

**Agricultural Journal**

**Cattle Fever Ticks &  
Texas Fever 1907 to  
2008: Looking toward  
the Future**

**SASDA**

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**Bismarck, ND**

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# *“Texas Fever”* in Cattle

- *Texas, Spanish, Splenetic, or Murraine Fever*
- **Caused by rapidly multiplying tick-borne protozoa – *Babesia bovis* and *B. bigemina***
- **Breaks up red-blood corpuscles**
- **Signs:**
  - high fever
  - bloody urine
  - dry cough,
  - yellowing of mucous membranes and fat
  - greatly enlarged spleen
  - weakness, depression
  - difficulty breathing
- **Fatal in most cases**

*Boophilus microplus*,  
southern cattle tick,  
and *B. annulatus*,  
cattle tick,  
introduced by  
Spanish colonists.

Vectors of *babesiosis*,  
Texas Cattle Fever



# Historical Highlights

- 1741-1744 – In South Carolina “the distemper” (cattle fever?) caused great mortality in cattle.
- 1795 & 1796 - Severe outbreaks of disease in cattle occurred in NC & Lancaster County, PA. Evidence indicated a relationship between the disease problem and a recent shipment of cattle northward from the south.
- 1850 – When Texas cattle began to be driven through Arkansas, Missouri, Kansas & western states, 50-90 % death losses in cattle occurred in latter areas



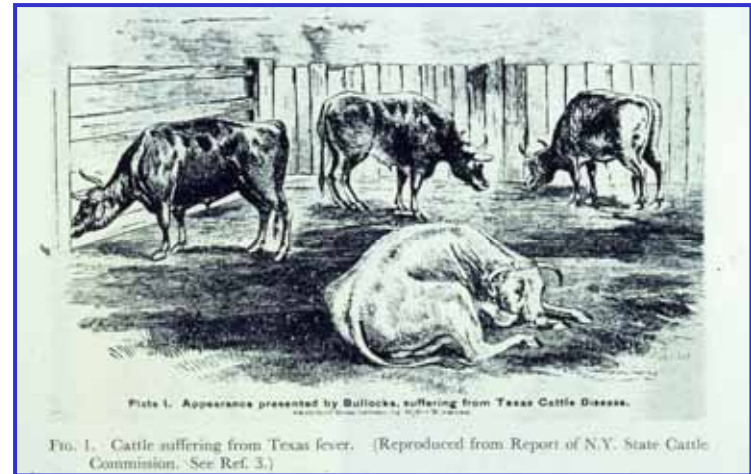
## Historical Highlights (cont.)

- 1865-1885 - After the War Between the States
  - Population growth and progressive industrialization in the north created a demand for southern cattle and resulted in the great cattle drives.
  - “Experience soon showed that the invariable result following the transportation of southern cattle into the Northern States was the death of all northern cattle along the roads and on the pastures over which the southern cattle had traveled, although the latter animals remained perfectly healthy. In the same way northern cattle taken south almost invariably succumbed to the malady ” (Mohler 1906).

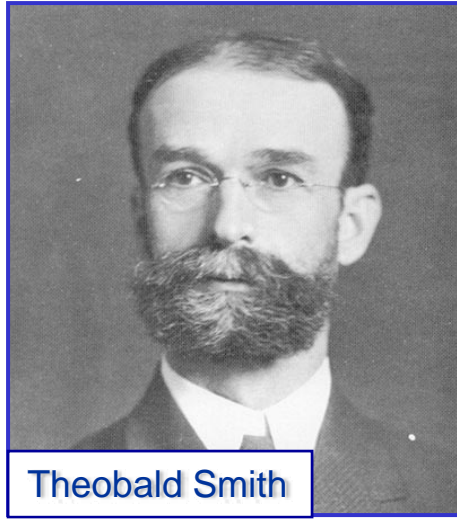


## Historical Highlights, cont.

- 1865 -1885 - After the War Between the States (cont.)
  - The disease was called “Texas fever,” “Spanish fever,” “redwater fever,” or “cattle fever”
  - By 1885 resulted in the prohibition of movements of southern cattle into the northern states
- 1891 - A quarantine was established by Congress. The Bureau of Animal Industry issued a regulation in 1892 to enforce the law.



# Discovery of the Cause & Mode of Transmission of Texas Fever



Theobald Smith



1891-1893 -Theobald Smith & F. L. Kilbourne worked at a B.I.A. laboratory near Washington, D.C., & with a series of elegantly designed experiments demonstrated how Texas fever was transmitted & identified the pathogen.



