

2008 Final Report

Predator Control of Rodent Pests

Grant Data

Grant #: K009607-POLK

Title: Western Regional IPM / Predator Control of Rodent Pests

Type: State Network Project

Lead Investigator: Jackie Hastings, District Manager, Polk SWCD

Funding Year: 2006

Funding Amount: \$20,000.00

The Polk Soil and Water Conservation District's Vole Control Program began in January 2006. The "Predator Control of Rodent Pests" project was funded by the Western Integrated Pest Management Center and match funds from other sources. The goal of the project was to stimulate a greater acceptance for alternative forms of pest control and reduce participant use of rodenticides. All phases of the grant were a huge success.

Outreach

Outreach was successfully conducted through all phases of the grant to the residents of Polk County. Efforts focused on agricultural producers, private landowners, and other resource managers. Outreach included articles in Polk SWCD newsletters, articles in local papers, mailing brochures, and in person contact. The project generated interest throughout Polk and neighboring counties. The District received numerous phone calls, letters, and visits from interested landowners. Mailing lists of these interested landowners were developed; application packets and information were sent by request.

The original goal of the project was to enroll 21 landowners in the Vole Control Program. The response was much greater than anticipated. During the initial sign up, 12 landowners enrolled in the Program. The second wave of advertising brought an astounding 16 new enrollees (one of which later cancelled), 9 others signed up throughout the program life, bringing the total Program participation to 37.

After priorities and Program logistics were worked out information packets and Program application packets were sent to interested landowners. The first round of outreach contacted an estimated 64,216 households via quarterly newsletters, newspaper articles in the Itemizer-Observer, and Statesman Journal, and Annual Report (attachments sent with 2006 Summary Report). General information packets on pest control, nesting boxes, and perch designs were sent to 13 landowners who responded to the initial outreach efforts. Application packets were sent to 67 landowners.

Four Polk SWCD quarterly newsletters contained an article about the Vole Control Program, which reached 800 households each time. Application packets were distributed to 46 landowners. The Vole Control Program brochure and application were sent out to 140 rural property owners in Polk County. A newspaper article ran in the Itemizer-Observer, Polk County's main newspaper, reaching an estimated 6,800 households. 30 applications were received that were determined to be ineligible for the program. These applicants lived in town or did not meet the agricultural requirement. 16 applicants joined the Program. The Polk SWCD Annual Report (in the form of a calendar) was given to 200 people who attended the Annual

Meeting in August of 2008, and post cards offering the calendar were sent to an additional 800 people on the SWCD general mailing list. It was also given out to 200 attendees at the 2007 Annual Meeting and post cards offering the calendar were sent to the additional 800 people on the general mailing list. Information about the Vole Control Program was posted on the Polk SWCD website, though due to website troubles, the number of people reached through this method is unknown.

Requests for the Annual Report Calendar have come from private landowners as well as other agencies such as Oregon Department of Forestry and Natural Resource Conservation Service (NRCS). Presentations were given about the Vole Control Program by the Project Director to other agencies such as Oregon Department of Agriculture, NRCS, and the Soil and Water Conservation Commission.

Design

After recording landowner interests and concerns, project advisors with the Polk SWCD, Oregon Department of Fish and Wildlife, Chintimini Wildlife Rehabilitation Center, a local Agronomist, and NRCS met and discussed priorities for the Vole Control Program. The team developed procedures and priorities for providing participants with equipment and reimbursements. The Priorities are detailed in the table below.

Priorities for Polk SWCD Vole Control Program:	
BOXES	PERCHES
No-Till Grass Seed {HIGH}	No-Till Grass Seed {HIGH}
Conventional Grass Seed {HIGH}	Conventional Grass Seed {HIGH}
Hay/pasture (no tillage) {HIGH}	Hay/pasture (no tillage) {HIGH}
Christmas Trees* {Med}	Christmas Trees* {Med}
Nurseries* {Med}	Nurseries* {Med}
Orchards* {Med}	
Vineyards* {Med}	
*All Christmas tree farms, nurseries, orchards, and vineyards must have an erosion control cover crop to be eligible.	

The decision on priorities was based on the following: susceptibility to vole damage, tendency to use rodenticides, implementation of conservation practices (no-till, cover cropping), production of agricultural crop, and potential for effective control.

