Alphabet Soup: Other Invasive Threats to Maine Forests

Emerald Ash Borer
EAB

Brown Spruce Longhorn Beetle
BSLB

Hemlock Woolly Adelgid
HWA

DEPARTMENT OF CONSERVATION
MAINE
FOREST SERVICE

Photos: Maine Dept. of Ag.; Jon Sweeney, Natural Resources Canada, Bugwood.org; Stanton Gill, University of Maryland

Emerald Ash Borer (EAB)

Photo: Troy Kimoto

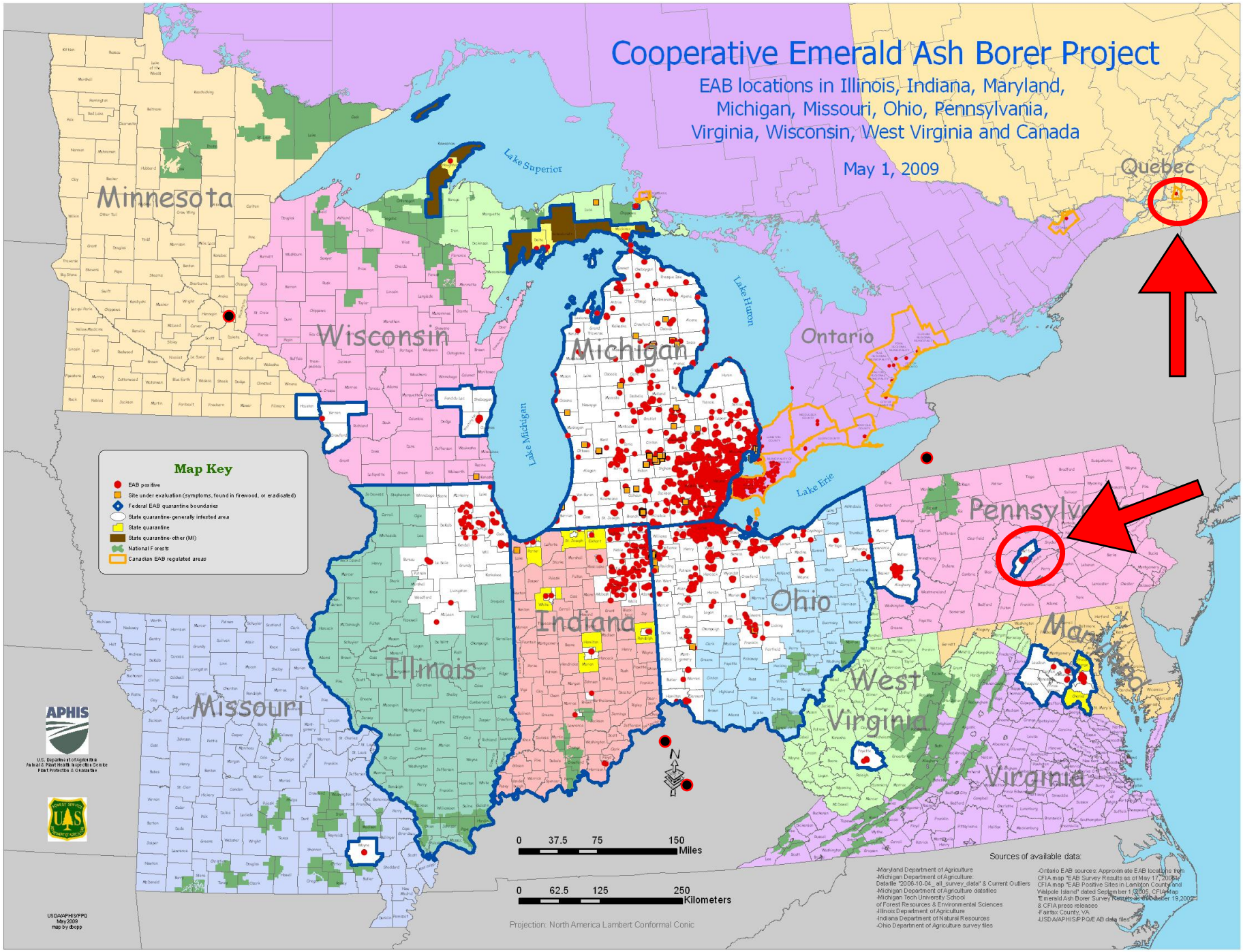
How it Got Here:

