



Preparing Livestock Producers for New World Screwworm Reemergence in the United States

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Introduction

New World Screwworm (*Cochliomyia hominivorax*) is a fly larva, or maggot, that can burrow into the flesh of a living animal, unlike other fly larvae that only feed on dead flesh. New World Screwworm (NWS) can affect any livestock species, as well as pets, wildlife, birds, humans, and essentially any warm-blooded animal. In the 1950's and early 1960's, NWS infestations resulted in devastating losses to cattle and wildlife in the southern United States. Economic impacts

reached \$50-100 million (USDA, 2025). In the 1960's NWS was eradicated in the United States (US). Since then, the US and Panama have collaborated through the Commission for the Eradication and Prevention of New World Screwworm Infestation in Livestock (COPEG) to prevent NWS from spreading north of the Darién Gap by releasing sterile male flies. Since NWS female flies tend to breed once in a lifetime, this process decreases the NWS population.



Figure 1. Current New World Screwworm detections as of September 2025. Image credit: USDA-APHIS

In 2023, NWS was able to break this barrier and spread northward. As of late September 2025, NWS was detected as far north as [Nuevo León, Mexico](#) (Figure 1). COPEG continues to release sterile flies in Central America and Mexico, however sterile fly production is at maximum capacity at the current facilities. US livestock producers should be prepared to implement proactive management and husbandry practices in the near term as well as preventative measures to limit the potential impact an infestation will have on the livestock industry if and when a regional detection happens.

New World Screwworm

The life cycle of NWS is determined by the climate of the region. In semi-arid environments like Arizona, the cycle can last approximately 24 days or longer, depending on environmental conditions. Female screwworm flies mate only once in their lifetime, which is why sterile male flies are released as an effective control mechanism. After mating, the female lays eggs on the edges of an open wound. In some cases, the eggs may become visible by the third day after being laid.

Once hatched, the larvae screw into the wound and go through three stages of development. Unlike other species of flies that may lay eggs in or around a wound, the larvae of the NWS feed on living tissue, not dead/decaying tissue. This is what makes a case of screwworm infestation much more serious than a case of simple flystrike. In the final developmental stage, the mature larvae leave the host animal, fall to the ground, and burrow underground. Once in the ground they form a hard protective case known as a pupa. Inside this hard case, they transform into adult flies. Once adults emerge, they can easily spread and infect new hosts.

It is important to recognize that detection of NWS will be invariably related to either recovery of NWS maggots from the host or from fly-trapping surveillance efforts for identification of adult flies. The behavior of female NWS flies is such that they DO NOT persist on or around the host, but rather remain in cover and vegetative growth for long periods of time, only leaving cover to find a host, lay eggs over only a matter of seconds to minutes, and then return to a protective environment near a congregation of host animals. This behavior is much different than Face Flies or Horn Flies that tend to remain on or around host animals and also means recovery of adult NWS flies from the host animal would be very rare unless actively engaged in egg-laying activity.

New World Screwworm pupae thrive in warmer climates, where their pupation is more successful. Pupae will not survive if exposed to soil temperatures below 46°F for several consecutive days or after frost. Temperatures below 50°F have a significant effect on survival. Adult screwworms survive best in hot, moderately humid environments typically between 77– 86°F with a relative humidity of 30–70%. High temperatures above 104°F in dry environments reduce the reproductive capabilities of these flies. However, previous outbreaks in Arizona have shown that they can successfully survive and reproduce in our climate, thriving particularly in

areas where there are the “Three W’s”, i.e. woods, water, and warm-blooded animals.

Adult NWS are roughly the size of a common house fly. The adult flies have orange eyes, metallic blue or green bodies, and three black stripes on their back (Figure 2). They are given



Figure 2. Close up of adult New World Screwworm fly. Photo credit: Adobe stock Image

the name screwworm because the larvae look like a screw. Larvae have a flat head with ridges that look like the threads of a screw along their body and are approximately 2/3 of an inch long when mature (Figure 3). They cause damage to skin tissue because larvae can latch on and tear through tissue with



Figure 3. New World Screwworm larvae. Image credit: USDA-APHIS

their sharp mouth hooks. As a result, wounds easily become larger as the screwworm gets deeper into tissue. When observed in a wound larvae present in a signature "pearl" formation, with the hind end of the larvae presenting to the outside of the wound and the mouth end positioned into the wound (Figures 4 and 5).



