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New World screwworm: What you need to know

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Dr. Payne is a member of Missouri's New World Screwworm Joint Working Group, which was assembled in preparation for the potential re-emergence of NWS in the U.S. Led by State Veterinarian Steve Strubberg, the working group comprises representatives from USDA, Missouri Department of Agriculture, University of Missouri Extension, Missouri Department of Conservation and Missouri Department of Health and Senior Services.

New World screwworm flies are about the size of a common housefly, or slightly larger, with orange eyes, a metallic blue or green body, and three dark stripes along its back. Photo by USDA.

The New World screwworm is the larval stage of a species of blowfly. Unlike most blowfly larvae, NWS feeds of living tissue. Photo courtesy of the Panama–United States Commission for the Eradication and Prevention of Screwworm Infestation in Livestock (COPEG).

The U.S. Department of Agriculture's Animal and Plant Health Inspection Service confirmed the presence of New World screwworm in the United States on June 3. Larvae were identified in the umbilical area of a 3-week-old calf in Zavala County, Texas. Current information on confirmed cases **can be found on the USDA APHIS website**.

New World screwworm is the larval stage (maggot) of the blowfly *Cochliomyia hominivorax*. Unlike most other blowfly larvae, which feed on necrotic tissue, NWS larvae feed on living tissue of warm-blooded animals.

While New World screwworm poses a health threat to cattle and other animal species, USDA emphasizes that the U.S. food supply remains safe. Screwworms do not infest meat or other food products. Any evidence of screwworm infestation in an animal would be identified during inspection, and any contaminated product from an affected animal would not be allowed to enter the food supply.

USDA and Texas animal health officials have initiated response activities consistent with the **New World Screwworm Response Playbook**. These actions include establishing a 20-kilometer (12.4-mile) infested zone around the detection, implementing quarantines and movement controls, increasing surveillance and trapping, deploying response personnel, and expanding sterile fly release efforts in the affected area. Early recognition of NWS by animal owners and rapid reporting will be essential for limiting the spread.

How are animals affected?

Although much of the discussion focuses on the impact of this parasite on cattle, many species are at risk, including horses, sheep, goats, swine, dogs, cats, wildlife, birds and, in rare cases, humans.

The adult fly lays its eggs on the edge of any wound or natural body opening. Eggs hatch within 12–24 hours, and the larvae enter the wound and begin feeding on living tissue. As they feed, they use sharp mouth hooks to tear at tissue, causing the wound to enlarge and deepen.

During the first day or two, screwworm infestations may be difficult to detect, and only slight movement may be visible within the wound. By day three, larvae can often be seen oriented in a vertical position. Infestations may contain hundreds of larvae, and multiple egg layings can result in thousands of larvae. The larvae mature over five to seven days then fall to the ground, burrow into the soil and transition to the pupal stage. After about 6–8 days, adult flies emerge, completing the life cycle. Under favorable conditions, the entire life cycle can be completed in as little as three weeks.

Although adult flies can travel several miles to locate a suitable host, the greatest risk of spread is often the movement of infested animals. Livestock, pets, wildlife and other warm-blooded animals can transport developing larvae to new areas before an infestation is recognized. Once mature larvae drop from the host and develop into adult flies, new infestations can begin in the surrounding area. For this reason, USDA response activities place a strong emphasis on surveillance, quarantines and animal movement controls.

According to data from the Panama–United States Commission for the Eradication and Prevention of Screwworm (COPEG), the most common conditions leading to myiasis (infestation by fly larvae) are the umbilicus of newborn animals and open cuts. Other frequently reported conditions include vampire bat bites, insect stings, wire cuts, ear tag wounds, dehorning sites, dog bites and tick bites. However, infestations are not limited to cuts and scrapes; eggs may also be deposited in natural body openings, including the nose, ears, and genitalia, such as the vulva of a post-calving cow. Any location where soft tissue is exposed is a potential entry point.

Affected animals often show clear signs of distress due to the tissue damage. They may separate from the herd, appear lethargic or depressed, and show reduced appetite and milk production. A putrid odor is commonly associated with advanced infestations.

If left untreated, affected animals often die within 7–14 days as a result of secondary bacterial infections and toxemia.

History of NWS in the Americas

NWS was eradicated from the U.S. in 1966 using the sterile insect technique (SIT). This strategy is effective because female screwworm flies typically mate only once during their lifetime. By releasing large numbers of sterile male flies into an infested region, wild females that mate with sterile males lay nonviable eggs, breaking the life cycle and collapsing the population.

After eradication from the U.S., control efforts progressed south through Mexico, which was declared free in 1991, and into Central America. A permanent sterile fly barrier was established in Panama near the Darién Gap to prevent northward spread.

What USDA, FDA and EPA are doing to keep livestock safe

In 2023, NWS was detected north of that containment zone and began to spread into Mexico. This northward movement placed the U.S. in a heightened state of alert.

In response, USDA increased preparedness efforts, which included restrictions on livestock movement, enhanced surveillance, sterile fly releases in northeastern Mexico and along the U.S.–Mexico border, and development of the New World Screwworm Response Playbook. USDA also invested in sterile fly production capacity, including renovation of an existing fruit fly facility in Metapa, Mexico, which is projected to produce 60–100 million sterile flies per week by summer 2026, and construction of a new sterile fly production facility at Moore Air Base in Edinburg, Texas.

The Food and Drug Administration (FDA), through its Center for Veterinary Medicine, and the Environmental Protection Agency (EPA) have also been proactive regarding NWS. While USDA leads surveillance and eradication efforts, FDA is working to ensure veterinarians have access to treatment options. This includes the use of regulatory pathways such as conditional approvals and emergency use authorizations to make certain animal drugs available. Several products have already received conditional approval or emergency use authorization for specific species as part of these efforts. The FDA website has a **current list of those products**.

What to look for in livestock

Early recognition and rapid reporting are critical to limiting spread of NWS. Animal owners are the first line of defense. It is important to recognize that the presence of maggots alone does not mean it is NWS. A notable difference between screwworm infestations and infestations caused by blowflies of other fly species native to the U.S. is the severity and progression of the wound. NWS larvae feed on living tissue, causing wounds to enlarge and deepen. In comparison, other blowfly larvae feed on dead or decaying tissue and generally remain near the surface. Although a wound infested with blowfly larvae may be slow to heal, it usually does not expand dramatically. However, if you are uncertain or suspect an NWS infestation, you should immediately contact your herd veterinarian or a state animal health official.

Actions you can take today

One action livestock producers can take immediately is to obtain a premises ID number for their livestock operations. If NWS were detected nearby, producers located within an infested zone who have a premise ID will be notified of the threat. Contacting producers without a premises ID will be more difficult, as animal health officials may not have a reliable way to identify and reach those operations quickly.

The Missouri Department of Agriculture has launched a **New World screwworm resource page** that serves as a central source of information. There, producers can complete the premises ID registration form and find more information about NWS, answers to frequently asked questions, contact information for the department, and links to state and federal resources. The page also includes resources for pet owners and referrals for wildlife and human health concerns.