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**FOREST PEST CONTROL** +3a

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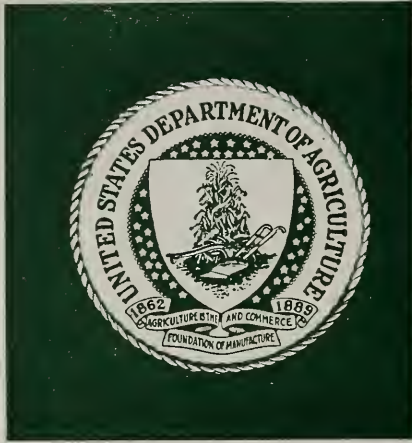
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A documentary report of 1961 accomplishments under the Forest Pest Control Act on the National Forests of Nevada, southern Idaho, Utah, and western Wyoming.

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Pest control is a major concern. It extends its activities through all the seasons, to all land ownerships--federal, state, and private, and onto the most rugged forest terrain. It exacts painstaking effort under the most trying of conditions. It requires a close union of the scientist and land manager, and demands close cooperative working relationships. But it is a gratifying task because the resources saved and protected are indispensable to our way of life.

Through experience and advanced knowledge, the complex job of forest pest control is made safer, more efficient, and less costly. The result accrues as an improvement to our economy, extending protection over our wealth of renewable forest resources plus the less measurable esthetic and recreational values inherent in forest lands.

*Floyd Iverson*

FLOYD IVERSON  
Regional Forester  
Intermountain Region  
U. S. Forest Service, +2a

THE COORDINATION OF PEST CONTROL WITH  
MULTIPLE USE

An important provision of the Multiple-Use Act of June 12, 1960, is for the ". . . harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land . . ."

Compared with the destructiveness of other factors including fire, forest insects and diseases account for 88 percent of the growing stock loss and 90 percent of the sawtimber lost each year. Together the pests rack up, nationwide, an annual toll estimated at 1,770 million cubic feet of growing stock and 7,280 million board feet of sawtimber. These losses are sustained both in outright kill of the trees and in the impact which destructive organisms have on normal growth rates. Thus, productivity of the timber-growing lands is seriously impaired by the ravages of forest pests.

In addition to cutting heavily into timber volumes and growth potential, such losses impede coordinated management of the associated resources of the forest land, including wildlife, recreation, and forage. This is true because insect and disease losses impair the esthetic qualities of the forest, and because of the effect such depredations have on recreational values, cover for wildlife, the hazards created by dead trees, the extra costs of removing down trees from roads, trails, and public areas, and the myriad problems wrought by changes in the forest cover. Thus, the destructive potential of forest pests is under constant consideration by forest managers and control becomes an essential concern in multiple-use land management activities.

## CONTROL BY LOGGING

Logging is the preferred method of bark beetle control but is, of course, limited to timber stands which can be logged economically, and to areas which are or can be made accessible to logging vehicles at reasonable costs. By this process the infested trees are removed from the woods to the sawmill and converted to timber before the beetles can emerge and infest growing trees.

On the Bridger, Dixie, and Wasatch National Forests 23,000 infested trees were logged to control spruce beetle, Black Hills beetle and mountain pine beetle, respectively.



Salvaging insect--  
infested trees,  
and converting  
them to usable  
products.

## CONTROL BY LOGGING TRAP TREES

A modified version of control by logging, this method is employed in areas where the infested trees cannot be completely logged and removed before beetle emergence. Sufficient green trees are cut to absorb the new attacks. This concentrates the beetles in the down trees which can then be removed during the next seasonal logging operation.

During the year 270 infested Engelmann spruce trees were treated by this method on the Manti-LaSal National Forest.



## CONTROL BY SLASH, PILE, AND BURN



Frequently the slashings and log ends from logging operations harbor bark beetles or provide host material which can contribute to infestation buildup. Such material must be piled and burned to complete suppression through logging. About 280 acres were treated in this manner on a spruce logging area, Uinta National Forest, and 77 acres on the Bridger National Forest. Control is completed on some Douglas-fir logging areas the same way.



## CONTROL BY STANDING - BURNING

Many trees infested by bark beetles are not in a situation which permits logging. Some infested stands are too limited to be economically logged, or too far from roads. This relatively cheap method of treating may be used early in the spring before fire hazards exist. However, as the forest dries out other methods of control are employed. During the control season 8,500 trees were treated on the Cache and Wasatch National Forests using this method.



## CONTROL BY FELLING AND BURNING



This control method is used during the cold months of the year especially for infested trees inaccessible to logging. However, as in control by standing-burning, felling and burning is limited to months when fire hazard is nonexistent. A portion of the Wasatch National Forest in Wyoming had 1,773 infested trees treated in this manner in 1961.

## CONTROL BY GROUP FELLING AND BURNING

In unusual situations unmerchantable infested trees may occur in heavy concentrations that pose a serious threat to adjacent commercially important areas. Where such concentrated groups are extensive the entire infested stand can be knocked down and burned much more economically than the cost of treating the trees individually. Such an operation was a part of a combined control project on the Wasatch National Forest where chemical spraying, standing-burning, and logging were also used in the most effective combinations. A total of 28,500 trees was treated effectively by the group felling and burning method.



## CONTROL BY CHEMICAL SPRAYS

The spraying of penetrating insecticides on the bark of infested trees is the most versatile method of bark beetle control. Its use is recommended especially where trees cannot be logged and during periods of high fire hazard. The method is ineffective during cold months because the chemical requires warm weather for proper penetration.

