

SPRUCE BUDWORM PROJECT 1963

TARGEE AND SALMON NATIONAL FORESTS

INFESTATIONS: of spruce budworm, *Choristoneura fumiferana* (Clem.), now seriously threaten destruction of large areas of Douglas-fir and true fir timber on portions of the Targhee and Salmon National Forests in southeastern Idaho. Control is planned in two phases:

Phase One — Targhee National Forest, 190,000 acres aerial spray for control. 1963.

10,000 acres aerial test spray to check new pesticide. 1963.

Salmon National Forest, 16,000 acres aerial test spray to protect salmon-spawn area. 1963.

Phase Two — Salmon National Forest, aerial spray for control 1964. Contingent upon results of 1963 tests.

BENEFITS FROM THE CONTROL of the infestation are manifold:

- ★ Forest esthetic values, wildlife habitat, and controlled usable water flow are all preserved.
- ★ Timber values important to local communities and economies are protected. Future forests are saved by protecting small trees.
- ★ The allowable timber harvest from the protected working circles is not reduced because of loss from insect depredation.
- ★ A costly crash salvage program yielding degraded logs is avoided.
- ★ Forest fire hazards are reduced through the preservation of living trees. A dead forest presents a tremendous fire hazard.

FACTS ABOUT THE CONTROL OPERATION

OBJECTIVES:

- I. Reduce infestation to the lowest possible level consistent with public safety, high economy, good multiple use management, and the highest degree of protection to fish and wildlife resources.

- II. Keep the public, especially the people most interested and concerned, fully informed as to the important planning, execution, and completion phases of the project.
- III. Work closely with cooperators and interested individuals and organizations.
- IV. Test promising new control methods. Screen new, safer pesticides and biological suppression agents.
- V. No lost-time accidents, no forest fires, no loss of wildlife, no damage to equipment.

DURATION: On selected days during the period from late June to early August, 1963, flights over the infested timber will occur between 4:00 AM and about 10:00 AM on suitable flying days. Total flying time to complete the project is estimated at about twenty days. Work in 1964 will be based on the status of the insect at that time and on any new and approved control procedures available.

SPRAYING PLAN: The critically infested timberlands are divided into Area 1 to be flown from the Dubois airport and Area 2 (a 16,000 acre test area) to be flown from the Salmon airport. Spray coverage will be governed by specific practices and patterns devised for each area individually to provide the greatest possible protection to salmon-spawning streams and trout waters and still obtain adequate control of the tree killers. The State Fish and Game Department and the Forest Rangers co-operated to select critical streams, rivers, lakes, and reservoirs.

Except for test areas where spraying is designated for specific testing to improve application techniques, the following procedure will be followed:

1. West Camas Creek, and Howard Creek, Targhee National Forest:
 - a. No spray application within $\frac{1}{4}$ mile of the stream.
 - b. The next $\frac{1}{4}$ mile use DDT at the rate of $\frac{1}{2}$ pound per acre applied by fixed-wing aircraft.
 - c. Remainder of infested area treated at rate of one pound of DDT per acre using fixed-wing aircraft.
2. Remainder of Infestation:
 - a. No spray within 100 feet of designated streams or bodies of water.
 - b. From 100 feet to 400 feet away from water apply $\frac{1}{2}$ pound of DDT per acre by helicopter.
 - c. From 400 feet to 1000 feet away from water apply $\frac{1}{2}$ pound DDT per acre by fixed-wing aircraft.
 - d. Remainder of area beginning 1000 feet from water apply DDT at rate of one pound per acre.
3. Test Areas*
 - a. No. 1 — 10,000 acres, Targhee National Forest, test feasibility of Sevin as a pesticide against spruce budworm.
 - b. No. 2 — 16,000 acres, Salmon National Forest test for maximum protection to salmon-spawning areas.