The application materials included a Vole Control Program Guide Sheet and application form. The guide sheet outlined the priorities for the Program (see chart above). It also explained the project design in which each landowner enrolled in the program signed a contract with the Polk SWCD. The application asked landowners information to determine eligibility. Information requested was:

- Name, location, and phone numbers
- Eligible land use types, as shown in the chart above, and how many acres of each
- Past rodent control methods for three years
- Crop damage and loss for the last three years
- Known rodent predators already at the property

- Control methods of interest, such as nest boxes for Barn Owls, Kestrels, Perches, and if technical assistance was needed.

The guide covered information such as:

- Installation of equipment and timeline for installation
- Maintenance of program equipment for the duration of its use
- Filling out reporting forms
 - Contribution of time, money, and equipment
 - Rodent control methods for the past three years
 - Rodent control methods for three years following contract signing
 - Past three years of crop damages and losses due to rodents
 - Crop damages and losses due to rodents for three years following contract signing
- Monitoring raptor use of perches and nest boxes for 2 years

Throughout the life of the program, Polk SWCD was responsible for:

- Providing technical guidance to participants
- Providing up to 3 barn owl and 3 kestrel nest boxes per site
- Reimbursing landowner for perch materials up to \$14 per perch after inspection by a technician
- Technician site visits for collecting reports for three years

Project details specified that each participant award amounts, which included the cost of nest boxes and perch reimbursement. The participant's labor was considered in-kind contribution to the program.

The contract agreement between the Polk SWCD and the landowner specified the award amount (the number of nest boxes and/or perches) and how long a landowner has to install the practices. It also detailed the practices and the information that is listed in the guide (above).

Additional information handed out upon enrollment to the Program included a detailed History form, nest box designs (just for the participants information, boxes were awarded already built), Raptor Perch General Design Options, a match form, and Perch Reimbursement Request Form (if participant was awarded perches).

The history form requested details including: methods used, time of year, frequency, amount, description of method, and estimated effectiveness. Crop damage and losses from rodent damage were also documented. Participants were asked to include crop type, season and year of harvest, and an estimation of damages and losses.

The Polk SWCD had the nest boxes made. The box designs covered American Kestrel and Barn Owls, two bird of prey species known to co-exist well in Polk County. In an attempt to support the local high school, the FFA was used. The SWCD learned the valuable lesson that quality craftsmanship in nest box construction is best found from more experienced builders. Half of the first round of boxes made failed due to their poor craftsmanship. The boxes made since have proven very resilient. The nest box designs were approved by the Oregon Department of Fish and Wildlife and Natural Resource Conservation Service. Additional nest box designs were handed out to people who did not qualify for the program, but were interested in putting them up.

The Perch Design sheets were given to all participants. Many of these forms were also given to other agencies and landowners who did not qualify for the Program or simply requested information on perch designs. The design sheet specified perches were to be at least 12 feet tall. Perches were to be oriented to point east to west, and they should be in place year-round. The perches were allowed to be removed for 23 hours at a time for equipment access and 2 weeks for harvest. The maximum award for perches was one per acre, to be spaced at least 200 feet from the nearest existing perches such as trees and telephone poles.

There were six designs included that gave a variety of options to choose from. Some of the designs were meant to be permanent perches, usually used along fence lines, or in areas no machinery needed to use. One of these permanent perches had two perching branches, one at the very top, and another a few feet lower, to increase the appeal and options for the birds. Another was a natural tree branch as the cross piece at the top of any perch. The other perch designs were very versatile and easily moved from one location to another. These perches were best suited for producers who had large fields with no natural perches toward the centers. This made for ideal vole habitat. The portable design allowed participants to place the perch in the midst of heavily colonized vole area but to also take the perch off site during harvest or move it to another problem area when the voles had been eradicated. The portable perches were very popular with participants.

Match forms were given to each person to track time and cost of materials to install perches and nest boxes. Once installed a technician inspected them and signed off on the Reimbursement Request.

The landowner then filled out an annual report form to track progress detailing methods of rodent control, time of year, frequency, amount, and estimated effectiveness. Also documented were crop type, damage, season, and financial loss value. Landowners agreed to report for three seasons.

Implementation

After landowners turn their application in, technicians reviewed the application for eligibility. 38 landowners were approved and technicians created each a pest management plan. Technicians then visited the sites and made any changes needed to the pest management plan. Specialized recommendations were made on a case by case basis. An agreement was then signed by the landowner and a Polk SWCD Director. The landowner then installed the practices. Upon completion of installing the perches and/or nest boxes, technicians inspected the practices. 37 landowners carried on with the project.

