The Resource
Maryland occupies a land area of 6,255,800 acres. Forest land comprises 2,565,800 acres of which nearly 76 percent is privately owned. Healthy, productive forests are critical in urban and rural areas for soil conservation, clean air and water, wildlife habitat, outdoor recreation, and esthetics. The forest products industry is the largest employer in Allegany and Garrett Counties and the second largest employer on the Eastern Shore.

Forest Health Programs
State forestry agencies work in partnership with the U.S. Forest Service to monitor forest conditions and trends in their State and respond to pest outbreaks to protect the forest resource.
Aerial Surveys

The majority of the damage recorded in Maryland from aerial surveys in 2013 was from fall cankerworm (80,734 acres). Salt intrusion caused 18,117 acres of damage in Dorchester, Somerset, Wicomico, and Worcester Counties. In Allegany County, the oak leaf roller caused 5,827 acres of defoliation. Hurricane Sandy caused 3,256 acres of tree damage by toppling trees due to high winds and 36 inches of wet snow. Also recorded was 2,560 acres of damage primarily on oaks due to a late May frost.
2013 Maryland Forest Damage

Legend
2013 Forest Damage Statewide 110,587 Acres
- Barkworm Defoliation 83,744 Acres
- Oak Leafroller Damage 5,327 Acres
- Saltwater Intrusion Damage 13,117 Acres
- Hurricane Sandy Damage 3,236 Acres
- Fire Damage 47 Acres
- Frost Damage 2,940 Acres
- Gypsy Moth Defoliation 47 Acres

Spatial Data Sources:
Maryland Department of Agriculture
Maryland Department of Natural Resources
MDIMP
ESRI, Inc., ArcGIS Online

Date: 10/22/2013
Forest Health Monitoring
The Forest Health Monitoring Program has two components: plot network and off-plot survey. The USDA Forest Service’s Northcentral Station Forest Inventory and Analysis Staff administers the plot network in Maryland. The network is designed to monitor, assess, and report annually on changes in the long-term condition of trees, soils, lichens, and air quality in forests.

The Maryland Department of Agriculture conducts the off-plot survey. The objectives are delimiting, mapping, and reporting forest pest problems, to supplement the plot network. Aerial and ground surveys, data collection, and reporting are conducted in accordance with Forest Health Management standards for air operations and GIS.

Office of Plant Industries and Pest Management
Forest Pest Management Section
Gypsy Moth
The gypsy moth is the most serious threat to oak forests in the United States. In Maryland the first egg masses were detected in 1971, and the first extensive defoliation occurred in 1981.

Each fall and winter, Maryland Department of Agriculture conducts an extensive survey for gypsy moth egg masses to determine potential areas of defoliation. From August 2012 through March 2013, personnel conducted gypsy moth egg mass surveys on 527,837 acres of “high value” forested lands. High value forested sites include areas with development, recreational use, managed forest and wildlife resources, and other site conditions that render dieback and mortality to be economically and socially important. The survey results indicated that the current populations were sufficient to cause moderate to heavy defoliation on 12,404 acres of high value rural and urban forest in 2013. A table summarizing egg mass surveys, and a map showing survey results are provided.

During May 3 – May 30, 2013, Maryland Department of Agriculture sprayed 11,996 acres in 61 spray blocks with the insecticide Foray 48B. All spray areas were in Garrett, St. Mary’s, and Worcester Counties. A map showing suppression blocks is provided.

Charts showing historical defoliation and suppression information are provided for reference.

Gypsy moth (Lymantria dispar (Linnaeus)), USDA APHIS PPQ Archive, UGA1148049, forestryimages.org.
<table>
<thead>
<tr>
<th>County</th>
<th>Number of Blocks Surveyed</th>
<th>Number of Acres Surveyed</th>
<th>Number of Points Surveyed</th>
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</thead>
<tbody>
<tr>
<td>Anne Arundel</td>
<td>55</td>
<td>22,657</td>
<td>282</td>
</tr>
<tr>
<td>Allegany</td>
<td>180</td>
<td>52,789</td>
<td>1,068</td>
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<td>Baltimore</td>
<td>225</td>
<td>33,167</td>
<td>774</td>
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<td>Baltimore City</td>
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<td>0</td>
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<td>Carroll</td>
<td>293</td>
<td>22,451</td>
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<td>Cecil</td>
<td>102</td>
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<td>Charles</td>
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<td>83,876</td>
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<tr>
<td>Caroline</td>
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<tr>
<td>Dorchester</td>
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<td>Frederick</td>
<td>340</td>
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<td>Garrett</td>
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<td>Harford</td>
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<td>26,546</td>
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<td>Howard</td>
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<td>Montgomery</td>
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<td>St. Mary’s</td>
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<td>Somerset</td>
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<td>Wicomico</td>
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<tr>
<td>Worcester</td>
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<td>78</td>
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<tr>
<td>Washington West</td>
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<td>13,737</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2,433</strong></td>
<td><strong>527,837</strong></td>
<td><strong>9,232</strong></td>
</tr>
</tbody>
</table>
Fall 2012 to Spring 2013 Gypsy Moth Egg Mass Survey Results

