



West Nile Virus in Michigan Domestic Animals

**Spring Arbovirus Surveillance
Workshop 2004**

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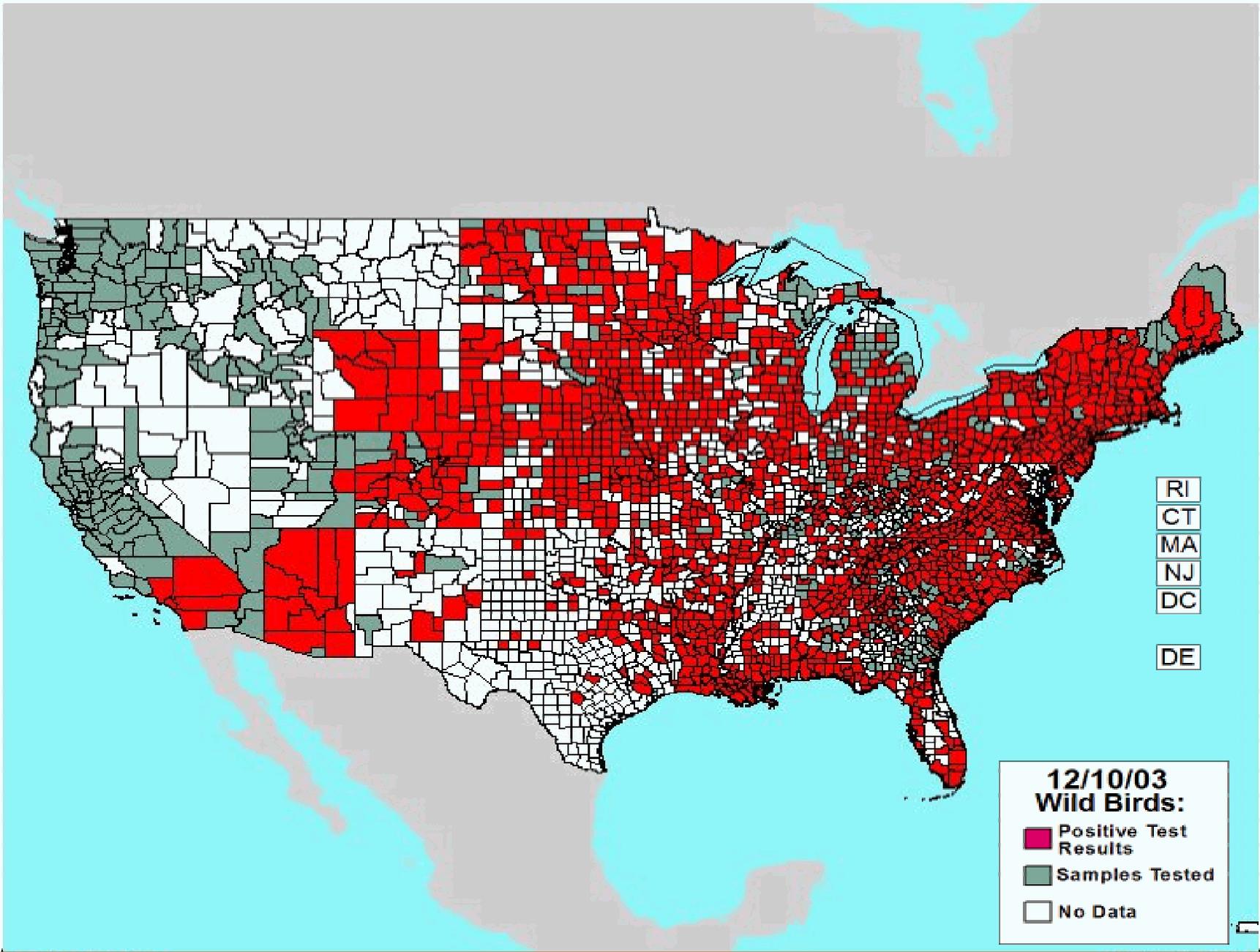
Michigan Dept. of Agriculture
Animal Industry Division

