Session 1: New World Screwworm

What Community Health Workers Need to Know

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Image courtesy of Mark Fox, CDC

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Planning Committee Members

Objectives – What we will cover today

- **Explain what New World screwworm is and why it's a threat to our communities.**
- **Describe the life cycle and how it spreads.**
- **Discuss the current outbreak and what it means for us.**

Activity: Poll Question #1

Before today, how much have you heard about New World screwworm?
Choose one answer:

A. A lot
B. Some
C. A little
D. Nothing at all

Why Community Health Workers Need to Know About New World Screwworm

- An ongoing outbreak of New World screwworm (NWS) in Mexico and Central America poses a threat to communities, especially those along the southern border.
- NWS threatens animals, economies, and food systems.
  - Many different **domestic and wild animals** can be affected, including cattle, horses, and dogs
- NWS myiasis can cause significant illness and can also contribute to death in humans.

What is a Screwworm (*Cochliomyia hominivorax*)

- Myiasis is a term used to describe an infestation with fly maggots
- In New World screwworm (NWS) myiasis, the maggots feed on living flesh
- NWS affects warm-blooded animals, mostly livestock, but the maggots can also infest humans, wildlife, and pets like dogs or cats

- Hominivorax means 'Human-eater'
  - larvae were associated with death of hundreds of prisoners on an island in 1858

Sherman, Ronald. Wound Myiasis in Urban and Suburban United States. Arch Intern Med. 2000;160:2004-2014

Bottom image courtesy of Denise Bonilla, U.S. Department of Agriculture.

New World Screwworm Flies

Image courtesy of Denise Bonilla, U.S. Department of Agriculture

- **NWS adult flies are about the size of a common housefly, or slightly larger**
- **The fly has orange eyes, metallic blue or green body, and three darker longitudinal stripes down the back**

New World screwworm Story Map | Animal and Plant Health Inspection Service (usda.gov)

New World Screwworm Flies

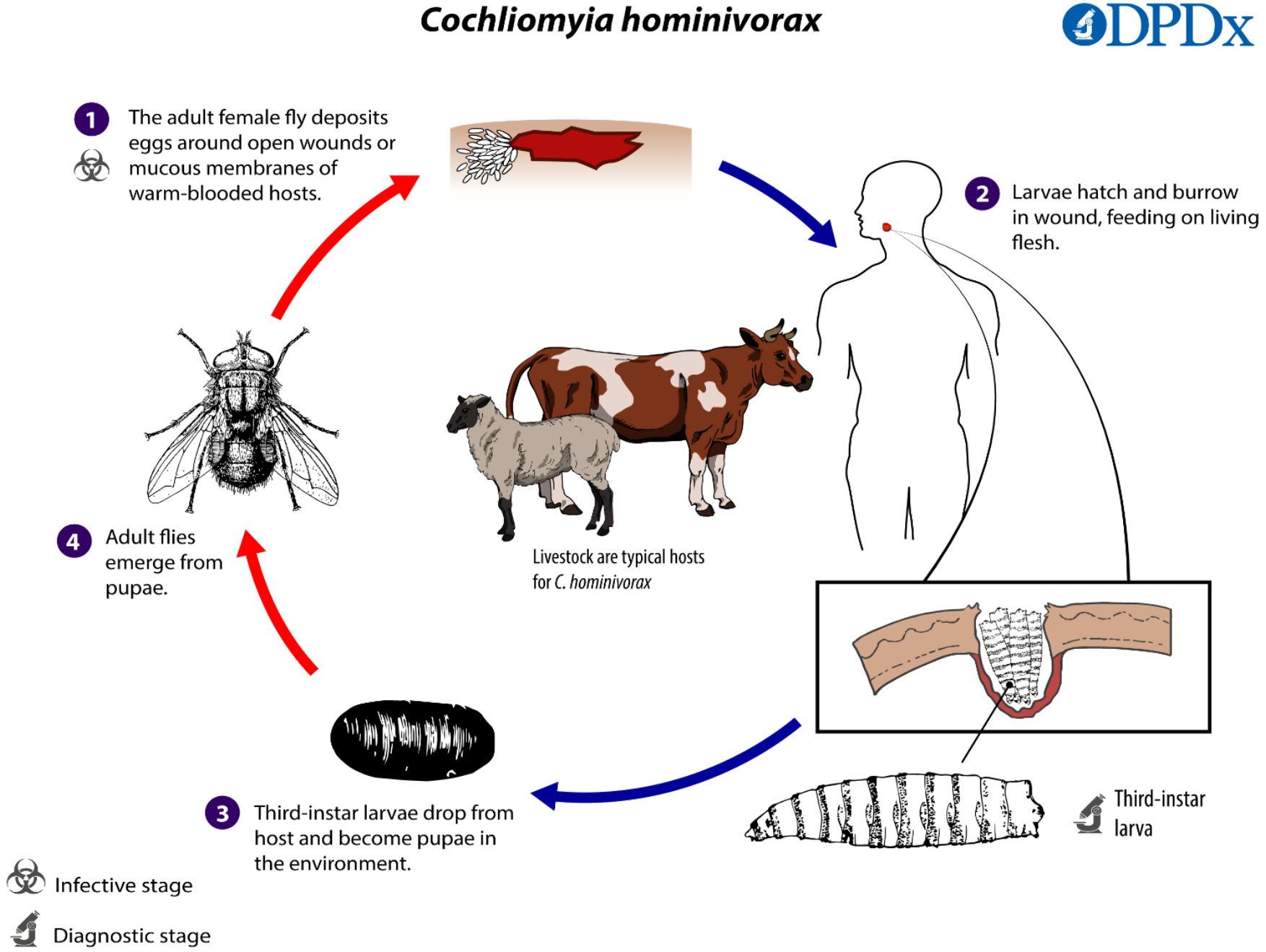
- Female NWS flies lay eggs directly on wounds, eyes, ears, nose, or mouth
- Hundreds of eggs are deposited within minutes
- Maggots hatch within a day and cause severe tissue damage which can be fatal

