

Farmers Use Falcons To Protect Berries



Rather than using chemicals or noise to keep birds from eating their ripe berries, some farmers are trying a new way to scare off hungry birds: *bigger* birds.

Farmers in some parts of the U.S. have hired people who own falcons, which are large birds of prey, to guard their berries. Small birds called starlings love berries. They can destroy hundreds of thousands of dollars in berries each year. But starlings are afraid of falcons, so they fly off when they see one nearby. Farmers use falcons that are trained *not* to kill the starlings and to fly back to their owners.

Keeping an eye on the falcons is hard work. One man and his eight trained falcons worked last summer at Rose's Berry Farm in Glastonbury, Connecticut. They worked 11 hours a day, seven days a week, to chase starlings from the farm.

NEWS WORD BOX

chemicals hire
guard cannon
expensive acre

In the past, the Roses tried chemicals and even small cannons to scare away the birds. But the chemical is no longer sold and the neighbors did not like the noise from the cannons. The Roses thought about covering their 40 acres of blueberries with nets to protect them, but the netting would have been very expensive.

MORE FACTS ABOUT FALCONS

- The falcons are saving the Roses money and are not harming the environment the way chemicals might.
- A person who raises and trains falcons is called a *falconer*.
- Falcons are used to scare away birds at airports too. The falcons keep planes -- and the people in them -- safe from the harm that birds can cause.

THINK ABOUT THE NEWS

Think about other ways in which animals are used to control other animals or protect crops. Share those ways with your classmates.

ADDITIONAL RESOURCES:

http://www.boston.com/news/local/connecticut/articles/2008/08/10/farmers_turn_to_falcon_to_help_guard_berry_crops/

Farmers turn to falcon to help guard berry crops

By Janice Podsada, Hartford Courant | August 10, 2008

GLASTONBURY, Conn. - As the sun rises over a sprawling berry farm in South Glastonbury, a trained falcon rises into the pink dawn. Its swift, sudden appearance panics a cloud of starlings and sends them fleeing toward the hills.

Behind this breathtaking scene, hundreds of thousands of dollars are at stake.

"It's a war out there," said Erik Swanson, a licensed falconer.

Starlings can cause more than \$100,000 in damage to a half-million dollar blueberry crop. Accompanied by eight trained falcons, Swanson is spending August at Rose's Berry Farm.

Working 11-hour days, seven days a week, he and his falcons - which are trained to chase the birds away, not to kill them - will protect the blueberries.

This is the second year that Henry and Sandy Rose, owners of the 100-year-old, 100-acre farm have hired Swanson, an employee of Falcon Environmental Services Inc., based in Plattsburgh, N.Y.

A growing number of farmers in the United States are turning to falconers to protect their crops. As more farmers find their fields hemmed in by suburban developments, the old methods of wildlife control noisemakers, shotguns, and poison are less tolerated.

"Everything we did, our neighbors did not like," said Sandy Rose.

At a cost of about \$400 a day, the falconry service is more neighbor-friendly than the 120-decibel propane cannons the Roses once used to rout the starlings, and it doesn't bother the farm's visitors or customers, who pay \$2.25 a pound for pick-your-own blueberries.

Starlings typically eat insects and grubs, but when the blueberries appear, they "go sugar crazy," Swanson said.

Three years ago, starlings destroyed 20 percent of the crop. Up until 10 years ago, the Roses used an insecticide to control the starlings. "It irritated their throats, and they'd give off a distress call," she said.

But the chemical, which also controlled blueberry maggots, is no longer available. The alternative - covering the farm's 40 acres of blueberry fields with nets - would have cost more than \$200,000.

The couple settled on propane cannons and traps, even shooting a few birds. But the neighbors complained. After reading about a California vineyard that successfully employed falcons, Henry Rose decided to hire Falcon Environmental.

The privately owned company provides airports, including John F. Kennedy International Airport in New York City, and landfills with ecologically friendly methods to disperse birds and wildlife without harming them. It's a business that's appealing to a growing number of farmers.