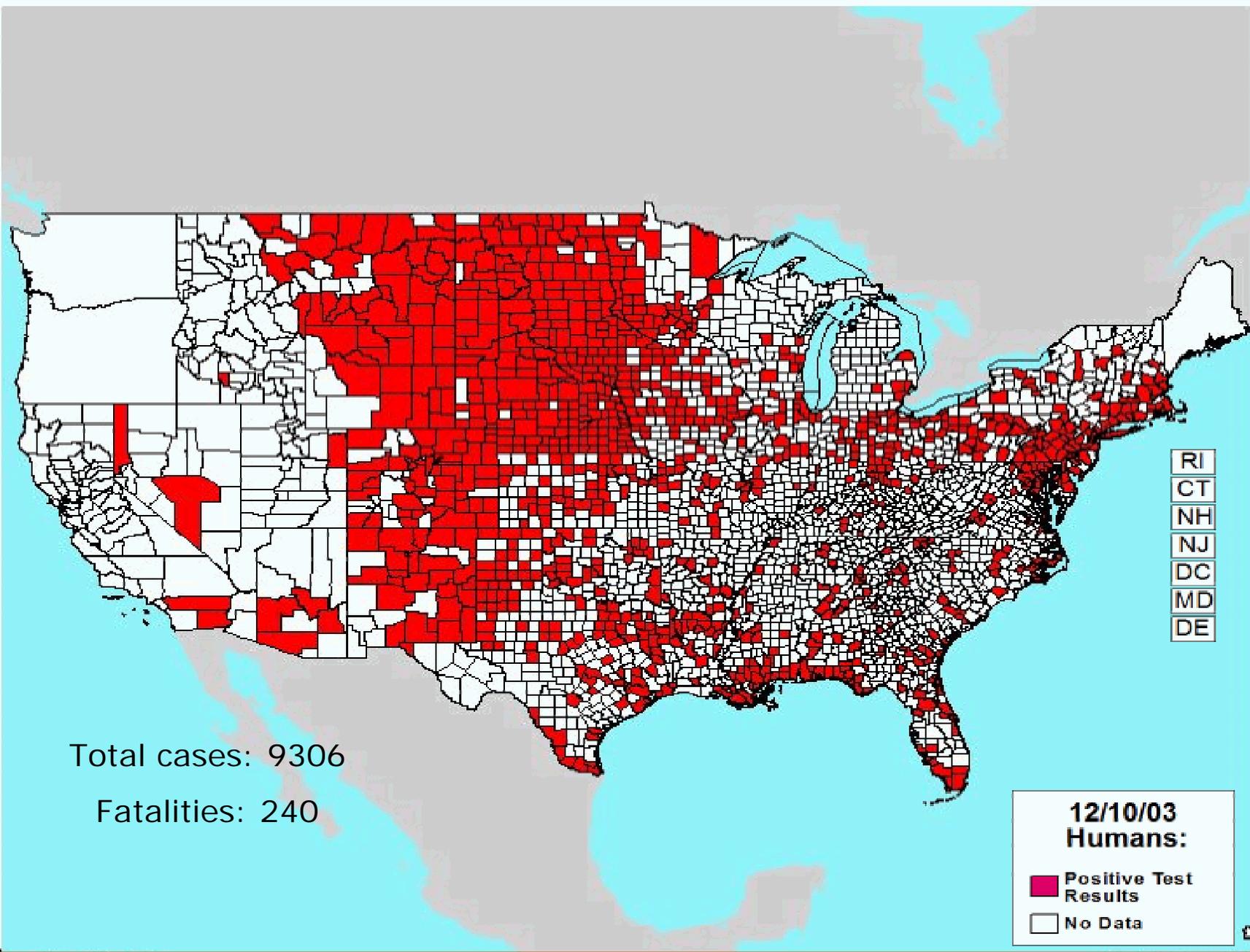
Arbovirus Surveillance

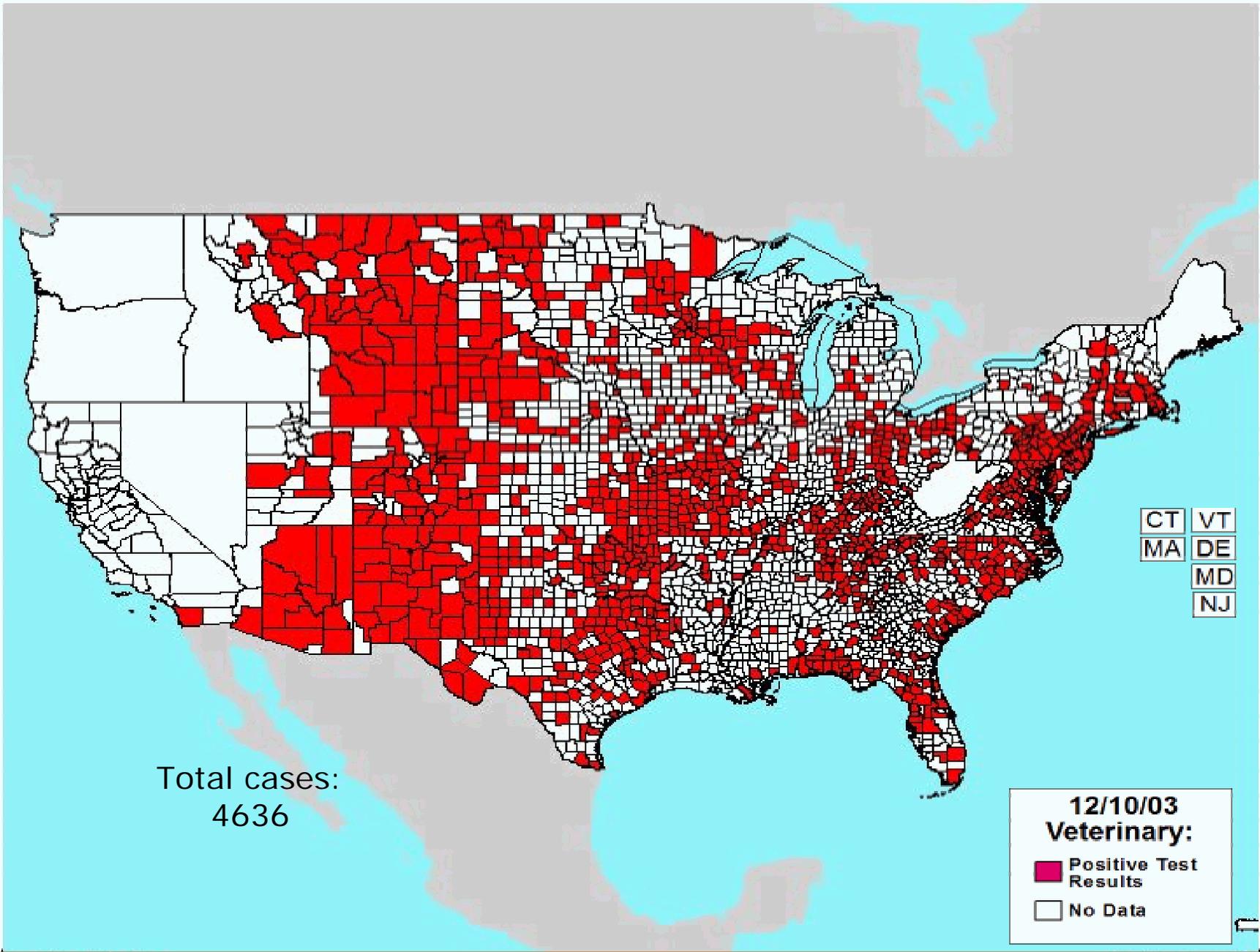
- Corvidae, Humans, Wild animals
- Domestic animals:
 - Practitioner submissions to MSU DCPAH
 - Carcasses
 - Blood (serum)
 - Regulatory submissions to MSU DCPAH
 - Equidae, heads only
- Limited active surveillance

West Nile Virus Epidemiology

- Three items...
 - Westward spread with Michigan activity greatly reduced
 - Canine cases
 - Equine prevention and treatment



