BUREAU OF FORESTRY FOREST HEALTH PROGRAM ANNUAL REPORT, FISCAL YEAR 2005 CHARLES M. BURNHAM, PROGRAM SUPERVISOR

AERIAL SURVEY

The annual aerial survey was conducted as part of our cooperative agreement with the USDA Forest Service. The intent of this survey is to document forest disturbances caused by insects, diseases, weather events and various environmental factors. This survey is scheduled for late June what most of the damage from major defoliators has reached its peak. Other special surveys may be scheduled to document damage caused by specific pests. The information collected during the aerial survey is used as the basis for all ground surveys. This information is also provided to municipal tree officials for the use in budgeting for suppression activities should they be warranted. This year the survey required 22.9 hours of flight time and documented approximately 159,000 acres of visible defoliation. Detailed information of the defoliation observed can be found elsewhere in this report.

FOREST HEALTH MONITORING

We continue to participate in the National Forest Health Monitoring Program. However because of changes in the USDA Forest Service work plan, the Forest Inventory and Analysis section of the Forest Service collected the tree data. Our role in this program was limited to the collection of data relating to lichens, soils, and down woody debris on ten plots. Additionally we collected data from eight sites to monitor the presence of ozone injury.

IMPACT PLOTS

We continued to collect data from the series of plots established to monitor the health of forest types of special concern. Specifically we visited fifteen sites to monitor hemlock woolly adelgid activity, three sites to monitor beech bark/Nectria canker, and six sites established to monitor the health of sugar maple. It is hoped that shortly enough data will have been collected to enable our agency to publish a paper dealing with the impact these agents are having on our forest resource.

HEMLOCK WOOLLY ADELGID PREDITOR RELEASE

In cooperation with the USDA Forest Service we continued to receive the predatory lady bird beetle *Sasajiscymnus tsugae* (this species has been renamed recently from *Pseudoscymnus tsugae*). To date we have made releases at 11 sites with a total of 65,096 insects being released. As required by the cooperative agreement to obtain these predatory beetles we must monitor the release sites for three years. Currently the most productive release site remains in Manchester, where both adult and immature beetles can be consistently recovered.

URBAN FOREST HEATLH MONITORING

This year is the fourth year of a five year USDA Forest Service project to monitor the health of the street trees in urban areas. This phase of the project requires revisiting a subset (eighty plots) of the plots established in Fiscal Year 2002. All data is electronically collected and submitted to the program administration for analysis. No formal reports are expected to be produced until all five years of data has been collected.

CHAMPION TREE PROGRAM

This year was a rather slow one for this program with only three trees being nominated as possible champions. Of these two proved to be larger than the current champions and therefore were identified as new champions. Additionally we cooperated with other New England States Champion Tree Coordinators to complete updating the "Champion Trees of New England" publication.

ENGAGEMENT TREE

For many years the health of the "Engagement or Wedding Tree" located on Coles Hill at Pilgrim Memorial State Park has been deteriorating. Previous efforts to improve the vigor have included two applications of fertilizer, (one soil incorporated and one injected directly into the trees vascular system) and the installation of nearly 200 feet of cable to strengthen the weakening branch structure have been unsuccessful. This tree has reached a point where it has become a major safety issue, an opinions shared by the municipal tree official in Plymouth. It was our collective opinion that this tree should be removed before the tourist season. To document the amount of decay numerous Resistograph borings were conducted. These borings revealed that there is a maximum of eleven inches of sound wood at one point and no sound wood at another. This information was presented at a public hearing as required by Massachusetts General Law. At this hearing the former Tree Warden, now a commercial arborist offered to absorb the cost of topping this historic tree in a last ditch effort to preserve it. This topping was conducted in early May. All wood suitable for milling into lumber as saved for use in ceremonial plaques and propagation material has been provided to the Arnold Arboretum in an attempt to have a replacement tree available when the present tree is finally removed.

BARK BEETLE SURVEY

A special grant was received from the US Forest Service for the Forest Health Program to participate in a pilot program to attempt to detect early introductions of bark beetles. This program is known as "Early Detection/Rapid Response". Two members of the Forest Health Staff attended a week long training on bark beetle identification at Cornell University, the purpose of this training was to have field staff identify the common bark beetles and send those that could not be identified to a bark beetle specialist at Cornell. The survey consisted in selecting 15 conifer sites across the state. Each site was to receive three funnel traps each of which was baited with different lures. The traps were

checked every 14 days and the trap catches were sent to the Forest Health Office in Amherst for screening before samples were sent to Cornell. As a result of this survey 49 species of bark beetles were identified in Massachusetts, one of which the Pine Shoot Beetle had never been found in the State and a second beetle *Xylerobus seriatus* had never been found in the United States.

