

## Quarantine zone and prevention measures in Texas prevent spread of cattle fever tick and nationwide issue.

by Kasey Brown, associate editor

**A** battle rages along 550 miles of the southern Texas border. It has nothing to do with a wall or international politics. It is keeping the cattle north of the border safe from a deadly, fever-inducing tick.

It's a long-standing battle that's been waging since the late 1800s. The problem started when longhorns and their accompanying cattle fever ticks moved north on cattle drives. What people rarely hear is that many trail-neighboring northern cattle died of unknown causes during those summers.

The cattle fever tick is endemic in southern and tropical regions, but few U.S. cattle maintain any immunity. In naïve cattle, these ticks can transmit *Babesia*, a parasitic infection that kills red blood cells. Fever, acute anemia, and enlargement of the spleen and liver result, and cattle die quickly.

Hallie Hasel, area veterinarian

in charge of the Cattle Fever Tick Eradication Program, USDA Animal and Plant Health Inspection Service (APHIS) Veterinary Services (VS), explains that in 1906, most of the Deep South had this tick. By 1943, it was eradicated from the United States by pushing the fever ticks back to a permanent quarantine zone from Del Rio to Brownsville, an area about 550 miles long containing more than half a million acres. That's a big battle zone for a small army.

If these ticks had not been eradicated in 1943, it would have cost the industry more

than \$1 billion annually, according to a Texas A&M University economic study. However, the war wasn't won in 1943. The battle is still going.

These ticks are a big deal. Climate change and adaptive ticks exacerbate the issue. Fever ticks life cycles are cyclical and they correlate with hurricanes. Hurricane season is anywhere between June 1 and Nov. 30. While they are native to Mexico, ticks don't understand borders, and that makes the quarantine zone so important, Hasel says. Stray animals come across from Mexico via the river.

Hasel is part of the Texas Surveillance, Preparedness & Response Services with USDA APHIS. Eradicating these ticks is a big, arduous job; one with a small and underfunded war chest. It's an



A cattle fever tick quarantine road sign in South Texas.

incredibly important job, as most cattle in the United States are naïve to these ticks and would be susceptible to *Babesia* if the ticks move north.

To put this into perspective, the cost of eradicating a current tick outbreak on three ranches in one year is more than \$122 million, says Hasel.

### Battle plan

To combat an enemy, one must first understand it. These ticks prefer cattle, but can be found on horses, white-tailed deer, nilgai antelope, red deer and other exotic hoofstock, Hasel notes. On the bright side, they are a one-host tick, but hosts are prevalent.

“The hosts for these ticks are not just in Texas. They're all across the southern United States. I don't know if other states have the insurgence of exotic hoofstock that Texas has, but it's like little Africa. Much of our land, especially along the border, these large ranches are converting from grazing cattle to becoming exotic wildlife hunting properties,” Hasel explains.

The USDA Cattle Fever Tick Eradication Program, which includes the Texas Animal Health Commission (TAHC) as soldiers, includes river and range inspections on a daily basis, livestock movement control, individual “scratching” inspections and treatment of livestock, apprehension of stray animals, and systematic treatment of infested premises.

Maintaining the permanent quarantine zone is of utmost importance. The war chest's biggest weapon is movement management. When ticks are found on a premises, movement restrictions are put in place. A premises with ticks is called “infested,” and nearby premises will also have varying levels of restriction — exposed, adjacent or check. These will include inspections and treatments.

“What do we have for treatment right now? We

# SOUTHERN BATTLE

have injectable doramectin, Dectomax®, which is every 28 days; we have dipping vats, which is every 14 days; and ivermectin molasses medicated tubs, along with spray boxes with coumaphos (an Environmental Protection Agency-approved insecticide). That's it. That's all we have for treatment right now," Hasel says.

Both treatment and inspections are labor-intensive, required often because of the tick's short life cycle. When an animal is being inspected and treated, employees are scratching for fever ticks on both sides, others are injecting Dectomax®, and still others are reading radio frequency ID tags noting and updating records up front. Dipping vats also require continual maintenance, much like a swimming pool. In addition to being labor-intensive with maintenance, Hasel notes this is not a cheap option. It costs about \$5,000 to fill a dipping vat.

