



The Commonwealth of Massachusetts

Natural Resources
Department of Conservation

Insect Pest Control

15 Ashburton Place, Boston 8

August 17, 1954

Memo to: Commissioner Lyman
Through: R. J. Kenney, Director
From: H. L. Ramsey, Bureau Chief
Subject: Partial Report of the 1954 Aerial Spray Program

As the result of severe defoliation by the Gypsy moth and the Forest Tent caterpillars in several areas of the Commonwealth in the summer of 1953 many demands and suggestions were made upon the Department of Natural Resources for an immediate relief from the ravages of these insects. Surveys and inspections indicated that approximately one and one-third million acres had been sufficiently damaged to warrant treatment. The cost for spraying on our previous contracts had run slightly under one dollar per acre, so, in this instance, the immediate question became one of securing necessary funds, or about a million dollars.

In late February legislation was enacted whereby each city and town approved for treatment would donate one-half of its legal liability (for pest control) to a common pool. This sum was to constitute 70% of the total expenditure with the state to contribute funds equalling another 30%. In other words, for every \$7.00 of city or town funds the Commonwealth would add \$3.00. Although this percentage basis was later changed the program actually went into the planning stage on the 70-30 basis. For a project of this enormity the department should have had clearance the previous October, rather than late February. The officials of over 100 towns had to be contacted and informed of the anticipated plan, all of the special data concerning certain industrial areas had to be collected, some 380 flight maps showing precise flight strips had to be prepared and, finally, bids had to be prepared for contractors.

Using the legislative formula of 70-30 the actual acreage that could be sprayed for the funds allowable had to be determined for each city and town involved.

It was found that several areas had sufficient funds to be sprayed in entirely on the "eradication" procedure - these were the Essex, Middlesex and Norfolk Regions. Available funds in two other regions, Connecticut Valley and Berkshire, were far from enough and the material was therefor applied on a control basis, rather than eradication. As a partial explanation of the terms "eradication" and "control" we can state that one gallon of material aerially applied to one acre will positively wipe out the entire gypsy population. When one gallon is stretched out to two or more acres all of the insects will not be killed and only a partial control can be expected. Actual application of one gallon to five or more acres was resorted to in the Valley Region and the present conditions are proof that it is not economical to attempt to treat more than two acres per gallon. There are many small areas throughout the Valley Region where the insects are still present and in a position to resume their damaging activities next year. If the weather conditions had not been greatly in our favor the economic value of the work would have been further reduced. At such short notice and with insufficient funds it was impossible to do an "eradication" project and we proceeded on the basis of giving the Valley Region all the control possible on the worst infested areas.

A contract for the aerial equipment was placed on April 12, 1954 with the East Coast Aviation Corp. and the placing of the fixed boundary and special area balloons was undertaken immediately. Actual application started in Norfolk County on April 26th and due to extremely unsettled weather it was necessary to alter the daily assignments from Norfolk to Essex or Middlesex continuously in order to keep the progress in operation. The entire program was the largest ever undertaken by the Department, was undertaken far too late and to increase our difficulties, Mother Nature gave us the worst season since 1923.

With the Norfolk - Essex - Middlesex Regions nearing completion two planes were released and sent to Westfield Airport on May 5th to start spraying the Valley Region, and for the next two weeks the same type of inclement weather hounded us, and it was necessary to fly planes out of several airports until the project was completed on June 16th. Supplies of insecticide had to be maintained at the several airports and ground control crews had to be shifted from one base to another at short notice, all of which added to delays and increased costs. It is really amazing that the complete area was finished on time.

During the forty-six operating days the following personnel was involved for varying periods:

1 - 7 Division Superintendents, 2 Foremen, 6 crew men, all regular employees of the department.

2 - 26 temporary helpers, engaged for the project duration only.

3 - The moth superintendent and assistants, of each city or town - for such time as the planes were working over their city or town.

4 - The contractor's pilots, co-pilots, mechanics, etc. and the tank trucks and drivers who transported and applied the insecticide.

Breakdown of the mixing plant and final material cost follows - this is shown only because it may be of interest to note that the operation of our own plant affected a saving of at least \$35,000 as compared to commercial costs.

Mixing Plant:

Materials -

Technical DDT	152½ tons	\$ 74,630.40
Solvent	58,580 gallons	14,498.55
Dilutent	312,258 gallons	<u>33,911.22</u>

Total \$123,040.17

Labor -

1 Chief Superintendent	\$1,259.14
1 Plant Superintendent	1,685.55
2 Foremen	1,066.10
6 Department employees	3,697.28
1 Mechanic	3,043.00
1 Watchman	126.18
10 Temporary employees	3,877.38
Total Overtime Paid	<u>28.39</u>

Total \$11,783.02

Plant set-up and testing	\$ 4,090.00
Plant motor fuels	287.97
Materials handling	138.00
Phone, electricity, etc.	<u>63.45</u>

\$ 4,579.42

Total cost of materials and labor \$ 139,402.61

Total number of gallons prepared	404,123
Cost of material and labor	- .345 per gallon
Contract application cost	- <u>.50</u> per gallon

Applied cost - .845 per gallon

As previously stated, the Norfolk, Essex and Middlesex Regions were sprayed on the "eradication" basis and for comparative purposes the approximate figures for these areas follow:

	<u>gallons</u>	<u>payroll</u>	<u>vouchers</u>	<u>total</u>
Norfolk	144,641	\$ 7,137.54	\$ 145.50	\$ 7,238.08
Essex	12,417	1,568.25	100.01	1,668.26
Middlesex	11,289	1,168.68	24.01	1,192.72

approximate supervision - labor cost - .06 per gallon

On the "control" basis the comparative figures for the combined Berkshire - Connecticut Valley Region are:

<u>gallons</u>	<u>payroll</u>	<u>vouchers</u>	<u>total</u>
231,270	\$ 16,083.14	\$ 1,083.38	\$ 17,166.54

approximate supervision - labor cost - .074 per gallon

Despite our knowledge gained from previous programs it is evident that we still encounter new problems - arising with the different contractors, different areas and varying seasons. We have incorporated several of our former responsibilities onto the contractors but find that, as the responsibility may cover a feature with which the contractor is unfamiliar, we still have most of the responsibility and supervision after all. An error on the contractor's part may cost him a few dollars, but the delay in correcting the error may mean hundreds of dollars to us. Just so long as we are faced with a different contractor annually, must we be ready to assume closer control of his adherence to each and every requirement of the bid.

We seem to be making slight progress in respect to cooperation of town officials and while this is very helpful, it is not an item which can improve annually, due to the fact that annually we enter another area and are faced with the same 'training' schedule. If we were able to have more permanent and trained employees in our own Bureau the combined saving in money and time would offset the additional salary cost. As soon as a spray program was completed these additional employees could be immediately transferred to our continuous Dutch elm disease program, a program on which we are making very little progress - due entirely to insufficient help.

This present program again demonstrated very forcibly our need for at least 2 two-way radios. Telephones cannot make direct contact with the ground men or the planes and the telephone costs this year would purchase 2 radios, thus paying for themselves during one program, not to mention the additional saving of time lost on delayed phoned instructions.

The Bureau Chief wishes to close this report by stating emphatically that the enormity and late start of this program absolutely precluded its completion on time - and only the determination and tenacity of the bureau's personnel made it possible at all. If similar demands are even contemplated they can be fulfilled only if the proper authorities give some heed and action to the needs of the bureau.