# BUREAU OF FORESTRY FOREST HEALTH PROTECTION ANNUAL REPORT, FISCAL YEAR 1997 CHARLES M. BURNHAM, PROGRAM SUPERVISOR

AERIAL SURVEY: 1997

Each year the Forest Health program conducts aerial surveys to obtain forest disturbance data, including that caused by insects, diseases. This statewide survey is usually scheduled for early July when the damage caused by the early season defoliators has reached its peak. Other surveys may be scheduled at various times of the year to document the effects of specific problems. These surveys are used as the basis for all other surveys and the information is supplied to communities to help in budgeting for suppression activities if warranted. In 1997 16.9 flight hours were required to complete this survey.

Details of this survey are included in the summary of conditions later in this report.

# FOREST HEALTH MONITORING

This year the Department continued to be a cooperator in the National Forest Health Monitoring Program. As was reported in the FY 96 report funding for this program was reduced. This reduced the number of sites visited in Massachusetts to 9. A full range of crown and vegetation data was collected. Again Mr. Kenneth Gooch was chosen to be a member of the Northeast Training Team requiring attendance at a special training session held in Ashville, North Carolina. Mr. Gooch was also chosen to assist in training crews in the Pacific Northwest (Oregon). The cooperation and enthusiasm shown by Mr. Gooch resulted in his receiving a "Bridging Partnership" award from the USDA Forest Service, National Forest Health Monitoring Program. A summary of the latest data available (1996) indicates that 95% of the trees evaluated were considered healthy and 75% had no damage reported.

# NORTH AMERICAN MAPLE PROJECT

This project was established in 1987 with the objective of

documenting the change in sugar maple condition in managed and unmanaged sugar maple stands. The 1996 data (the most recent available) indicates that 93% of all the sugar maple observed are in a healthy condition, there was very little difference between the managed and unmanaged sugar maple stands; and the average mortality was .3%. The conclusions which can be drawn from this program are that the sugar maples have recovered nicely from the defoliation caused by pear thrips in the mid 80's and the overall health of the trees is good.

# GYPSY MOTH MONITORING

We continued to monitor this insect's population in the 180 permanent plots established in 1982. The information collected in these plots indicated that the insect population is on the increase and noticeable defoliation can be expected to occur in 1998 in Southern Worcester County, along the Rhode Island border, in the Milford and Lawrence areas along Rt. 495, and in the Hingham areas of the South Shore. Increases in egg masses were also noted on Cape Cod and at the north end of the Quabbin Reservoir.

# HEMLOCK WOOLLY ADELGID COLD HARDINESS STUDY

The cooperative study to determine if cold temperatures will limit the spread of this insect continued. In addition to this agency, the project cooperators are the USDA Forest Service, Vermont Division of Forest and Parks, and the University of Vermont. Samples are collected at Mt. Tom State Reservation and transported to the University of Vermont where they were held in a quarantine facility under various temperatures and time intervals. The temperatures used this year are those most likely to be experienced in northern Vermont and Maine. The preliminary results indicate that the insect's northward spread will not be limited by exposure to cold.

### ASIAN LONGHORN BEETLE

The first known infestation of this insect was reported in New York City in the summer of 1996. The USDA moved quickly to establish a quarantine of wood removed from the area and sought

help from state cooperators to survey for this pest in other locations. This program joined the cooperative effort to publicize the possible presence of this insect by notifying all municipal tree care departments, having articles published in various extension and other state agency publications, and publications of many of the professional tree care organizations. This publicity campaign resulted in many insects being submitted for identification but none were identified as the Asian Longhorn Beetle.

Because of our long standing cooperative relationship with the USDA Methods Development Lab located on Cape Cod we were asked to assist in their studies of what woody plants this insect would feed on and reproduce in. As a result we shipped to the Methods Lab 21 different species of wood for reproduction studies and 23 different species of twig samples for feeding studies.

### URBAN FORESTRY SUPPORT

One person (Mr. Ken Gooch, Region 5) from the Forest Health Staff volunteered to be the Western Massachusetts representative to the Community Forestry Council. Duties include the attendance at regular meetings and serving on the education and diversity committees. Also workshops were conducted in support of the Urban Forestry Program including 5 pruning, tree identification and tree planting workshops. Assistance was provided on grant application preparation to communities requesting assistance.

