New World Screwworm (NWS)

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DISCLAIMER

The information presented today is based on current preliminary data and on CDC's recent guidance. Information is subject to change.

October 8, 2025

NWS Discussion Topics

- Background
- Human New World Screwworm Cases
- Human Risk Factors, Prevention, and Case Management
- Current Situation in Texas

TEXAS Health and Human Services

Texas Department of State Health Services

Background

NWS Background

- NWS are larvae of the fly *Cochliomyia hominivorax.*
- Female flies lay eggs in wounds or on mucous membranes of warm-blooded animals.
- Once hatched, the parasitic larvae (maggots) burrow into the animal to feed on living tissue, which is called myiasis.
- Severe infestations are almost always fatal if untreated.

Image: An adult New World screwworm fly

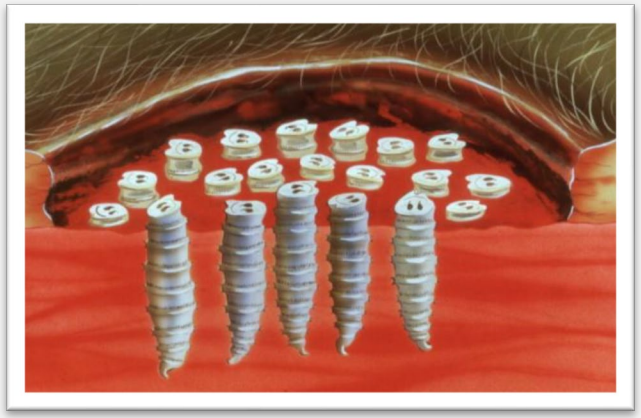
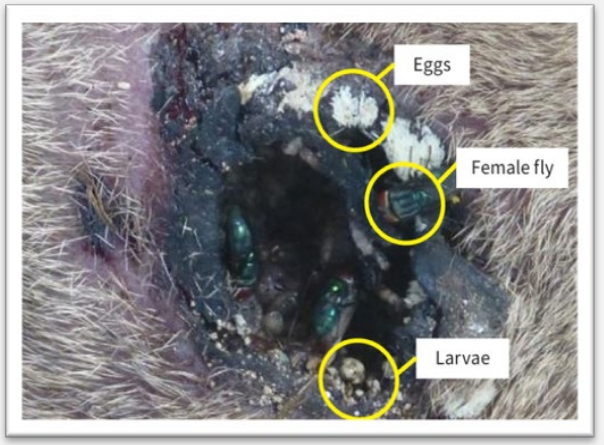


