

STANDARD FORM NO. 64

*TM file*

**Office Memorandum • UNITED STATES GOVERNMENT**

U. S. FOREST SERVICE  
P. O. BOX 4137  
PORTLAND 8, OREGON

TO : Chief, Forest Service

FROM : Regional Forester, R-6, By: L. K. MAYS, Acting

SUBJECT: S, CONTROL, Umatilla, Insects  
*R-6*

DATE: April 16, 1948



Reference is made to your allotment of \$5,000 for the experimental control project against the spruce budworm.

*x20* From the attached memorandum, which we are sending you in duplicate, you will note that the State of Oregon will contribute \$5,000 to this job, thus making the project a truly cooperative one between the State, the Forest Service, and the Bureau of Entomology and Plant Quarantine. Much credit is due Mr. Furniss for securing this aid. It may well mark the beginning of all-out assistance when both national forest and private lands in other control projects are involved.

The area tentatively chosen for the experimental project is in the Kinzua territory. The exact boundaries have not yet been drawn but the timber to be protected is tributary to the Kinzua mill.

We are especially well pleased that Dr. Craighead is providing so adequately for research for this project by the loan of personnel from his other stations.

The spraying has been planned for completion by the end of June. For this reason, the expenditure of your \$5,000 allotment during the present fiscal year is reasonably certain. If there is any change, you will be informed sufficiently in advance to enable you to use the funds elsewhere.

*L. K. Mays*

cc: Umatilla 2  
Mr. Furniss 2  
Chief 1

U. S. F. S. RECEIVED  
TIMBER MANAGEMENT  
APR 20 1948

The statement given below was prepared pretty largely by Mr. R. L. Furniss of the Bureau of Entomology and Plant Quarantine, as the basis for discussion by the Oregon State Board of Forestry at its meeting on April 7, 1948. Mr. John B. Woods of the State Forester's office presented the statement and led the discussion. The State Board of Forestry unanimously approved the State's cooperation in this project to the extent of \$5,000.00.

PROJECT PROSPECTUS, FOREST RESEARCH, State of Oregon Conservation Division  
(Exhibit C – April 7, 1948)

Title: Spruce budworm control in eastern Oregon.

Justification: Surveys conducted in the fall of 1947 by the Forest Insect Laboratory of the Bureau of Entomology and Plant Quarantine at Portland, Oregon, showed that there is a serious infestation of the spruce budworm (*Archips fumiferana*) in the mixed Douglas-fir type fir stands of eastern Oregon and Washington. The outbreak is by far the most extensive one on record for this destructive insect in these two states.

The total area of infestation is approximately 1,000,000 acres. In the Blue Mountain region alone varying degrees of defoliation are present on 710,000 acres. So far the kill of timber has been nominal, but the outbreak has reached the critical stage. The indications are that the outbreak will continue to develop and spread.

This infestation is a serious threat to the timber stands of eastern Oregon. Extensive control measures may soon be necessary. Since considerable areas of private land are involved the State Forester has the responsibility under the Insect Control Act of instituting a control program. Unfortunately, due to the peculiar characteristics of the spruce budworm, no wholly dependable control measures have yet been evolved.

For several years spruce budworm control experiments have been in progress in the Northeastern states and eastern Canada. These experiments have been extensive, and while results have been variable, the indications have been that under the proper conditions aerial spraying with DDT is effective. These indications remain to be verified and specific recommendations developed before large-scale control operations can be undertaken with assurance of success.

Purpose: The purpose of this experiment is to test under carefully controlled conditions the effectiveness of various quantities of DDT applied in different ways. It is hoped that effective and economically feasible control measures applicable to conditions in eastern Oregon will be developed. Such measures are needed as a safeguard against continuation of the present outbreak or development of future outbreaks.

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<sup>1</sup> This document was transcribed from a photocopy of the original, which is located in the Supervisor's Office Silviculture Library Archives. To the greatest extent possible, this version is an exact duplicate of the original text.

