

# Western IPM Center Research Accomplishments Report for 2006 research year

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INSTRUCTIONS: PLEASE PROVIDE ONLY THE ESSENTIAL COMPONENTS OF ACCOMPLISHMENT WHICH ARE:

1. A CLEAR IDENTIFICATION OF THE PROBLEM/ISSUE ADDRESSED BY THE RESEARCH.
2. A CONCISE EXPLANATION OF HOW THE RESEARCH ACHIEVEMENT CONTRIBUTED TO THE SOLUTION OF THE PROBLEM/ISSUE BEING RESEARCHED.
3. THE IDENTIFICATION OF OTHER BENEFITS RESULTING FROM THE RESEARCH, EVEN IF UNPLANNED.
4. PLEASE ATTACH A SUMMARY OF THE PAST YEARS PROGRESS, ONE PAGE MINIMUM.

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CONTACT: Polk Soil & Water Conservation Dist. PROJECT NUMBER: K009607-POLK  
TELEPHONE: 503-623-9680 PROJECT TITLE: Predator Control of Rodent Pests  
PRINCIPAL INVESTIGATOR: Jackie Hastings

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INSTITUTIONAL ADDRESS: 580 Main St Suite A, Dallas OR 97330

CO-PIs or TEAM MEMBERS: Melody Rudenko

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THE PROBLEM, ISSUE, OR REASON FOR CONDUCTING THE RESEARCH

This project implements an integrated pest management program that utilizes natural predator populations as a control mechanism for rodents. Rodent damage to agricultural crops has been identified as a significant resource problem. Participants are provided with nest-boxes and build predator perches. They are required to install, monitor, & maintain all equipment. This projects goal is to stimulate a growing acceptance for alternative forms of pest control & reduce participant's use of rodenticides.

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THE SINGLE MOST IMPORTANT ACCOMPLISHMENT OR BENEFIT RESULTING FROM THIS RESEARCH.

The most important accomplishment in 2006 for the vole control program was the implementation of integrated pest management practices on 846 acres in Polk County (involving 15 producers) and 381 of those acres are used in certified organic production. Each producer implemented a unique management program involving different combinations of barn owl nesting boxes, kestrel nesting boxes, and raptor perches. The 846 acres include a variety of production and management practices:

- 7 acres grass seed
- 51 acres orchard with cover crop
- 115 acres vineyard with cover crop
- 12 acres Christmas trees with cover crop
- 121 acres pasture – beef

- 32 acres pasture – horse
- 30 acres pasture – sheep/goat (31 acres organic)
- 350 acres pasture – dairy (organic)
- 128 acres hay

## **ADDITIONAL BENEFITS, SUCH AS:**

### **SOCIAL BENEFITS -**

Most producers involved in this program have previously utilized very time consuming pest management methods. These methods typically involve walking through a vole infested field and applying a poison or other control method to individual vole holes through out the field. The management practices this program implements involve an investment of time and effort in the beginning and significantly less time and effort after installation. Participants have been very pleased with the low maintenance commitment.

In addition to the increased free time participants have enjoyed observing the raptors preying on voles in there field. Checking around the perches and boxes for signs of use (pellets, fecal matter) has also been more enjoyable that past control efforts. Most participants get excited when finding signs of use and even more excited when observing the predators in action.

### **ECONOMIC BENEFITS -**

The immediate economic benefit that participants are experiencing is an increase in time that can be spent on other farm activities. Other vole control practices are extremely time consuming and utilizing voles natural predator to control the population has decreased the amount of time they are spending on intensive control practices.

It is still early in the project to measure the other economic benefits that the participants are experiencing. The future economic benefits that participant expect from utilizing these integrated pest management practices are: spending less or no money on rodenticides, a decrease in crop losses do to vole damage, and a decreased cost in equipment repairs (voles tunneling creates rough field conditions which causes significantly increased ware and damage to equipment.)

### **ENVIRONMENTAL BENEFITS -**

This project will have a variety of positive environment benefits, the most significant being a decreased use of rodenticides. Less poison in the environment is beneficial to a variety of wildlife including no-target mammal and avian species. In addition these practices provide more secure nesting sites for native raptors which will be very beneficial as natural nesting habitat continues to decline.

Finding alternative methods to keep vole population in control will also benefit the environment by assuring the continued use of low tillage practices and cover cropping. These practices have a significant environmental benefit, but create conditions for vole population to grow to abnormally large numbers.

OTHER –

In order to construct a large number of nesting boxes to be provided to project participants we enlisted the help of Dallas High School FFA students. As part of their nest box construction project we taught the students about integrated pest management and the reasoning behind and need for our vole control project. The students learned a lot about environmental balance and farming practices. These students knowledge and understanding with have significant beneficial effects on farming and the environment in the future.

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PLEASE SUBMIT A HIGH RESOLUTION DIGITAL IMAGE REPRESENTATIVE OF YOUR RESEARCH/EXTENSION PROJECT.

