National Wildlife Disease Program

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Tularemia Surveillance Update

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The NWDP—Who are we?

By Dr. Thomas Deliberto

The National Wildlife Disease Program is based on a strategic premise that safeguarding the health of humans, animals, plants and ecosystems makes safe agricultural trade possible and reduces losses to agricultural and natural resources. Active surveillance allows for a better understanding of select wildlife diseases and enhances the ability to respond to disease outbreaks in wildlife and domestic animals, as well as to prevent disease threats to humans.

The program has 44 Wildlife Disease Biologist (WDBs) positions located across the country. WDBs conduct surveillance activities in all 50 states and act as Wildlife Services' first responders in cases of emergency, as part of NWDP's Surveillance and Emergency Response System (SERS). As part of their everyday duties, WDBs participate in avian influenza surveillance, as well as other disease monitoring and control activities that are of particular interest and concern in their designated regions. These diseases include the following: highly-pathogenic avian influenza, classical swine fever, swine brucellosis, pseudorabies, plague, tularemia, bovine tuberculosis, West Nile virus, chronic wasting disease, foot and mouth disease, Johne's disease, Lyme disease.

Sampling a coyote for tularemia

The NWDP also facilitates and assists state, federal, tribal and international agencies, as well as private cooperators, with local disease monitoring and nationally-coordinated wildlife surveillance systems. These nationally-coordinated systems focus on sample collection, information exchange, laboratory support and monitoring of diseases of concern to national biosecurity.

WDBs work closely with other Wildlife Services personnel within their assigned state. Key collaborators include the following agencies: USDA/APHIS Veterinary Services, USDA/APHIS International Services, US Department of Homeland Security, state health and wildlife agencies, as well as international health and natural resources agencies.

Why do tularemia surveillance?

By Dr. Thomas Gidlewski

Tularemia is an infectious disease caused by the bacterium *Francisella tularensis*. Tularemia has been identified as a disease of concern to human, wildlife and domestic animal populations within the United States. It is considered a "Category A" disease by the Department of Homeland Security, meaning it could potentially be used as a bioterrorist agent.

Nobuto samples

Tularemia is found throughout the U.S. with foci of human infections often occurring in the south central states. It is also found internationally, throughout the Northern Hemisphere in places like Japan, Russia and

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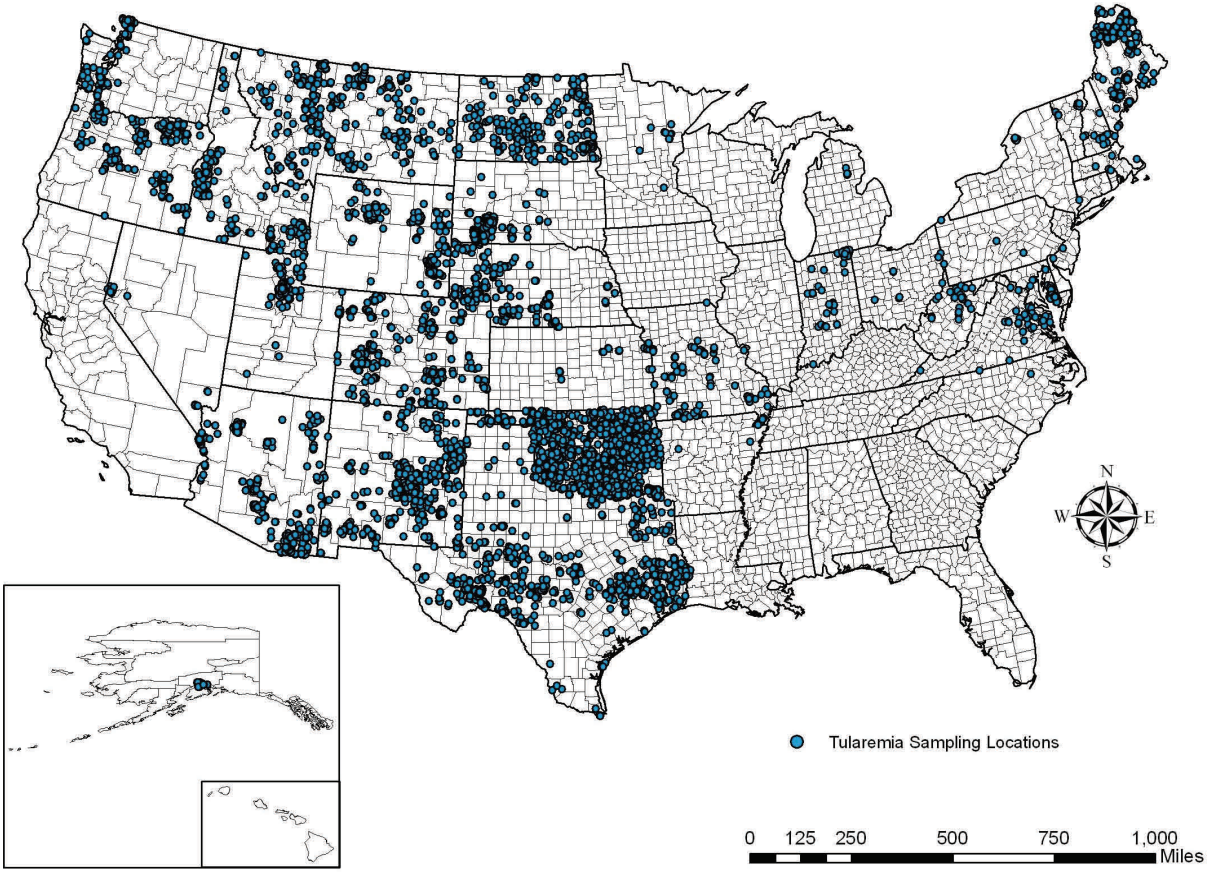
The original artwork on this page was created by the National Wildlife Disease Program's Erika Kampe and Sarah Goff