- 1897** **First meeting of Interstate Association of Livestock Sanitary Boards -- now U.S. Animal Health Association (USAHA) -- to discuss dipping, tick quarantines and procedures.**
- 1905** **U.S. Secretary of Agriculture announces decision to conduct tick work in cooperation with states.**
- 1906** **U.S. Congress commits \$82,500 and 97 federal veterinarians to tick eradication!**  
***First state-federal cooperative eradication effort!***

# Tick Eradication Program

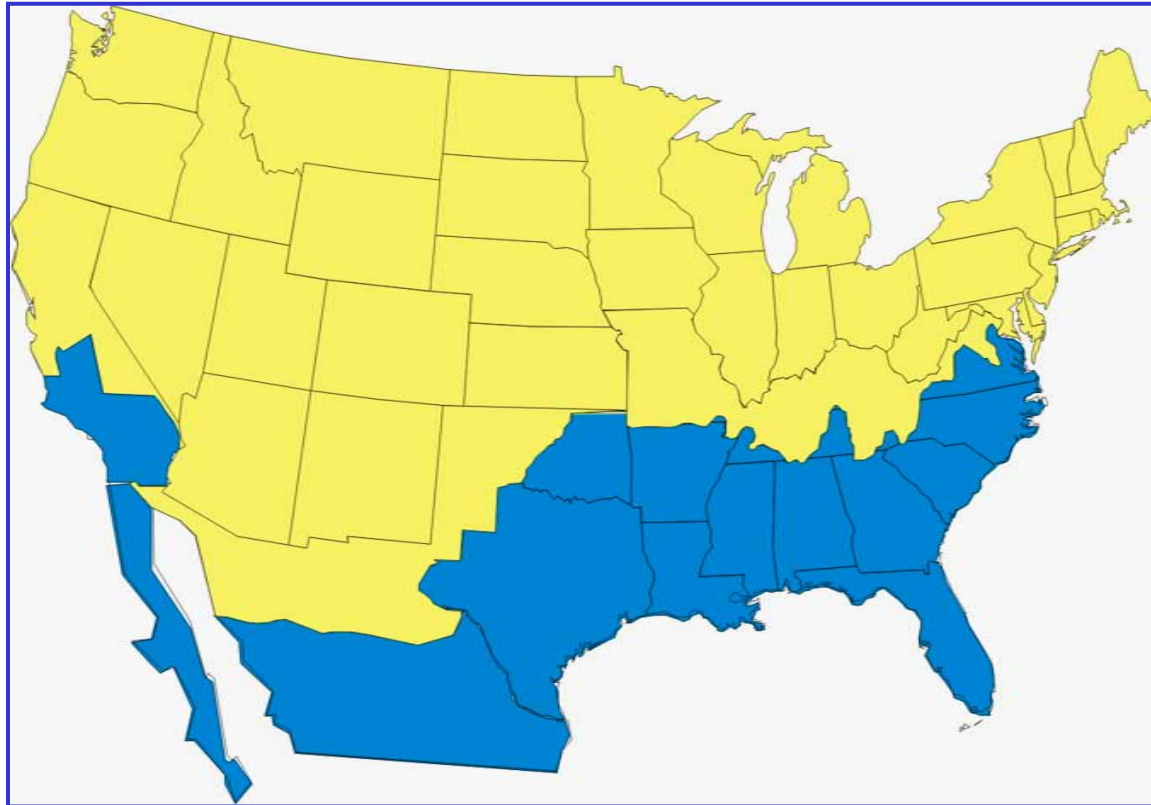
- Summer 1906
  - Authority given in the USDA appropriation act, but no funds were appropriated
  - Systematic cooperative work between Federal Government & affected States began



# Tick Eradication Program

- Fiscal Year 1907 –
  - 1<sup>st</sup> Federal appropriation.
  - The sum was \$82,000
- Annual Federal appropriations continued
- Liberal appropriations were made by states & counties





1907 – Area (= 741,515 mi<sup>2</sup>) infested with Cattle Fever Ticks at the Beginning of the National Eradication Campaign





**South Carolina....**

**Early 1900s...**

**State mandates the state veterinarian to control animal diseases to include the control of the cattle tick transmitting Texas Fever and the supervision of livestock shipments into the state, the cost -- nearly \$16,000 came out of the Clemson University college budget.**



**1,500+ vats built in Texas...**  
**3,400 in Florida**  
**2,500 Mississippi**

**1920-21**

**50 dipping vats dynamited!**  
**Texas Rangers called to help**

A dark, foggy forest scene with a wooden fence in the foreground. The trees are bare and the atmosphere is misty. The text is overlaid on this background.