USDA photo

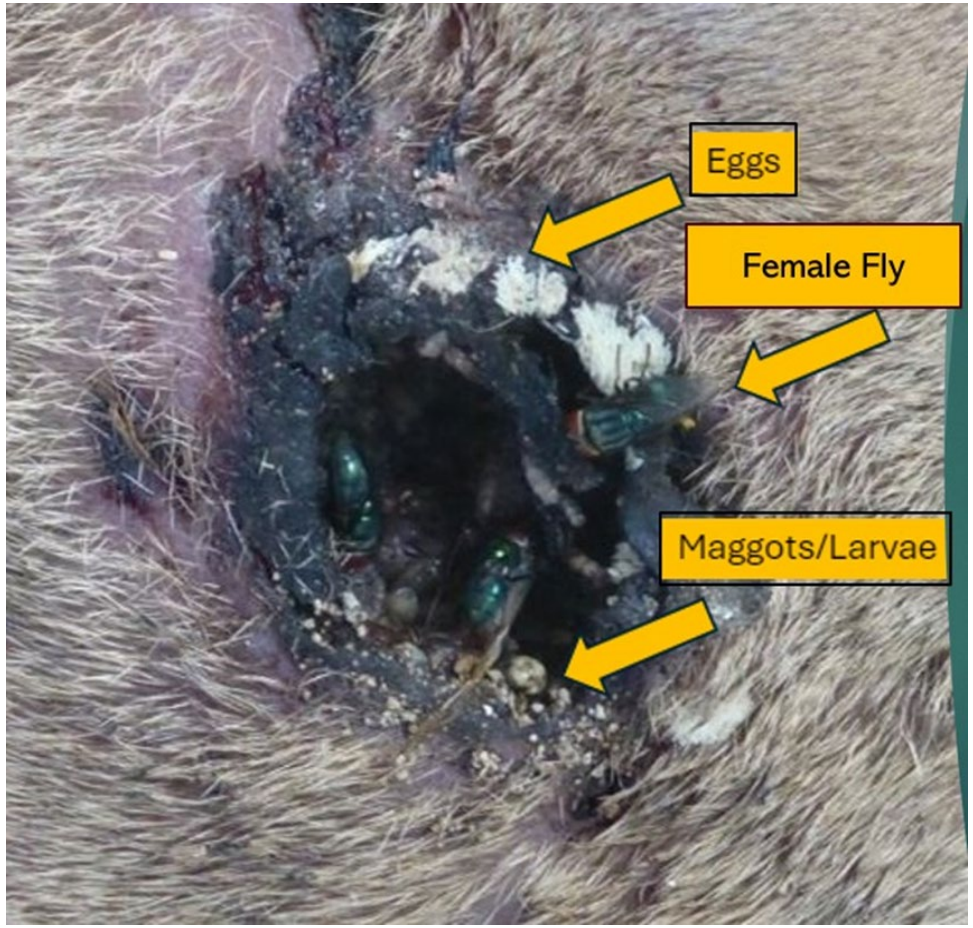
NWS Lifecycle

Key Facts:

- **Female flies only mate once during their life**
- **Maggots can remain in the body for up to 7 days**