"It seemed to work. Last year they were controlled very well," Sandy Rose said. ■

http://www.falcon.bz/flash_eng/main_eng.html Falcon Environmental Services

Farms Turn To Falcons To Guard Berry Crops

<http://www.wtic.com/Farms-Turn-To-Falcons-To-Guard-Berry-Crops/2743277>

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But the chemical, which also controlled blueberry maggots, is no longer available. The alternative _ covering the farm's 40 acres of blueberry fields with nets would have cost more than \$200,000.

“It costs \$5,000 an acre just putting them up, and that's not including upkeep,” Sandy Rose said.

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Swanson, who normally works the dawn shift at JFK, was assigned to guard Rose's Berry Farm last year.

“At first, I didn't know what to expect with a blueberry farmer. We're airport people,” Swanson said.

In fact, when Henry Rose introduced Swanson to a group of local farmers, he was greeted with a bit of skepticism.

“The old farmers looked at me cross-eyed like, 'Boy, didn't you take Henry but good,'" Swanson said. “I don't know any farmer that hasn't been taken advantage of by someone claiming they'll get rid of the starlings.”

Today, some of those same farmers are considering hiring a falconer. And Swanson, sunburned and sharp-eyed, has become an old hand at recognizing the enemy's approach.

“You know there's trouble when you see a speckled sky coming in. The problem with starlings is that they will go from one blueberry to the next, pecking it once and moving on,” Swanson said.

Each year, starlings, blackbirds and crows cause more than \$150 million in damage to the nation's grain, fruit and berry crops, according to the U.S. Department of Agriculture.

Falconry is a 4,000-year-old sport whose practitioners reportedly included Genghis Khan and William Shakespeare. There are about 5,000 licensed falconers in the U.S.

But managing falcons commercially is a new industry, said Mark Adam, 40, the president and founder of Falcon Environmental Services, which has eight offices in the U.S. and Canada.

“When I started this business 17 years ago, it was just me,” said Adam, a falconer since age 15. “Now we have 50 people, a mixture of falconers, biologists and office staff.”

Adam would not disclose the company's revenue or its fee schedule.

“Our birds don't go out to kill, they just scare the nuisance birds,” Adam said. “It's harnessing nature.”

But harnessing nature is, in the United States at least, no fly-by-night operation.

Falconry is a highly regulated state and federal sport. Only licensed falconers who have passed a federal examination and undergone a rigorous apprenticeship are allowed to keep these fierce, flying predators.

Falconry was legalized in Connecticut only three years ago.

“It's easier acquiring a heavy equipment license or explosives than it is getting a falconer's license,” Swanson said.

The firm provides its falconers with vehicles, radio transmitters and other supplies, sometimes even the falcons themselves, which receive hundreds of hours of training and can be worth thousands of dollars.

From sunrise to sunset, Swanson will fly each of his eight falcons at least once a day.

The workday begins with a weigh-in. Falcons must be weighed every day, on a scale so sensitive “it can weigh your breath,” said Swanson, who feeds his falcons farm-raised quail, shipped frozen via FedEx.

A hungry falcon that's even a few grams underweight may kill a starling instead of chasing it.

Before takeoff, Swanson attaches a radio transmitter to the falcon's ankle in case it gets lost. His falcons rarely stray, but when they do, they are in danger of being attacked by wild, red-tailed hawks.

On a recent afternoon, Squish, a 4-year-old Lanner falcon, decided that Glastonbury Meadows State Wildlife Area was more appealing than circling the Roses' farm.

On a hot day, “they can stay up there all day. It's cooler up there,” Swanson said as he climbed into his truck to track the beeps being generated by the tiny transmitter attached to the female Lanner falcon's leg.

“You're hiding, baby. I know you're up there somewhere,” he said, veering onto a dirt road. Forty minutes after giving chase, Swanson found her lolling in a tree, a few miles from the farm.

“She knew exactly what she was doing,” he said. “She was up there having big fun.”

