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1966

ANNUAL REPORT

OF THE

BUREAU OF INSECT PEST CONTROL

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Probably the most important development concerning the Bureau in Fiscal Year 1966 was the release of the "Report of the Surveillance Program conducted in Connecticut with an Application of Carbaryl (Sevin) for the Control of Gypsy Moth on Cape Cod, Massachusetts." This was the culmination of efforts by a number of agencies including the Pesticide Board, the Agricultural Research Service, U. S. D. A., the Massachusetts Division of Fisheries and Game, the National Park Service, the Massachusetts Department of Public Health, Division of Sanitary Engineering and the Department of Natural Resources to determine as nearly as possible the overall effects of Carbaryl on the total environment.

The Bureau continues to have problems with the Dutch elm disease. Elms are still being lost due to infection by the Dutch elm disease fungus which is spread for the most part by the European elm bark beetles and to a lesser degree by the native elm bark beetle. It still holds true, however, that those communities which conscientiously follow the recommended control procedures are holding their losses to a minimum.

To the average citizen, perhaps, we appear to be fighting a losing battle. This is far from the truth. Many, if not most of those elm trees remaining on the streets of our cities and towns are the direct result of good spraying and sanitation programs. It could be termed a good holding action until the day a truly effective cure for the disease can be found.

Problems with the gypsy moth are diminishing for the present. The epidemic numbers of this pest which have been experienced during

the past few years are rapidly decreasing. Parasites, predators and control programs have done their job well. The gypsy moth will now remain endemic, except for an occasional local outbreak, for a few years when it will again begin to reach outbreak conditions. It will then again be necessary for spraying with the cooperation of the parasites and predators to reduce the population.

Although the Bureau is charged with assisting cities and towns in their effort to suppress the public nuisances set forth in Chapter 132, it is becoming more apparent each year that more of an effort must be expended on Department land. This is particularly true in the case of the State parks. The Bureau is a pest control agency. Some of the problems confronting recreation people such as ticks, poison ivy, Dutch elm disease, and some of the forest defoliators are pests according to Chapter 132. Some other problems along these lines are not legally defined as functions of the Bureau but certainly fall within the broad term of pest control.

It is not reasonable to manage recreation areas without giving some consideration to the problem of mosquitoes. This is particularly true of a season such as that experienced in the spring and early summer of 1966. Efforts to control them with small fogging machines proved futile. Control could only be accomplished through the use of the Department's big mist blowers.

Another pest problem confronting the Department in the management of recreation areas is that of overabundant aquatic weed growth in some of the ponds and lakes. Chemical control of these weeds is possible. The problem can be approached in much the same manner as an outbreak of a tree pest. It must first be determined what is causing the trouble

and its location and abundance. Following this assessment the proper material must be chosen. The final step would be the actual application by a commercial firm.

Being experienced in the application of chemicals to control pests the Bureau of Insect Pest Control should logically assume the responsibility for the abatement of such things as aquatic weeds, mosquitoes, ticks, forest defoliators, Dutch elm disease, etc. on land under the jurisdiction of the Department. At the present time much of the effort extended by the Bureau is to assist cities and towns in the control of the Dutch elm disease. Somewhere along the line in the not too distant future it is quite apparent that the work load of the Bureau must be reapportioned.

A detailed report as to the current status of the various public nuisances named in Chapter 132, Section 11 and Section 11A is as follows:

GYPSY MOTH - During early July, 1965 the Bureau conducted the annual aerial survey to determine the extent and severity of gypsy moth defoliation. The same two experienced observers were used and were flown at a 2,000 foot height over the forested areas of the state. A total of 20 hours of flying time were required at a total expense to the Bureau of $360.

It was determined that 16,832 acres had been partially or totally defoliated in 1965. Areas in the western part of the state, although exhibiting some defoliation, also showed good evidence, which was later borne out, of a continued downward trend in population numbers.

Approximately 4,500 acres of defoliation were recorded on Cape Cod in and near the area of the spray project (reported in the last Annual Report). The application of carbaryl (Sevin) did present problems leaving areas where caterpillars fed, apparently unaffected by the spray.

An egg mass survey throughout the state in the fall of 1965 indicated that, generally the gypsy moth outbreak was close to being finished. During the past fiscal year the egg mass survey on the Cape, the most critical area, was handled very efficiently on a regional basis. Following the survey it was determined that the gypsy moth would pose no major problem anywhere on Cape Cod in the spring of 1966. The combination of Department spraying and parasites and predators had done a good job in reducing what could have been dangerously high populations of the pest.

No spraying for gypsy moth was done in 1966 by the Department. The only aerial spraying for gypsy moth in the state was conducted by the Agricultural Research Service, U. S. D. A. on 300 acres of moderately infested woodland in the town of Holland. This was done on an experimental basis with the Bureau cooperating. It was a low volume--high concentrate application of Sevin. Results have not yet been determined.

