

Maryland Department of Natural Resources  
Forest Service  
Annapolis, Maryland 21401



## The Hemlock Woolly Adelgid

The hemlock forests of Maryland are part of a unique and often fragile habitat. Because of their shade tolerance and intolerance of fire, hemlocks are usually found growing in riparian areas or in steep cove forests in the northern and western tier counties of Maryland. It's estimated that more than 42,000 acres of such forests exist in Maryland.

The health of Maryland's hemlocks, and the associated ecosystems, is being threatened by the hemlock woolly adelgid (HWA). This small, exotic insect is native to Asia, and was first found in North America in British Columbia in the 1920's. It was reported in Richmond, Virginia in 1951, and spread northward into Maryland by the 1980's.

Heavy infestations of HWA may result in decline of tree health and eventual mortality. The severity of decline and mortality is often hastened by drought, or other pests, such as elongate hemlock scale and hemlock borer. Several stands in Maryland, which have been infested with HWA for more than 10 years, have extensive decline and some mortality.

Landscape hemlocks in the Baltimore – Washington area were infested in the late 1980's and natural stands in the area became infested by 1990. The infestation steadily moved westward through native stands of hemlock in Frederick and Washington Counties in the mid-1990's, Allegany County in 1999 and Garrett County in 2001.

While adelgid populations were moving through Maryland in the 1980's and 1990's, there were very few management tools available to stop its spread. Although treatment options for HWA are still being developed, there are now more tools available than there were just 10 years ago.

The Maryland Departments of Agriculture and Natural Resources have developed a Hemlock Woolly Adelgid Management and Suppression Plan. This plan sets forth management options for HWA on public lands across the State. Treatments began in the fall of 2004 and have continued through the present.

Visit this website, for more detail on the biology and identification of HWA:  
[http://mda.maryland.gov/plants-pests/Pages/hemlock\\_woolly\\_adelgid.aspx](http://mda.maryland.gov/plants-pests/Pages/hemlock_woolly_adelgid.aspx)

The tables below indicate suppression efforts on Potomac Garrett State Forest.

Predator Release Form

File Preview 332 of 1828 Next Last

Location Name: Laurel Run State: MD Release ID: UNMG02007 Status: Approved Type: Original

Coordinate Reading		Site Ownership	Site Contact:
UTM Datum:	NAD83	Zone:	17
Easting:	649841	Northing:	4016157
Lat/Long		Name:	MD Dept of Natural Resources
Latitude:	39.14223	Phone Number:	301-707-1504
Longitude:	-79.13479	Organization:	MD Dept. Agriculture
ID M 1	39 20 32.02	Email Address:	bth7@verizon.net
ID M 5	39 20 32.02	Date of Release:	11/24/2010
Biological Control Agents Released		Time of Release:	8:00
Species Released:	1/N	Weather:	40 F
Total No. Predators Released:	1000	Wind:	Wind: none
Life Stage Released:	Adults	Precipitation:	low
Predator Description (Free):	000	Cloud Cover:	low
Source of Beetles:	LAB	Stand Condition	<50%
Lab-Reared Beetles		Overall Health:	Good
Inventory VA:	Rearing Lot #: 2010	Crown Class:	Intermediate
Date of Shipment:	11/22/2010	Slope:	30
Conditions Prior to Release:	Photoperiod: 13:13 (L:D)	Aspect:	SE
Temperature: 4 C:	Exposing? No	WMA Denotes:	Medium
Post-Diapause? Yes		Notes:	
Field-Collected Beetles		Notes:	First release in Laurel Run
Wild Beetle Collection Site:			
Wild Beetle Collector:			
Date of Field Collection:			

Pre-Release Data for Release Sites	
Tree 1	Tree 6
ID Tag:	ID Tag:
DBH: 8 inch	DBH: 20 inch
Health:	Good
Other Stressors?	
WMA Density:	Low
Tree 2	Tree 7
ID Tag:	ID Tag:
DBH: 10 inch	DBH: 14 inch
Health:	Good
Other Stressors?	
WMA Density:	Low
Tree 3	Tree 8
ID Tag:	ID Tag:
DBH: 4 inch	DBH: 10 inch
Health:	Good
Other Stressors?	
WMA Density:	Low
Tree 4	Tree 9
ID Tag:	ID Tag:
DBH: 6 inch	DBH: 6 inch
Health:	Good
Other Stressors?	
WMA Density:	Medium
Tree 5	Tree 10
ID Tag:	ID Tag:
DBH: 2 inch	DBH: 3 inch
Health:	Good
Other Stressors?	
WMA Density:	Medium

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Predator Release Form

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Location Name: Lost Land Run State: MD Release ID: UNMG02008 Status: Approved Type: Original