HEMLOCK WOOLLY ADELGID RESEARCH continued as in the past year. We were again asked to supply the Connecticut Experiment Station with infested hemlock branches for their use as a food source in rearing the predatory lady bird beetle *Sasajiscymnus tsugae*. We continue to monitor the seedlings planted in Amherst for mortality caused by this insect. After this years survey we have not found any of the seedlings to be resistant to this pest.

SUDDEN OAK DEATH SURVEY continued as part of our cooperative agreement with the USDA Forest Service. We are provided with a list of nurseries that received plant material from California and we are then required to conduct surveys in the area of these possible introduction points. The result of this year's survey has all been negative.

ASSISTANCE TO USDA APHIS in support of their research on the Asian Longhorned Beetle. We continue to provide striped maple branches weekly for use as food for the research colony. Also we provided arboricultural expertise in New York and Detroit to aid in surveys. We also provided wood for insect feeding and fumigation studies.

EMERALD ASH BORER SURVEYS were conducted across the state. As a starting point for this survey records from the Urban Forestry tree planting grants were reviewed. Those communities where green ash was recently planted were surveyed and the result was reported to the USDA Forest. There were no indications that the emerald ash borer was present at any of the survey sites.

ASSISTANCE TO THE NATIONAL PARK SERVICE continued this year. Again we provided tree climbing instruction to NPS staff as well as training them in the proper use of hand tools while working above the ground. This training is being used as part of the NPS Delaware Water Gap effort to monitor for the presence of hemlock woolly adelgid

SUMMARY OF INSECT/ DISEASE ACTIVITY

WINTER MOTH continues to cause heavy defoliation particularly in coastal areas. Population monitoring traps were placed in various locations in November and the results of this trap survey indicate that the Winter Moth will again cause major defoliation. In the Natick area defoliation was noted. A follow-up ground survey identified the cause as Winter Moth. Working in cooperation with the University of Massachusetts the parasitic fly *Cyzenis albicans* was released at Wompatuck State Parks and in public lands in the Town of Wenham.

HEMLOCK WOOLLY ADELGID: No new communities were found to be infested this year. Insect populations in western Massachusetts have been drastically reduced by the cold temperatures this past winter.

GYPSY MOTH has caused large areas of defoliation in the Norfolk and Bristol Counties. On the north shore ground surveys found an increase number of egg masses in the Rt. 93 and Rt.128 areas. In increase was also noted along routes 495 and 93. There has also been an increase in egg mass density in Berkshire County.

WHITE PINE DECLINE continues to be observed on roadside trees statewide. It is believed that most of the decline is a result of the use of salt as a deicing agent.

FOREST TENT CATERPILLAR has again caused major defoliation in Hampshire, Franklin and Berkshire Counties. We assisted several maple sugar producers in surveys to determine if suppression projects were necessary. Several of the hardest hit producers feel they would spray to protect their sugarbush from further defoliation.

MISCELLANEOUS INSECTS/DISEASES

Eastern Tent Caterpillar populations were low in the eastern and central part of the State while complete stands of black cherry were defoliated in Berkshire County.

Fall Webworm populations remain low.

Elongate Hemlock Scale appears to be increasing in the Connecticut Valley and Berkshire County where it caused moderate to severe defoliation. When hemlock woolly adelgid is present the combination of these two insects can severely reduce the vigor of the eastern hemlock.

Arborvitae Leafminer caused severe damage throughout Berkshire County. This is a major concern to homeowners is as much as most of the arborvitae are grown is ornamental plants.

STATISTICAL SUMMARY OF ACTIVITIES

District Supervisor

Training Workshops Attended	4
Training Workshops Conducted	12
Number of Attendees	440
Municipal Contacts	89
Grant Inspections	53
Landowner Assistance	57
Requests for Information Answered	305

Tree Crew Activities

Poison Ivy Control and Hemlock Woolly Adelgic	1	
Control	33	Man Days
Assistance to Other State Agencies	11	Man Days
Assistance to Other DEM Programs	34	Man Days
Recreation Areas Assisted with Tree Work	43	
Number of Trees Removed	843	
Number of Trees Pruned	1,062	
Stumps Ground	28	

AERIAL SURVEY RESULTS

Oak Leaf Skeletonizer	5,654 Acres
Browntail Moth	49 Acres
Pine Needleminer	22,624 Acres
Birch Leafminer	63 Acres
Gypsy Moth	35,433 Acres
Eastern Tent Caterpillar	55 Acres
Forest Tent Caterpillar	204,616 Acres
Locust Leafminer	204 Acres
Japanese Beetle	97 Acres
June Beetle	1,368 Acres
Winter Moth	20,470 Acres
Red Pine Scale	381 Acres
Armillaria Root Disease	194 Acres
Anthracnose	24 Acres
Pear Thrips	34 Acres
Drought	107 Acres
Flooding	16 Acres
Unknown Cause	1,511 Acres