Report to the Boards of Health
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New World Screwworm

What is New World Screwworm?

New World screwworm (NWS) is caused by maggots from the New World screwworm (NWS), or *Cochliomyia hominivorax*. The adult fly is metallic blue-green and about twice the size of a regular housefly. It has large orange eyes and three dark stripes on its back. Most types of fly maggots eat dead tissue. Screwworm maggots are different and more dangerous because they only eat living flesh. They get their name from how they feed—they burrow into healthy tissue like a screw being driven into wood. They use sharp hooks in their mouths to tear the tissue and as they feed, the wound gets bigger and deeper. This attracts more flies, which lay more eggs, making the problem worse.

Screwworms can infest any warm-blooded animal. This includes farm animals like cattle and horses, pets, wild animals, and humans. While human cases are rare, they do happen and can be deadly if not treated.

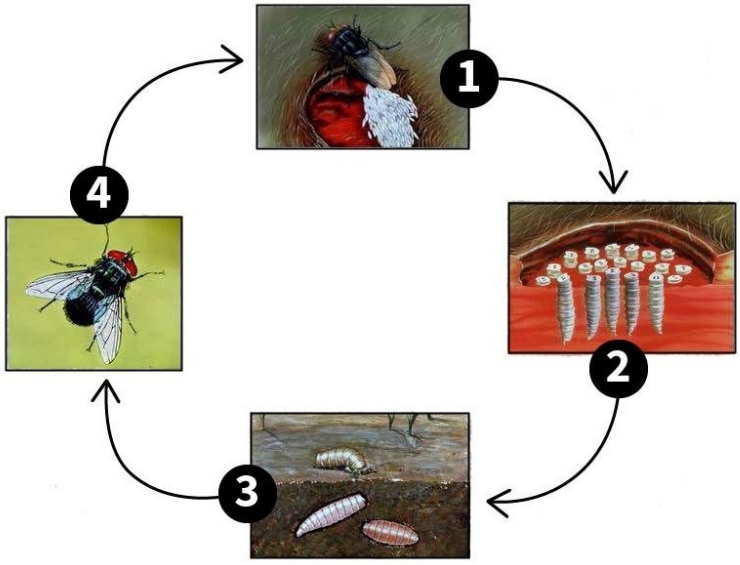
New World screwworm maggot (left) next to a nickel, for size comparison. *Image courtesy of Mark Fox, Centers for Disease Control and Prevention.*

1: Adult screwworm fly 2: Adult common housefly

Life Cycle

Understanding how screwworm grows and reproduces helps to understand both the threat and how to stop it:

1. **Female flies** are attracted to the smell of an open wounds and lays her eggs on the edges of it.
2. **Eggs hatch** in just a few hours. The maggots (larvae) immediately burrow into the wound to feed. This worsens the wound and attracts more flies, which lay more eggs.
3. **Maggots feed** for about 1 week and then fall off and burrow into the ground, up to 6 inches deep, to change form (pupate).
4. **Adult flies** come out after at least 7 days.



Males can mate up to ten times, but female flies mate only once, a fact that was important for finding a way to get rid of screwworm. The whole life cycle takes about 20 days.

The fly does well in warm, humid weather. It cannot survive long periods below 45°F and dies if frozen. This has kept it in the southern areas and prevents it from living year-round in northern areas.

History: A Devastating Pest

Screwworm used to be a serious problem throughout the southern United States, Mexico, Central America, South America, and parts of the Caribbean. The pest caused great suffering and money losses:

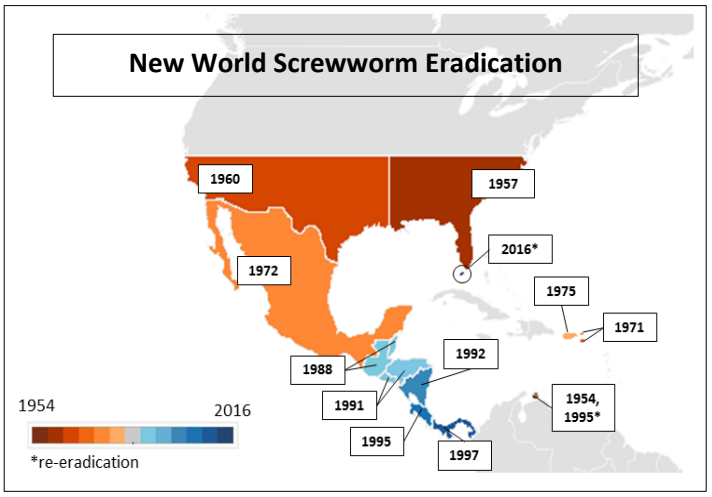
- **Farm animals:** Common ranching work like castration, removing horns, branding, and birthing created wounds that attracted screwworms. Entire herds could be destroyed during outbreaks. In Texas alone, thousands of cases were reported every week in the 1930s.
- **Wild animals:** In 2016, an outbreak of NWS in the Florida Keys killed over 10% of the remaining population of the endangered key deer.
- **People:** Humans are also victims, and NWS can cause death or lost body parts.