Pictures of NWS Lifecycle



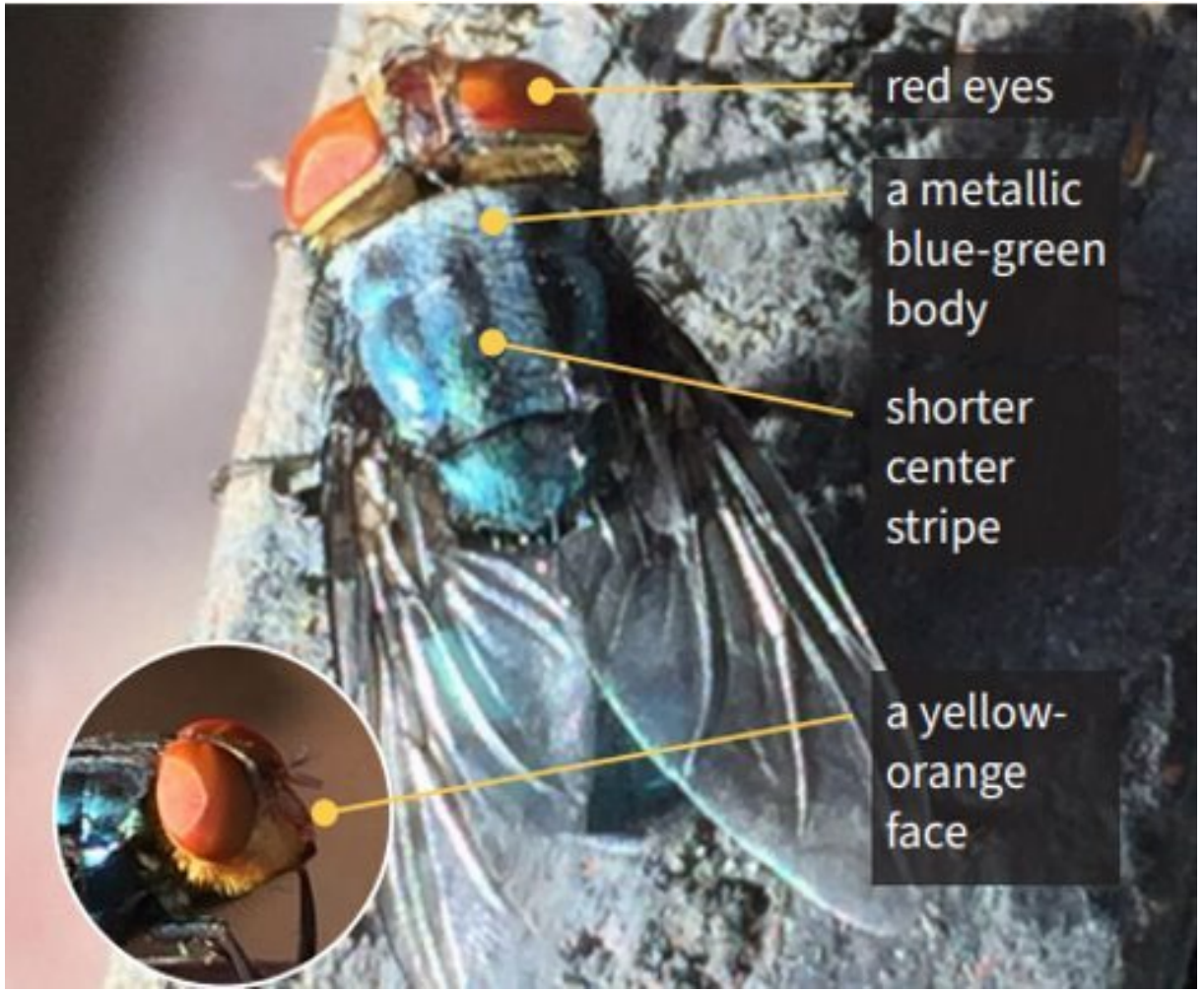
Credit: USDA

Photo credit: COPEG www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/screwworm/new-world-screwworm-photo-gallery

Activity: "Spot the Difference" Photo Quiz

The New World screwworm fly can look a lot like other common flies.

Can you tell the difference?



Pest Identification Card: New World Screwworm

Poll #2 Which of these flies is a New World screwworm fly?

A

Credit: bugguide.net, Judy Gallagher

B

Credit: bugguide.net, Gary Sibio

C

Credit: bugguide.net, MJ Hatfield

Answer: A is NWS Fly

A

Credit: bugguide.net, Judy Gallagher

NWS

- **Blowfly**
- **Blue or blue/green with three darker (nearly black) patches running down the back**

Other Flies

B

Credit: bugguide.net, Gary Sibio

“Flesh fly”

- **Grey and black with bristles**
- **Very common and widespread**
- **Associated with decaying flesh of dead animals**

Other Flies

C

Credit: bugguide.net, MJ Hatfield

“Greenbottle fly”

- Blowfly
- Lacks the 3 stripes of NWS
- Very common and widespread
- Associated with rotting material like food trash

History of New World Screwworm in the United States

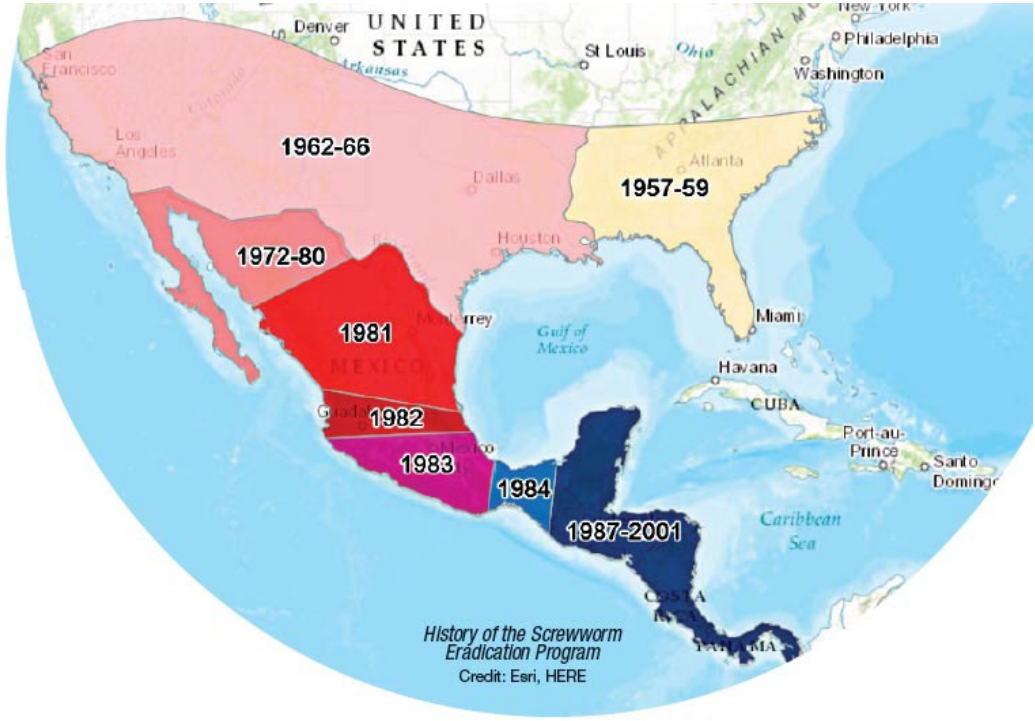
History of NWS

- **Present in the United States before 1966**
- **USDA (U.S. Department of Agriculture) developed a way to eliminate NWS**
- **Sterile insect technique**
  - Female flies only mate once
  - USDA created a way to make flies sterile and release them where NWS flies were found
  - Sterile males mate with wild females → female flies lay hundreds of unfertilized eggs that never hatch
- **Outbreaks were managed using this sterile insect technique *and* intense monitoring with prompt isolation and treatment of infested animals**

Photograph of Dr. Edward F. Knipling (seated) and Dr. Raymond C. Bushland.

