

Barn owl box program helps farmers adopt sustainable rodent strategies

AT A GLANCE

Many farmers spend thousands on rodenticides annually, our team helped farmers begin implementing barn owl boxes as an alternative.

The Situation

Voles (genus: *Microtus*) are a small rodent that can cause significant damage to many irrigated crops in Idaho including alfalfa, cereals, sugar beets and potatoes. To deal with voles, most farmers in the Magic Valley use rodenticides like zinc phosphide. In a 2019 survey conducted at Magic Valley Pesticide Safety Recertification schools, we asked farmers how much they spent on rodenticides during years with heavy vole pressure. Some of the farmers indicated they spent more than \$20 per acre on rodenticides during bad vole years. A common concern brought up by local farmers is that they lack alternative means of control. One practice used for years in California is building barn owl boxes to attract the predators to hunt and feed on rodents nearby. A [study](#) in northern Utah by Carl D. Marti found that 76.9% of skulls found in barn owl pellets was voles. During our initial research in 2018 there were no programs being conducted in the Magic Valley to teach farmers about this alternative and how to successfully implement it.

Our Response

In order to start a program focused on teaching about barn owls, we obtained two grants, one from the



Jason Thomas teaches a group of farmers about the potential benefits of barn owls to reduce rodent damage.

Western SARE and the other an University of Idaho innovative project grant totaling \$7,020. We assembled a team of UI Extension educators in the central district who wanted to pursue outreach and research activities on barn owl nesting behavior. Using the money, we began building owl boxes and putting on educational programs in the area. Through our efforts, we carried out the following:

- Gave 22 agricultural presentations to Idaho farmers and pest managers about the usage of barn owls for pest management in irrigated crops.
- Published an UI Extension bulletin about how to install, maintain and build a barn owl box.
- Presented at the national vertebrate pest conference in 2019 about our efforts.

- Wrote two county newsletter articles on the subject.
- Taught the public about our program at three booths including the Minidoka County Fair and Ketchum Farmers Market.
- Were interviewed for three newspaper articles.
- Were interviewed by two radio shows.

We also built over 120 barn owl boxes with the help of volunteers from the Boy Scouts of America, Mini-Cassia Juvenile Probation Office, Minidoka County School District and Power County School District. Using these boxes, we coordinated with farmers and homeowners to deploy barn owl boxes into fields and on private property to track and detect nesting patterns.

Program Outcomes

Through our program we taught 2,891 individuals about barn owl boxes. The majority of these individuals were farmers and pest managers attending agricultural workshops or webinars. We also reached over 310,000 individuals with our media exposure.

Through our efforts 83 individuals who were not using predators as part of their rodent management plan took steps to start integrating barn owl boxes into their rodent management plan by purchasing boxes from us or requesting plans to build their own. Farms and ground operated by these individuals was over 77,736 acres. This includes Blaine, Bingham, Cassia, Camas, Gooding, Jefferson, Minidoka, Oneida and Power counties.

Sean Mallet from Harmony organic dairy who installed 40 boxes after a harsh vole year indicated, “We haven’t

really had a problem since. Overall, I think there’s been a great benefit to our farm utilizing these owl boxes.”

Russ Suchan, “It is hard to know for sure how much benefit the owls have provided, but in the past, zinc phosphide was our only option with mixed results in my opinion. With the use of owl boxes, we can at least approach this problem from multiple angles now.”

Another outcome was that the Hagerman Valley historical society began building and selling barn owl boxes using our designs to provide more boxes for agricultural use in that area.

Through the sales of our owl boxes, we were able to raise \$13,144 of revenue to support our ongoing efforts.

Through our research we were able to prove that barn owls would use nest boxes in Idaho and raise their young in them. Based on nesting data we collected, combined with dietary studies we can conclude the following:

- We estimate that 134,568 voles were consumed by barn owls in our boxes during the 2021 nesting season.
- Barn owls tended to use new boxes placed in areas more than 500 meters or ~547 yards from a human residence (i.e. houses, warehouses, frequently used facilities).
- Kestrels, a small falcon species would also use barn owl boxes on occasion.
- Starlings, an invasive pest species, would use owl boxes on some occasions.

FOR MORE INFORMATION

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