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INTRODUCTION

The purpose of this investigation was to determine the density of the rodent population on a logged-off area in the foothills of the Coast Range Mountains in Oregon, and to find out if rodent eradication would be necessary before seeding or planting is done.

The area studied was a 1/4 acre circular plot in the center of a logged-off section of the McDonald Forest at the Lewisburg Saddle.

It was found that the only rodent on the area that was in enough numbers to conduct a study of was the white-footed mouse (Peromyscus, spp.).

It was noted that there were plenty of seed trees on the area, but little or no reproduction could be seen. The following report elaborates the methods used in determining the rodent population on the area and the methods of control practiced in lieu of planting or seeding.
White-footed Mouse

Description

This mouse has large ears, prominent eyes, a long tail, conspicuous white underparts of the body and the tail and with white feet. It is about the same size as the common house mouse (Mus musculus).

Habitat

The white-footed mouse is found from sea level to the vegetation line of the highest peaks, and from the heavily timbered areas to the waste lands of the desert. It is a common mouse throughout the United States.

This mouse lives on the surface of the ground and builds nests in stumps, roots of shrubs, and under bark and logs. These mice do not hibernate, and, therefore, control can be practiced during the winter months. It has a very limited range. It spends its entire life within a 50 foot radius.

Like most rodents, the white-footed mouse is very prolific; producing a litter of 4-6 young every month of the year, providing the climate conditions are right, and they are usually right in the Douglas fir region on the coast.

Food Preference

The white-footed mouse consumes a large variety of foods, but prefers seeds of grasses, trees, and shrubs, nuts, and grains. A. W. Moore ("Wild Animal Damage to Seed and Seedlings on Cut-over Douglas Fir Lands of Oregon and Washington," United States Department of Agriculture Technical Bulletin 706, 28 pp.,
illus.) states that in preference tests made on fir-forested areas, these mice chose conifer seeds in the order of Douglas fir, hemlock and western red cedar. These mice will also eat their own kind. It was observed by the authors that the mice would eat the bodies of mice that were caught in the traps.

**Damage Done**

White-footed mice, when very numerous, will destroy the seeds that fall from seed trees and seed that has been sown on the area for reforestation. It was observed that the mice did considerable damage to yearling seedlings. The buds and the tender bark was eaten by the mouse.

**Preliminary Study of Rodent Density**

The experiment area was surveyed very carefully for the signs of mice within the area. Logs were turned over, stumps were uprooted, and brush piles were scattered in search of possible homes of the mice. Young seedlings, when found, were checked for rodent damage. It was found that there were quite a few rodents on the area and so control methods were applied.

**Methods of Control**

**Trapping #1**

Within the 1/4 acre circular plot, 24 wooden based snap traps were placed in probable nest areas, common to the white-footed mouse. These traps were baited with a steam-rolled oats and peanut butter mixture. A long piece of white string was attached to each trap and tied to a bush or stump for the
purpose of finding the traps later. In some instances the traps had to be concealed from the air because of the presence of numerous sparrows and wrens in the area. The traps were left for 2 days and then they were checked. There were 17 mice caught in the 24 traps and blood was present on 4 more, and of the remaining 3 traps, 2 were sprung and the bait gone.

**Poisoning**

After the first trapping, poison was set out in well located places throughout the area. One hundred baits were used in the initial poisoning. The best bait for poisoning is Jeffery pine seeds, ponderosa pine seeds, steam-rolled oats, and wheat in the order of preference. Due to the fact that the pine seeds were unavailable, steamed-rolled oats were used on the area.

The following formula was the one used that would give the quickest action on the mice:

- Steam-rolled oats: 4 pounds
- Baking soda: 1/3 ounce
- Gloss starch: 1/4 ounce
- Water: 1/3 pint
- Heavy corn syrup: 1/12 pint
- Glycerine: 1/3 tablespoon
- Powdered strychnine alkaloid: 1/3 ounce

This poison bait was put out and a cover was put over it to eliminate anything from taking it from the air.

**Trapping #2**

Ten days after the poison was put out, the 24 traps were again set out in the same places as before. Two days later
these traps were gathered and the results were tabulated. The results proved satisfactory. This time there were only 3 traps with mice, 4 with blood, and 1 sprung. These results were contributed to the poisoning of the mice between the two trapping periods.

Determining Success of Control Methods

Douglas fir seed was obtained and put in wire cages. These cages were placed at random throughout the area. The cages were concealed from birds and animals that might have eaten the seed. The amount eaten by the mice was 98% before the first trapping. After the trapping, the amount was lowered to only 95%. When the poison was put out, the amount was further lowered to a low of 8%. This proved that the methods of control applied to the area were successful.

Conclusions

The amount of seed eaten by the white-footed mice proved that eradication would be necessary before the planting or the seeding of Douglas fir on the area could be accomplished.

It was estimated that there are approximately 120 mice per acre on the logged-off area where the study was made.
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Setting Trap After Location of Proper site.
Looking For Mice runs, houses and other indicators

Locating Sites for Traps. Note string in background marking boundary of area.

General View of Area

View of One Trap in Lower Left-hand Corner with string attached