Tularemia Sampling Sites: 2005-2009

Map by Mark Lutman—NWDP

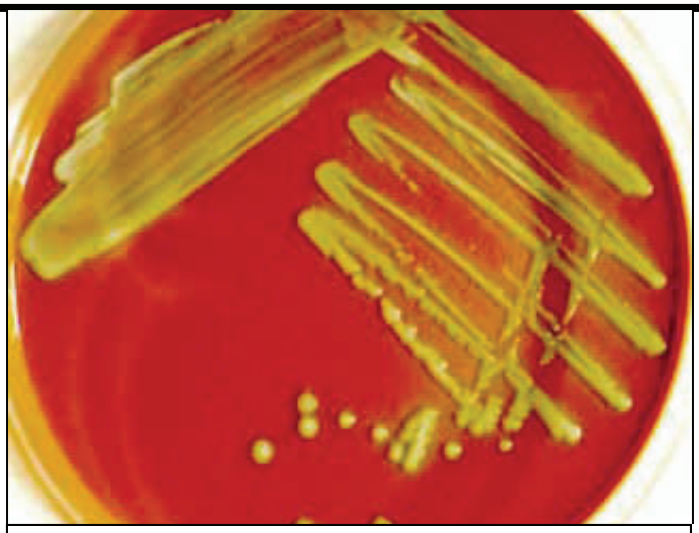


(Why do tularemia surveillance? ~ Continued from page 1)

Scandinavia.

Tularemia mostly affects, and is reservoired within, a variety of small mammals including (but not limited to) rodents such as muskrat, beaver, water voles and lagomorphs such as rabbits and hares.

The disease is not contagious from human to human, but can be spread by the bites of fleas, ticks and other arthropods that have fed on infected wildlife, or by contact with the carcass of the infected animal. Reported human cases of tularemia in the United States currently average about 200 yearly, a dramatic reduction from the over 1,000 cases per year that occurred in the 1930s and 1940s.



Francisella tularensis on blood agar plate
Photo from CDC website

NWDP biologists and their collaborators are currently sampling aquatic rodents and other susceptible species across the US to detect the presence of tularemia antibodies in their blood. Due to the focus on early detection, local health professionals can be alerted when tularemia is present in a region and take this into consideration when examining certain symptoms.

In humans, tularemia first emerges as a flu-like illness. Depending on the method of exposure to the bacterium, infected individuals may also experience lesions, swollen lymph glands and even the development of pneumonia. When these symptoms are positively identified as tularemia, they can be treated with prescription antibiotics.