Solid Wood Packing Material

Spread:

Firewood, Nursery Stock

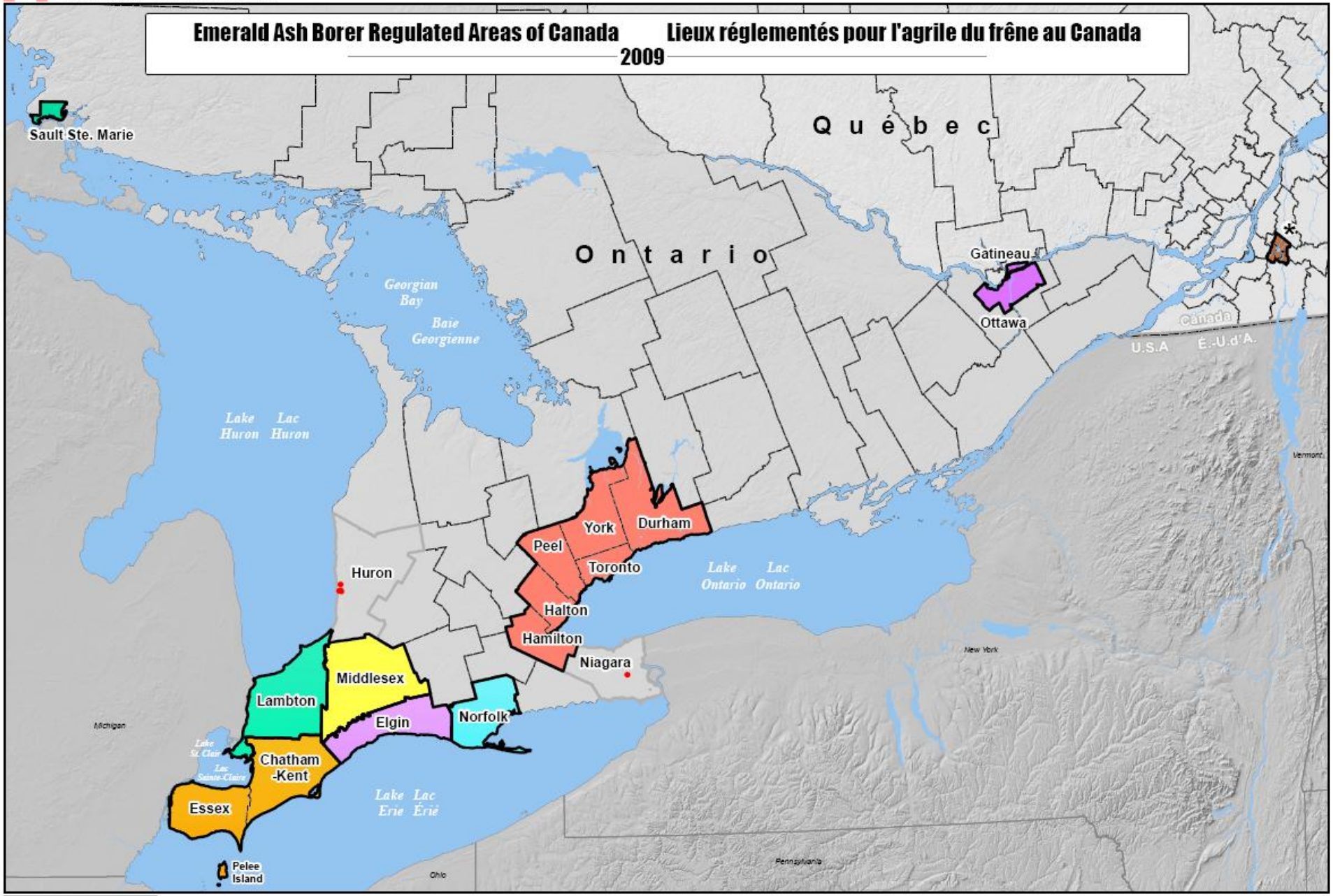
Photo: David Cappaert, Michigan State University