Infested lodgepole pine and Engelmann spruce were treated by application of ethylene dibromide mixture on the Ashley, Bridger, Payette, Cache, Dixie, Sawtooth, Targhee, Teton, and Wasatch National Forests--a total of 156,000 trees.

An outbreak of geometrid caterpillars in the Mill Creek campground area of the Wasatch National Forest threatened willow and box elder trees on 300 acres. This also was controlled by chemical spray.



## CONTROL BY AERIAL SPRAYING

Application of pesticides from the air is a highly effective and economical means of covering sizeable areas of timber infested with such defoliating insects as pine butterfly, spruce budworm and tussock moth. Chemicals are applied in this manner only after it has been determined that the adverse effects on wildlife and other values will be negligible or non-existent. An outbreak of 1,200 acres of tussock moth infestation in a new ponderosa pine plantation and surrounding area on the Boise National Forest was quelled by aerial spraying in 1961.



## OPERATIONAL SURVEYS

Before control of an insect is undertaken reliable information is needed on the number of trees infested, their location, and the exact area involved in the infestation. These data, obtained by operational surveys, form the basis for control planning and activity. The surveys are made after entomologists have detected the outbreak, roughly outlined its boundaries, and evaluated its potential as a destructive agency.



Checking a logged area for insect buildup.



Penetrating the back country by helicopter - less costly than an extended pack trip.

INSECT CONTROL ACCOMPLISHMENT  
INTERMOUNTAIN NATIONAL FORESTS  
CURRENT YEAR  
1961

Name of Project	National Forest	Dates of Treatment 1961	Tree Species	Insect Species	Suppression Method	Total Area (Acres)	Area Treated (Acres)	No. Trees Treated
Ashley	Ashley	5-1 to 6-30	Lodgepole pine	Mountain pine beetle	Chemical spray	905	905	4,340
Town Creek Tussock moth	Boise	6-8 to 6-9	Ponderosa pine	Tussock moth	DDT aerial spray	1,200	1,200	—
Green River Engelmann spruce Beetle	Bridger	7-24 to 10-11	Engelmann spruce	Engelmann spruce beetle	Chemical spray, logging and burn brush	7,200	6,620	20,784
Stauffer Ridge	Cache	5-20 to 6-30	Lodgepole pine	Mountain pine beetle	Chemical spray and burning	275	275	1,620
Black Hills beetle	Dixie	5-1 to 6-30	Ponderosa pine	Black Hills beetle	Chemical spray and logging	8,630	8,580	923
Dark Canyon	Manti-LaSal	6-1 to 10-31	Engelmann spruce	Engelmann spruce beetle	Trap trees	—	—	270
Goose Creek Road	Payette	6-15 to 6-23	Engelmann spruce	Engelmann spruce beetle	Chemical spray	128	128	410
Sawtooth Valley	Sawtooth	5-22 to 6-13	Lodgepole pine	Mountain pine beetle	Chemical spray	800	800	163
Douglas-fir beetle Survey	Sawtooth	4-15 to 6-20	Douglas-fir	Douglas-fir beetle	Operational survey	5,325	—	—
Targhee	Targhee	5-15 to 6-24	Lodgepole pine	Mountain pine beetle	Chemical spray	652	652	2,983
Teton	Teton	4-24 to 6-30	Lodgepole pine	Mountain pine beetle	Chemical spray	2,000	1,405	18,493
Soapstone Basin	Uinta	5-1 to 6-30	Engelmann spruce	Engelmann spruce beetle	Slash, pile and burn	280	280	—
North Slope	Wasatch	5-15 to 12-30	Lodgepole pine	Mountain pine beetle	Chemical spray, fell burn, standing burn, group fell and burn, and logging	123,964	39,864	167,027
Kamas and Evanston	Wasatch	6-5 to 10-31	Lodgepole pine	Mountain pine beetle	Chemical spray	850	850	1,835
Mill Creek	Wasatch	6-9 to 11-30	Box elder and willow	Geometridae	Chemical spray	300	300	6,000
Total						152,509	61,859	224,848

## TOTAL PEST CONTROL ACCOMPLISHMENT - 1961

- \* Control operations extended over parts of 13 of the 18 National Forests of the Intermountain Region which embraces Utah, Nevada, southern Idaho, and western Wyoming. Insects fought were those which either exhibited epidemic tendencies or were in the epidemic destructive stages; mountain pine beetle in lodgepole pine, tussock moth in ponderosa pine, Black Hills beetle in ponderosa pine, the Douglas-fir beetle in Douglas-fir, the Engelmann spruce beetle in Engelmann spruce, and geometrid caterpillars in box elder and willow.
- \* Acreages of timberland treated were small in comparison to acreages threatened; 61,859 treated, with the controlled infestations capable of infesting and destroying the forest on 9,000,000 acres.
- \* Forest Pest Control funds expended were \$1,467,893 which saved resource values of many times this cost.
- \* Forest pests pose a never-ending threat to the National Forests and adjacent forest lands in other ownerships, but control has proven to be worth the funds, time, and effort it takes to preserve the forest resources which are ever growing in value and importance to our national economy and welfare.







THE NATIONAL FOREST LANDS OF THE INTERMOUNTAIN REGION  
SUBJECT TO THE FOREST PEST CONTROL ACT