Polk SWCD used summer interns to effectively track the progress of participants and map installation of practices. A part-time Technician Assistant led the interns and was instrumental in the success and effective execution of this project. In addition to training and education on pest management, predator ecology, and cropping practices, the technician and interns were trained in the use of GPS and GIS mapping. The technician and interns mapped every perch and nest box installed through the project.

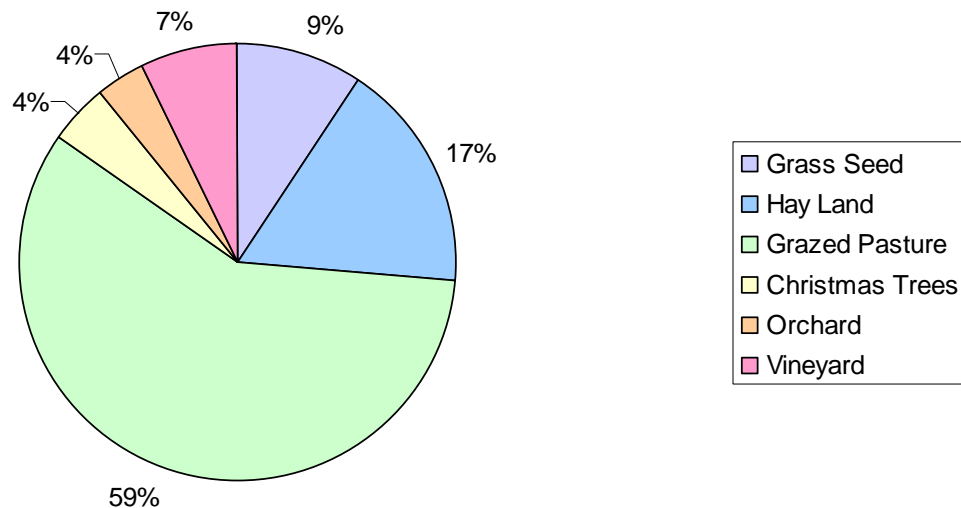
Each landowner installed a combination of kestrel nest boxes, barn owl nest boxes, and raptor perches on their property. The final results for the project are below:

- 37 participants
- 1,450 total acres enrolled
- 87 kestrel boxes provided
- 98 owl boxes provided
- 194 raptor perches installed

Out of the total 1,450 acres, the uses are as follows (see chart below):

- 135 acres grass seed
- 51 acres orchard
- 106 acres vineyard
- 247 acres hay land
- 848 acres pasture land (590 cattle, 125 combined use with cattle and other animals, 84 horse, 37 sheep, and 12 acres used for goat or alpacas only)
- 64 acres Christmas trees

Participant Land Use Types



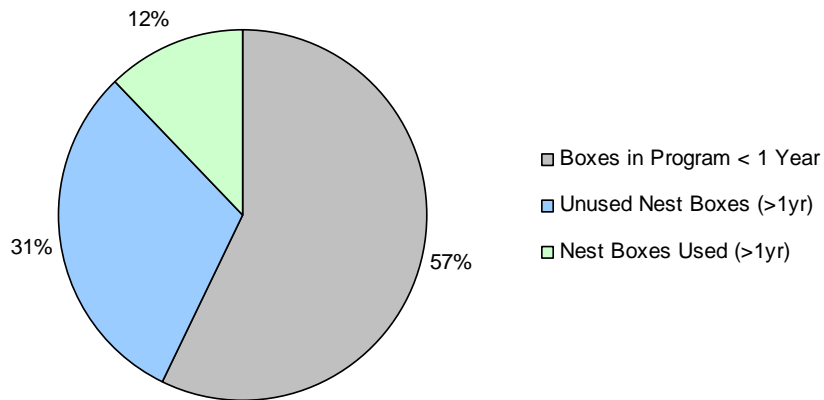
Use of perches was as high if not higher than the anticipated 80-100%, with 90-100% of perches seen in use. The model site for our project was an 80 acre farm producing hay and pasture that suffered significant vole damage in the past. They installed 31 perches in their fields. These landowners have reported very successful use of the raptor perches. They noticed a decrease in vole damage and their rodenticide use also decreased. Equally important, they feel confident these pest management practices are an effective control. They have been very vocal in their support of this project and promoted these pest management practices to other producers.