Figure 4. New World Screwworm larvae infestation showing "pearl" formation with the hind end of the larvae presenting to the outside of the wound and the mouth end positioned into the wound. Image credit: moonswimmer on commons.wikimedia.org



Figure 5. Severe New World Screwworm larvae infestation on dog's neck. Note the signature "pearl" formation. Image credit: Winthorpe Marsden, Jamaican Ministry of Agriculture

Preventative Measures

There are currently no Federal Drug Administration (FDA) approved animal drugs for treatment or prevention of NWS; however, preventative measures can be taken to decrease animals' risk of having a screwworm infestation (FDA, 2025). The best preventative measures include focusing on wound prevention, rapid wound treatment, potentially adapting management practices, surveillance, and being more mindful of biosecurity.

Since NWS flies are attracted to wounds, consider changing seasonal livestock activities to low-risk periods, like cooler weather, when fly activity is reduced. Avoid procedures like dehorning, branding, castration, ear tagging, sheep shearing, tail docking, etc. unless necessary during seasons when flies are active. When performing these management procedures, consider keeping grazing animals in proximity where they can be checked regularly while healing. Even the smallest wound, like a tick bite, can be an entry site for NWS. If you must perform these procedures, treat with a veterinarian-approved insecticide product and monitor the animal until any wounds have fully healed.

If possible, change your breeding schedule to reduce calves that are born during peak screwworm activity. The navel area of newborns and the reproductive trauma that occurs around the vulva of livestock that have recently given birth, are ideal sites for NWS flies to lay their eggs. The optimal calving window is when average temperatures are below 59°F. If the calving season cannot be changed and your herd is in an NWS infested zone, treat the umbilical cords of newborn animals and all wounds immediately with a veterinarian-approved insecticide or the animal with a systemic product.

Handle livestock carefully and inspect corrals, chutes, gates, water troughs, trailers, and any other equipment for sharp objects that can cause wounds. Don't forget to inspect working animals, like dogs and horses, for wounds as they can also become infested by NWS. If an animal has an open wound, closely monitor them until the animal has healed.

Increase biosecurity measures by cleaning clothing, boots,

vehicles, and other equipment regularly to reduce the risk of transferring flies between locations, especially if you ranch on non-adjacent allotments in different locations in Arizona or across state lines. Remember the larvae pupate in the soil. Consider having a biosecurity plan in place for any visitors to your operation. Be sure to stay informed of any quarantine and livestock movement advisories between states and [USDA announcements](#).

Lastly, remain cautious and maintain communication with your veterinarian, Extension agent, neighbors, and Arizona Department of Agriculture (AZDA) for current information.

Treatment

It is important to have a valid vet-client-patient relationship (VCPR) for proper guidance on the treatment of infested animals. After speaking with your veterinarian, clean any open wounds with approved insecticides or wound dressing. Thoroughly clean the affected area and if possible, remove all visible larvae. Then, use a veterinarian-approved topical or systemic antiparasitic treatment to eliminate remaining unseen pupae.

When treating an animal, it is important to remember that NWS can also infest humans. Any person with open wounds that will be in contact with infected animals should properly clean and cover the injury with clothing, disposable gloves, or other protective equipment.

While there are currently no drugs approved by the FDA for the treatment of NWS, the FDA and Environmental Protection Agency (EPA) are working to identify and approve products. Your veterinarian can prescribe the extra-label use of FDA-approved products within the context of a valid VCPR. Having an established relationship with a veterinarian will be critical to the timely treatment of any NWS cases that arise on your operation. It is important to seek preventative and treatment guidance from your veterinarian to ensure that any meat or milk withdrawal periods are followed to avoid an inadvertent residue in food products that would result in a mass recall for adulterated product or potentially put human or animal health at risk.

Collecting a Specimen

The University of Arizona Cooperative [Extension Offices](#) and AZDA have limited free Arizona Livestock Incident Response Team (ALIRT) sampling kits and online submission forms available for Arizona livestock owners (Figure 6). New World Screwworm is federally reportable, and it is required to notify both AZDA and USDA of suspected cases immediately. The ALIRT sampling kits contain two tubes containing isopropyl alcohol and pre-labeled packaging for mailing samples to the Arizona Veterinary Diagnostic Laboratory (AZVDL) in Tucson. **If the sample submission is authorized for testing following review of the case details by AZDA, AZVDL will examine one sample and send the second to the USDA's National Veterinary Services Laboratory.** If AZVDL identifies NWS, they will work with AZDA to initiate a rapid response regarding treatment, containment, and eradication for the impacted operation.