History of NWS

- The flies were eradicated from the U.S. in 1966
- Over the next 40 years, the control program eliminated the files **from Mexico** through Panama by 2006
- The Panama-United States Commission for the Eradication and Prevention of Screwworm (COPEG) produces sterile flies in Panama
- The control program has kept NWS below the Darién Gap between Panama and Colombia by continuously releasing sterile flies in that area



New World Screwworm Story Map | Animal and Plant Health Inspection Service

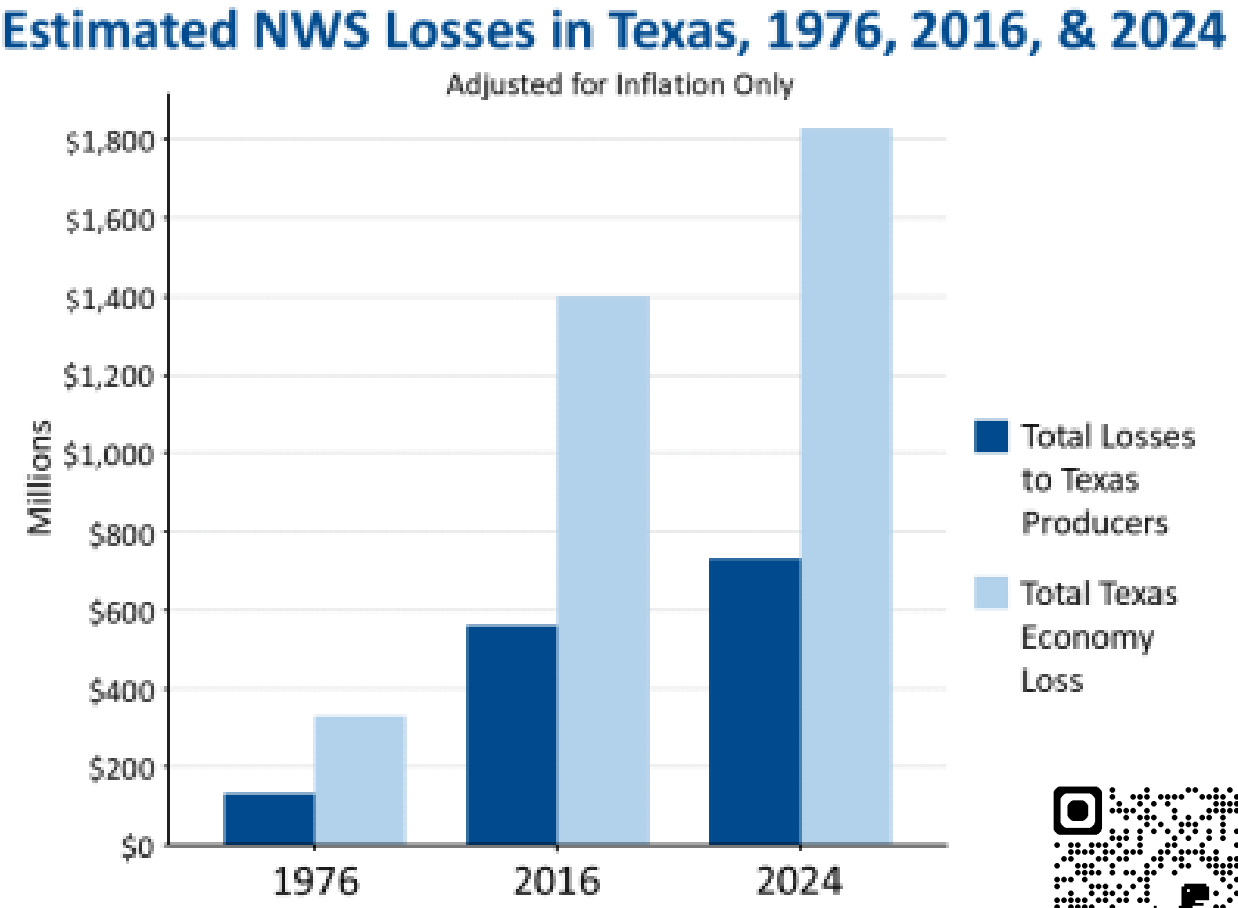
COPEG – Comisión Panamá – Estados Unidos para la Erradicación y Prevención del Gusano Barrenador del Ganado

NWS Outbreak in Key Deer in Florida - 2016

Image courtesy of Samantha Gibbs, U.S. Fish and Wildlife Service.

