BUREAU OF FORESTRY FOREST HEALTH PROGRAM ANNUAL REPORT, FISCAL YEAR 1998 CHARLES M. BURNHAM, PROGRAM SUPERVISOR

AERIAL SURVEY

An aerial survey to document forest disturbances is required as part of the Forest Health Monitoring cooperative agreement between the USDA, Forest Service and the Massachusetts Forest Health Program. This years survey required 21 hours of flight time at a cost of \$1,500 for airplane rental. A detailed report on this survey can be found later in this report.

FOREST HEALTH MONITORING

Due to changes within the USDA, Forest Service, Forest Inventory and Analysis Unit (FIA), it was decided that the Forest Service Crews currently conducting forest inventory in Massachusetts would also collect Forest Health Data within the assigned plot network.

NORTH AMERICAN MAPLE PROJECT

This project was initiated in 1987 to look for changes in the condition of sugar maples stands. Even though funding specifically for this project was canceled, the forest health program continues to monitor these sugar maple plots as part of the National Forest Health Monitoring grant. The result of this years survey indicate that sugar maples within the sample sites are in good condition and have recovered nicely from the prior years defoliation caused by pear thrips.

HEMLOCK WOOLLY ADELGID STUDIES

We continued to cooperate with the USDA Forest Service and their cooperating universities to determine if cold temperatures will be a limiting factor in the spread of hemlock woolly adelgid (HWA). Results from these cold hardiness studies indicate that cold will not be a limiting factor in the spread. An additional study is being conducted to determine if some strains of eastern hemlock will be resistant to HWA infestations. Seedlings grown from seeds collected at various locations in the northeast were raised at the University of Tennessee. These seedlings are to be planted by various cooperating agencies in areas currently infested with HWA. The planting in Massachusetts was conducted on State Forest Land in Amherst. These seedlings well are monitored annually for mortality.

URBAN FORESTRY SUPPORT

As a member at large to the Urban Forestry Council representing Western Massachusetts, Mr. Kenneth Gooch helped to organize and participate in educational workshops. These workshops were to assist communities in having a better understanding of urban forestry. The workshops were presented to seven community groups and were attended by 75 individuals. Work continued at the National Tree Trust nursery previously established at Mt. Greylock State Reservation. A small quantity of trees from this nursery was donated for planting in various communities. Additional seedlings will be planted and raised until deemed large enough to be planted in communities. The Forest Health Program continued to provide field support to the Urban Forestry Program making twenty site visits to insure that grants specifications were being followed.

ASIAN LONGHORNED BEETLE

The Forest Health Program continued to cooperate with the USDA, APHIS in determining host species of the Asian Longhorned beetle. Samples from various tree species were collected and shipped to the APHIS research facility on Cape Cod.

100 TRES FOR 100 YEARS

The Forest Health Program was tasked by Director Frederick to oversee the selection and planting of 100 trees to celebrate the 100th anniversary of the Department of Environmental Management. Contract specifications for trees and planting were developed and trees were planted in the following DEM facilities: Shawme Crowell State Forest, Fort Phoenix State Reservation, Mt. Greylock State Reservation, Elwell State Park, Robinson State Park, Maudslay State Park, Cochituate State Park, Lake Park, Hopkinton State Park and Blackstone Heritage State Park as well as the Leverett Saltonstall Building in Boston.

OUTREACH

During Fiscal Year 1998 the Forest Health Staff made four presentations at schools and at professional organizational meetings reaching 750 participants. Additionally we provided information on a variety of tree health and insect/disease topics to 440 citizens and municipal officials. One television appearance was made on a local cable channel. Working with the University of Massachusetts, Cooperative Extension Service and funded by the USDA Forest Service the 122 page "Massachusetts Tree Wardens Guide to Common Insects and Diseases" was produced and printed. This publication will be distributed to municipal tree officials, commercial arborists, other professionals and interested citizens. Finally with funds provided by the US Forest Service "A History of Forest and Shade Tree Pest Management in Massachusetts" was completed and published.

SUMMERY OF INSECT AND DISEASE CONDATIONS

GYPSY MOTH defoliation documented during the annual aerial survey totaled 12,976 acres, a dramatic increase from the previous year. Follow-up surveys in the defoliated areas revealed that the fungal disease *Entomophaga maimaiga* and the virus causing wilt disease in the caterpillar populations had greatly reduced the insect population. The exception to this was in Berkshire County were the insect population appears to be stable or building slightly. Little disease was noted in the Berkshire County caterpillar population

HEMLOCK WOOLLY ADELGID was identified in 13 new communities including Norton, Beverly, West Tisbury, Dover, Halifax, Fairhaven, Deerfield, West Springfield, Warren, Pelham, Southampton, Boston, and Westfield. Some hemlock mortality has been noted but this mortality can not be solely attributed to the presence of Hemlock Woolly Adelgid.

SPRING AND FALL CANKERWORM caused approximately 13,000 acres of defoliation on the South Shore as observed in the annual aerial survey. This is a significant increase from previous years. We are working with the USDA Forest Service on developing a good tool to predict defoliation, but to date this effort has been unsuccessful.

SUGAR MAPLE PROBLEMS: Warm temperatures in March and April caused the maples foliage to emerge earlier than normal. This was follow by cool wet weather which proved ideal for the development of the foliage disease Anthracnose. This combined with light feeding from pear thrips and saddled prominent will cause some dieback and mortality to weaker trees.

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STATISTICAL SUMMARY OF ACTIVITIES

DISTRICT SUPERVISORS ACTIVITIES

Municipal assistance	101		
Grant inspections	13		
Homeowner site visits	26		
Telephone requests for information	296		
Educational Programs			
Conducted	12		
Attended	35		
Arbor Day Programs	9		
Special Projects			
Asian Longhorned Beetle Research	20 Man Days		
100 Trees for 100 Years Centennial Planting	51 Man Days		
Forest Inventory Assistance to Service Forestry	92 Man Days		
Champion Tree Measurement	15 Man Days		
Insect Impact Plots	25 Man Days		
Insect Surveys	21 Man Days		
TREE CREW ACTIVITIES			
Number of Recreation Areas Assisted	62		
Number of Trees Pruned	2.047		
Number of Trees Removed	1,455		
Number of Stumps Removed	177		
Assistance to Other DEM Programs	38 Man Days		
Assistance to Other State Agencies	8 Man Days		

AERIAL SURVEY RESULTS

CAUSE OF I	AMAGE		ACRES OF DAMAGE
	Oak Leaf Tier		26.6
	Spring and Fall Cankerworm		13,070.2
	Browntail Moth		7.8
	Gypsy Moth		12,976.5
	Nantucket Pine Tip Moth		134.0
	Trunk Decay		7.2
	Beech Bark Disease		1,997.9
	Nectria Canker		39.2
	Unknown Foliage Disease		172.4
	Anthracnose		1,794.7
	Lophodermium Needle Cast		623.1
	Diplodia Blight		8.9
	Fire		67.6
	Abiotic Damage		380.6
	Frost	•	3,379.7
	Unknown		<u>2,910.0</u>
Total damage			37,596.4
