NWS Flies and Maggots: What They Look Like

The adult screwworm fly is 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. The name screwworm is thought to refer to the feeding behavior of the maggots as they burrow (screw) into the wound, feeding as they go like a screw being driven into wood. Maggots (larvae) cause extensive damage by tearing at the host's tissue with sharp mouth hooks. The wound can quickly become enlarged and deepened as more maggots hatch and feed on living tissue.

How to Spot an Infestation

Infested deer with extensive tissue damage

Fly with egg mass on wound

Close-up female fly, eggs, and maggots on wound

Severe screwworm myiasis on dog's neck

Infested door with extensive tissue damage

NWS flies attracted to an animal wound

NWS Infestation: What To Look For

- Any warm-blooded animal (including birds and humans) with maggots in wounds or other body openings (like nose, ears, umbilicus, or genitalia) that are draining or enlarging.
- Animals that may have recently suffered from a wound or surgical procedure. Wounds as small as tick bites attract flies.
- Egg masses may be around or in the wound; larvae may be visible by the third day of infestation.
- Because they feed on live flesh, NWS maggots may burrow deep into wounds or openings, while other species of maggots may appear around the outer surface of the wound.
- Screwworm infestations are very painful. Animals may become depressed, stop eating, and separate themselves from other animals or people.
- Secondary infection may occur in an NWS-infested wound. Left untreated, animals may die within 1 week of being infested.

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Report any suspected NWS cases to your State Animal Health Official or a USDA veterinarian!

Contact Us

- State Animal Health Officials
- USDA-APHIS, Veterinary Services

To learn more about NWS, go to:
www.aphis.usda.gov/animalhealth/nws
New World Screwworm (NWS) myiasis is a serious disease that can affect livestock, pets, wildlife, and in rare cases, people. It is a painful condition in which the larvae (maggots) of the NWS fly (Cochliomyia hominivorax) burrow into the flesh of a living animal. This causes serious, often horrific disease.

Sterile flies may also be dispersed from aircraft over larger areas. As male flies emerge from the chambers, they seek out females. Because female screwworm flies mate just once in their 30-day lifespan, the only eggs she will lay are viable and will not develop into maggots. The population ultimately dies out as more sterile screwworm flies are released. The population of sterile screwworm flies dies off naturally over a few lifecycles.

To eradicate NWS, sterilized pupae may be placed in chambers at strategic locations throughout an infested area. Sterile flies may also be dispersed from aircraft over larger areas. As male flies emerge from the chambers, they seek out females. Because female screwworm flies mate just once in their 30-day lifespan, the only eggs she will lay are viable and will not develop into maggots. The population ultimately dies out as more sterile screwworm flies are released. The population of sterile screwworm flies dies off naturally over a few lifecycles.

Sterile insect technique is an ecologically safe and proven way to eradicate NWS fly populations by taking advantage of the fly’s own biology. The sterile-insect approach eradicated NWS from the United States in 1966.

In a cooperative program, the Panama-United States Commission for the Eradication and Prevention of Screwworm (COPEG) maintains a permanent sterile fly barrier along the border of Panama and Colombia to prevent the re-establishment of screwworms.

An eradication program to remove NWS from the United States began in 1957. It used a biological control technique (sterile insects) developed by USDA’s Agricultural Research Service. This method is an ecologically safe and proven way to eradicate NWS fly populations by taking advantage of the fly’s own biology. The sterile-insect approach eradicated NWS from the United States in 1966.

In October 2016, USDA and the Florida Department of Agriculture and Consumer Services announced the detection of NWS. It was successfully eradicated by March 2017 using this same method to eliminate screwworm from the United States once again.

This was the first local infestation in the United States in more than 30 years and the first infestation in Florida in over 50 years.

**INFESTATION: What Happens?**

Screwworm infestations begin when a female fly lays eggs on a wound or orifice of a live warm-blooded animal. Female flies are attracted to the odor of a wound or orifice, such as the nasal or eye openings, umbilicus of a newborn, or genitalia. Wounds as small as a tick bite may attract a female to feed. One female can lay 200–300 eggs at a time and may lay up to 3,000 eggs during her 10- to 30-day lifespan.

Eggs hatch into larvae that burrow into the wound to feed on the living flesh. After about 7 days of feeding, larvae drop to the ground, burrow into the soil, and pupate. The adult screwworm fly emerges from the soil after 7–64 days depending on temperature and humidity. Female flies mate after 3 days, and males can mate within 24 hours of maturation.

**STERILE INSECT TECHNIQUE: How Does It Work?**

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**NWS: What’s the Impact?**

Another incursion into the United States could cost millions of dollars from livestock losses, trade embargoes, and eradication work. Pets, livestock, wildlife, and even humans may suffer and die from screwworm myiasis.

**History of Eradication**

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**2016–2017 NWS Outbreak: By the Numbers**

- 136 wildlife cases
- 15% of endangered Key Deer died from screwworm infestation
- 9 domestic animal cases
- Over 17,000 animals inspected at checkpoint leaving surveillance zone
- More than $188 million sterilized pupae placed in 35 sites over 6 months
- Approximately $3.2 million in taxpayer dollars spent on eradication efforts

**References**

