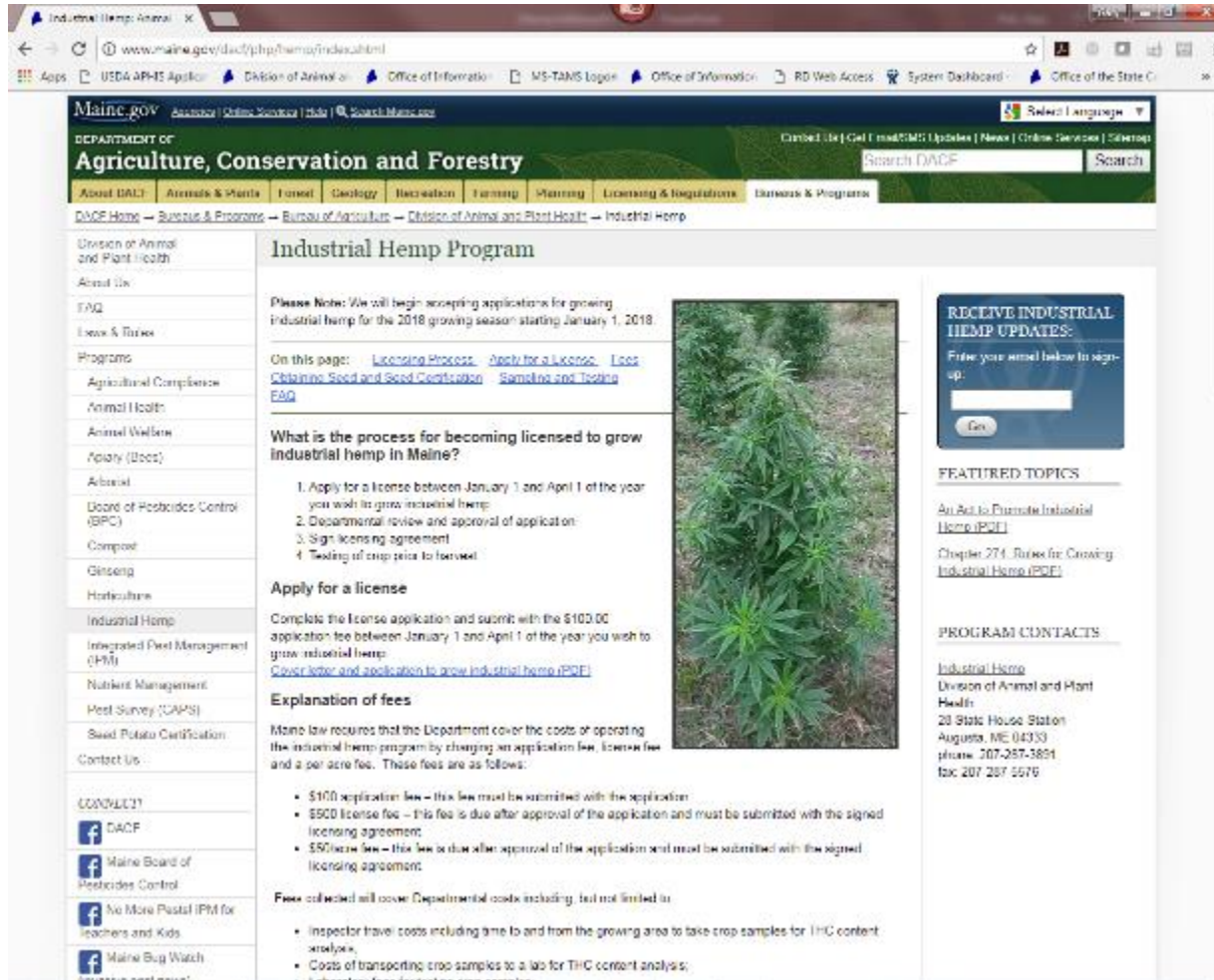
Licensing policy interpretation

- ▶ **Can I grow industrial hemp indoors or in a greenhouse?**
 - ▶ No. Growers can start plants indoors, but once the seedlings are hardy enough to survive outdoors they must be grown outside without any sort of roof or covering over the top.
 - ▶ Industrial hemp seedlings are defined as non-flowering plants that are no more than 12 inches tall.
 - ▶ All seedlings started indoors must be moved outside and grown without coverings by June 1. Should the threat of frost occur after June 1, the intermittent use of a row cover or other frost protection is allowed.
- ▶ **Can I grow industrial hemp from tissue culture or clones?**
 - ▶ Yes, as long as you can provide appropriate third party analysis on the variety you plan to grow. If you plan to grow from tissue culture or clones, submit documentation on the plants from which the tissue culture or clones will be produced that includes the same minimum information required for those growing industrial hemp from seed.



Photo courtesy of Oleg Zharsky

Industrial hemp website



The screenshot shows the website for the Industrial Hemp Program in Maine. The page is titled "Industrial Hemp Program" and is part of the Maine Department of Agriculture, Conservation and Forestry website. The main content area includes a "Please Note" section stating that applications for the 2018 growing season will begin on January 1, 2018. Below this, there is a list of links for "On this page" including "Licensing Process", "Apply for a License", "Loss Claims", "Seed and Seed Certification", and "Sampling and Testing". A central image shows a field of growing industrial hemp plants. To the right of the image is a "RECEIVE INDUSTRIAL HEMP UPDATES" sign-up form with a "Go" button. Below the image and form, there are sections for "What is the process for becoming licensed to grow industrial hemp in Maine?", "Apply for a license", "Explanation of fees", and "PROGRAM CONTACTS". The "Apply for a license" section states that the application fee is \$100.00 and must be submitted between January 1 and April 1. The "Explanation of fees" section lists three types of fees: \$100 application fee, \$500 license fee, and \$50/acre fee. The "PROGRAM CONTACTS" section provides the address and phone/fax numbers for the Industrial Hemp program.