Coordinate Reading		Site Ownership	Site Contact:
UTM Datum:	NAD83	Zone:	17
Easting:	220029	Northing:	4029910
Lat/Long		Name:	Patuxent State Forest
Latitude:	36.48126	Phone Number:	301-707-1504
Longitude:	-78.180148	Organization:	MD Dept. Agriculture
ID M 1	36 27 27.75	Email Address:	bth7@verizon.net
ID M 5	36 27 43.94	Date of Release:	11/24/2010
Biological Control Agents Released		Time of Release:	12:00pm
Species Released:	1/N	Weather:	41 F
Total No. Predators Released:	1000	Wind:	Wind: none
Life Stage Released:	Adults	Precipitation:	light rain
Predator Description (Free):	000	Cloud Cover:	high
Source of Beetles:	LAB	Stand Condition	<50%
Lab-Reared Beetles		Overall Health:	Good
Inventory VA:	Rearing Lot #: 2010	Crown Class:	Intermediate
Date of Shipment:	11/22/2010	Slope:	30
Conditions Prior to Release:	Photoperiod: 13:13 (L:D)	Aspect:	SE
Temperature: 4 C:	Exposing? No	WMA Denotes:	Medium
Post-Diapause? Yes		Notes:	
Field-Collected Beetles		Notes:	
Wild Beetle Collection Site:			
Wild Beetle Collector:			
Date of Field Collection:			

Pre-Release Data for Release Sites	
Tree 1	Tree 6
ID Tag:	ID Tag:
DBH: 10 inch	DBH: 5 inch
Health:	Good
Other Stressors?	
WMA Density:	Medium
Tree 2	Tree 7
ID Tag:	ID Tag:
DBH: 4 inch	DBH: 4 inch
Health:	Good
Other Stressors?	
WMA Density:	Medium
Tree 3	Tree 8
ID Tag:	ID Tag:
DBH: 5 inch	DBH: 7 inch
Health:	Good
Other Stressors?	
WMA Density:	Medium
Tree 4	Tree 9
ID Tag:	ID Tag:
DBH: 9 inch	DBH: 13 inch
Health:	Good
Other Stressors?	
WMA Density:	Medium
Tree 5	Tree 10
ID Tag:	ID Tag:
DBH: 7 inch	DBH: 6 inch
Health:	Good
Other Stressors?	
WMA Density:	Medium

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Predator Release Form

File Preview 322 of 1828 Next Last

Location Name: Lost Land Run State: MD Release ID: UNMG02004 Status: Approved Type: Original

Coordinate Reading		Site Ownership	Site Contact:
UTM Datum:	NAD83	Zone:	17
Easting:	215019	Northing:	4039910
Lat/Long		Name:	Patuxent State Forest
Latitude:	36.48126	Phone Number:	301-707-1504
Longitude:	-78.180148	Organization:	MD Dept. Agriculture
ID M 1	36 27 27.75	Email Address:	bth7@verizon.net
ID M 5	36 27 43.94	Date of Release:	11/14/2008
Biological Control Agents Released		Time of Release:	10:00
Species Released:	1/N	Weather:	57 F
Total No. Predators Released:	100	Wind:	Wind: low
Life Stage Released:	Adults	Precipitation:	none
Predator Description (Free):	00	Cloud Cover:	high
Source of Beetles:	LAB	Stand Condition	<50%
Lab-Reared Beetles		Overall Health:	Good
Inventory VA:	Rearing Lot #: 2010	Crown Class:	Intermediate
Date of Shipment:	11/12/2008	Slope:	15%
Conditions Prior to Release:	Photoperiod: 13:13 (L:D)	Aspect:	SW
Temperature: 4 C:	Exposing? No	WMA Denotes:	Medium
Post-Diapause? Yes		Notes:	
Field-Collected Beetles		Notes:	
Wild Beetle Collection Site:			
Wild Beetle Collector:			
Date of Field Collection:			

Pre-Release Data for Release Sites	
Tree 1	Tree 6
ID Tag:	ID Tag:
DBH: 3 inch	DBH: 6 inch
Health:	Good
Other Stressors?	
WMA Density:	Medium
Tree 2	Tree 7
ID Tag:	ID Tag:
DBH: 12 inch	DBH: 8 inch
Health:	Good
Other Stressors?	
WMA Density:	Medium
Tree 3	Tree 8
ID Tag:	ID Tag:
DBH: 3 inch	DBH: 4 inch
Health:	Good
Other Stressors?	
WMA Density:	Medium
Tree 4	Tree 9
ID Tag:	ID Tag:
DBH: 4 inch	DBH: 9 inch
Health:	Good
Other Stressors?	
WMA Density:	Medium
Tree 5	Tree 10
ID Tag:	ID Tag:
DBH: 1 inch	DBH: 1 inch
Health:	Good
Other Stressors?	
WMA Density:	Medium

Augmentation Release Information

Release Date: 11/24/2010

Releaser Name: Bill Thompson

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