Cooperative Emerald Ash Borer Project
EAB locations in Illinois, Indiana, Maryland, Michigan, Missouri, Ohio, Pennsylvania, Virginia, Wisconsin, West Virginia and Canada
May 1, 2009
Minnesota
Wisconsin
Michigan
Ontario
Quebec
Lake Superior
Lake Huron
Lake Michigan
Lake Erie
Pennsylvania
Ohio
Indiana
Illinois
Missouri
West Virginia
Virginia
Maryland
Map Key
EAB positive
Site under evaluation (symptoms, found in firewood, or eradicated)
Federal EAB quarantine boundaries
State quarantine- generally infected area
State quarantine
State quarantine- other (MI)
National Forests
Canadian EAB regulated areas
APHIS
U.S. Department of Agriculture
Animal & Plant Health Inspection Service
Plant Protection & Quarantine
N
0 37.5 75 150 Miles
0 62.5 125 250 Kilometers
Projection: North America Lambert Conformal Conic
Sources of available data:
-Maryland Department of Agriculture
-Michigan Department of Agriculture:
Datafile "2006-10-04_ all_survey_data" & Current Outliers
-Michigan Department of Agriculture datafiles
-Michigan Tech University School
of Forest Resources & Environmental Sciences
-Illinois Department of Agriculture
-Indiana Department of Natural Resources
-Ohio Department of Agriculture survey files
-Ontario EAB sources: Approximate EAB locations from CFIA map "EAB Survey Results as of May 17, 2006" & CFIA map "EAB Positive Sites in Lambton County and Walpole Island" dated September 1, 2005. CFIA Map "Emerald Ash Borer Survey Results as of October 19, 2009" & CFIA press releases
-Fairfax County, VA
-USDA/APHIS/PPQ/EAB data files
USDA/APHIS/PPQ
May 2009
map by dbopp

Canadian Food Inspection Agency | Agence canadienne d'inspection des aliments

Emerald Ash Borer Regulated Areas of Canada — Lieux réglementés pour l'agrile du frêne au Canada

2009



LEGEND | LÉGENDE

- Positive Site | Site positif
- Areas Regulated by Ministerial Orders | Lieux réglementés par des arrêtés ministériels
- * Carignan, Saint-Mathias-sur-Richelieu, Chambly, Richelieu et Saint-Basile-le-Grand.

Produced by the Canadian Food Inspection Agency, Mapping and GIS Services, London, Ontario.
Map Projection UTM NAD 83 Zone 17.
Yr/An 2009 Mo/M 06 Da/J 03

Produit par l'Agence canadienne d'inspection des aliments, Cartographie et services SIG, London, Ontario.
Projection cartographique UTM NAD 83 Zone 17.

SCALE | ÉCHELLE

40 20 0 40 Kilometres | Kilomètres

40 20 0 40 Miles | Milles

Canada

Recognizing EAB

Photo: Ohio Tree Care, Inc.