**March 27, 1931 –  
NO MORE TICKS IN GEORGIA.**

*“There is not now a cattle fever tick in Georgia as far as inspection and general reports show,”* **R.B. Thompson,**  
**Supervisor of Tick Inspection.**

**... In Georgia campaigns,  
dipping vats were blown up  
and objectors engaged in gun battles  
over the government work.**

# Tick Eradication Program

“Heretofore it has been impracticable to improve the quality of southern cattle by introducing fine breeding animals from other sections, because such animals were likely to contract tick fever and die unless protected by inoculation. Furthermore, it is impossible for animals to attain good growth and to thrive when they are heavily infested with ticks, however, the southern farmers are enabled to introduce good breeding animals and to improve the grade of their stock.” (Mohler, John 1942, revised edition. *Infectious Diseases of Cattle. In Special Reports on Diseases of Cattle.* USDA)



# The End of the National Campaign

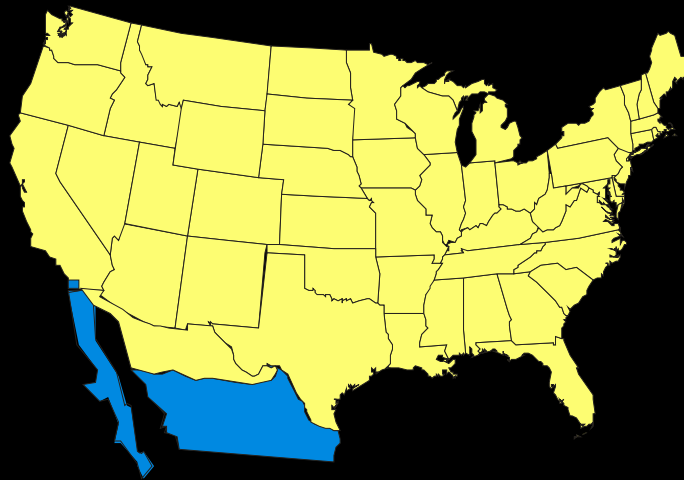
- 1942 – Ticks had been eradicated everywhere except:
  - “.....for a narrow buffer zone, under Federal & State quarantines along the Texas-Mexico border.”
  - Counties in Florida; Florida declared eradicated in October 1961



# *Boophilus* spp. Infestations

1943: National Eradication Campaign  
“complete”

Surveillance continues - **Both *Boophilus* ticks and *Babesiosis* are prevalent in Mexico**