- Local outbreak in Key Deer in the Florida Keys in 2016
- USDA immediately responded by releasing sterile flies and providing medications to at-risk deer
- NWS was successfully re-eradicated in 2017
- The source of outbreak never identified

Potential Economic Impact of NWS in U.S. Today (2024 USDA Estimates)



- 1976 NWS outbreak in Texas infested 1,488,256 cattle and 332,600 sheep and goats
- After adjusting for inflation, an NWS outbreak roughly the scale of the 1976 outbreak could cost Texas economy a loss of $1.8 billion in 2024 dollars

Current Outbreak and Why We are Here Today: A Problem Moving Closer to Our Communities

NWS Outbreak Timeline

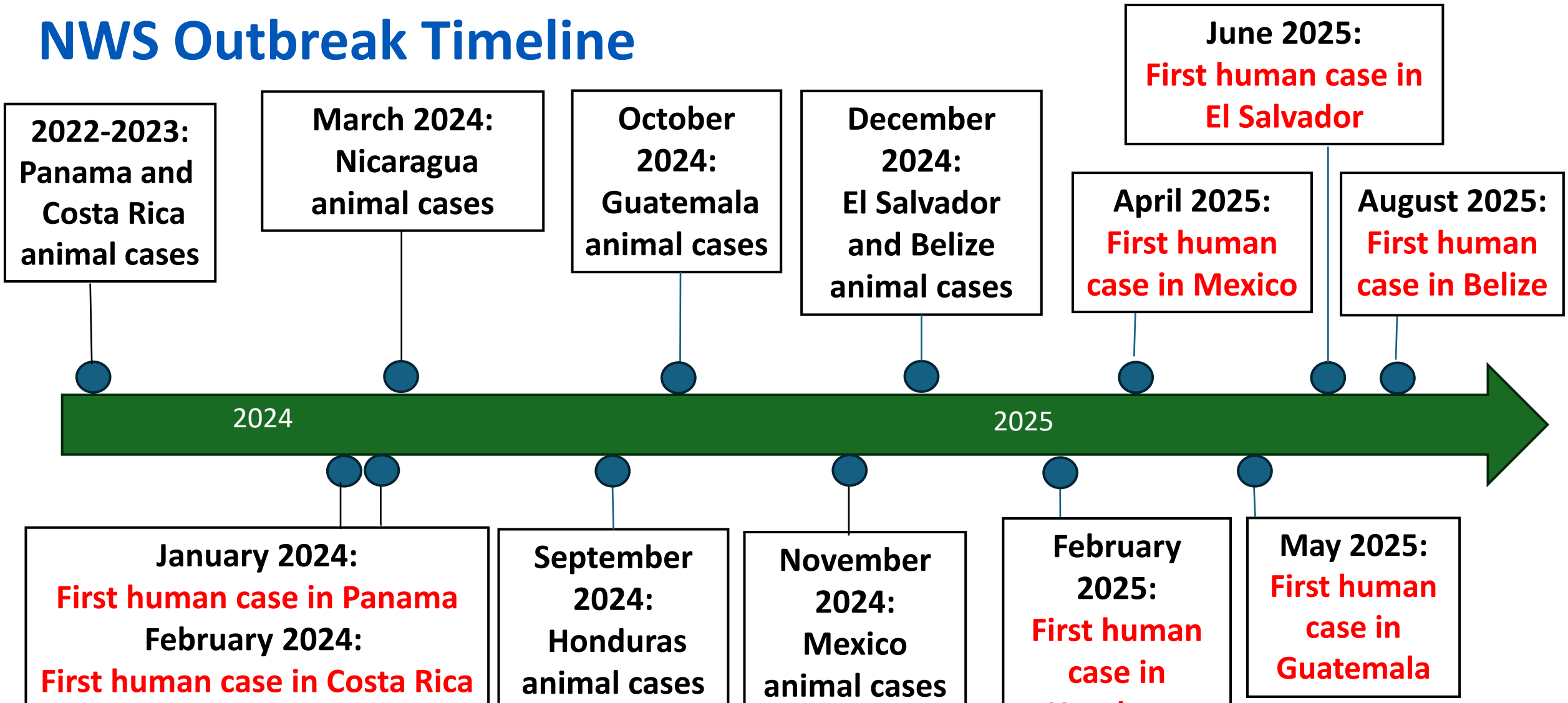
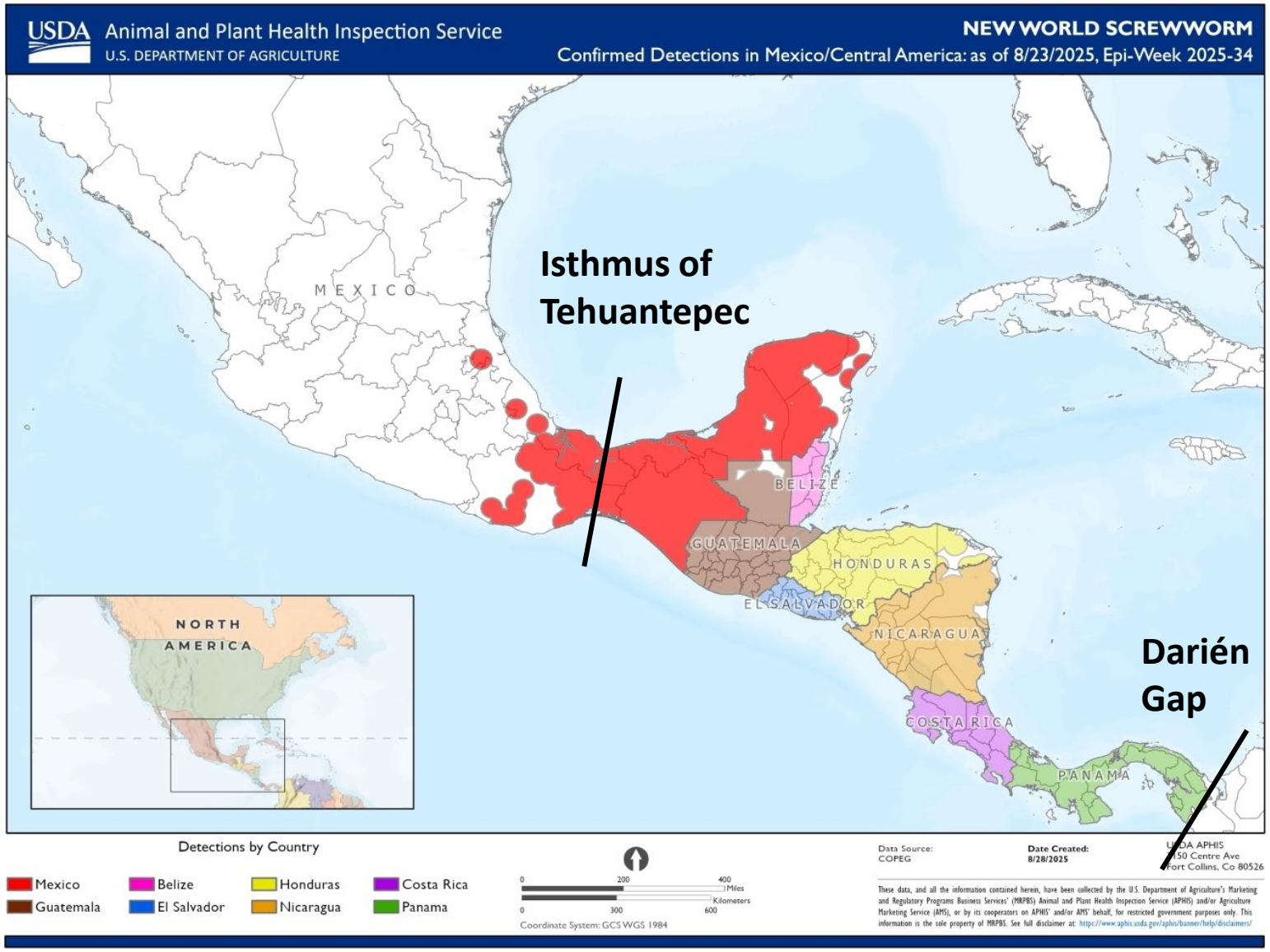


