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RODENT CONTROL AIDED BY EMERGENCY CONSERVATION WORK

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The Emergency Conservation Work Program has been of inestimable value in the control of prairie dogs, ground squirrels, pocket gophers, kangaroo rats, rabbits, and other native rodent pests. The citizens of the West have been forced to carry on campaigns for the control of these rodents since the settlers first staked out claims on the prairies. The control of rodents is as vital to the agricultural interests of the West as is the proper spraying of trees to prevent damage by insects throughout the East. These small mammals cover the western ranges by countless thousands, and control is necessary if crops are to be grown.

Rodent control is nothing new. Records indicate that as early as 1808, strychnine was shipped by boat around Cape Horn to the Santa Barbara Mission, Calif., in order that the early settlers might kill off the ground squirrels. A constant fight has been waged ever since, but unfortunately, while the landowners were willing to finance killing the squirrels on their own holdings, the Federal Government provided inadequate funds to take care of the vast areas of public domain, national forests, Indian reservations, and other Federal holdings.

When the Emergency Conservation Program came into being, the Forest Service, the Bureau of Indian Affairs, the Bureau of Reclamation, the Division of Grazing, and the Bureau of Biological Survey took the opportunity to treat a vast acreage that would have been treated years ago had finances permitted. During the three years, 1933 to 1935, a total of almost twelve million acres have been covered by ECW for the control of these various rodent pests. Rodent-control laws on the statute books of several Western States provide that landowners may establish rodent-control districts wherein all lands are treated simultaneously by paid crews working under the supervision of the Biological Survey. Never before the ECW program were there adequate Federal funds to make these laws effective by taking care of the infested public lands adjacent to private holdings.

Rodent control is one of the most popular projects with ECW enrollees themselves as well as with the local people benefited. In many cases, crew foremen supplied by the Survey took boys who would not work satisfactorily on any other type of project and made real hands of them on rodent-control crews. The boys liked to work in these crews, as it afforded them opportunity to become acquainted not only with rodent control but with the various habits of wildlife as well.

In order to employ proper methods and place all possible safeguards around poisoning operations for the protection of beneficial and harmless species, the Biological Survey has insisted upon handling the supervision of all rodent-control work for its various cooperating agencies. When poisoning campaigns are properly handled and carefully supervised, there is little danger of the accidental poisoning of other animals. The records indicate that there have been practically no cases of destruction of other forms of life through the ECW rodent-control program. Naturally, the supervisors not only must know rodent control but also be acquainted with the habits and status of wildlife in general, and in handling the crews they have imparted knowledge to the boys that will be of permanent benefit to them and to the Nation.

Educational programs were provided as regularly as possible, in order to tell the CCC enrollees of various wildlife problems. The entire personnel of ECW camps were shown films depicting the work of beavers, showing measures for the protection of elk, deer, and other big-game animals, and portraying the need of sane, sensible conservation methods, in order that the remnants of our fast-vanishing forms of wildlife might be preserved. Mimeographed leaflets on wildlife management studies were made up by district agents of the Survey for distribution to the boys in order that they might be given as broad instruction as possible in the protection and preservation of species that are an asset rather than a liability to man's interest. It has been the attempt of the Biological Survey to make the rodent-control project a field laboratory for the education of the enrollees, and the popularity of the project among the boys attests to the wisdom of this course. In many camps more applications for places on rodent control crews were received than there were places to fill.

Fortunately, the ECW program came at the most opportune time. The extreme drought throughout the West had forced rodents from the open lands into the irrigated valleys and mountain meadows, where they became especially objectionable in their competition with livestock for the available forage. Livestock and rodents together, during dry periods, have in many places almost entirely denuded the surface soil of its vegetation. This has caused sheet erosion to start in areas where there would still be ample forage for livestock had it not been for the excessive numbers of rodents. On many areas, grazing by livestock and rodents combined has practically eliminated the native grasses, and these are now being replaced with weeds and poisonous plants. Damage in some instances has amounted to at least 75 percent of the available forage, and the average loss has probably been approximately 25 percent.

On some of the Indian reservations of the Southwest, the condition has been pitiful. On the Navajo Reservation, in particular, the Indians have carried on a losing fight against drought and rodents. It has often been necessary for them to replant their corn three and four times a season, since kangaroo rats and other native rodents dig up the kernels as rapidly as they are planted. Prior to the spring of 1935, there had been three years of drought, and this, coupled with rodent damage, had reduced corn production

to the point where they had barely enough for the spring seeding. All the Indians were clamoring for aid, and in order to save their last crop of corn it was necessary to detail a foreman with four or five ECW Indians to go from farm to farm and conduct rodent-control operations.

The Forest Service is endeavoring to carry on a reforestation program throughout much of the cut-over area in the Lake States and the Pacific Northwest. One of the chief problems to successful reforestation is the control of rodents, particularly the snowshoe hare. In the Olympic Forest in Washington, the snowshoe hare has destroyed as much as 40 percent and damaged 70 percent of the Douglas fir seedlings. In Michigan and Wisconsin, it was necessary to carry on extensive rodent-control operations to permit the seedlings to survive. Much of this work would never have been possible but for ECW.