- Bright metallic green
- ½ inch long
- Bores under bark of ash (*Fraxinus* spp.) trees

Photo: H. Russel, Michigan State University

Maine Hosts: White, Green, Brown Ash

White Green Brown

White

Green

Brown

Photos: Maine Forest Service, Forest Policy and Management

Recognizing EAB

Ash Crown decline
(from top down)

Photo: David R. McKay

Basal shoots

Photo: Pennsylvania Department of Conservation and Natural Resources - Forestry Archive

Recognizing EAB

Bark splitting

Photo: Oregon Department Of Agriculture, Plant Division

Photo: Maryland Department of Natural Resources

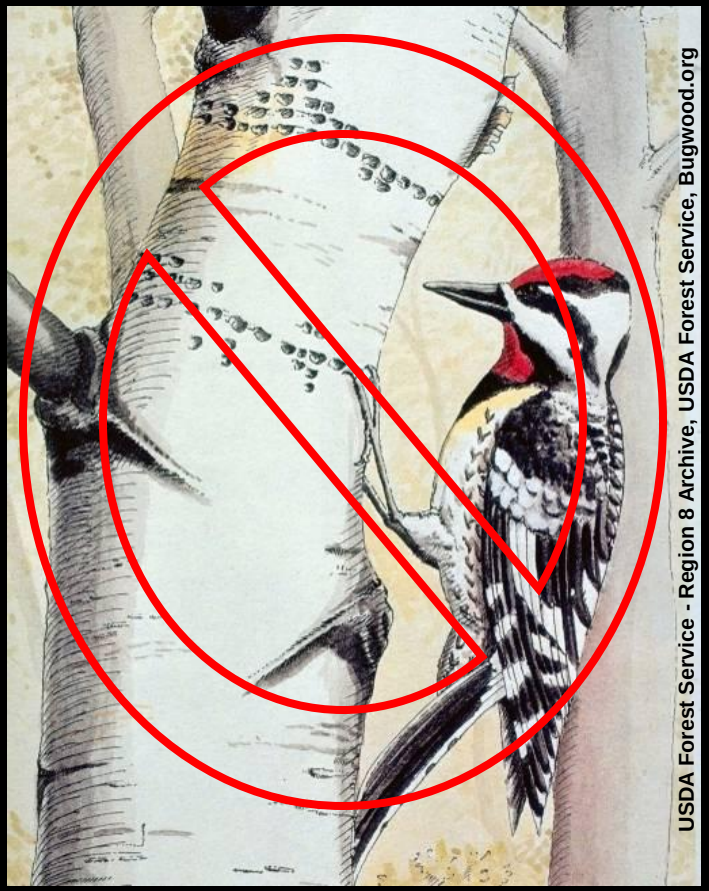
S-shaped tunnels under bark

Photo: David Roberts, MSU

D-shaped exit holes

Photo: University of Wisconsin Entomology

Recognizing EAB



Impact

- Attacks **all** species of North American ash
- Kills **all** of the trees it attacks
- Has killed over 40 million trees since 2002
- Has the potential to wipe out ash

Photo: Maine Department of Agriculture

Questions?

Photo: Maine Department of Agriculture

Brown Spruce Longhorned Beetle

Photo: Georgette Smith, bugwood.org

How it Got Here:

Solid Wood Packing Material (1990 or earlier)

