

## Cattle Fever Ticks and Cattle Fever

### Background

Cattle fever ticks—*Rhipicephalus (Boophilus) annulatus* and *R. (B.) microplus*—are the most dangerous cattle ectoparasites in the United States. These ticks have been a threat to American agriculture for generations because they spread the disease bovine babesiosis, commonly called cattle fever. This disease caused enormous economic losses to the U.S. cattle industry in the late 1800s and early 1900s.

### A Deadly Cattle Disease

Cattle fever is caused by either of two protozoan blood parasites carried by cattle fever ticks. The parasites, called *Babesia bigemina* and *Babesia bovis*, infect, reproduce in, and eventually rupture an infected animal's red blood cells, releasing the parasites and hemoglobin into the animal's bloodstream. This results in anemia and lowered oxygen levels in the blood, which can cause lowered milk production, weight loss, increased respiratory rate, and death. In addition, infected animals sometimes have red-colored urine because of the hemoglobin the kidneys filter out of the blood. This is why the disease is also called "red water."



Figure 1. Three of the cattle fever tick's four life stages are (from left to right): larva (six-legged and looks like a small black dot), nymph, and adult. Nymphs and adults are eight-legged.



Figure 2. This figure shows various female ticks, including (from left to right) *Rhipicephalus (Boophilus) spp.*, a cattle fever tick; *Dermacentor spp.*; and *Amblyomma spp.*



Figure 3. This photo shows various male ticks, including (from left to right) *Rhipicephalus (Boophilus) spp.*, a cattle fever tick; *Dermacentor spp.*; and *Amblyomma spp.*

### Disease Spread

Cattle fever ticks ingest the protozoa while taking a blood meal from an infected animal. The ingested protozoa develop and eventually migrate to the tick's reproductive system and are passed on to any eggs laid. Tick larvae that hatch from these eggs are already infected with the protozoa when they begin to feed on a new animal. This is how the infection is passed between tick generations and between host animals.

Potential hosts of cattle fever ticks include, but are not limited to: livestock (mainly cattle and horses), white-tailed deer, and exotic hoofstock, such as nilgai antelope and red deer. Cattle fever ticks do not attach to humans.

### Cattle Fever Tick Life Cycle

Cattle fever ticks develop through three life stages while on the host animal: larva, nymph, and adult. Each adult female tick

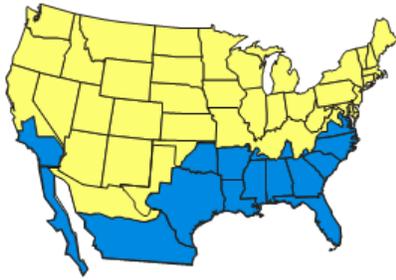


Figure 4. The distribution of cattle fever ticks before the CFTEP began in 1906 is depicted in blue. This same area could become infested again if current infestations are left uncontrolled.

mates while on the host animal. After engorging with host blood, it drops off to lay 4,000 or fewer eggs on the ground. The eggs hatch into larvae, which attach to animals that walk by the larval cluster—and the cycle continues. Up to four generations of ticks can be produced each year.

## Eradication Efforts

The U.S. Department of Agriculture's (USDA) Cattle Fever Tick Eradication Program (CFTEP) has been fighting the spread of these ticks since 1906; however, in recent years, cattle fever tick infestations have increased significantly in number. Because cattle fever and the ticks that spread it are common to parts of Mexico, the CFTEP's mounted patrol inspectors routinely perform patrols along horse trails that they maintain alongside the Rio Grande, to monitor for signs of stray or smuggled livestock from Mexico that might carry fever ticks into the United States. Intercepted animals are inspected, sprayed



Figure 5. Map of South Texas counties showing CFTEP work areas. For work area contact numbers, refer to "Contact Us."

with the pesticide coumaphos, and quarantined. Land the intercepted animals have traversed is also quarantined. Inspectors also watch for illegal livestock movements. Currently, there are seven permanent CFTEP work areas in South Texas, from Brownsville on the eastern end to Del Rio on the western end (fig. 5).

## Report Suspected Cattle Fever Ticks

We need your help. If you suspect that you have found a cattle fever tick, please contact one of the area offices at the numbers listed below. The area supervisor can also provide you with more information regarding cattle fever ticks and the eradication program.

## Contact Us

To report a suspected cattle fever tick or learn more about these pests, please contact the closest area office.

### Area 1-Brownsville:

(956) 546-6004

### Area 2-Mission:

(956) 580-3355

### Area 3-Rio Grande City:

(956) 487-5007

### Area 4-Zapata:

(956) 765-4911

### Area 5-Laredo:

(956) 723-3051

### Area 6-Eagle Pass:

(830) 773-5565

### Area 7-Del Rio:

(830) 775-5452

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