In the open area, jack-rabbits have become a serious pest. The Biological Survey, in 1934, received a petition from eastern Colorado, bearing the signatures of more than 9,000 individuals, requesting Government aid in killing rabbits, which were ravaging the meager stocks of forage left after drought and wind had taken their toll.

The Forest Service has realized that rodent control must be one of the major projects if the Shelterbelt program of planting trees from the Canadian border in Texas is to be effective, and in 1935 approximately one-tenth of its entire appropriation for this purpose was expended for rodent control under the supervision of the Biological Survey. Crews patrol the planted areas constantly to prevent the gnawing of the seedlings by jack rabbits and pocket gophers.

The most concrete proof of the necessity of rodent control is found in the amount of money expended by private individuals throughout the West for this purpose. The Federal Government, while owning as much as 60 percent of the land throughout many of the Western States, contributes only about 25 percent of the total cost of rodent-control operations. During the fiscal year 1935, States, counties, and private individuals expended \$553,779 for the purpose, while the Biological Survey was able to expend only \$185,973 from regular appropriations. The ECW program afforded the first opportunity of somewhere near meeting the Federal Government's obligations to the citizens of the West in the matter of adequately controlling the rodent pests that breed and range on public lands and infest and reinfest private holdings.

The permanent benefits accruing from the ECW rodent-control program have been enormous from the standpoint of erosion control alone. An associate range examiner of the Forest Service has the following to say regarding the effect of rodents on erosion in the Boise watershed of Idaho:

"Rodents, numerous and spreading over nearly 80 percent of the Boise watershed, have undoubtedly been responsible for no small part of the present erosion. Wholly dependent upon the herbaceous plants for their food supply,

their tremendous numbers have been an important contributing factor along with over-grazing by livestock and unfavorable climate in depleting this cover, and thus have greatly reduced the protection afforded the soil and subjected it the more to increased sheet erosion. Even light rains on rodent-infested areas are likely to start cutting, which may develop into destructive gully erosion because of the almost immediate accumulation of run-offs in the myriads of burrows and channels which these animals construct just under the surface of the soil."

The Soil Conservation Service recognizes the relation of rodents to the revegetation of the range, and rodent control is one of its principal projects.

A few concrete examples will illustrate the great good that has resulted from the ECW rodent-control program. A group of farmers living at Springfield, Idaho, suggested to the camp superintendent there that the jack rabbit control work done by the ECW crew during the summer of 1935 might pay the cost of the camp. It is estimated that not less than 600,000 rabbits were killed by this crew on public lands adjacent to farming areas between American Falls and Moreland, Idaho. The work afforded protection to not less than half a million dollars worth of cultivated crops and to more than 75,000 acres of grazing lands.

The control work carried on by an ECW crew near Weber Lake, Calif., in 1933 has been responsible for a 50 percent comeback of the grass on a large mountain meadow, which had been made a dust heap because of pocket gopher workings. The pocket gophers had honeycombed the surface of the ground, and sheep had trampled out most of the grass, while livestock grazing had been reduced to a negligible figure. The restoration in two years time was due primarily to the elimination of the pocket gophers.

To control prairie dogs in Oklahoma, an area of 47,000 acres in Pawnee, Noble, and Kay Counties, was treated through the medium of the ECW. The Indian lands here are interspersed with private lands, and the landowners were unable to make any progress in a general clean up. This was because there were insufficient Federal funds to treat the Indian lands until the ECW project afforded opportunity to carry on a systematic campaign over the entire area. A good piece of work was accomplished, and the grass was so much better over these old prairie dog towns in the spring of 1935 that the Indian Service officials at Pawnee received an increase of 25 cents an acre on their grazing lands. On areas where they received 50 cents an acre in 1934, they received 75 cents in 1935, a direct increase in receipts to the Federal Treasury.

Some persons uninformed as to the need for rodent-control and the methods followed by the Biological Survey in carrying on the work have stated that control by use of poison and CCC workers endangers the existence of other forms of wildlife. This, however, is not the case. The Biological Survey has studied rodent-control methods for more than twenty years and in

this period it has developed the most scientific and selective poisons possible. Occasionally a few seed-eating birds are killed, but the total number is negligible.

The Biological Survey is a conservation organization and will undertake no work that will be detrimental to any species of animal not interfering too greatly with the interests of man. Those conversant with actual conditions in the range States realize that if agriculture is to survive, the control of injurious rodents is as essential as is control of the corn borer, the chinch bug, the boll weevil, the grasshopper, the codling moth, and numerous other insects that become agricultural pests. The Survey insists that in conducting work of this sort, the most careful supervision by trained technicians must be given. All cooperating agencies recognize the necessity for such supervision, and as a result a most worth-while program has been carried on during the past three years.