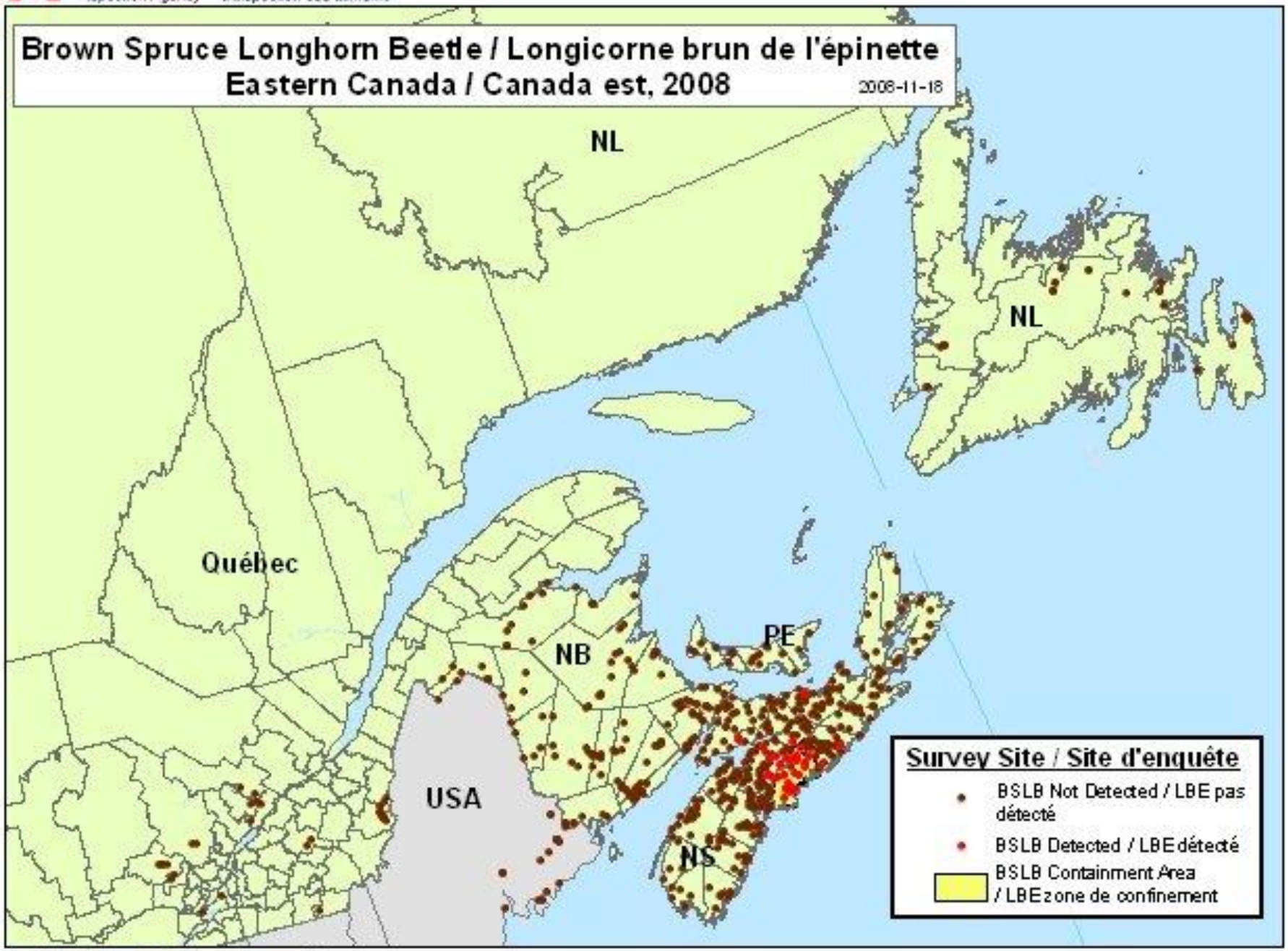
Spread:

Logs, Firewood

Canadian Food Inspection Agency | Agence canadienne d'inspection des aliments

Brown Spruce Longhorn Beetle / Longicorne brun de l'épinette
Eastern Canada / Canada est, 2008

2008-11-18



Canada

Maine Hosts: Spruce (fir, larch, pines)

Photos: Maine Forest Service, Forest Policy and Management

Recognizing BSLB

Yellowing Foliage

Resin Covered Trunks

Round to D-shaped
1/8” exit holes

Photos: CFIA (left), Jon Sweeney, bugwood.org (middle and right)

Recognizing BSLB

Larval Feeding Tunnels

L-Shaped Pupal Chamber

Photos: Georgette Smith, bugwood.org

Recognizing (what is not) BSLB

- Spruce Beetle
  - Native pest
  - Pitch tubes (not always)
  - Round exit holes (smaller)

Questions?