Image: an NWS infestation



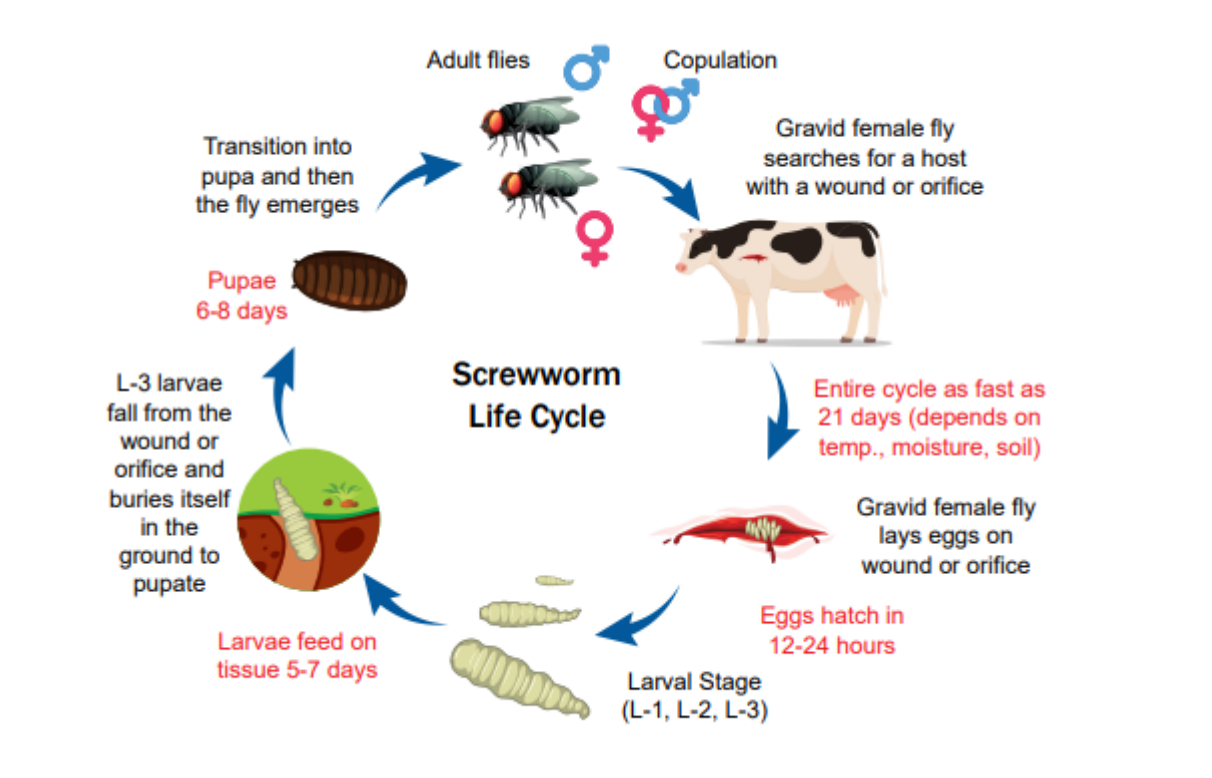
Available: https://www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/screwworm; https://phil.cdc.gov/Details.aspx?pid=19576. Accessed on September 8, 2025

Available: https://www.aphis.usda.gov/sites/default/files/factsheet-nws-private-veterinarians.pdf. Accessed on September 8, 2025.

NWS Background

Summary

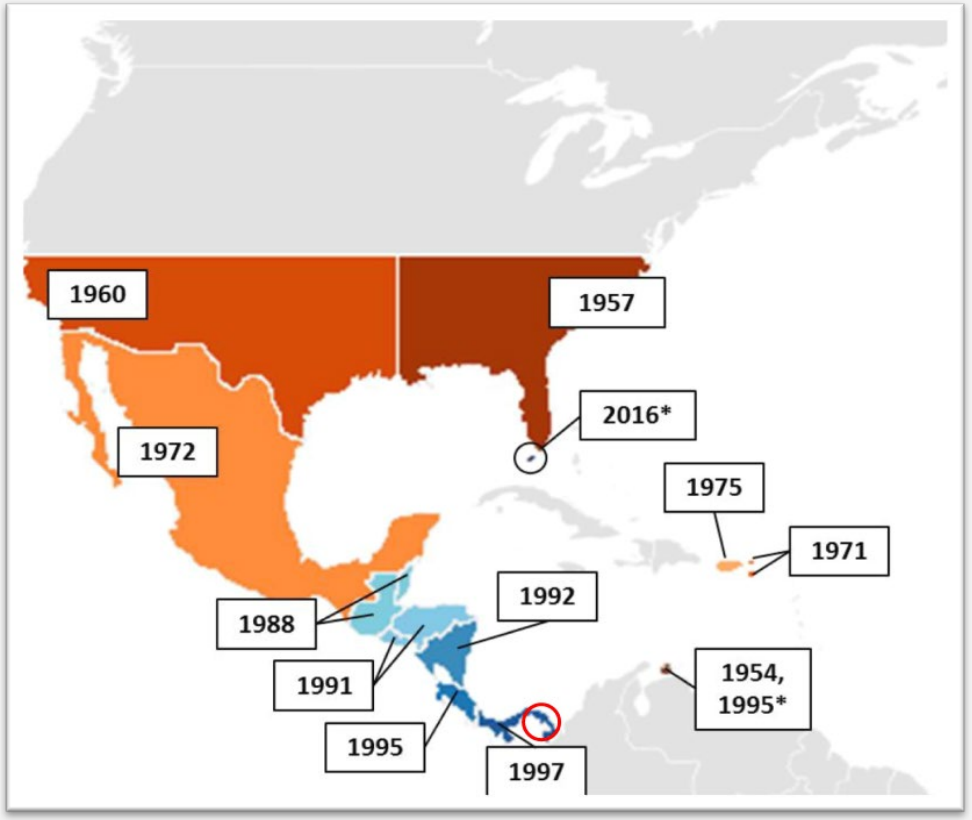
- A female fly will mate once with a male and can lay up to 200-300 eggs at a time and up to 5,000 eggs during its lifetime.
- Depending on the environmental conditions, the entire lifecycle can range from 21 days to 3 months.
- Larvae emerge within 24 hours and can persist in tissue up to 7 days.