Legend
Gypsy Moth Egg Masses per Acre
- 0 Egg Masses per Acre
- 1 - 250 Egg Masses per Acre
- 251-1000 Egg Masses per Acre
- 1000 + Egg Masses per Acre
- Not Surveyed

Spatial Data Sources:
Maryland Department of Agriculture
Maryland Department of Natural Resources
MD/MAP
ESRI, Inc., ArcGIS Online

Date: 10/22/2013
Maryland Gypsy Moth Defoliation 1980 - 2013
Hemlock Woolly Adelgid (HWA)

HWA remains the major threat to the health of eastern hemlock. Infested hemlocks occur in the metropolitan area between Baltimore and Washington, DC, and in natural stands from Harford to Garrett Counties. *Laricobius nigrinus*, a predatory beetle of HWA, has been released in several areas since 2003.

Since 2003 there have been 36 releases totaling 15,477 *Laricobius nigrinus* in Maryland.
A joint task force of Maryland Department of Agriculture and the Maryland Department of Natural Resources addressed the multidisciplinary needs related to the HWA infestation. The task force prioritized more than 50 hemlock stands and selected them as the sites where suppression might be attempted. Only publicly owned sites would be part of this suppression project.

**2004 to Spring 2013 Imidacloprid Treatments to Control Hemlock Woolly Adelgid in Maryland Hemlock Stands**

Legend:
- Hemlock Stands Treated with Imidacloprid

Spatial Data Sources:
- Maryland Department of Agriculture
- Maryland Department of Natural Resources
- MEMAP
- ESRI, Inc., ArcGIS Online

Date: 10/22/2013

Broad Creek Scout Camp was treated by the Maryland Department of Agriculture, Forest Pest Management and by the Broad Creek Boy Scout Camp personnel.

Swallow Falls SP and New Germany SP were treated by the Maryland Department of Agriculture, Forest Pest Management and the Maryland Conservation Corps, Maryland Department of Natural Resources.
Southern Pine Beetle (SPB)
The SPB is one of the most destructive insect pests of pines. Maryland is at the northern edge of its range, and it is commonly found on the lower Eastern Shore and Southern Maryland. Since 1989, Maryland has participated in a multi-state SPB survey throughout the southern United States using pheromone-baited traps. Trap data indicated that SPB numbers would continue to remain low in 2013. Populations have been below outbreak level since 1994.

Sirex noctillio (Woodwasp)
Sirex woodwasp has been the most common species of exotic woodwasp detected at United States ports-of-entry associated with solid wood packing materials. Recent detections of Sirex outside port areas in the United States have raised concerns, because this insect has the potential to cause significant mortality of pines. The Sirex woodwasp has not been detected in Maryland but is known to be in Pennsylvania. MDA placed two traps per county on the northern tier counties and one trap in all other counties, for a total of 30 traps in pine woods. All traps were negative during FY 2013.

Emerald Ash Borer (EAB)
In conjunction with Maryland Department of Agriculture Plant Protection Section, Forest Pest Management put up 187 purple traps in the quarantined counties of Maryland that were not designated as being of special interest. Traps picked up a new EAB find in Frederick County.
2013 Maryland Emerald Ash Borer (EAB), Southern Pine Beetle (SPB) and Sirex Woodwasp Trap Locations
Forest Pest Management Section, Maryland Department of Agriculture

Legend
- **Sirex Traps**
- **SPB Traps**
- **Negative EAB Traps**
- **Positive EAB Trap**

Spatial Data Sources:
Maryland Department of Agriculture
Maryland Department of Natural Resources
MDMAD
ESRI, Inc., ArcGIS Online

Date: 6/21/2013

0 25 50
Miles
Thousand Cankers Disease (TCD) and Walnut Twig Beetle (WTB)

Eastern black walnut planted in the western United States have experienced dieback and mortality. The WTB spreads the TCD. An infested tree usually dies within 3 years of showing symptoms. This beetle and disease had not been reported in the natural range of eastern black walnut until their discovery in Tennessee in 2010. Since then, the disease has been found in Pennsylvania, North Carolina, and Virginia.

Maryland and other mid-Atlantic States started surveying for this disease in 2011. So far, visual inspection has not detected the disease in Maryland. Statewide, 28 traps baited with a pheromone for the WTB have captured no WTB.
Bacterial Leaf Scorch (BLS)
BLS was prevalent all through Maryland this year. Not only was it observed on ornamental trees but in forest areas throughout the State. BLS was less severe this year than last.

Beech Bark Disease (BBD)
BBD has been found only in Garrett County where 154,473 acres of forest are infested. In 2013 permanent monitoring sites were set up in Garrett and Allegany Counties.
Acknowledgments

The aerial detection survey map was produced by the U.S. Forest Service, Forest Health Protection, in Morgantown, WV, using survey data from the Maryland Department of Agriculture, Forest Pest Management.

References

Land Cover Map:

Forest Land Ownership, Forest Species Type: