RX-RM INSECT SURVEY PROGRAM Reports Bandelier National Monument Bark beetle infestation

> Bark Bectle Conditions Bandelier National Monument August 1955

Reconnaissance Survey

Bark beetle infestations reported by National Park Service personnel on Bandelier Monument and surrounding Government lands were examined on August 12, 1955.

On that date S. T. Carlson and C. I. Massey examined the Otowi Section and the South Mesa of the Monument. Lands adjacent to the Monument on the Santa Fe National Forest and areas managed by the Atomic Energy Commission were examined visually from observation points on Bandelier National Monument.

Ponderosa pine in the areas are heavily infested with Dendroctonus barberi and Ips sp. Trees for the most part are dying from the top towards the base. The trees are evidently being attacked by Ips spp. in the upper 1/3 of the tree; the base is subsequently attacked by Dendroctonus barberi.

The infestation has reached alarming proportions on sections of Bandelier National Monument. It is estimated that 30 percent of the ponderosa pine in some areas of the Monument has been killed during the past year. Undoubtedly drought has played a significant role in weakening the trees which are growing in marginal areas.

An aerial survey will be made of the area during September to ascertain the specific boundaries of the infestation. An appraisal survey will then be made to determine the extent of the infestation and the approximate numbers of trees infested.

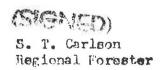
C. L. Massey, Entomologist.

cc Chief
S. T. Carlson
Santa Fe Nat'l. Forest
Los Alamos Field Office (Atomic
Energy Commission)
Ft. Collins Laboratory

an appraisal survey with recommendations for control as it is deemed necessary. It is anticipated that some control measures will be necessary, and, on the basis of the prolitionary recommissance, it would cost about thirty thousand dollars to treat this infestation on Park Service lands.

I will make it a point to ollow the infestation and the work the Forest Service is going to do on it so that we can keep well-informed and prepared for any control possibilities that will come up.

Throughout the pinyon type in and adjacent to Bandelier, a great number of these species are being attacked and killed by twig beetles (Pityophthorus app.). In some of the dying trees a species of Ips are also present. This type of infestation and loss of pinyons has been observed throughout the portions of Southwestern Colorado, Arizona and New Mexico which I have visited during the past two months.



Approved for Distribution: /S/ HUGH M. MILLER Date: 10 1915

Copy to: - Director, Washington Office Superintendent, Bandelier Regional Firector Miller

INTRODUCTION

For the past several years heavy losses of ponderosa pine has occurred in the marginal penderosa pine stands on Bandelier Matienal Monument and to the adjoining lands managed by the Atomic Energy Commission on the morth and the Banta Fe Matienal Forest on the south. Past and current examinations of dead and dying pine in the affected area revealed the presence of the Fouthwestern pine beetle Dendrectomus barberi Hopk., and Ips spp. Moneyer, it is questionable if insects alone are the primary cause of the heavy pine mortality in the marginal areas. It is probable that the increase of beetle activity is associated with drouth conditions which has seriously lowered the resistance of the trees to bark beetle attacks.

buring the summer of 1955 Eundelier Mational Monument personnel reported in increase in tree-killing throughout the outbreak area; losses were as high as 30 percent in some localities. National Park Service officials responsible for the protection of the trees on the Monument requested that the situation be appraised with the possibility of applying control measures.

STATE OF SURVEY METHODS

A combined serial and ground survey was made of the infestation.

The extent of the infestation, which was based on "faders" (penderosa pine already killed and showing foliage discoleration) was determined by a preliminary serial recommaissance. The flight revealed approximately 24,000 acres were involved, portions of which were inaccessible. An aerial count of "faders" was made of these inaccessible areas. A total of 2 hours flying time was used on the aerial survey. Aircraft used was a Gessna 180. Aerial observers were Arthur White, Forester, Bandelier Mational Manusent, and F. M. Yasinski.

The systematic ground survey method employed was that which is used by the Rocky Mountain Ferest & Range Experiment Station in appraising Black Hills beetle infestations. The infestation pattern of the Black Hills beetle and the complex Southwestern pine beetle and Ips sps. is similar. The surveyed area of 5,000 acres was covered at a 5 percent intensity using a 1-chain-wide-strip every 20 chains. A 100 percent survey was made of the town of Los Alamos and vicinity. All infermation pertinent to the aerial and ground survey was recorded. The survey party consisted of James B. Goodkin, Chief of party, and Carl Van Rusen, crew member. The ground survey started on September 20 and terminated on October 4.

X

Preliminary studies of the life history and habits of the Southwestern pine beetle was initiated on the Monument during Movember 1955. It is hoped that the studies will provide information leading to a better understanding of the problem.

Submitted by:

Frank M. Yasinski, Entomologist, Rocky Mtn. For. & Range Exp. Sta., Forest Insect & Disease Lab., Reom 310, P.O. Box 523, Albuquerque, New Mexico. November 28, 1955.

co: Chief (#)
Region 3
Rocky Mtn. Sta.
Carson W.F.
Tres Piedres Dist.
Albq. Research Center
Ft. Cellins Lab.