Success Story: Sterile Insect Technique

In the 1930s, an American scientist named Dr. Edward F. Knipling had the idea of controlling insects by disrupting their mating cycle. His idea, which he developed while working on the screwworm problem, is known as the Sterile Insect Technique (SIT).

How SIT Works to Control NWS:

1. Scientists raise huge numbers of screwworm flies in special buildings.
2. They expose the baby flies (pupae) to radiation which damages the sperm, or sterilizes, the male flies.
3. They release huge numbers of sterile male adult flies who mate with wild female flies.
4. The wild females mate only once, and after mating with sterile males, their eggs don't develop.
5. With continued releases of sterile flies and as the sterile flies keep mating, the wild population slowly dies out.



The sterile flies were tested on the island of Curaçao in 1954 and successfully eradicated the NWS in under four months. After this, eradication efforts took place in North America, the Caribbean, and Central America from the mid 1950's to the present.

The Current Threat: Coming Back and Moving North

The NWS is still in much of South American. For over 20 years, a barrier zone in Panama successfully kept screwworm south of Central America with only about 25 small outbreaks per year. However, things changed a lot in 2022.

What Had Happened:

- **2022 and 2023:** New outbreaks began spreading north through Central America.
- **2024:** Over 6,500 cases reported in Central America; moving north faster.
- **May 2025:** NSW was found in Oaxaca and Veracruz, Mexico, which are about 700 miles from U.S. border. The U.S. closed their border to Mexican cattle, horses, and bison on May 11, 2025.

- **July 2025:** NSW was found about 370 miles from U.S. border in Veracruz, Mexico.
- **August 2025:** A human case of NSW was diagnosed in Maryland in a person who traveled from El Salvador.
- **September 21, 2025:** NSW was found in an 8-month-old cow in Sabinas Hidalgo, Nuevo León, less than 70 miles from U.S. border. The cow had recently been moved from a region in southern Mexico with known active NWS cases.

Why is screwworm coming back?

- Money problems led to closing Mexico's sterile fly factory in 2012.
- After increased efforts by the Mexican government, they faced a terrible setback in June 2025 when a plane carrying sterile flies crashed in southern Mexico.
- The only remaining facility in Panama can only make 100 million flies per week—not enough to cover all outbreak areas.
- Weather and climate change may be helping NWS spread north.

What's Being Done Now

The U.S. Department of Agriculture (USDA) has a five-part plan:

1. **Stop the Pest from Spreading in Mexico** by working with Mexico to improve surveillance, provide training, and improve reporting of NWS cases to contain the pest in Mexico.
2. **Protect the U.S. Border** with strong surveillance systems, including border patrols on horseback and with detector dog and a ban on cattle imports from Mexico until NWS is fully contained.
3. **Maximize Our Readiness** by updating emergency management plans with partners and making sure we have treatments available for NSW.
4. **Take the Fight to the Screwworm** which focuses on building a sterile insect dispersal facility and exploring other options to get rid of NSW.
5. **Innovate Our Way to Continued Success** by investing in research to develop new technologies, such as improved traps, lures, and potential treatments for infestations.

How to Prevent Screwworm Infestation

If you're traveling to Central America, South America, or the Caribbean where screwworm lives:

- Keep all wounds clean and covered, even wounds as small as a tick bite
- Prevent bug bites by wearing long-sleeved shirts, long pants, and socks
- Use EPA-registered bug spray
- Treat clothing with products that have 0.5% permethrin
- Sleep indoors in rooms with screens, or use bed nets if outdoors
- Don't sleep outdoors during the day
- See a doctor right away if you see or feel maggots in a wound

Recommendations:

1. **Stay informed:** New World screwworm is in South America, Cuba, Haiti, and the Dominican Republic, and has been returning to countries in Central America and Mexico. If you are traveling to these areas, know how to prevent infestation.

2. **Support cooperation between countries:** Support efforts to work with other countries on watching for, preventing, and getting rid of screwworm to keep our country free of infestation.

Resources:

- CDC New World Screwworm Information: https://www.cdc.gov/myiasis/about-new-world-screwworm-myiasis/index.html
- USDA-APHIS New World Screwworm: https://www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/screwworm
- USDA. Eradicating New World Screwworm with Sterile Insect Technique https://www.aphis.usda.gov/sites/default/files/factsheet-eradicating-nws-sit.pdf

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