In March of 1966, the Pesticide Board released its report on the monitoring of the 1965 Cape Cod gypsy moth spray project in which Sevin was used. Results of the various studies included in this report indicate that Sevin fulfills to a more or less degree most of the modern day requirements of a pesticide in that it:

1. disappears from the general environment at a "relatively slow and regular rate" thus eliminating the hazard of long term environmental contamination.
2. does not excessively kill honey bees, bumble bees and other pollinators although a kill of pollinators was noted.
3. "had no immediate effect on the fish and shellfish populations" and that "no fish mortalities could possibly occur under normal operating conditions."

4. "had no immediate adverse effects on the bird population" although "It isn't reasonable to conclude from these brief observations that the application of the spray formulation had no effect on the bird population"
5. left amounts of Sevin in water tested "which may be considered to be insignificant from the standpoint of water quality management."
6. controlled the gypsy satisfactorily from the viewpoint of those living within an area of high gypsy moth population.

DUTCH ELM DISEASE - Control recommendations continue the same as have been in effect for many years, i.e. dormant spraying followed by a good sanitation program. We are still losing trees at an alarming rate, however. It is still interesting to note that those cities and towns maintaining the smallest percentage loss each year are those which conduct a control program following carefully the recommendations of this Department.

During the past fiscal year, the four tree removal crews assisted 80 cities and towns in the removal and destruction of 1,897 diseased and beetle infested trees at a bureau cost of $33,550. The crews also assisted 78 cities and towns in the sampling of 2,169 trees for the disease at a Bureau cost of $4,977.

The Bureau assisted other state agencies and other Bureaus of the Department in the removal of 184 trees and the sampling of 155 trees at a cost of $764.00

Last year the Audubon Society in conjunction with the Department published a booklet entitled "Protecting Your Community's Elms against Dutch Elm Disease." This booklet was sent to each of the cities and towns in the state. Judging from its demand it has been a very popular

publication. In it was described the habits of the elm bark beetles and the role they play in spreading the disease. Also outlined were recommendations for control and the reasons for these methods. Audubon had been disturbed by the heavy use of DDT in these control measures and rightfully so. The booklet suggests the substitution of Methoxychlor for DDT while at the same time stressing the importance of sanitation.

In the early spring of 1965 the Bureau cooperated with the University of Massachusetts in conducting trials with a recently introduced systemic insecticide called Bidrin. The manufacturer stated that this material injected properly in an elm would prevent the elm bark beetles from feeding enough to transmit the disease. The final results of the experiment indicate that the incidence of disease was about the same in the treated trees as in the untreated check trees.

It is evident at this time that a sure cure for Dutch elm disease is still not a fact and that we must continue our present recommendations. Despite the fact that we are still losing trees we are still saving many.

WHITE PINE BLISTER RUST - As a result of our blister rust work and surveys during the past year 1,508 acres of premaintenance or land which contains enough white pine to be considered for examination was placed on maintenance, which means follow-up work, and 18,344 acres of maintenance was placed on no further work needed.

A summary by counties indicates that in Berkshire County there are 106,786 acres in the control area. Of this amount 79,150 acres need further work. In Bristol County, of 109,322 acres, no further work is needed. In Essex County, of 129,235 acres, no further work is needed. In Franklin County, of 99,327 acres, 5,446 acres need further

work. In Hampden County, of 52,913 acres, 9,683 acres need further work. In Hampshire County, of 54,277 acres, 30,110 acres need further work. In Middlesex County, of 184,786 acres, 43,077 acres need further work. In Norfolk County, of 85,013 acres, no further work is needed. In Plymouth County, of 276,525 acres, no further work is needed. In Worcester County, of 278,841 acres, 66,300 acres need further work. Statewide, of a total of 1,357,943 acres in the control area we find we have a figure of 233,764 acres needing further work.

BROWN TAIL MOTH - For a number of years this pest has been confined to beach areas of Cape Cod. Presently the greatest concentration is on the National Seashore Park in the Town of Truro. Most severely infested are the beach plums growing on the dunes. Much of this infestation was brought under control by U. S. Park Service personnel using a sprayer mounted on a beach buggy.

The infestation which has been reported in Dennis for the past few years has been brought under control by hand pruning of the nests of the hibernating caterpillars. The work was done by the local superintendents of insect pest control.

TENT CATERPILLAR - The marked increase of this roadside pest in many of our cities and towns noted in last year's report was not evident during the past year. Many communities prepared to conduct control programs found that this would not be necessary. Apparently parasites and predators had already done the job.

CANKERWORMS - Continue at a low ebb. Nantucket Island saw a continuation of the 4000 acre infestation reported last year. Population numbers were less and officials sprayed areas near public roads, tc. There should be no problem there next year.

WOOD TICKS - Each year seems to increase the problems created by this pest. Although it can be found statewide the major problem area is southeastern Massachusetts and some communities just west of Boston.

Many inquiries were received by the Boston office and by district supervisors in the field as to measures which could be taken to combat this pest. This was found to be a difficult question to answer. DDT, which has been used for years with good results, has received much unfavorable publicity recently and many people are reluctant to use it. Carbaryl (Sevin) has been substituted with varying results.

PINE LOOPER - Heavy flights of moths reported early last year in the vicinity of Harwich did not result in the defoliation anticipated. Few, if any, larvae could be found in September despite careful examination.

