

Three-year study evaluates owls as rodent control

By Steve Adler

Barn owls have long provided a natural way to control destructive gophers and other rodents, but a recently completed three-year study showed the use of barn owls can be economical as well as effective.

After conducting research in California, Florida, Malaysia and Israel, Mark Browning, a field researcher for the Pittsburgh Zoo, said his study confirmed that barn owls “provide a highly effective, inexpensive and non-toxic alternative to other methods.”

Chris Storm, viticulture director for Vino Farms in Acampo, said he supports supplying habitat for predators, using owls as an integrated pest management technique to control gophers.

“A family of owls will consume several thousand rodents in a year,” Storm said. “We are hoping that consumption of rodents keeps the population at a level that is manageable, rather than spiking to the point where we have to take other measures.”

He said the importance of using owls for rodent control increased when Vino Farms shifted from a method of disking every row five or six times a season to growing permanent cover crops.

“Because we are no longer disking, the mounds that the gophers dig create an uneven path for the tractors to drive down. So we need to suppress the population,” Storm said.

The vineyard in Acampo covers 251 acres and uses eight owl boxes. In addition, Vino Farms provides more nesting opportunities for owls by creating a hedgerow of native oaks running alongside the nearby Mokelumne River, as well as in 23 acres of the farm that has been restored to native habitat.

“Barn owls occupy nesting boxes year-round, but generally nest in late winter or early spring. That is usually when there is the highest adult population, as well as a significant number of young owls. Owls will continually lay eggs, so you have owls of different ages. It is an evolutionary advantage in case the population of rodents goes up,” Storm said.

During the three year study, Browning said he was able to develop a number of recommendations for best practices surrounding barn-owl programs:

- Barn owls need to be used in sufficient densities to make a difference on rodent populations. One nest box for every 10 to 20 acres is a good rule of thumb.
- Nest boxes do not need to be installed higher than 8 feet off the ground. This saves money and time for the farmer, and makes the boxes much easier to maintain.
- Nest boxes should be layered with 3 to 4 inches of mulch. Hens will avoid barren boxes, and when they do use them, broken eggs often result. Do not rely on the production of pellets.



Photo/Steve Adler

Chris Storm, viticulture director for Vino Farms in Acampo, says he is very pleased with the gopher control provided by hard-working barn owls. Inset photo shows baby owlets in a nest box. Owlets consume hundreds of rodents while they are in the nest.

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- Nest boxes can be placed where convenient; the barn owls will fly to areas of highest rodent density to hunt.

- Boxes can be placed as little as 100 feet apart.

- Inspections of boxes during breeding season should be made in the late afternoon so sitting or brooding hens can return at dusk to eggs or chicks.

- Replacing mulch in September or October is recommended.

Vineyards aren't the only crop that would benefit from owl boxes, Browning said.

"Growers of almonds, walnuts, cherries and other nut, fruit and row crops are already using sophisticated nest box programs; sugar cane growers as well. Since the barn owl hunts the prevalent rodent in its area, any crop that

attracts high numbers of rodent pests qualifies as an excellent attractant for barn owls," he said.

Browning identified rice as a crop where barn owls could be used to a greater extent, if crops suffer damage from marsh rice rats.

"Usually, it is a matter of the farmers becoming aware of the barn owl's positive effects," he said. "The vineyards have been on the leading edge of this."

According to Browning, the most important findings of his study came as it wound down in its third year, and the accumulated data began to form a cohesive picture of the effect of the barn owls on rodent populations. He said the study recorded on camera all deliveries made to a nest containing three chicks during the first eight weeks of their nine-week developmental period.

"Never before had anyone chronicled the actual number of prey required to raise three chicks," he said. "Combined with our conservative estimate of adult consumption at one rodent per night—it is likely higher—we were able to determine that over the first two years, the large population of owls took 25,682 rodents at a cost of 26 cents per rodent, versus a cost of trapping at \$8.11 per rodent."

Browning said the figures do not include cost savings resulting from lowered numbers of pocket gopher mounds that interfere with harvest and other operations, and reduced damage to vines, irrigation lines and other equipment.

"What we hoped to accomplish with these results is to raise the use of barn owls out of the realm of the esoteric, where they are often placed, and into the same category as more traditional methods such as trapping, strychnine and fumigants," he said. "By having confidence that an average nest box of barn owls will take around 800 rodents, vintners and orchardists can determine their relative worth to their operation."

(Steve Adler is associate editor of AgAlert. He may be contacted at sadler@cfbf.com.)



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