Tularemia Serology Results By State: 2005-2009

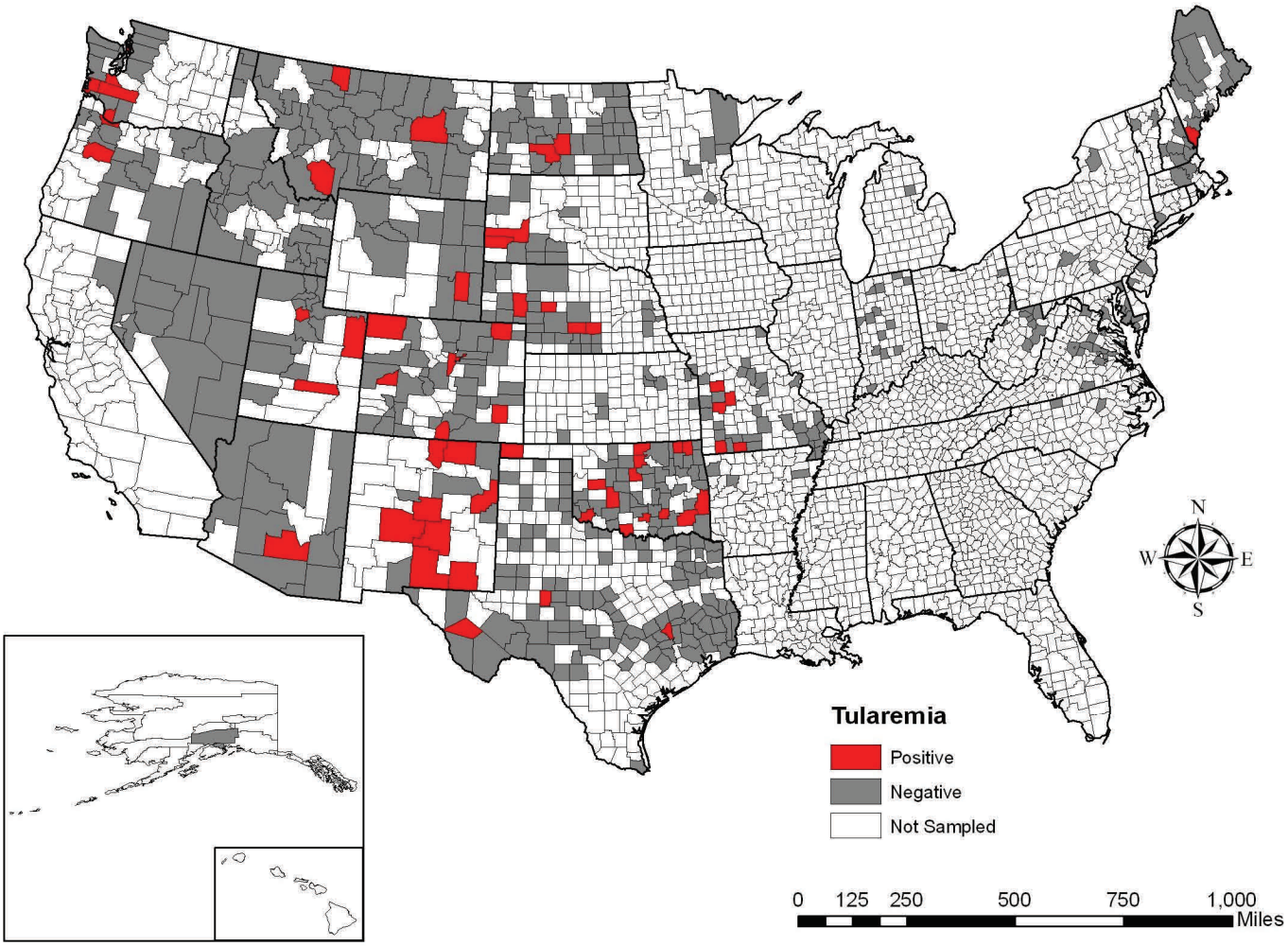
State	All Species Negative	All Species Positive	All Species % Positive	Coyotes Negative	Coyotes Positive	Coyotes % Positive
AZ	n/a	n/a	n/a	253	1	0.4 %
CO	582	8	1.4 %	389	7	1.8 %
ME	320	1	0.3 %	n/a	n/a	n/a
MO	665	21	3.1 %	n/a	n/a	n/a
MT	n/a	n/a	n/a	306	4	1.3 %
ND	505	2	0.4%	62	0	0.0 %
NE	n/a	n/a	n/a	195	21	9.7 %
NM	n/a	n/a	n/a	437	18	4.0 %
OK	1931	16	0.8 %	804	13	1.6 %
OR	301	1	0.3 %	167	0	0.0 %
SD	n/a	n/a	n/a	310	8	2.5 %
TX	941	4	0.4 %	44	1	2.2 %
UT	835	6	0.7 %	29	4	12.1 %
WA	426	11	2.5 %	5	0	0.0 %
WY	n/a	n/a	n/a	186	21	10.1 %
Averages	723	8	1.1 %	245	8	3.0 %
Totals	6506	70	n/a	3187	98	n/a

Potential Sentinel species based on national results for tularemia surveillance: 2005-2009

Species	# Negative	# Positive	% Positive
Rabbits	345	16	4.4 %
Coyotes	3187	98	3.0 %
Feral Swine	365	4	1.1 %
Bobcats	115	1	0.9 %
Beaver	2139	14	0.7 %
Nutria	449	3	0.7 %
Striped Skunks	671	3	0.4 %
Raccoons	1421	4	0.3 %

Tularemia Sero-Surveillance Results: 2005-2009

Map by Mark Lutman—NWDP



Interested in additional tularemia surveillance data for your state?

National Wildlife Disease Program
http://www.aphis.usda.gov/wildlife_damage/nwdp/

For more information on the Wildlife Services Wildlife Disease Program in your state, please call **866-4 USDA WS,** or contact the following staff:

Tom DeLiberto - National Coordinator
970.266.6088

Tom Gidlewski – Assistant Coordinator and Tularemia Project Manager
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Brandon Schmit – Wildlife Disease Biologist,
970.266.6079

We will be happy to put you in touch with the wildlife disease biologist in your state. Each wildlife disease biologist works closely with state, county, city and tribal entities to improve disease surveillance with the ultimate goal of improving and safeguarding local wildlife, livestock, and human health.

For All-Hazard Emergencies Involving Wildlife
Call: 970.266.6363
or toll-free 1.877.303.6363