Figure 6: Arizona Livestock Incident Response Team (ALIRT) NWS Surveillance Kit. Image credit: Dr. Betsy Greene

To collect a sample, remove maggots of various shapes and sizes from multiple areas within the wound using tweezers. It is also crucial to include maggots from the deepest part of the wound. Place the maggots in the two provided tubes. It is important to obtain maggots from several sites in or around the wound as there is a good chance other fly species have been attracted to the wound and have also laid eggs that have developed into maggots. Therefore, it is likely there could be multiple species of maggots infesting a single wound.

If you suspect NWS on your Arizona operation and cannot visit an Extension or AZDA office immediately to obtain a sampling kit, you can make your own. Even if you are self-reporting a sample, maintain contact with your veterinarian and inform AZDA or USDA. Collect maggots as described above and place them in a tight-closing container and preserve them in 70% ethyl or isopropyl alcohol at room temperature until you can mail or drop off the samples to AZDVL. If mailing the samples, package the sample tubes in a box or sealable bag, and then in another sealable bag with cotton balls or other material to absorb any leaking fluids, which is a USPS requirement. Additional packaging instructions can be found on the [ALIRT website](#). It is important to remember to split samples into two containers: one for AZDVL and one for USDA.

If possible, take photos of the wound with suspected NWS larvae and the individual larvae samples. Record the Animal ID (number and/or name), species, date and time of collection, GPS coordinates or address of sample collection location, collectors name, and a contact phone number to include with the sample.

To prepare AZDVL for sample processing, you will need to complete a submission form. You can access the form by scanning the QR code or by using [this link](#) to access the submission form in a web browser (Figure 7). Submitting this form ensures testing will be evaluated for approval by AZDA and that AZDVL has the necessary information to process your sample.



Figure 7: QR code to online NWS sample submission form.

If dropping off the sample to AZDVL, the address is 2831 N. Freeway, Tucson, AZ 85705.

If a suspect sample falls outside of the ALIRT Surveillance Project scope, it is possible to still have AZDVL work with your veterinarian to do a screening process for an estimated cost of [\\$35 for private parties](#).

If you suspect a case in a state other than Arizona, please contact your state Department of Agriculture or Livestock Board to discuss your concerns with the State Animal Health Official and request testing. Additionally, you can collect samples following the specimen collection guidance above. Then contact your cooperative extension, state department of agriculture, and/or state diagnostic laboratory to find an entomologist to examine samples and/or photos.

Conclusion

Effective New World Screwworm prevention and/or control hinges on wound management, strategic timing of animal management activities, surveillance, and prompt reporting. Increase the frequency of livestock inspections as much as possible during warmer months. Maintain communication with your veterinarian and AZDA. If an animal shows signs of irritated behavior, the smell of decay, larvae in wounds, unusual drainage, head shaking, or you see a maggot on live animals contact the AZDA at diseasereporting@azda.gov immediately. It is good to be vigilant and overly cautious about reporting unusual cases, even in wildlife.

But That's a Southern Issue, Right?!

There are several reasons that all livestock producers in the United States should be aware of and looking for potential New World Screwworm issues in their animals.

- Flies don't stop at border checkpoints.
- Wildlife and any other warmblooded animals can bring NWS across borders and state lines.
- Although the acceptance of livestock has been ceased at Mexican border crossings for many months, that does not mean that pets, people, or other warmblooded animals cannot carry developing larvae across in a small wound.

Key Point: There are no cattle movement restrictions between states in the USA at the time of publishing, and cattle are constantly moved across state lines to "finish out" at feedlots, etc. from south to the mid-west every day. Until an infestation is found, movement restrictions will not be put in place. There could be many animals that have already been shipped before one shows up positive.

Being aware, alert, and proactive in identifying, reporting, and treating any NWS positive animals will make a big difference in the cost (both financial and animal health) to ranchers across the US.

For more information about NWS and regularly updated maps of known locations these resources are available:

- **COPEG Website**
<https://www.copeg.org/en/>
- **USDA-APHIS Current Status**
<https://www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/screwworm/outbreak-central-america>
- **USDA APHIS Screwworm Outbreak Central America**
<https://www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/screwworm/outbreak-central-america>
- **USDA APHIS Screwworm Information**
<https://www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/screwworm>
- **University of Arizona Cooperative Extension “Be on the lookout”**
https://extension.arizona.edu/sites/default/files/2025-07/Az2149_2025_ALIRT_BOLO_NWS_final.pdf

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