Photo: Jon Sweeney, Natural Resources Canada, Bugwood.org

Hemlock Woolly Adelgid

-Already in Southern Maine-

How it got here:

Accidental Introduction, Ornamental planting

Spread:

Eggs, crawlers on wind, vehicles, clothing, birds, mammals, etc.; all stages on live hemlock material

Background:Maine Forest Service Upper Image: Stanton Gill, University of Maryland
Lower Image: Rusty Rhea, USDA Forest Service

Recognizing Hemlock Woolly Adelgid

- Hemlock
- ~1/8” discrete white woolly masses
- Undersides of twigs
- Newer growth of twigs

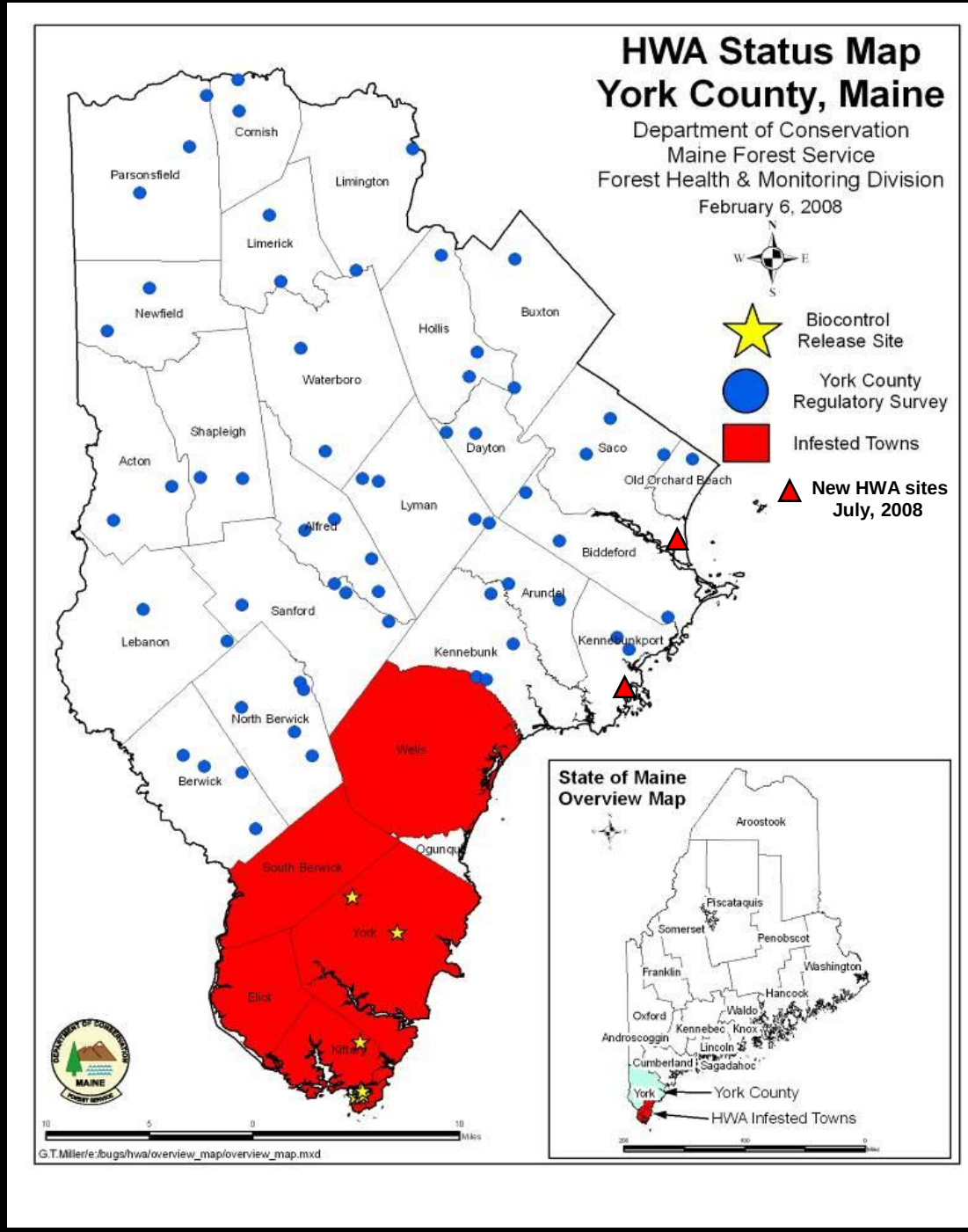
Photo: Maine Forest Service

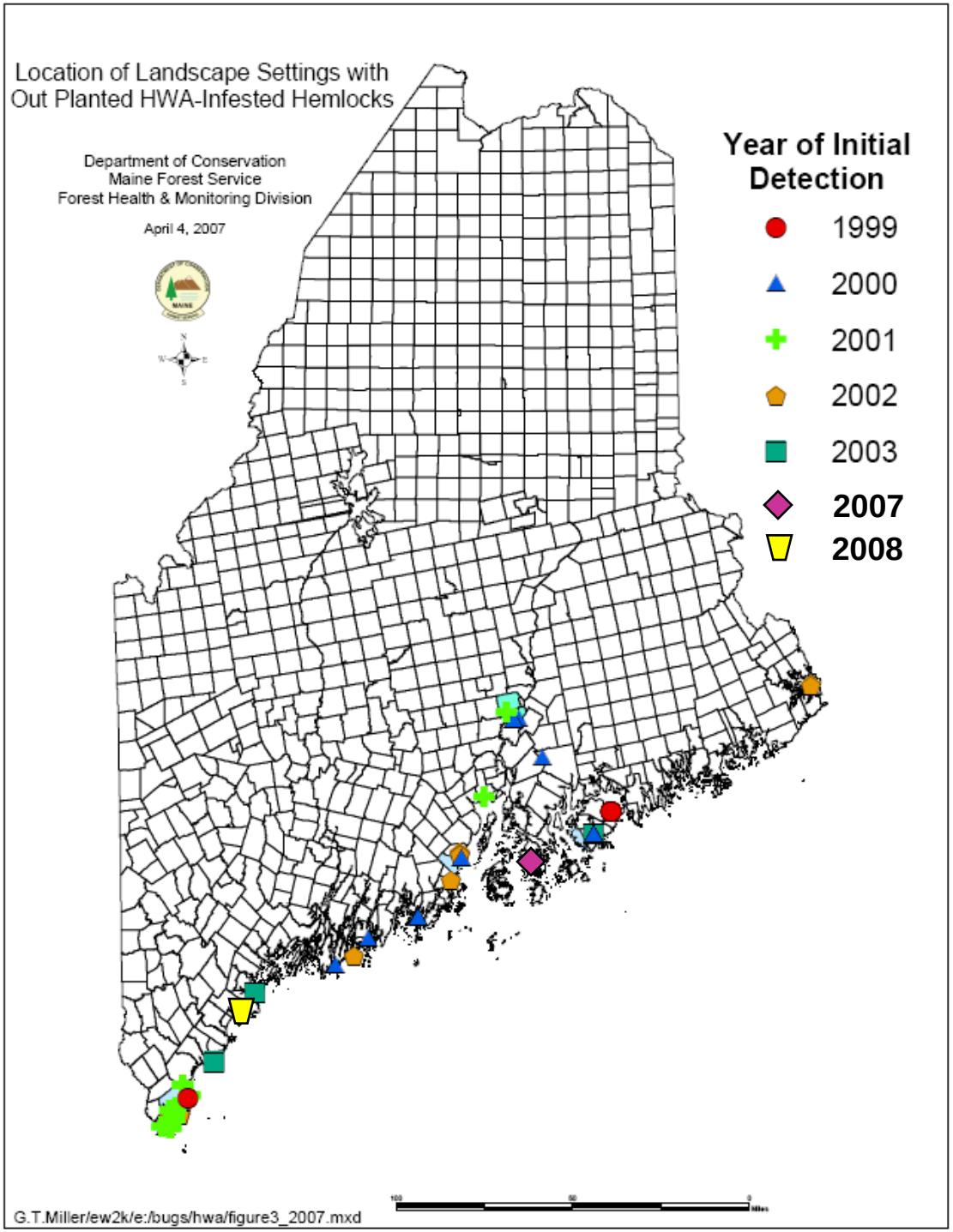
Where in Maine is HWA found?