The TAHC outlines an additional option of vacating the premises, but it poses its own challenges. Treatment is still required before leaving the pasture.

Vacating the premises works by "starving" the ticks by removing the hosts. This process, according to TAHC, begins with dipping the cattle on a 7- to 14-day schedule. The cattle must have two consecutive tick-free inspections and dippings before the herd can be moved to a new, tick-free location.

However, the risk remains because of free-ranging deer and exotics, plus Hasel warns that surveillance of the pasture is gone. The wildlife would have to

be treated by approved methods before cattle could return.

Despite not having many available weapons, one of them has been in recent contention. In early August 2018, Texas Agriculture Commissioner Sid Miller shut down the use of state and federal spray boxes citing lack of ventilation in the spray boxes.

Andy Schwartz, Texas state veterinarian and TAHC executive director, countered: "Portable spray boxes have been utilized for decades and have proven very effective in our containment and eradication efforts. It is important to note that over the years of state

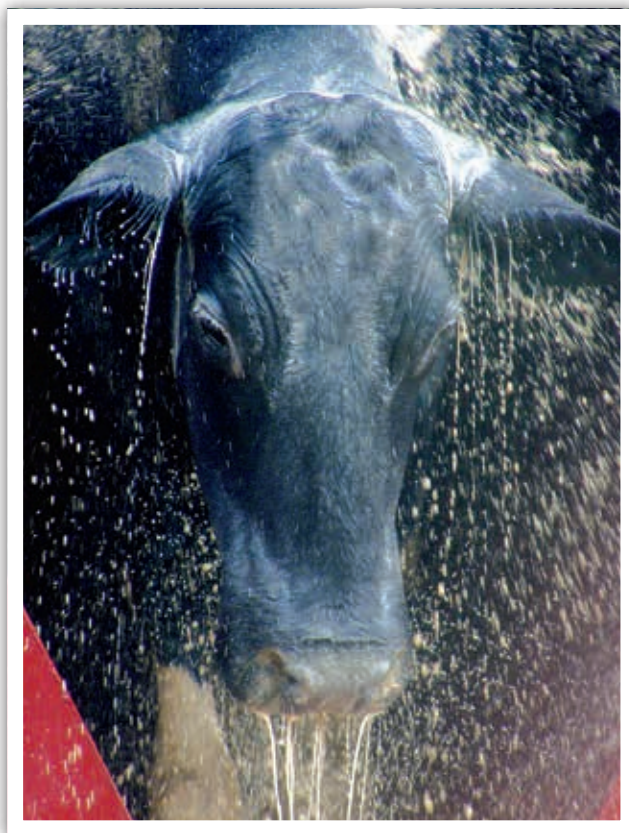
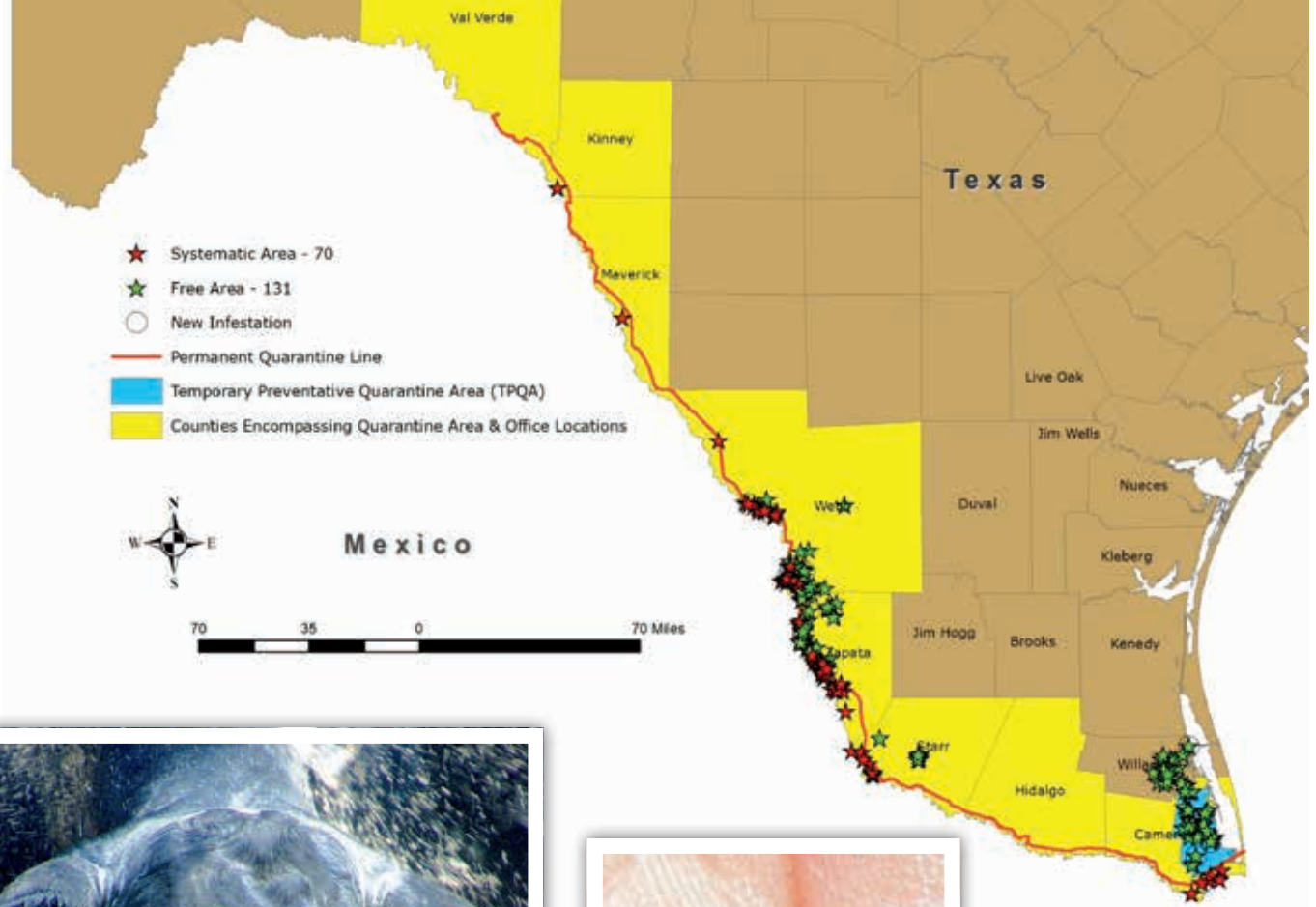
and federal use, there has been no indication the application of coumaphos in spray boxes has led to cattle deaths."