https://www.cdfa.ca.gov/ahfss/Animal_Health/pdfs/Screwworm_Fact_Sheet.pdf ; accessed 9/12/2025

NWS Background

- NWS is currently endemic in South America, Cuba, Haiti, and the Dominican Republic.
- NWS was eradicated from the US in the 1960s and from Mexico in the 1980s using the Sterile Insect Technique (SIT).
- To further prevent spread, the Commission for the Eradication and Prevention of NWS (COPEG) was established 1994.
- Until June 2023, Panama was considered the biological barrier against the pest.
- Some ideas on how the breach occurred include increased deforestation for more grazing, more South American cattle were moved into Panama for finishing, and illegal livestock movements.
- Also, a new sterile fly strain was developed in 2024.



North American NWS Eradication Programs, by start date. Darien Gap is circled in red

Available: https://www.aphis.usda.gov/sites/default/files/nws-historical-economic-impact.pdf. Accessed 9/8/2025

https://afsa.org/small-mighty-aphis-turns-50; accessed 9/8/2025

Current Status of NWS in Animals

- As of September 24, the closest active animal case is 70 miles from the border.
- Since 2022, there have been over 6,246 animal cases in Mexico, with 711 currently active.
- Panama–US Commission for the Eradication and Prevention of Screwworm Infestation in Livestock, or COPEG, manages the only sterile fly production facility and produces up to 100 million sterile flies per week.
  - Sterile Insect Technique (SIT) fly distribution is focused on the northern edge of the outbreak.
  - Currently, the demand exceeds the SIT capacity.

Available: https://www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/screwworm/outbreak-central-america; accessed 9/15/2025

USDA Announces Plans to Protect the United States from NWS

- August 15, 2025: U.S. Secretary of Agriculture Brooke L. Rollins, Governor Greg Abbott and stakeholders from across the country announced the largest initiative yet in the U.S. Department of Agriculture's (USDA) plan to combat the New World Screwworm.
- To achieve success, USDA will work across the federal, state, and local government partners, and with the public and private sectors to take the following actions as part of its 5-Prong Strategy:
    1. Stop the Pest from Spreading in Mexico
    2. Protect the U.S. Border at All Costs
    3. Maximize Our Readiness
    4. Take the Fight to the Screwworm
    5. Innovate Our Way to Continued Success

Available at: USDA Announces Sweeping Plans to Protect the United States from New World Screwworm | USDA; accessed 9/8/2025
Available at: New World Screwworm Domestic Readiness and Response Policy Initiative; accessed on 9/8/2025

Human NWS Cases

NWS Outbreak in Central America and Mexico -- Human Cases

- From 2024 – September 12, 2025:
  - There are **49 human cases** reported in Mexico (43 in Chiapas, 3 in Campeche, 2 in Yucatan, and 1 in Tabasco)
  - There are **> 760 human cases** of NWS reported across Central America/Mexico
- The SIT effort is focused on the northern edge of the outbreak in Mexico, so animal cases are increasing in Central American countries, which could also result in additional human cases. (Many farm workers in Texas originate in the Central American countries).
- NWS surveillance in many countries is challenging; there is presumed under-reporting according to CDC.