American Kestrels, Red-tailed Hawks, and Northern Harriers were most commonly seen using perches. Signs of owl use were present at some perch sites, but it was difficult to document use by owls due to nocturnal activities. Landowners reported seeing a reduction in new holes around areas with perches. They also enjoyed seeing the birds.

It is still early to know the total effectiveness of the nesting boxes, but the initial observations of use have been very positive. Most of the boxes given out were installed after the nesting season and are expected to see more use in the upcoming years. Out of the boxes installed for at least one nesting season, the occupancy was lower than the 50-70% initially expected. Boxes had a higher rate of use by the second nesting season, so we anticipate the percentage of boxes used to increase with time.

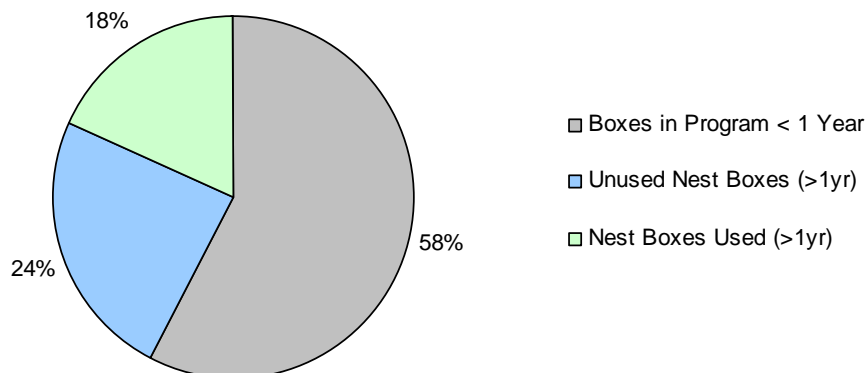
98 Barn Owl nest boxes were awarded. Boxes installed an entire nesting season or longer make up 43% of the total boxes awarded. 57% of the awarded boxes have not in the Program through a nesting season (see chart below). Out of the boxes that have been up for at least one nesting season, an estimated 28% were occupied (12% of total boxes awarded). Total Barn Owl boxes awarded status is shown in the chart below.

Barn Owl Nest Box Use Chart



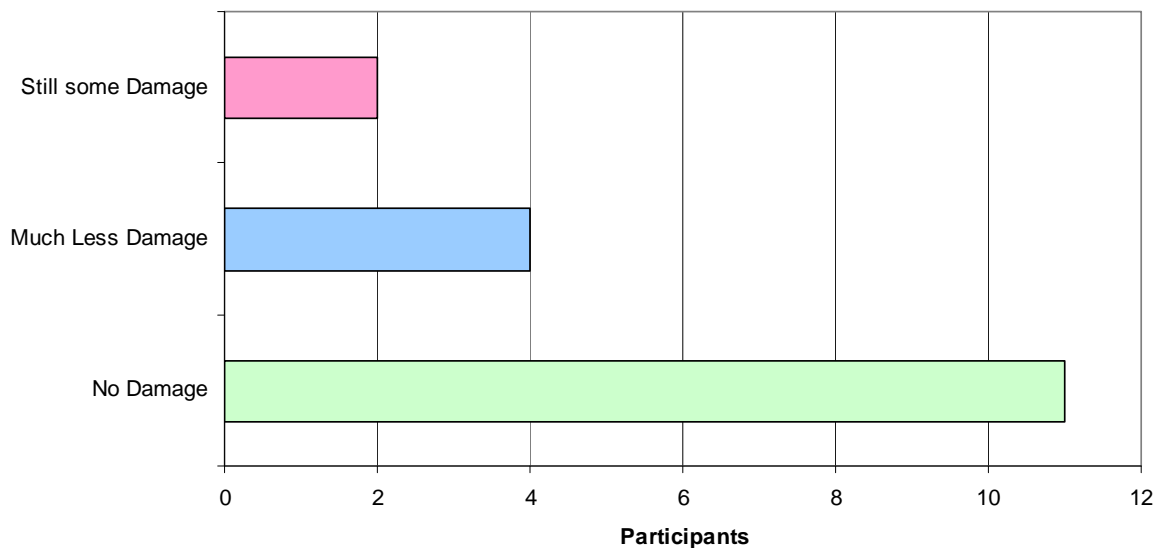
Kestrel nest box use was lower than the 50-70% initially expected, but not as low as the Barn Owl recruitment. 87 Kestrel nest boxes were awarded. Boxes installed an entire nesting season or longer make up 42% of the total boxes awarded. 58% of the awarded boxes have not in the Program through a nesting season (see chart below). Out of the boxes that have been up for at least one nesting season, an estimated 43% were occupied (18% of total boxes awarded). Total Kestrel boxes awarded status is shown in the chart below.