# Fever Ticks: Never-Ending Nemesis

Current situation

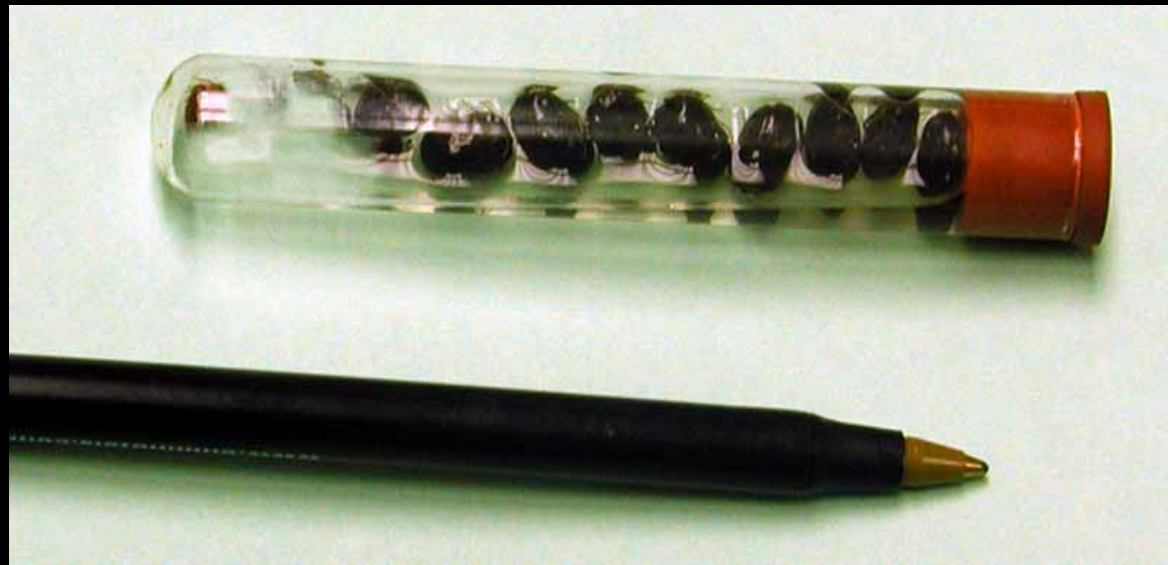




**Rio Grande**

**Only the  
Rio Grande  
separates  
Fever Ticks  
from  
the U.S.**

**Fever ticks  
collected from  
cattle recently**



# The Line of Defense

Quarantine Line  
USDA Tick Force  
Port Veterinarians  
TAHC Inspectors and Veterinarians



# USDA's Control Program in Quarantine Zone

**River, range  
inspection**

**Livestock  
movement  
control**

**Scratch,  
dip livestock**

**Apprehend  
stray animals**







**Legally imported  
Mexican feeder cattle  
inspected, and  
dipped prior to entry.**



# Cattle Fever Tick Eradication Program Quarantine Area

Quarantine Area ( = Systematic Area, or Buffer Zone) is about 800 km long & 0.4 to 16 km long



 Systematic Area  
 Buffer Zone Counties

70 35 0 70 Miles



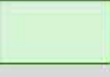
Cattle Fever  
Tick Infestations  
FY 2008  
128 infestations  
(84 Systematic, 44 Free)  
as of 31 August, 2008