DAMAGE surveys made in 1962 after the caterpillars had completed their feeding showed that natural enemies of the insect would need immediate outside help to reduce budworm dam-

*See map for location.

age. The most critical infestations now extend over 6,000 acres on the Targhee and Salmon National Forests. The esthetic, wildlife, and watershed values to be preserved cannot be measured in dollars and cents. These values assume particular importance on such popular forest recreation and public fishing and hunting grounds as are located on these two National Forests. The Henry's Lake-Island Park area on the Targhee National Forest and the Salmon River drainage of the Salmon National Forest are both of Nationwide interest. The volume of timber in danger of destruction is 5.3 billion board feet; equal to the lumber in 750,000 houses.

WILDLIFE PROTECTION: Past experience has shown that serious damage to fish, birds, wild or domestic animals, is unlikely as a result of spraying with the concentration and application rates used on this project. All extra precautions, including modified flight plans to exclude salmon-spawning grounds and other critical streams, are taken to prevent damage. Helicopters are being used on about 20 percent of the area adjacent to lakes and streams for spot control. No spraying is done when air movement will cause appreciable drift. The advice of fish and wildlife specialists is being rigidly followed. Tight operational control and supervision will insure that all instructions and precautions are carried out.

PUBLIC PRECAUTIONS: A forest fire in the control areas could hamper completion of the job and destroy the timber we are striving to protect. Please observe signs, prevent fires, and adhere to the precautionary measures necessary for protecting yourself and your resources.

COOPERATION

This is a cooperative effort to save the threatened timber. Cooperating with the Forest Service are:

STATE OF IDAHO DEPARTMENT OF FORESTRY
STATE OF IDAHO LAND DEPARTMENT
INTERMOUNTAIN PEST ACTION COUNCIL
SOUTH IDAHO LUMBER INDUSTRY
U. S. BUREAU OF LAND MANAGEMENT
FEDERAL AERONAUTICS ADMINISTRATION
U. S. WEATHER BUREAU
IDAHO STATE DEPARTMENT OF AERONAUTICS

OPERATING PERSONNEL:

DIRECTOR — Richard C. Stemple
ASST. DIRECTOR — Roger Taynton
ENTOMOLOGIST — Jerry A. E. Knopf
AIR OFFICER — J. Karl Bryning
UNIT SUPERVISORS:
DUBOIS — Robert K. Patee
SALMON — Orlo Johnson

INFORMATION:

TARGHEE NATIONAL FOREST — St. Anthony, Idaho
SALMON NATIONAL FOREST — Salmon, Idaho



THE SPRUCE BUDWORM: The last appearance of serious infestations requiring control occurred on the Boise, Payette, Salmon, Challis, and Targhee National Forests during the years of 1955, 1956, and 1957. The epidemic was successfully suppressed over the three-year period.

The spruce budworm is one of the most potentially destructive enemies of Douglas-fir and true fir in North America. Principal damage results from the caterpillars feeding on the new foliage. Deformation and reduced growth or death of the trees are the inevitable result of sustained, uncontrolled attacks of the pests. The insect attacks trees of all ages indiscriminately.

LIFE CYCLE CHART:

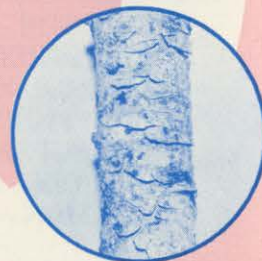
JULY - AUG.
Pupae transform to mottled buff colored or grayish moths that fly and lay eggs.



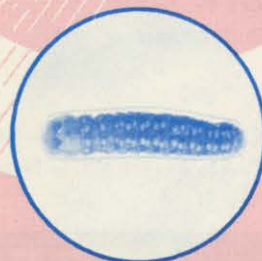
JULY - AUG.
Eggs are laid in masses on underside of needles.



AUGUST
Eggs hatch in about 10 days & tiny larvae conceal themselves in bark crevices & overwinter.



MAY - JULY
Larvae grow, feeding on new foliage.



SUSCEPTIBLE TO SPRAY



LATE JULY
When through feeding larvae transform to pupae attached to twigs.



Feeding by larvae destroys only new growth.



TEST AREA #2



CONTROL AREA #1



SPRUCE BUDWORM INFESTATIONS TARGHEE-SALMON NATIONAL FORESTS 1963

SCALE 0 10 20 30 40 MILES

LEGEND

- National Forests
- Control Areas
- + Air Bases
- Test Areas