Maine.gov DEPARTMENT OF **Agriculture, Conservation and Forestry**

Industrial Hemp Program

Please Note: We will begin accepting applications for growing industrial hemp for the 2018 growing season starting January 1, 2018.

On this page: [Licensing Process](#) | [Apply for a License](#) | [Loss Claims](#) | [Seed and Seed Certification](#) | [Sampling and Testing](#) | [FAQ](#)

What is the process for becoming licensed to grow industrial hemp in Maine?

1. Apply for a license between January 1 and April 1 of the year you wish to grow industrial hemp;
2. Departmental review and approval of application;
3. Sign licensing agreement;
4. Tending of crop prior to harvest.

Apply for a license

Complete the license application and submit with the \$100.00 application fee between January 1 and April 1 of the year you wish to grow industrial hemp:
[Cover letter and application to grow industrial hemp \(PDF\)](#)

Explanation of fees

Maine law requires that the Department cover the costs of operating the industrial hemp program by charging an application fee, license fee and a per acre fee. These fees are as follows:

- \$100 application fee – this fee must be submitted with the application;
- \$500 license fee – this fee is due after approval of the application and must be submitted with the signed licensing agreement;
- \$50/acre fee – this fee is due after approval of the application and must be submitted with the signed licensing agreement.

Fees collected will cover Departmental costs including, but not limited to:

- Inspector travel costs including time to and from the growing area to take crop samples for THC content analysis;
- Costs of transporting crop samples to a lab for THC content analysis;
- Laboratory fees for testing crop samples.

RECEIVE INDUSTRIAL HEMP UPDATES:
Enter your email below to sign up:

FEATURED TOPICS

[An Act to Promote Industrial Hemp \(PDF\)](#)

[Chapter 274 - Rules for Growing Industrial Hemp \(PDF\)](#)

PROGRAM CONTACTS

[Industrial Hemp](#)
Division of Animal and Plant Health
28 State House Station
Augusta, ME 04333
phone: 207-287-3851
fax: 207-287-5676

► <http://www.maine.gov/dacf/php/hemp/index.shtml>

Questions?