Available at: https://www.gob.mx/cms/uploads/attachment/file/1020874/sem35.pdf ; accessed on 9/8/2025

Available at: https://www.copeg.org/en/situacion-actual /; accessed on 9/8/2025

Additional email correspondence with CDC NWS team and webinar and Texas Animal Health Commission, 9/15/2025

Maryland NWS Travel-Associated Human case

- On August 26, 2025, the U.S. Department of Health and Human Services (HHS) and the US Centers for Disease Control and Prevention (CDC) reported a recently identified travel-associated human case of NWS.
  - The Maryland Department of Health and CDC investigated the case on August 4, 2025. The traveler arrived in the US from El Salvador before their diagnosis.
  - In support of CDC's activities and out of an abundance of caution, USDA initiated targeted surveillance for NWS within the 20-mile radius of the affected area, encompassing portions of the District of Columbia, Maryland, and Virginia. All trap results are negative to date.

Available at HHS and USDA Confirm Singular Traveler-Associated New World Screwworm Case; Precautionary and Proactive Surveillance Ongoing | USDA; accessed 9/5/2025

NWS – Threat of Reintroduction from Travelers

2014: Infested traveler returned to Washington after a vacation to the Dominican Republic

2023: Infested traveler with a surgical wound returned to Arkansas from Argentina and Brazil

2024: Infested traveler returned to Florida after vacation in the Dominican Republic

2025: Infested traveler returned to Canada from Costa Rica

https://www.ajtmh.org/view/journals/tpmd/92/3/article-p599.xml ; accessed 9/15/2025
https://time.com/7312475/screwworm-in-us-new-world-parasite/ ; accessed 9/15/2025
https://www.firstcoastnews.com/article/news/local/doctors-remove-bugs-from-inside-of-mans-nose-and-face/77-cc1136f8-ed6b-44a5-9848-60d422042bac; accessed 9/15/2025
https://www.sciencedirect.com/science/article/pii/S1477893925000493?via%3Dihub ; accessed 9/15/2025

Countries Where NWS is Endemic or Active

Endemic:

- Cuba
- Haiti
- Dominican Republic
- South American countries, including but not limited to: Brazil, Colombia, Venezuela, Ecuador, and Peru

Regions with recent spread or active cases (2023-2025):

- Panama
- Costa Rica
- Nicaragua
- Honduras
- Guatemala
- Belize
- El Salvador
- Mexico

Available at: New World Screwworm; accessed 9/17/2025
Available at: New World Screwworm Outbreak in Central America; accessed 9/17/2025
Available at: https://www.woah.org/fileadmin/Home/eng/Animal_Health_in_the_World/docs/pdf/Disease_cards/SCREWWORM.pdf; accessed 8/17/2025

NWS Risk Factors, Prevention, and Case Management

Human Cases – Risk Factors/Prevention

Risk Factors

- Travel to areas where the flies are present.
- Have a weakened immune system.
- Have a medical condition that can cause bleeding or open sores, such as from skin or sinus cancer.
- Live, work, or spend an extended amount of time with (or near) livestock or other warm-blooded animals in these areas.
- Have an open wound, from a scratch or cut, from an insect bite, or from a recent surgery.
- Sleep outdoors.

Prevention

- Wear loose-fitting long-sleeved shirts and pants, and socks to limit areas where you could get bitten.
- Use an EPA-registered insect repellent.
- Treat clothing and gear with products containing 0.5% permethrin.
- If livestock or companion animals show signs of myiasis, have them assessed and treated by a veterinarian.
- Keep open wounds clean and covered.
- Sleep indoors or in rooms with screens.

