DEPARTMENT of the INTERIOR

news release

FISH AND WILDLIFE SERVICE FEATURE ARTICLE

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VAMPIRE BAT CONTROL PERFECTED

U.S. Fish and Wildlife Service biologists have discovered a way to control vampires--those nasty little bats that lap up their weight in blood from victims each day. But instead of using garlic, mirrors, or wooden stakes, the scientists use an anticoagulant.

Vampire bats are only slightly larger than house sparrows, yet each year they inflict over $250,000,000 damage in Latin America, killing up to 1 million milk cows and beef cattle. They have also been known to kill horses, sheep, pigs, deer, turkeys, and--on occasion--humans.

The vampire feeds at night after its prey has settled down. With razor-sharp incisors it makes two painless cuts in the skin--usually around the neck, tail, or feet--and laps the blood as it oozes from the wound. After it gorges itself for three or four minutes, the vampire flies off, leaving its victim a little weaker or perhaps with a case of rabies. The anticoagulant naturally present in the vampire's saliva causes more blood to flow from wounds after the bat finishes feeding. Reports indicate that some cattle lose as much as a quart of blood a day and are bitten by 15 to 20 different bats. Blood loss represents only one problem caused by vampire bats. They also are major carriers of rabies and their bites provide avenues for many other kinds of infection.

Vampire bats suffer a terrible reputation because they are the only mammals to feed entirely on blood. Their appearance doesn't help them either. Their grayish-brown fur and small pointed ears are similar to

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those of rats. The nose is a wrinkled mass with no septum and the eyes are big and dark brown. When walking, the bats look like huge spiders with all four feet pointing away from the body. Their fangs stick out, too.

But vampires are highly intelligent and fascinating mammals that have come into increasing conflict with man as his activities have expanded their distribution and density. The common vampire ranges from tropical Mexico to northern Argentina and its density within this area is generally a function of food supply. With man's introduction and husbandry of livestock, the bat now has an almost unlimited food source. Man has also enabled the vampire to spread by creating such structures as mine shafts, wells, and aqueducts that the bats can use as roost sites in addition to their usual caves and hollow trees.

Few humans actually die as a result of vampire bites. However, last year when vampires roosted in wells in the town of Granada, Nicaragua, over 100 people were bitten. Most of those bitten were children who received bites on their toes while sleeping. Fortunately, none died since the offending bats were not infected with rabies.

For centuries there have been numerous attempts at reducing man-vampire conflicts, all of which proved ineffective. Destruction of roosts with explosives and fumigation of caves were somewhat helpful, but their application was limited to known roosts. Other methods tried included electrocution, trapping, shooting, and netting. These procedures were costly and none really solved the vampire problem. In addition these methods were not selective and resulted in the deaths of large numbers of beneficial bats.

For the last 6 years, the U.S. Agency for International Development has provided funds to the Fish and Wildlife Service for research on a vampire control program in several Latin American countries. Researchers

have recently completed field studies and their success has exceeded all expectations. In fact, many biologists consider it the classic success story in animal damage control.

After studying the vampire intensely, both in the laboratory and in the field, biologists at the Service's Denver Wildlife Research Center discovered that when cattle are treated with the anticoagulant diphenadione, vampire bat predation can be reduced by 90 to 95 percent. With proper dosage, the drug, ordinarily used to treat humans for heart disease, is harmless to cattle when injected into their stomachs and absorbed into the bloodstream. When a bat bites a cow, it ingests the drug and within 3 days dies from massive hemorrhaging. The anticoagulant from the cow, on top of the bat's own anticoagulant, is too much for the bat.

Research on the living habits of vampire bats resulted in the discovery of an even more effective and less time-consuming method of using diphenadione. Scientists found that vampires are gregarious only with other vampires, and roost apart from other bat species in a cave. They live in very close proximity in colonies often numbering less than 100 individuals, and spend nearly 10 percent of their time grooming themselves and each other. The researchers smear a mixture of diphenadione and vaseline on the vampires whenever they are caught in nets. As the bats preen themselves, they ingest the drug. This approach is virtually flawless since it is not only species-specific, but affects only those colonies in the population that actually feed on livestock. Thus, biologists can control the vampire problem without endangering the entire species.

When used on a herd of 100 cattle in Nicaragua, the two techniques reduced bat bites from more than 400 daily before treatment to 13--a 97 percent reduction. Another herd of 414 cattle was receiving an average of 1,560 fresh bites and collectively losing over 20 gallons of blood a day. A week after treatment the number of new bites dropped to seven per day.

Program results have been so effective in curbing vampire bat predation on livestock,that, in the last 5 years, 17 Central and South American countries have requested and received technical and advisory help from the United States. Livestock producers have been able to increase their incomes as well as their country's food supply.

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