Procedure:

- A. Establish, mark, and map an experimental area of approximately 6720 acres. This area will be subdivided into fifteen compartments of 420 acres each, twelve of which will be treated and three left as checks.
- B. Determine by aerial and ground surveys the status of infestation within each of the compartments prior to treatment.
- C. Spray the selected plots with DDT as follows:

<u>Test No.</u>	<u>Lbs. DDT per acre</u>	<u>Gallons fuel oil per acre</u>	<u>Applied by</u>	<u>No. Plots</u>	<u>Plot Acreage</u>	<u>Flight Acreage*</u>
1	1	1	Helicopter	3	1260	1260
2	1	1	Airplane	3	1260	1260
3	1	1	Airplane	3	1260	2520
4	2	2	Helicopter	<u>3</u>	<u>1260</u>	<u>1260</u>
Subtotal				12	5040	6300
Check				<u>3</u>	<u>1260</u>	<u>-</u>
Total				15	6300	6300

\*In test No. 3 the plots will be flown twice at the rate of 1/2 gallon per acre on each flight. The other plots will be flown once.

- D. Determine the effectiveness of the spraying by a detailed study of the spruce budworm population and the degree of defoliation subsequent to treatment.

Cooperation: This project will be a cooperative undertaking with costs and responsibilities to be shared by the State Board of Forestry, the United States Forest Service and the Bureau of Entomology and Plant Quarantine.

Area of Activity: The 6300-acre experimental area will be located within a 160,000-acre area of infestation lying north of the breaks of the John Day River and extending from Swale Creek on the east to the Spray-Heppner highway on the west. The experimental area will be laid out to include approximately equal acreages of privately and federally owned land.

Duration of Project: Spraying operations will be conducted during a two-week period, probably in the last half of June 1948. The exact scheduling will depend upon the seasonal development of the budworm. Preliminary surveys and population studies are already under way and will continue throughout the project. The entire project should be completed by August 15.

Personnel Required: Each of the three cooperating agencies will provide personnel approximately as follows:

The State Board of Forestry will provide at least one technical forester to work full-time beginning in May plus part-time field assistance as needed for loading insecticide and routine checking. Dale Bever and Richard Quintus will represent the State Forestry Department and will participate in all phases of the project.

The Bureau of Entomology and Plant Quarantine will provide four or five entomologists. These men will include Robert Furniss and Walter Buckhorn of the Portland laboratory and two or three undesignated men who have had extensive experience with spruce budworm control in the eastern states.

The Forest Service will provide one or more foresters as the need develops.

Materials and Equipment:

- a. DDT – 6300 pounds.
- b. Fuel oil – 4100 gallons (approx..)
- c. Solvent – 2200 gallons
- d. Airplane for reconnaissance (BE & PQ)
- e. One helicopter and one airplane equipped for spraying (this equipment with pilots to be obtained on contract)
- f. Mobile mixing tank, approx.. 500 gallon capacity (on contract)
- g. Storage tank, 1000 gallons or greater (source?)
- h. Pumps for agitating solutions and loading planes (State Forestry Dept.)
- i. Radio equipment for plane to ground communication (State Forestry Dept.)

Estimated Cost of Project: The size of the experimental area and the total costs will be determined by the contributions made by each of the cooperating agencies. Commitments to date are as follows: State Board of Forestry - \$5000.00, exclusive of contributed personnel; U. S. Forest Service - \$5000.00, exclusive of personnel; and U. S. Bureau of Entomology and Plant Quarantine – personnel and operating expenses only.

On this basis the projects as outlined may have to be pared somewhat. This can be done by reducing the size of the plots, but should be avoided if possible. The estimated costs are as follows:

Application of insecticide at \$1.25 per acre	\$7875.00
6300 lbs. DDT at \$ .31 per lb.	1953.00
4100 gal. fuel oil at \$ .10 per gal.	410.00
2200 gal. solvent at \$ .45 per gal.	<u>990.00</u>
Total	\$11,228.00

A. J. Jaenicke