Available at: https://www.cdc.gov/myiasis/about-new-world-screwworm-myiasis/index.html, accessed on 9/17/2025

Human Cases - Clinical Management

- There is no medication to treat NWS infestation in humans.
- *There are anecdotal reports of using ivermectin in off-label treatment of NWS infestations in humans. However, there are no controlled, double-blind studies measuring the impact of ivermectin use on myasis.*
- NWS myiasis in humans is treated by removing larvae from a wound.
  - Healthcare providers (HCP) should remove the NWS larvae from the affected site and place directly into 70% ethyl or isopropyl alcohol, which kills the larvae.
  - HCPs must account for every single larvae.
- If you see or feel larvae in or on a wound or other area of your body, contact your healthcare provider immediately.
- CDC released an updated 3-page resource "Recommendations for Healthcare Providers: New World Screwworm Myiasis" on September 8, 2025

Image: NWS-larva-nickel-web.png (660×372).

Available: Clinical Overview of New World Screwworm | New World Screwworm | CDC Accessed: 9/8/2025

Available at: https://www.cdc.gov/myiasis/hcp/clinical-overview/index.html. Accessed on 9/8/2025

CDC Recommendations for Healthcare Providers: New World Screwworm Myiasis

Available at: New World Screwworm Myiasis, Recommendations for Healthcare Providers, accessed on September 8, 2025

New World Screwworm Myiasis

Recommendations for Healthcare Providers

New World screwworm (NWS) myiasis is a disease of warm-blooded animals, especially livestock, but can also affect wildlife, pets, and humans. Every country in Central America and Mexico is reporting cases of NWS in both animals and people. Your patients may be at an increased risk for NWS infestation if they are in areas where the flies are present, particularly in areas near infested livestock or other infested animals.

Risk Factors

NWS is endemic in the American tropics and subtropics which includes countries in South America, Cuba, Haiti, and the Dominican Republic. However, Central America and Mexico are experiencing an outbreak of NWS with cases in both animals and humans for the first time in decades.

People at higher risk include

- Those living in rural areas in regions or countries where NWS is endemic or in countries currently experiencing an outbreak, and where livestock are raised.
- People who frequently work with livestock.
- Anyone with open sores or wounds, including from recent surgery, as the flies will lay eggs on open sores.
- Vulnerable populations, including people who are immunocompromised, those at extremes of age, and people experiencing malnutrition.

Transmission

New World screwworm infestations begin when a female fly lays eggs on a wound or orifice of a live, warm-blooded animal. The odor of a wound or an opening such as the nasal or eye openings, umbilicus of a newborn, or genitalia attracts female flies. Wounds as small as a tick bite may attract a female fly 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 – 54 days depending on temperature and humidity. Female flies mate only once in their lifespan.

Clinical Features

Consider NWS in patients

- With visible larvae or egg masses in a wound, ears, eyes, nose, mouth or other body orifice
- With destruction of healthy tissue
- Who report sensation of movement, foul odor, bloody discharge, swelling, and pain
- Who report recent travel to regions where NWS is present.

Refer to the USDA webpage for the most up-to-date locations of NWS infestation in animals.

Prevention

In areas where NWS is present, advise patients to

- Clean and cover all wounds, no matter how small or the location on the body.
- Wear loose-fitting, long-sleeved shirts and pants, socks, and hats to limit exposed skin and use Environmental Protection Agency (EPA)-registered insect repellents.

CDC U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION

- Encourage patients, if possible, to avoid spending time where livestock or other infested animals are located or housed.
- Avoid sleeping outdoors, especially during the day.
- Protect sleeping quarters with screens or bed nets, especially for people who have wounds or active nasal or ocular discharges. Screening of hospital windows and doors is essential.

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

The New World screwworm flies have orange eyes, a metallic blue or green body, and three darker-shaded stripes along their backs. *Image courtesy of Denise Bonilla, U.S. Department of Agriculture.*

New World screwworm infestation in in a patient's leg. *Image courtesy of* Dr Isaac Bogoch, Toronto General Hospital.

Treatment

- Use standard precautions when treating wounds and handling larvae.
- Remove and kill ALL visible larvae and eggs in patients with suspected NWS. This may require surgical removal. **Failure to kill and properly dispose of all larvae or eggs may result in the new introduction and spread of NWS in the local environment (see specimen handling and submission).**
- Reexamine treated lesions after 24 – 48 hours to confirm no live larvae remain. Remove and safely dispose of any remaining larvae as described below.