Flying falcons all day may sound idyllic, but it's not for everyone, said Swanson.

<http://www.bearsmart.com/bearSmartCommunities/ProtectingLivestock&Crops/Livestock&Crops.html#1>
Protecting Livestock against Predators - Guard Animals

The best way to protect livestock from predators is to take a preventative approach, like using guard animals, such as dogs, llamas and donkeys. Some common uses can be to protect stock, home, land, and owners against wolves, feral dogs, mountain lions, and even bears. Coyotes, wolves and wild and domestic dogs are likely the main cause of livestock deaths. Grizzly and black bears may also predate on livestock, but are more often caught taking advantage of a domestic kill as a food source.

Managing for predators takes a variety of control methods. There is no one technique that will solve every producer's problems. Those who are successful, use an integrated approach, combining good husbandry practices with [electric fences](#), guard animals, good herders, or [mechanical scare devices](#). They also must be flexible enough to use whatever combination of methods solve the problem, since predators always have and always will be a part of the livestock producers' world.

- There are advantages and disadvantages to each type of guard animal. Do your homework to ensure that the type of guard animal you choose is suitable to work with your livestock and in your particular situation. Some livestock guardian dogs (LGD), for example, may not make good pets. If the LGD is to be used in an area where neighbors are close, the owner must be aware that LGD have a natural barking behavior to warn off predators. Because LGD's are nocturnal, as are most predators, they will bark often through the night. This is an important part of their job.
- Livestock Guardian Dogs (LGD) may be the best suited guardian animal to protect livestock against bears. Llamas and donkeys are better suited to protect livestock against canids - dogs, coyotes, foxes and wolves.
- Each guard animal will be different and some individuals, whether a donkey, llama or dog, may be a wonderful pet, but may not be suited for guardian duty. Your guardian animal must have the proper instincts.
- Proper training and handling of your guardian animal is critical to its effectiveness.
- Be prepared to allow some time for the guard animal to bond with your livestock and settle into its role as a guardian. It will also take time for the livestock to accept the guardian animal.
- Work with a reliable breeder that will allow you the right to exchange an unsuitable animal.



Books:

May Safely Graze - Protecting Livestock Against Predators by Eugene L. Fytche

The predators, risk and protection models, potential protective measures and their effectiveness, 103 pg.

To order contact Eugene Fytche, R.R. #1 Almonte, Ontario K0A 1A0 (603) 256-1798

Web Links:

Bear Wise - Farmer's role in keeping bears at bay http://bears.mnr.gov.on.ca/article_farmers_role.html

A farmer's life, while challenging at the best of times, can be made especially difficult when the farm is situated in "bear country." Thousands of farms are located in regions where the forests support populations of black bears. Learn more about preventing farmer-bear conflicts.

Dog Owner's Guide: Livestock guard dogs www.canismajor.com/dog/livestck.html

A comprehensive introduction to behaviour, training, the breeds: Anatolian, Akbash, and Kangal dogs, Great Pyrenees, Komondor, Kuvasz, Tibetan Mastiff, Maremma, Tatra Sheepdog, Slovak Tchouvatch, Caucasian Ovcharka, Castro Laboriero.

Livestock Guardian Dogs www.lgd.org

Brought to you by the Livestock Guardian Dog Association

Livestock & Family Guardian Dog Comprehensive Resource Gateway www.Flockguard.org

Here you will find general information, training tips, health articles and discussion of responsible ownership and legal issues.

Black Bear Conservation Committee - Bears and Crops and Livestock

<http://www.bbcc.org/livingwithbears/cropslivestock/bearsandcropslivestock.htm>

<http://news.nationalgeographic.com/news/pf/88027845.html>

NATIONAL GEOGRAPHIC NEWS

NATIONALGEOGRAPHIC.COM/NEWS

Are Birds Best Hope for Pest-Ridden Coffee Crops?