Image courtesy of CDC

NWS Has Expanded Beyond Barriers



- **>770 human cases in the region, including 6 deaths**
  - **All countries have reported human cases**
  - **49 human cases reported in Mexico since reporting began in April 2025**
  - **Underreporting is likely**
- **>116,000 animal cases in the region**
  - **Wildlife**
  - **Livestock**
  - **Companion animals**

New World Screwworm Outbreak in Central America

Microsoft PowerPoint - Boletín36

Mexico Confirms NWS Case less than 70 miles from U.S.- Mexico Border: Imported

PRESS RELEASE

Mexico Confirms Case of New World Screwworm in Nuevo Leon

PUBLISHED: September 21, 2025

SHARE:

Mexico Confirms Case of New World Screwworm in Nuevo Leon | USDA

Control Efforts are Underway in Central America and Mexico

- **Release of sterile flies**
- **Animal movement controls**
  - Checkpoints for livestock transports
  - Inspection of animals at slaughter, other sites
- **Increasing surveillance**
  - Farm visits
  - Reports of animal and human cases
- **Health education initiatives for**
  - Communities and livestock producers
  - Human healthcare providers and migrant health workers
  - Veterinarians, animal health workers, and wildlife management officials

Sterile insect ground release chambers | USDA photo, D. Bonilla

USDA Readiness and Response to the Outbreak

- **Increased monitoring at the Texas-Mexico border**
  - Fly traps
  - Specialized USDA mounted patrol officers called "tick riders"
  - Border crossing inspections

Photo by USDA

- **USDA strategy for eradication if New World screwworm reaches the United States**
  - Use of the sterile fly technique
  - Development and enforcement of animal movement controls
  - Increasing passive and active surveillance, outreach, and education in impacted areas

Prompt Reporting Is Critical for Response

- **Reporting NWS infestations in humans and animals is critical so that USDA can start monitoring for the flies and using control measures in the right areas to prevent new infestations**

- **CDC and USDA are working to encourage and support reporting by everyone, especially healthcare providers, veterinarians, and public health officials**

USDA Recommendations for NWS Detection

What You Can Do

NWS maggots can infest livestock and other warm-blooded animals, including people. They most often enter an animal through an open wound and feed on the animal's living flesh.

USDA urges residents on the southern border to check their pets and livestock for signs of NWS. Look for draining or enlarging wounds and signs of discomfort. Also look for screwworm larvae (maggots) and eggs in or around body openings, such as the nose, ears, and genitalia or the navel of newborn animals. If you suspect your animal is infected with screwworm, contact your state animal health official or USDA area veterinarian immediately.

While not common in people, if you notice a suspicious lesion on your body or suspect you may have contracted screwworm, seek immediate medical attention.

Learn more about NWS on the APHIS website

Mexico Confirms Case of New World Screwworm in Nuevo Leon | USDA

Help Keep New World Screwworm Out of the United States

- **Early detection and reporting means faster response and fewer infested animals**
- **This saves lives and keeps costs down**
- **If you hear of or see anything you think could be NWS in an animal, report it right away to your local veterinarian, State Animal Health Official, or a USDA veterinarian**
- **Contacts**
  - State Animal Health Officials https://usaha.org/wp-content/uploads/2025/04/STATE_ANIMAL_HEALTH_OFFICIALS-2.pdf
  - USDA-APHIS Veterinary Services www.aphis.usda.gov/contact/animal-health

Help Keep New World Screwworm Out of the United States

- **Early detection and reporting means faster response and fewer infested people, too**
- **If you hear of or see anything you think could be NWS in a person, report it right away to your local or state public health department (Epi on Call)**
- **Encourage a person with suspected NWS to seek medical care immediately**