The tree nursery established at Mt. Greylock in 1996 through a grant from the National Tree Trust was maintained. The trees are reaching a point where they will have to be distributed to the public or non-profit organizations while they are still at a manageable size. Additional trees were planted this year as a continuation of the grant.

A member of the Forest Health Program served on the planning committee for the annual "Storms over Urban Forest Conference" and as a member of the Massachusetts Tree Wardens and Foresters Executive Committee.

### CHAMPION TREE PROGRAM

The Forest Health Program assumed the responsibility of the

administration of the Massachusetts Champion Tree Program. The duties include the tracking, verification, and submission of the state records to the New England and National program offices. In this fiscal year 109 new state champions were identified and of these 13 proved to be New England Champions.

# STOW HEADQUARTERS RELOCATION

During this fiscal year the Department was approached by the Department of Public Safety, Fire Services Program regarding the possibility of vacating our Stow Facility to make room for expansion of the Massachusetts Firefighting Academy and housing of the staff of the Fire Marshals office. It was agreed to vacate our office building if we could be provided with a suitable office/workshop and storage facility at the same site. The equipment garage located at the Stow site would remain under the control of the DEM. After much negotiations DEM was provided with a modular building which was located next the equipment garage. The move proved to be a massive project. All records, supplies, and equipment had to be sorted, disposed of or packaged for the move to the new building. Andrew Taylor accomplished most of the work with limited assistance from other tree crews.

This move provided a more modern but minimally adequate facility for our needs. Many problems have developed at the site caused by the expansion of the of the Fire Services program and many of the commitments made to DEM have not been fulfilled.

# SUMMARY OF PROGRAMS PRESENTED BY THE FOREST HEALTH STAFF

Site	Audience		Attendes	Presenter
Rehoboth	Garden Club	Tree Health	40	LaChance
Foxboro	Boy Scouts	Forestry	12	LaChance
S. F.		Merit Badge		
Easton	School Children		50	LaChance
Rehoboth	School Children		160	LaChance
Braintree	School Children		85	LaChance
Hull	School Children	Arbor Day	130	LaChance
Wrentham	School Children	Arbor Day	150	LaChance
Borderland	School Children	Forest	300	LaChance
S.P.		Insects		Burnham
Sturbridge	School Children	Arbor Day	280	Larson
Spencer	School Children	Arbor Day	120	Larson
Deerfield	School Children	Arbor Day	70	Dejnak
Montague	School Children	Arbor Day	130	Dejnak
Athol	School Children	Arbor Day	40	Dejnak
Orange	School Children	Arbor Day	110	Dejnak
UMASS	Arboriculture	Aerial Lift	125	Dejnak
Amherst	Class	Operations		
Wilbraham	School Children	Arbor Day	125	Gooch
Pittsfield	School Children	Arbor Day	700	Gooch
Pittsfield	General Public	Tree ID	20	Gooch
DAR S.P.	Park Guests	Tree ID,	20	Gooch
		Insects &		
		Diseases		
Upton	DEM Staff	Forest Health	20	Burnham
Sturbridge	Fed.	Forest Health	20	Burnham
	Cooperators			
Norwood	Envirthron Team	Insect ID	10	Burnham
UMASS	Arboriculture	DEM/Forest	150	Burnham
Amherst	Class	Health		
Portland,	Forest Pest	MA Pest	50	Burnham
ME	Council	Conditions		
Northwood,	Federal Forest	Insects/Disea	75	Burnham
NH	Inventory Crews	ses of MA		
Windsor	Coop Extension	Forest Health	200	Burnham
Locks, CT	Forestry	in MA		