Stefan Lovgren
for [National Geographic Magazine](#)

August 26, 2008

Chances are you've never heard of *Hypothenemus hampei*. But this tiny insect is the world's biggest threat to something many of us swear we can't live without: our morning cup of [coffee](#). ([See photos](#).)

The bug, commonly known as the coffee berry borer, strikes almost everywhere coffee grows. It can destroy up to 70 percent of a crop, posing a significant threat to this \$70-billion-a-year industry.

Millions of dollars have funded research to eradicate the coffee berry borer, and for decades, coffee farmers the world over have been battling the pest using every weapon they can muster, from traps to insecticide and even other insects—all with limited success.

But a simple solution may already exist in their own backyards: birds.

"By eating the pests that damage coffee crops, birds can provide a valuable service to coffee farmers," said ecologist Matthew Johnson. He's measured birds' protective effects on coffee plants in [Jamaica](#)—and concluded that farmers can reap more protection simply by providing the birds a friendlier environment.

Jamaica's mountain regions produce some of the world's best and most expensive varieties of gourmet coffee.

With funding from National Geographic, Johnson, an associate wildlife professor at Humboldt State University in Arcata, California, and his research partner, Jherime Kellermann, showed the extent to which birds protect coffee crops.

The birds target and gobble up insects during the brief window of time before the bugs start doing damage. When foraging birds were free to visit coffee plants, there was up to 14 percent less borer infestation than in plants that were caged off from the birds.

The researchers also found that berry damage was cut nearly in half, providing a significant boost in coffee yields and farm income.

"This is one of those win-win-win situations—something that is good for the farmer, good for the birds, and good for the environment," Johnson said.

A Hot Commodity With a Costly Problem

Coffee is produced in 70 countries, and the industry employs some 20 million farming families around the globe. It's the second most traded commodity in the world, after oil.

The damage caused by the coffee berry borer is commonly put at half a billion dollars a year. But entomologist Fernando E. Vega, an expert on the pest at the U.S. Department of Agriculture, says that's a very conservative estimate, since any hint of crop damage can send the price tumbling.

"As soon as the brokers take a sample and see there is damage by the coffee berry borer, the price goes down immediately," he explained.

So how does a tiny beetle do so much harm? The female borer, just a millimeter and a half long, drills into coffee berries and lays its eggs inside—up to 50 per berry. Once hatched, the young borers devour the beans from within, rendering them worthless.

Solutions aren't easy—or cheap.

Farmers can exhaust up to one-fifth of their annual income attempting to control damage by these pests.

Traps tend not to work, in part because the insects spend so little time outside the coffee berry. Parasitic insects that attack the coffee berry borers aren't always effective or easy to rear.

Researchers, including Vega, are investigating the possibility of fighting the beetles with deadly fungi. In the meantime insecticides, while hardly foolproof, may be the most powerful weapon.

But some farmers find them prohibitively expensive, and the most effective insecticide, endosulfan, is highly toxic—to humans as well as the insects. As a result, endosulfan has already been banned in many countries, and Jamaica's Coffee Industry Board will phase out its use on the island by 2010.

[See related: [Pesticides Float From Distant Farms to Protected Forests, Study Says](#) (March 2, 2007)]

Avian Solutions

Birds, on the other hand, are relatively problem free. Migratory warblers spend every winter in Jamaica and are partial to the coffee berry borers that infest the island's famed Blue Mountain and High Mountain coffee farms.

Johnson estimates that growers who enlist these birds to control berry borers could save as much as \$237 an acre (0.4 hectare) every year at lower-elevation farms, where pest infestation is highest. That's more than 20 percent of the average Jamaican coffee farmer's annual income, \$1,043 an acre (0.4 hectare) at those elevations.

Johnson hopes his findings will help create an economic incentive for coffee producers to manage their farms in ways that will aid bird conservation—especially by planting or maintaining pockets of trees instead of clear-cutting pastures, as they normally do.

Jamaica's mountain regions, he notes, are at particular risk of deforestation because of clear-cutting for coffee farms. Even if tree maintenance costs some farmers more, he emphasized, "birds are always going to be cheaper than using pesticide"—and more eco-friendly too.