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When you have completed this form, return to

Linda Herbst  
Associate Director, WIPMC  
Department of Environmental Toxicology  
One Shields Avenue  
University of California  
Davis, CA 95616

THIS FORM WAS COMPLETED BY:

Melody Rudenko  
Polk SWCD Resource Management Technician

## Summary 2006 Progress – Predator Control of Rodent Pests

The Polk Soil and Water Conservation District's Vole Control Program began in January 2006. The grant funding from the western Integrated Pest Management Center for the proposal entitled "Predator Control of Rodent Pests" was used to fund this program. As stated in the proposal abstract the goal of the project was to stimulate a growing acceptance for alternative forms of pest control and reduce participant's use of rodenticides.

In January through April outreach was conducted to the residents of Polk County. This outreach included articles in our newsletters, articles in local papers, and mailing brochures (see attachments.) The project generated a lot of interest throughout Polk county and neighboring counties. The District received numerous phone calls, letters, and visits from interested landowners. Mailing lists of these interested landowners were developed so that application packets and information could be sent after the program priorities were developed.

After recording landowners interests and concerns the project advisors met and discussed priorities for the vole control program and procedures for providing participants with equipment and reimbursements. The Priorities are detailed in the table below (further information in attachment #6.)

### **Priorities for Polk SWCD Vole Control Program:**

<b>BOXES</b>	<b>PERCHES</b>
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, incidence of rodenticide use, implementation of conservation practices (no-till, cover cropping), production of agricultural crop, and potential for effective control.

After priorities and program logistics were worked out information packets and program application packets were sent to interested landowners. (See Attachments) These initial mailings were sent in March. General information packets on pest control, nesting boxes, and perch designs were sent to 13 landowners. Application packets were sent to 67 landowners.

During the initial sign up we had 12 landowners turn in applications. To date we have had 16 landowners apply and 15 carry on with the project. After landowners turn their

application in, District technician would review the application form and propose a pest management plan for the landowner. A site visit would then take place to review the site and make any changes to the pest management plan. An agreement is then signed by the landowner and Polk SWCD Chairman. The landowner will then begin installing pest management practices and upon completion the SWCD technician will conduct an inspection site visit.

In order to effectively track progress of participants and map installation of practices the Polk SWCD hired a summer intern to assist with the project. The help of this high school intern was instrumental in the success and effective execution of this project, and the experience was very beneficial to the intern. In addition to training and education on pest management, predator ecology, and cropping practices, he was trained on GPS use and GIS mapping. With his assistance every perch and nest box installed through the project have been mapped.

Each landowner installed a different combination on kestrel nest boxes, barn owl nest boxes, and raptor perches on their property. The results for 2006 are below:

- 15 participants
- 846 acres total (381 of which are used in organic production): 7 grass seed, 12 Christmas tree, 51 orchard, 115 vineyard, 128 hay, 121 beef pasture, 32 horse pasture, 30 sheep/goat pasture, 350 dairy pasture
- 35 kestrel boxes provided
- 40 owl boxes provided
- 113 raptor perches installed and in progress

We have had a very positive response from the landowners who have installed raptor perches. It is still too soon to know the actual effectiveness of the nesting boxes or the perches, but the initial observations of predation and perch use has been very positive. The model site for our project is an 80 acre farm producing hay and pasture that has suffered significant vole damage in the past. 16 Perches have been installed and an additional 25 will be installed on the remaining fields. These landowners have reported very successful use of the raptor perches. They have noticed a decrease in vole damage, and their rodenticide use has also decreased. Equally important, they feel confident that these pest management practices are an effective control, and they have been very vocal in their support of this project and the promotion of these pest management practices to other producers.

Plans for the future include continuing to recruit participants for the program, hiring another seasonal intern to assist with the continuation of the project, conducting further outreach and education on integrated pest management, and begin to pool and summarize the results landowners report annually.

**Polk SWCD Predator Control of Rodent Pests Report & Summary 2006**  
**Attachments**

- Attachments are numbered in the upper right hand corner
  - All outreach materials and publications are included in chronological order
1. Page from Polk SWCD Quarterly Newsletter – January 2006. Distributed to standard mailing list – 641 current recipients. [1 page]
  2. Vole program brochure, distributed in February 2006 to standard mailing list – 641 current recipients. [1 page]
  3. Newspaper Article, Statesman Journal – Published February 11, 2006. Estimated distribution: 54,972 readers. [1 page]
  4. Newspaper Article, Itemizer Observer – Published March 1, 2006. Estimated distribution: 6,600 households. [1 page]
  5. General information packet, distributed to 13 landowners upon request, after seeing outreach materials. [3 pages]
  6. Application packet, distributed to 67 landowners upon request, after seeing outreach materials. [5 pages]
  7. Page from Polk SWCD Quarterly Newsletter – April 2006. Distributed to standard mailing list – 641 current recipients. [1 page]
  8. Polk SWCD Annual Report – September 2006. Distributed to standard mailing list – 641 current recipients. [Calendar format, relevant page marked]

**Maps and Photos were included for 3 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 Chase project site [1 page]
12. Photos Chase Project site [2 pages]
13. Map Overturf project site [1 page]
14. Photos Overturf Project site [4 pages]
15. Map Herron project site [1 page]
16. Photos Herron Project site [2 pages]