Kestrel Nest Box Use Chart



All participants had previous rodent damage. Total damage reported after one year of participation was much less than at time of application. Twenty of the participants have not been in the Program for at least a year, so it is too early to tell what results they will have (reports are taken annually). Of the 17 participants in the Program at least a year, 11 reported there was no damage for the reporting year, 6 reported there was still damage. 2 of these landowners said damage was greatly reduced since joining the Program.

Damage Reported by Participants in Program at Least 1 Year



Part of the Program goal was to reduce chemical dependency. This part of the goal has been very triumphant. Out of the 17 participants, 7 reported no use of traps, bait, or chemical control, which had been their method of treatment prior to joining the Program. The other 10 reported reduced use of traps, bait, or chemical control.

The other 20 participants will begin reporting in 2009. They will continue to report for the next three years. The early feedback from these participants has been very positive. Those with perches told technicians they have seen frequent use by birds. They are hopeful their nest boxes will be occupied this coming nesting season.

Landowners who entered this program were so pleased with the results they are still encouraging their neighbors to join the Program. This project was shared with other entities and has received great interest. After reviewing reports from landowners, it is evident use of chemicals for rodent control has been reduced and natural predation has become an alternative form of pest control. Since installing Program practices, many non-program perches and nest boxes have been seen installed around the County. Another goal met and exceeded was the number of participants enrolled. The Program currently has 37 participants and many interested landowners who did not qualify. Because this Program was so successful and there is a continued interest in joining the Program, the Polk SWCD plans to create an updated version of the Vole Control Program, recruiting more participants, and conducting further outreach and education on integrated pest management.

Polk SWCD Predator Control of Rodent Pests Report & Summary 2008

Attachments:

- Attachments are numbered in the upper right hand corner
 - All outreach materials and publications are included in chronological order
1. Application packet, distributed to 16 landowners upon request, after seeing outreach materials. [2 pages]
 2. Polk SWCD Quarterly Newsletter Article – April 2007. Distributed to general mailing list – 800 recipients.
 3. Vole Control Program Brochure – Sent to targeted mailing list of 140 recipients in the Fall of 2007
 4. Polk SWCD Quarterly Newsletter Article – Winter 2007. Distributed to general mailing list – 800 recipients.
 5. Polk SWCD Quarterly Newsletter Article – January 2008. Distributed to general mailing list – 800 recipients.
 6. Polk SWCD Quarterly Newsletter Article – June 2008. Distributed to general mailing list – 800 recipients.
 7. Newspaper Article, Itemizer Observer – Published August 13, 2008. Estimated distribution: 6,800 households.
 8. Polk SWCD Annual Report – July 2009 page highlights the Vole Program. This calendar is offered to 200 people who attended the Annual Meeting, August 2008, and post cards are mailed out to 800 general mailing list recipients informing them about the calendar so they can request copies.

Maps and Photos were included for 7 example project sites:

9. Map of Polk County location in Oregon [1 page]
10. Map of Polk County project site locations [1 page]
11. Map Ken Fletcher project site [1 page]
12. Photos Fletcher Project site [2 pages]
13. Map Mel Finegan project site [1 page]
14. Photos M. Finegan Project site [2 pages]
15. Map Tom Finegan project site [1 page]
16. Photos T. Finegan Project site [2 pages]
17. Map Mel Chase project site [1 page]
18. Photos Chase Project site [2 pages]
19. Map Steve Forbes project site [1 page]
20. Photos Forbes Project site [2 pages]
21. Map Tom Hansen project site [1 page]
22. Photos Hansen Project site [2 pages]
23. Map Rebecca Herron project site [1 page]
24. Photos Herron Project site [2 pages]
25. Photos Signs of Vole Damages [3 pages]