Diagnosis

There are many morphologically similar species of flies that can cause myiasis. Submission of larvae is critical for morphological diagnosis and species identification. Diagnostic confirmation for suspected human cases is available through CDC's Diagnostic Parasitology Laboratory, DPDx, at dpdx@cdc.gov.

Specimen Handling & Submission

Submit larvae for clinical diagnosis and confirmation at CDC.

- Send at least 10 larvae. If you have fewer than 10, submit them all.
  - If you have more than 10, send at least 10.
  - If multiple stages of larvae are present in the lesion, try to include a representative sample from each stage. Email dpdx@cdc.gov for specimen submission instructions.
- Place larvae and eggs in a leak-proof container with 70% ethanol. The volume of liquid should be sufficient to fully submerge larvae and eggs.
  - The ethanol will both kill and preserve them for identification.
  - 70% (or greater) isopropanol or 5% – 10% formalin are acceptable alternatives.

CDC NWS Resources

- CDC sent a Dear Healthcare Provider NWS notification letter to 18 healthcare provider associations (not yet shared with health departments)
- CDC has developed/is developing factsheets on NWS for different audiences:
  - Public (available online)
  - Healthcare Providers (available online)
  - Health Departments (in development)
- Case Report Form is available; Training for One CDC Data Platform (1CDP) for data entry is ongoing.
- Case investigation guide in development.

Source: Updates shared during the CDC All-Response STLT Call on September 8, 2025

NWS Webinars

NWS: ECHO Healthcare Webinars

- ECHO (Extension for Community Healthcare Outcomes) is a platform to allow partnerships with providers and healthcare workers in underserved, remote, and rural communities to increase their knowledge in specific healthcare areas.
- CDC developed ECHO training webinars for health care providers and Community Health Workers (CHW).
  - September 15: Intended audience are Healthcare providers, and public health professionals
  - September 22 & 29: Intended audience are community health workers and public health professionals
- Register for these webinars, using this link: Meeting Registration - Zoom

Available at: https://wp.uthscsa.edu/echo/, accessed on September 8, 2025.

Current Situation in Texas

Texas NWS Response Team

- Governor Abbott appointed the Texas NWS Response Team
  - Texas Animal Health Commission (TAHC), Texas Parks and Wildlife Department (TPWD), Texas Department of Agriculture (TDA), and Texas AgriLife are the lead state agencies in the taskforce
  - Many animal industry groups representing the main livestock species were present, as well as South Texas property rights and ranchers
  - Dr. Susan Rollo is the public health representative
  - Dr. Varun Shetty, DSHS Chief State Epidemiologist is an invited participant

Human Cases – Proposed Lab Sample Submission Protocol

LRNs

- Assist clinical laboratories in forwarding samples to DSHS laboratory
  - CDC suggests submitting at least 10 larvae from deep within the patient's wound
  - If fewer than 10 larvae are recovered, all larvae should be sent for identification