ELM LEAF BEETLE - The changeover to Sevin as a substitute for DDT as a control for this pest in many communities has apparently been successful. Any community that desired elm leaf beetle control could accomplish this control by proper timing of the application. Only moderate infestations were noted where spraying was not done.

Each year as part of the overall function of the Bureau assistance, according to Section 16, Chapter 132, is rendered to cities and towns as previously mentioned under Dutch Elm Disease. This assistance is in the form of tree removal work by the four tree removal crews. The members of these crews are skilled in the use of chain saws and the use of winch trucks. Members are also experienced tree climbers. For this reason they are often called upon to assist other bureaus and at times other departments.

A breakdown by man days gives an accurate picture of the time spent by the four crews during the past fiscal. Out of a total of 3,350 man

days worked by the crews exclusive of vacation and sick leaves, it was found that 220 man days or 6.5% of the time was devoted to maintenance of equipment and buildings due to inclement weather or equipment breakdowns, 383 man days or 11.4% of the time was spent assisting other bureaus, 97 man days or 3.1% of the time was spent assisting other state agencies, 294 man days or 8.7% of the time was devoted to other functions of the Bureau, and 2356 man days or 70.3% of the time was spent assisting cities and towns according to Chapter 132.

Added to the duties performed by members of the Bureau during Fiscal Year 1965 was that of checking certain pesticide applicators for licenses to spray. This was in line with a "get tough" policy adopted by the Pesticide Board. The Bureau approach to this problem has been one of education.

MEETINGS - On September 15 and 16 Massachusetts assumed the role of host state for the Summer Meeting of the Northeastern Forest Pest Council. Headquarters for the meeting was Hyannis. The itinerary for the two day meeting was planned by members of the Bureau and included visits to Myles Standish State Forest, the Methods Improvement Laboratory at Otis Air Force Base, infestations of brown tail moth, pine looper and gypsy moth, and the Cape Cod National Seashore Park.

On October 6, was held the Twentieth Annual Conference on Dutch Elm Disease at the Waltham Field Station of the University of Massachusetts. All Bureau personnel attended. The major topic of discussion centered around the use of Bidrin as a control agent. The consensus of opinion was that it did not do the job as advertised by Shell Oil Company.

On October 15 the Chief attended a symposium on pesticides held at Clark University in Worcester.

On November 3 and 4 members of the Bureau attended the Annual Meeting of the Northeastern Mosquito Control Association held in Seekonk.

On November 9 and 10 the Chief attended a Water Symposium held in the Student Union of the University of Massachusetts in Amherst.

On December 15 and 16 members of the Bureau attended a conference in Concord, New Hampshire entitled "Focus on Municipal Pest Control Problems." This was an excellent conference in that it covered most of the problems confronting those who look to us for advice and recommendations--the local superintendents of insect pest control.

On February 2 and 3 the Annual Tree Wardens and Foresters Meeting was held at Horticultural Hall in Boston. Most Bureau personnel attended at least one day of this meeting.

On March 8 and 9 the Northeastern Forest Pest Council held its annual meeting in Boston. The regular meeting was preceeded by a half-day session dealing with shade tree problems.

During the week of March 14-18 members of the Bureau attended the Massachusetts Tree Wardens, Arborists and Utilities Conference held in Amherst. Members of the Bureau participated in a panel discussion entitled "Bureau of Insect Pest Control Relations with Municipalities."

On April 20-22 the Chief attended a Mosquito Suppression Wildlife Management Conference. One of the co-sponsors of this conference was the Department of Natural Resources. One important fact brought out at the two day session was the fact that the thinking of wildlife managers and those interested in mosquito control is not as far apart as one would first imagine.

RECOMMENDATIONS

In the 1968 Budget Request is an item calling for the addition of a fifth tree removal crew. The base of operations of each of the present crews is such that four of the five Regions within the Division of Forests and Parks are now covered by the operation of these crews. A fifth crew, properly placed, would give statewide coverage by these crews on a regional basis.

The personnel making up a tree removal crew is specialized and equipped with winch truck, chain saws and other tools especially adapted for tree work. In the past these crews have been called upon to perform certain jobs vital to the proper maintenance of our parks and recreation areas, manning pumps and tanks during fire emergencies, etc. It would seem logical to place them under the direct supervision of the Regional Forest and Park Supervisors.

With the addition of a fifth crew and with proper supervision it would be possible to devote a major portion of time to continuing our assistance to cities and towns but at the same time accomplishing work needed elsewhere within the Division.

The normal time for assisting cities and towns in tree removal work falls between October 1 and March 31. From April 1 to June 30 the crews could be utilized in the parks, forests or other areas. Planning by a Regional Supervisor could realize a saving by the Commonwealth and result in more presentable areas for the public. From July 1 through August 31 the crews would again work with the cities and towns on the assistance programs scouting for Dutch elm diseased trees. The month of September could again be devoted to work within the Department.

Commitments to cities and towns are usually flexible enough to allow the emergency use of the crews during the assistance periods. With

one crew under the control of each of the Regional Forest and Park Supervisors the full capabilities of these crews could be realized to the advantage of the entire Division.

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