"Because spray boxes are portable units, we can take the fight to where the ticks are," Schwartz continues. "Since Sept. 1, 2016, TAHC has traced fever-tick-exposed cattle to over 919 individual premises in 82 counties across the state. TAHC was able to efficiently and safely treat the cattle because of the spray box features."

A temporary compromise was reached, according to a release by the Texas Department of

Hasel explains that current research is looking to expand the war chest. This includes an extended 60-day injectable; topical treatments with an insect growth regulator; medicated mineral blocks for cattle and wildlife, though the veterinary feed directive would be needed; electrostatic spraying of an essential oil that kills ticks; wildlife fences; and effective wildlife population management.

Northern cattle are safe from Babesia thanks to the tireless efforts of southern soldiers. The battle continues. ▮



Above: Cattle fever ticks prefer cattle, but can be found on horses, white-tailed deer, red deer and other exotic hoofstock.

Left: Spray boxes use the coumaphos insecticide to completely cover cattle and reach ticks all over the body. The boxes are portable, so more cattle can be treated

Agriculture. The fever tick spray boxes were opened for 45 days, so long as ranchers are allowed to opt for another form of treatment for some of their cattle.

### New weapons

An anti-tick vaccine is available for the two types of fever ticks, Hasel says. The vaccine is 90% efficacious on the Laredo-north tick, though it is only 35%-40% efficacious on the Laredo-south tick. A vaccine alone will not be enough.