DSHS Austin Laboratory

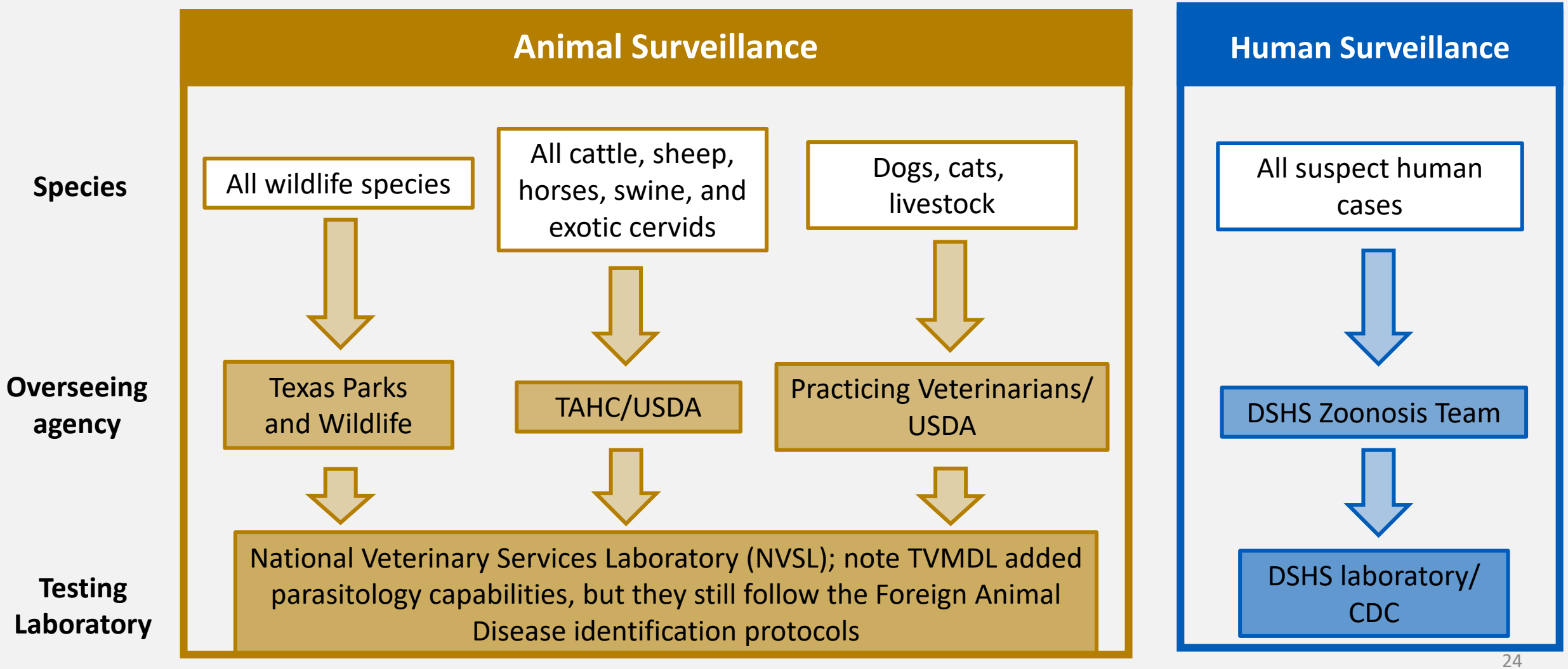
- **Provide larval identification**
  - **Samples will only be accepted if they are submitted by healthcare provider**
- Coordinate with CDC on identification
  - Will send pictures of samples to CDC DPDx for identification
  - Can repackage and ship samples to CDC as necessary
  - Receives final lab report from CDC

CDC

- **Provide larval identification**
  - Can provide identification based on high quality photos or video of larvae and/or flies
  - Will issue report identifying *C. hominivorax* or other species
  - For samples where pictures/video are not sufficient, can receive samples forwarded by state lab

- Healthcare providers can email newworldscrewworm@dshs.texas.gov for information about sample collection and laboratory submission.
- All larvae should be sent in either concentrated (70%) ethyl or isopropyl alcohol and should be submitted using a G-2B form.

Overview of Animal and Human Surveillance



Resources

- Clinical Overview of New World Screwworm | New World Screwworm | CDC
- About New World Screwworm Myiasis | Myiasis | CDC
- Myiasis | DPDx | CDC
- Laboratory Testing Services Manual - Forms and Laboratory Fee Schedule | Texas DSHS
- USDA-APHIS New World Screwworm Web Page https://www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/screwworm
- Texas Animal Health Commission New World Screwworm Emergency Management Guide https://www.tahc.texas.gov/animal_health/feverticks-pests/EMGuide-NewWorldScrewworm.pdf
- Texas Parks and Wildlife New World Screwworm Fact Sheet
- Bring a Pet Dog into the United States | USDA/ Animal Importation Form | CDC

Thank you

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Services

Texas Department of State
Health Services