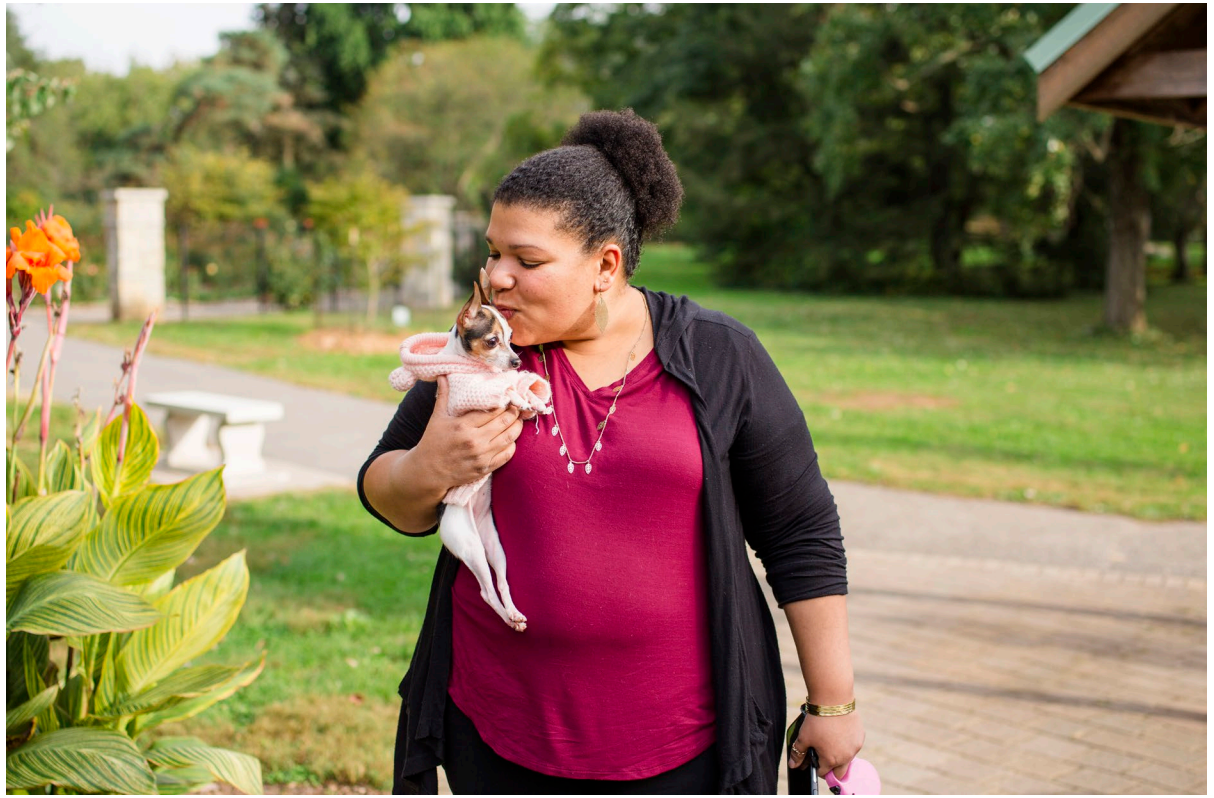
Let's Talk About Screwworms: How to Share This Information

- **You are the most trusted messengers in your communities. Here’s how to talk about screwworms in a clear and helpful way .**
- **Talking Points – here are a few positive ways to communicate:**
  - "We are working together to keep our communities healthy and safe from a new fly."
  - "There's an easy way to help—just be on the lookout for any strange wounds on people or animals.”
- **Any other ideas? Put it in the chat.**

Interactive Activity – What would you do?

- A community member, Maria, tells you about a strange wound on her dog. It has a foul smell, and she sees maggots in it. What do you say to her?

- Put your answer in the chat.



Session 1 Recap

- **The damage caused by New World screwworm maggots can be severe and even kill—infesting wildlife, livestock, pets and people.**
- **Once the fly is introduced and established in an area, it is difficult and expensive to control and eradicate again.**

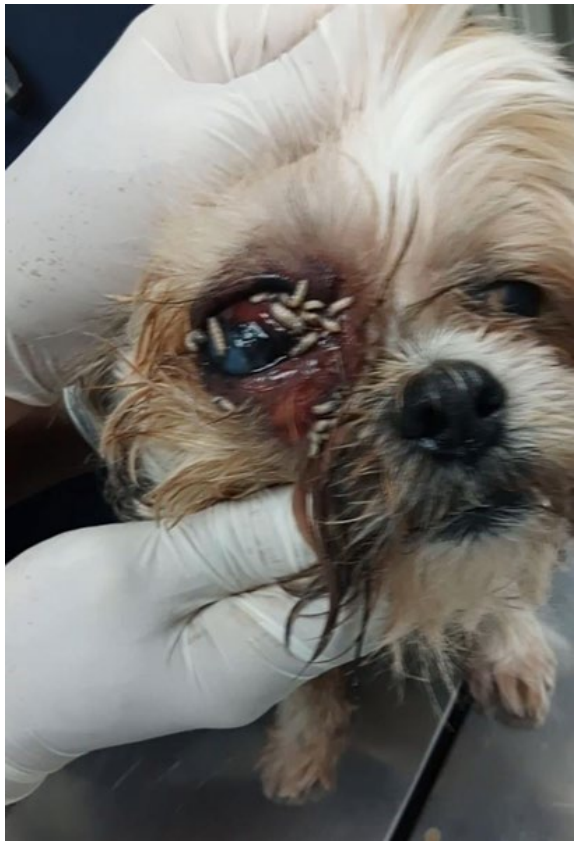


Image credit: USDA New World Screwworm Photo Gallery
Dog Image courtesy of Dr. Feliciano Bravo, COPEG.
www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/screwworm/new-world-screwworm-photo-gallery

Session 1 Recap

- **Currently, New World screwworm is spreading north from Central America into southern Mexico.**
- **The key to keeping New World screwworm out of the United States is staying aware and knowing what to do about a suspected maggot infestation in an animal or person.**

Ulcer of New World screwworm infestation on right shin. Majeed A, et al. New World screwworm (*Cochliomyia hominivora*x) infestation in a returned traveler from Costa Rica. Travel Medicine and Infectious Disease 65 (2025).