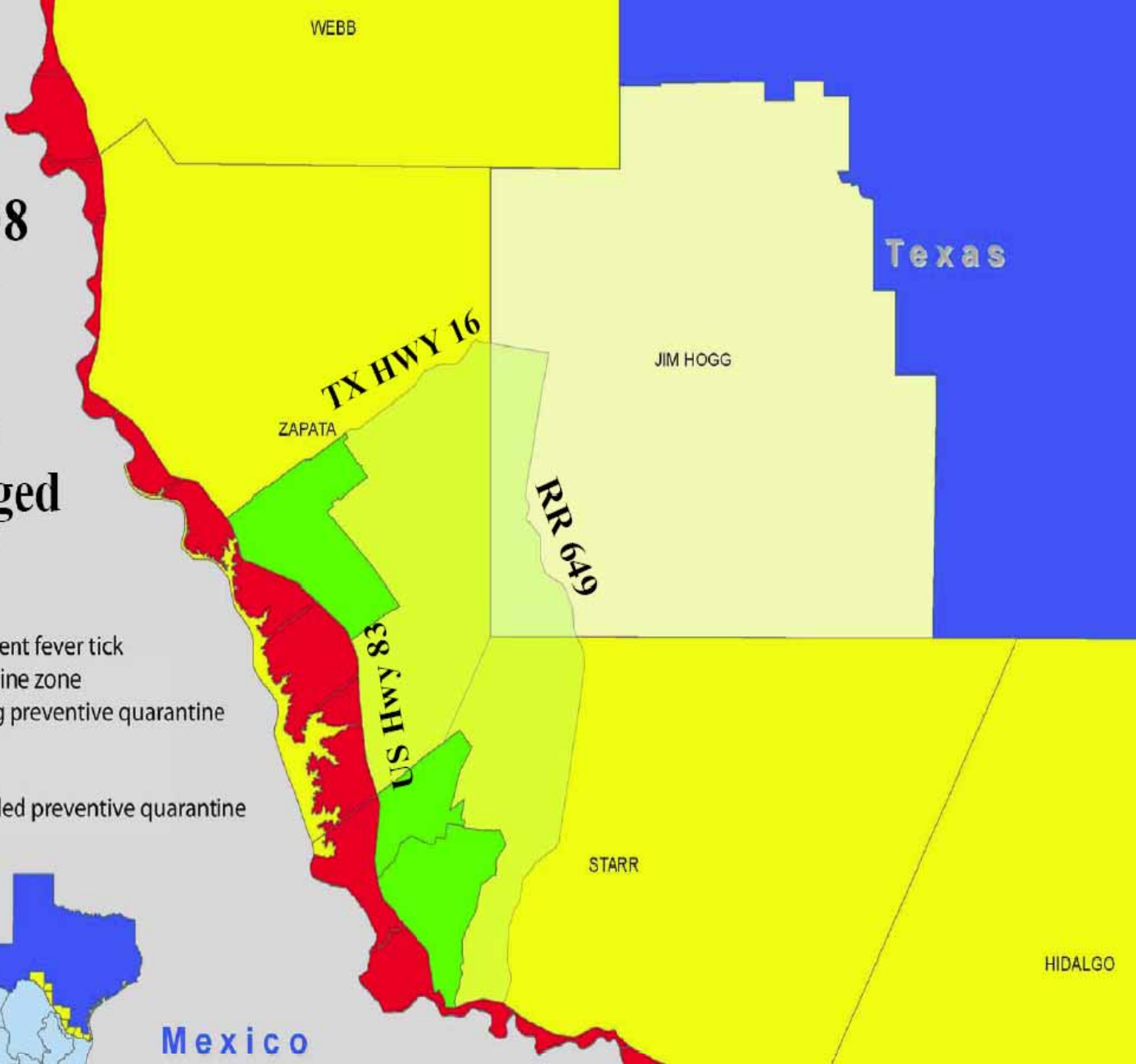


- Systematic Area
- Free Area
- Temporary Preventive Quarantine Areas
- Quarantine Line

70 35 0 70 Miles

# July 3, 2008 Temporary Fever Tick Quarantine Area Enlarged Again

-  Permanent fever tick quarantine zone
-  Existing preventive quarantine area
-  Expanded preventive quarantine