Kittery, York, Wells, Eliot, South Berwick, Saco, Kennebunkport

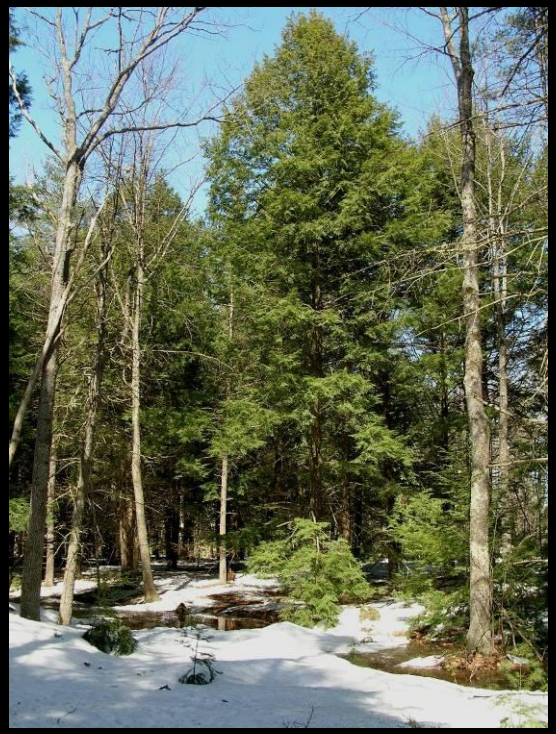
Scattered Infestations

Note: Ogunquit is within the HWA quarantine.




Location of Landscape Settings with
Out Planted HWA-Infested Hemlocks
Department of Conservation
Maine Forest Service
Forest Health & Monitoring Division
April 4, 2007
Year of Initial
Detection
1999
2000
2001
2002
2003
2007
2008
G.T.Miller/ew2k/e:/bugs/hwa/figure3_2007.mxd

Impacts



Hemlock health
Water Quality
Wildlife (deer, trout)
Timber

Questions?

Photo: Maine Forest Service

Firewood

Leave your Firewood at Home
Buy It Where You Burn It
Don't Give Bugs a Free Ride!

Types of Invasive Insects Found In Firewood

- Longhorned beetles (Asian longhorned beetle)
- Bark beetles (European elm bark beetle)
- Scale insects (beech scale)
- Flatheaded woodborers (emerald ash borer)
- Wood wasps (*Sirex noctilio*)
- Ants, termites, powderpost beetles, etc.
- “Shelter-seekers” (gypsy moths)
- Diseases (Dutch elm disease)

Many Invasive Pests Can Be Moved in Firewood

Firewood Moves!

- Recreational
  - Camping
  - Hunting/Fishing
  - Snowmobiling
  - Camp owners
- Commercial dealers
  - Stores
  - Residential use

Photo: Troy Kimoto

Bruce Williamson, New York State Department of Environmental Conservation

Firewood

Messages:

- *Buy firewood locally.*
- *Try not to buy firewood harvested more than 50 miles away.*
- If firewood already moved, burn it within 24 hours

Especially important for out-of-staters - but also for us

Worchester, MA didn’t think they had anything to worry about for 12-15 years…

Questions?

www.maine.gov/firewood

www.dontmovefirewood.org

You Can Help…

- Spread the word
- Learn more
- Keep Your Eyes Open
  - Question, Report!
- Don’t move firewood
- Volunteer
  - ALB
  - EAB
  - HWA

Photo: Maine Forest Service

For More Information:

www.maineforestservice.gov/InvasiveThreats.htm