Discussion to be Continued in Session #2

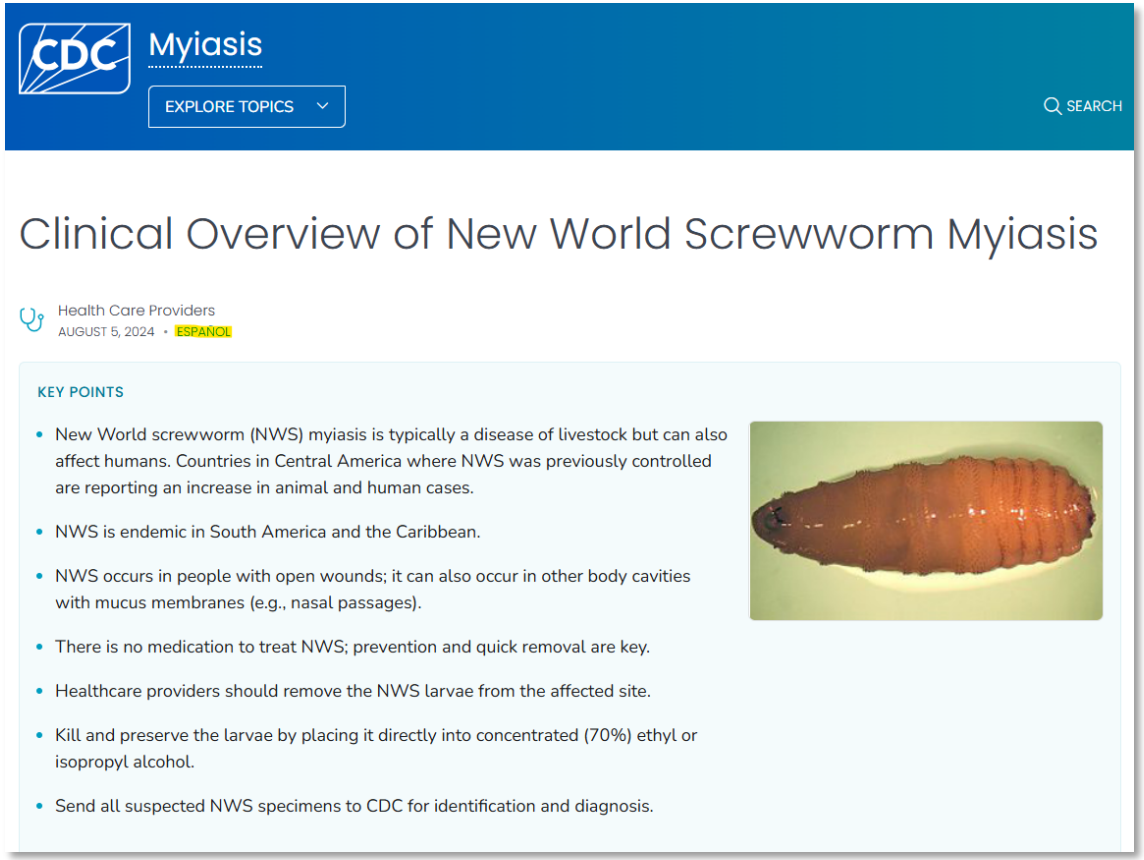
- **We will talk more about human and animal infestations**
- **How to report cases**

Website Materials for the Public

- About New World Screwworm Myiasis
- Acerca de la miasis por el gusano barrenador del Nuevo Mundo

Website Materials for Healthcare Providers and Laboratorians

- Clinical Overview of New World Screwworm Myiasis
- Información clínica sobre la miasis por el gusano barrenador del Nuevo Mundo
- Lab Identification of New World Screwworm (cdc.gov)



Additional Resources for New World Screwworm

- **U.S. Department of Agriculture New World Screwworm Domestic Readiness and Response Policy Initiative:** https://www.usda.gov/sites/default/files/documents/nws-visit-policy-brief.pdf
- **U.S. Department of Agriculture-Animal and Plant Health Inspection Service:** https://www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/screwworm
- **U.S. Department of the Interior-Fish and Wildlife Service:** https://www.fishwildlife.org/fish-and-wildlife-health-initiative-toolkit/Fish-and-Wildlife-Health-Program-Capacity/disease-monitoring
- **Food and Drug Administration:** https://www.fda.gov/animal-veterinary/safety-health/animal-drugs-new-world-screwworm
- **Food and Drug Administration:** https://www.fda.gov/animal-veterinary/safety-health/new-world-screwworm-information-veterinarians

CDC New World Screwworm Contacts

CDC New World Screwworm Response
newworldscrewworm@cdc.gov

CDC Parasitic Clinical Inquiries parasites@cdc.gov, 404-718-4745

Image courtesy of Denise Bonilla, U.S. Department of Agriculture

Thank you

You Make a Difference
You are a critical part of the team protecting our communities.

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.