**Cattle are inspected, then run thru spray boxes or submerged in dipping vats charged with Co-Ral**

**Horses  
moved out  
inspected,  
sprayed  
and  
permitted....**

**“14-day  
pass”  
allowed**





**Ruminants,  
including  
llamas and  
camels, are  
inspected,  
dipped and  
permitted for  
movement.**

**Hogs, dogs, goats,  
sheep not a  
fever tick host**



# **Product Options for Cattle Treatment**

**Dip in Co-Ral  
at 7–14 day intervals**

**Treat with Doramectin  
at 28-day intervals**

**Agencies bear cost of dipping or treatment**



# Options for Infested Premises

**1. Have cattle scratched and dipped or treated**

**every two weeks during nine-month quarantine period.**

**2. Have cattle scratched and dipped twice—**

**14 days apart. Get “clean” check... then “vacate” pasture for nine months.**



**Red deer**

**Wildlife:  
Effective  
Hosts for  
Fever Ticks**

**Axis, Fallow  
Aoudad?**



**White-tail**

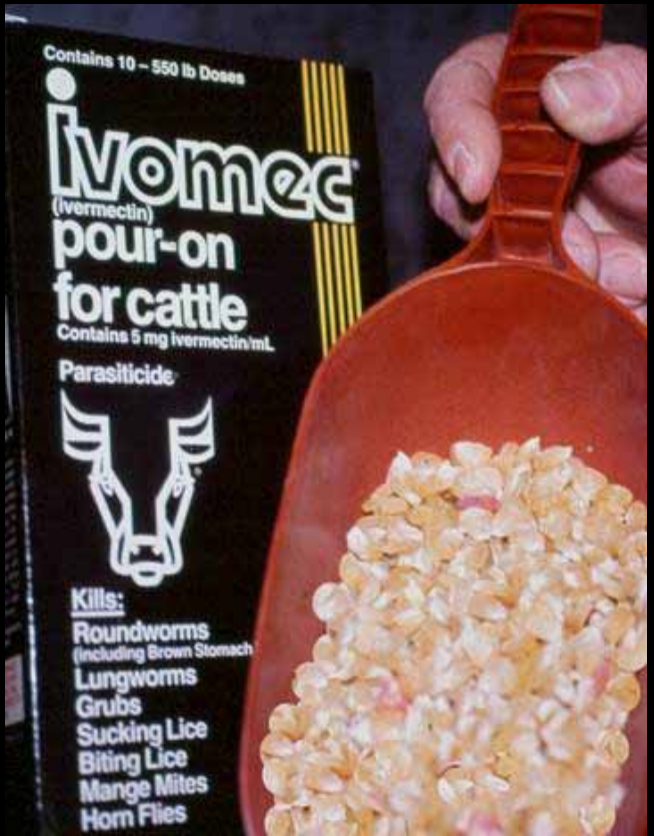


**Elk**



**Nilgai**

**Wildlife  
treatment  
products limited  
Ivomec-corn  
4-Poster**



**If exotic or domestic hunts are conducted on a fever tick-infested or exposed premises, hides of harvested**

**animals must be left behind until they are inspected, treated and permitted.**



# USDA Needs Assessment:

\$\$\$ for equipment, staff

Product development  
and approval

Ivermectin Gold

Ivermectin  
in Molasses

Microspheres



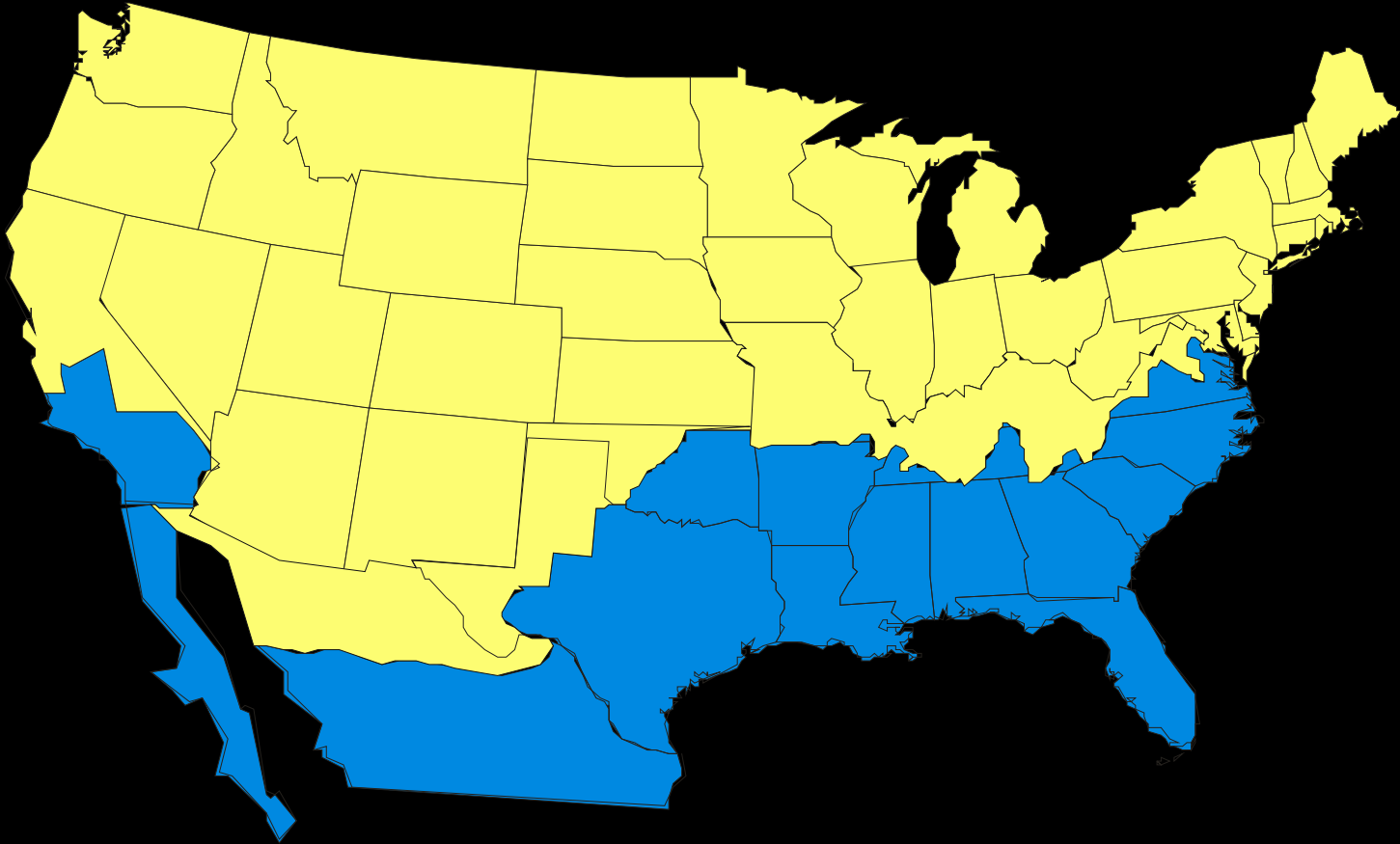
**March 2008: \$5.23 million of \$13.3m requested from the Commodity Credit Corporation (CCC).**

**Newly requested: \$15 million for two years to fund:**

- **expanded temporary quarantines**
- **tracing & treating cattle OUTSIDE the zones**
- **request for scratching & dipping at 7 South Texas livestock markets**



# *Fever Ticks – Not a Texas Problem, but US Problem*



**We must not allow *Boophilus* ticks  
to become re-established in their  
former ranges**