Total Programs 27
Total Attendees 3,225

## SUMMARY OF INSECT AND DISEASE CONDITIONS

- was at the lowest point in 30 years. A total of 115 acres were mapped, all of which was along the Rt. 495 corridor. This decrease is attributed to the presence of the fungal disease Entomophaga maimaiga. This may be the calm before the storm, ground surveys results indicated that the insect population is increasing in the Douglas area, near the Rhode Island border, in the Hingham area, on the Cape and at the north end of the Quabbin Reservoir. See Map "A" for the areas of defoliation in 1997.
- HEMLOCK WOOLLY ADELGID continues to spread with 15 new infestations documented this year. These new infestations include one in the Town of Montague that also adds a new county (Franklin) to the infested list. Other infestations identified are in Cohasset, Norwell, Attleboro, Worcester, Sherborn, Dartmouth, Bourne, Easton, East Bridgewater, Blackstone, New Bedford, Swampscott, Sturbridge, and Foxboro. We are still not seeing mortality, which we can attribute solely to this insect, but where other stress factors are involved, mortality is occurring. See Map "B" for the locations of infestations identified in 1997.
- SPRING AND FALL CANKERWORM caused minimal defoliation in the Hingham, and East Weymouth areas. Surveys conducted in the fall indicate that the infestation will continue in 1998 but again with only light defoliation expected.
- GOUTY OAK GALL has caused 28 acres of dieback on the red oak in the Plymouth area as documented from the aerial survey.
- BROWN TAIL MOTH defoliation on the outer cape was extremely light although there is considerable mortality in the beech plum from previous defoliation. Pheromone traps for this insect were deployed on Plum Island because the vegetation composition is similar to the outer cape. These traps caught 12 adult moths which have been positively identified as being brown tails moths. A follow-up ground survey is scheduled for the spring to determine the extent of this infestation.
- SADDLED PROMINENT a late season defoliator of beech, birch and maple caused light spotty defoliation in northern Berkshire


County.

- OAK LEAF SKELETONIZER'S second generation was quite heavy in Worcester County.
- LEAF DISEASES: Anthroacnose was quite common especially on sycamore trees. Most sycamores had the initial flush of growth completely destroyed by this pathogen but by mid to late June new foliage had emerged. The large tar spot disease, which has caused problems in Berkshire County, did not appear to be as serious as in previous seasons.
- BEECH BARK DISEASE was recorded on about 1,500 acres in northern Berkshire County and on Mt. Wachusett in central Worcester County. This disease is causing mortality on the sites with the poorer soils.
- DROUGHT effects from 1993 and 1995 appear to have weakened many different species of trees. We received requests from several municipal tree wardens for help in identifying the cause of tip dieback on red oak. Samples taken to the lab at UMASS, Amherst confirmed the presence of 1-year-old cankers caused by the fungus Botryosphaeria. We have also tentatively identified the canker disease Caliciopsis piena in southern Berkshire County. This disease is also related to drought stress of white pine.
- HEMLOCK LOOPER caused no noticeable damage in southern Berkshire County for the fist time in 3 years. The effects of the previous defoliation caused a buildup on hemlock borer, a pest that invades trees in a weakened condition.
- ARBORVITAE LEAF MINER caused the most severe defoliation in memory, particularly in the western part of the state.

### STATISTICAL SUMMARY OF ACTIVITIES

### DISTRICT SUPERVISORS ACTIVITIES

Municipality's Assisted:	147	•
Grant Inspections:		
Number of Site Visits	36	
Number of Man-Days Required	29	
Educational Programs:		
Conducted	27	
Attended	27	
Arbor Day Programs Supported	43	
Number of Telephone Inquires Answered: 46	1	
Number of Property Owners Assisted	76	
Special Projects:		•
National Forest Health Monitoring Program	55	Man-Days
North American Maple Project		Man-Days
Insect/Disease Surveys		Man-Days
Aerial Survey	8	Man-Days
Gypsy Moth Plots	87	Man-Days
Hemlock Woolly Adelgid Research	6	Man-Days
Measurement of Champion Trees	28	Man-Days
Clean Lakes Program	3	Man-Days
Assistance to Other DEM Programs	31	Man-Days
TREE CREW ACTIVITIES		
Number of Recreation Areas Assisted	64	
Number of Trees Pruned	2,733	
Number of Trees Removed	5,320	
Number of Stumps Removed	230	
Pesticide Application	37	Man-Days
Equipment Maintenance		Man-Days
Assistance to Other DEM Programs		Man-Days
Storm Cleanup Assistance		Man-Days
Assistance to Other State Agencies	11	••••••••••••••••••••••••••••••••••••••
Time Required	26	Man-Days



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