Experts find reason for hope in Johnson's findings, though some caution that there's no silver bullet to eradicate *H. hampei*.

"The coffee berry borer is an incredibly difficult insect to control, and the only way to make a dent in its population levels in the field is by using an arsenal of strategies," said the USDA's Vega. "The recent findings from Jamaica indicate that birds could be an important part of the arsenal to fight this pest."

Jamaica Stands Behind Bird Arsenal

Johnson's work adds to existing evidence that birds have an overall positive impact on agriculture.

Ornithologist Russell Greenberg, who heads the Smithsonian Migratory Bird Center at the National Zoo in Washington, D.C., conducted a survey of studies examining the effect birds and insects can have on tropical agricultural habitats.

"We found that across all studies, birds reduce all arthropods [which include insects, spiders, and crustaceans] and plant damage," he said.

Although some Jamaican coffee farmers object to planting shade trees for fear of encouraging fungal growth, the island's Coffee Industry Board recently began encouraging farmers to plant trees that support birds.

Peter Williams, a farmer with Kew Park Estate Coffee, which produces Jamaican High Mountain coffee, thinks it's a good idea.

"We have always had an appreciation that birds played a role in controlling [the] coffee borer, but had no idea that the effect was as significant as [Johnson's] research has shown," he wrote in an email. "This is changing the way we farm, as we now are looking at ways to attract more birds to the coffee fields, including preserving more woodland and ensuring that the shade trees are maintained within the coffee fields."

In certain cases, the birds themselves might be able to do some of the work needed to grow more trees in coffee-producing regions. National Geographic grantee Cagan Sekercioglu, an avian ecologist at Stanford University, found that two fruit-eating manakin bird species in [Costa Rica](#) serve as effective couriers for seeds. These small, tropical forest

dwellers may help increase the number of trees on and around agricultural land, including coffee farms.

In an ongoing radio-tracking project—one of the largest of its kind—Sekercioglu and his team followed up to 500 birds, including a hundred manakins, to learn how they responded to agricultural practices and deforestation.

"Although they prefer forests, we found that these manakins also leave the forest sometimes and travel between fragments," Sekercioglu said. He and his team found that the manakins digest their food very fast—in less than half an hour—and can move several hundred meters in that short time, dispersing seeds across a largely deforested landscape.

Conservation in a Cup

So how can java junkies get their caffeine fix and support pro-bird coffee farming at the same time?

Buying shade-grown coffee, farmed under a forest canopy, can be a good start. Research done a decade ago by Greenberg showed that shade-coffee plantations help bird conservation by providing a nesting habitat that's similar to that of a forest. And fans of shade coffee say its benefits go further than eco-friendliness, since it tastes sweeter than most coffee grown in the sun.

Beyond this, coffee lovers can buy coffee that's marketed as bird friendly.

But some experts warn that eco-marketing terms like these are not interchangeable. "Many people think that shade coffee means bird-friendly coffee," said Stuart Pimm, the chair of conservation ecology at Duke University and a member of [National Geographic's Committee for Research and Exploration](#) and [Conservation Trust](#). "Sometimes it is, sometimes it isn't," Pimm said.

In parts of Central America, for example, coffee is grown in the shade of non-native trees that don't attract native birds. "That is shade coffee," Pimm said, "but it's not bird friendly." Neither is shade coffee grown on farms that rely on pesticides.

One reliable option: Look for the Smithsonian Migratory Bird Center's "Bird Friendly" certification.

Organic coffees that bear this [trademarked seal](#) of approval are grown under strict ecological standards that require farmers to have three layers of forest cover and at least 11 species of canopy trees, among other conditions, all designed to benefit birdlife. So far, this coffee is being grown on just 35 farms and is available mostly in North America and Japan.

But for coffee lovers who crave their caffeine with an eco-friendly kick, that's one nice way to wake up and smell the java.