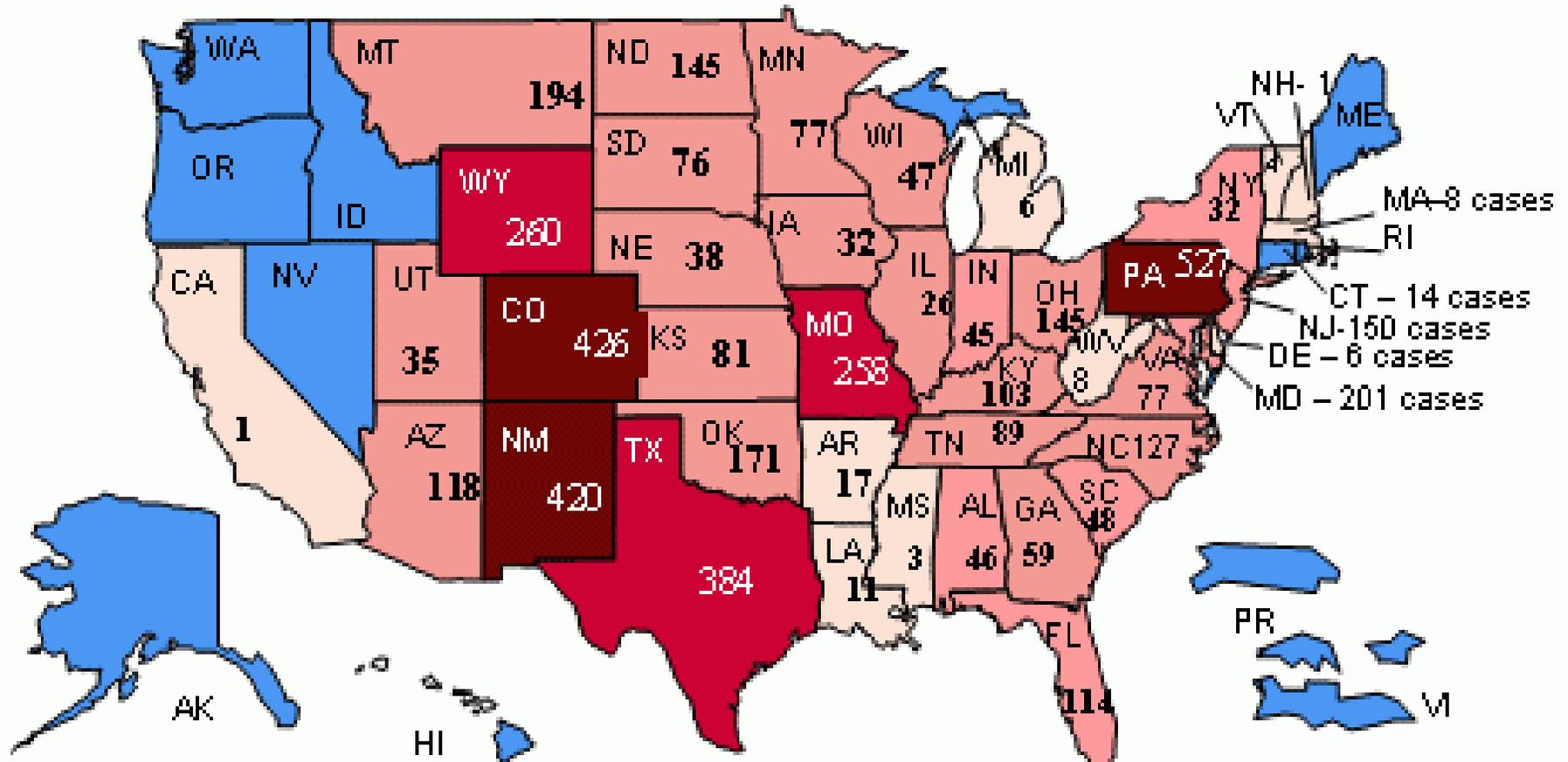




West Nile Virus in 2003

States with an Equine Case(s)

Total Case 4,636



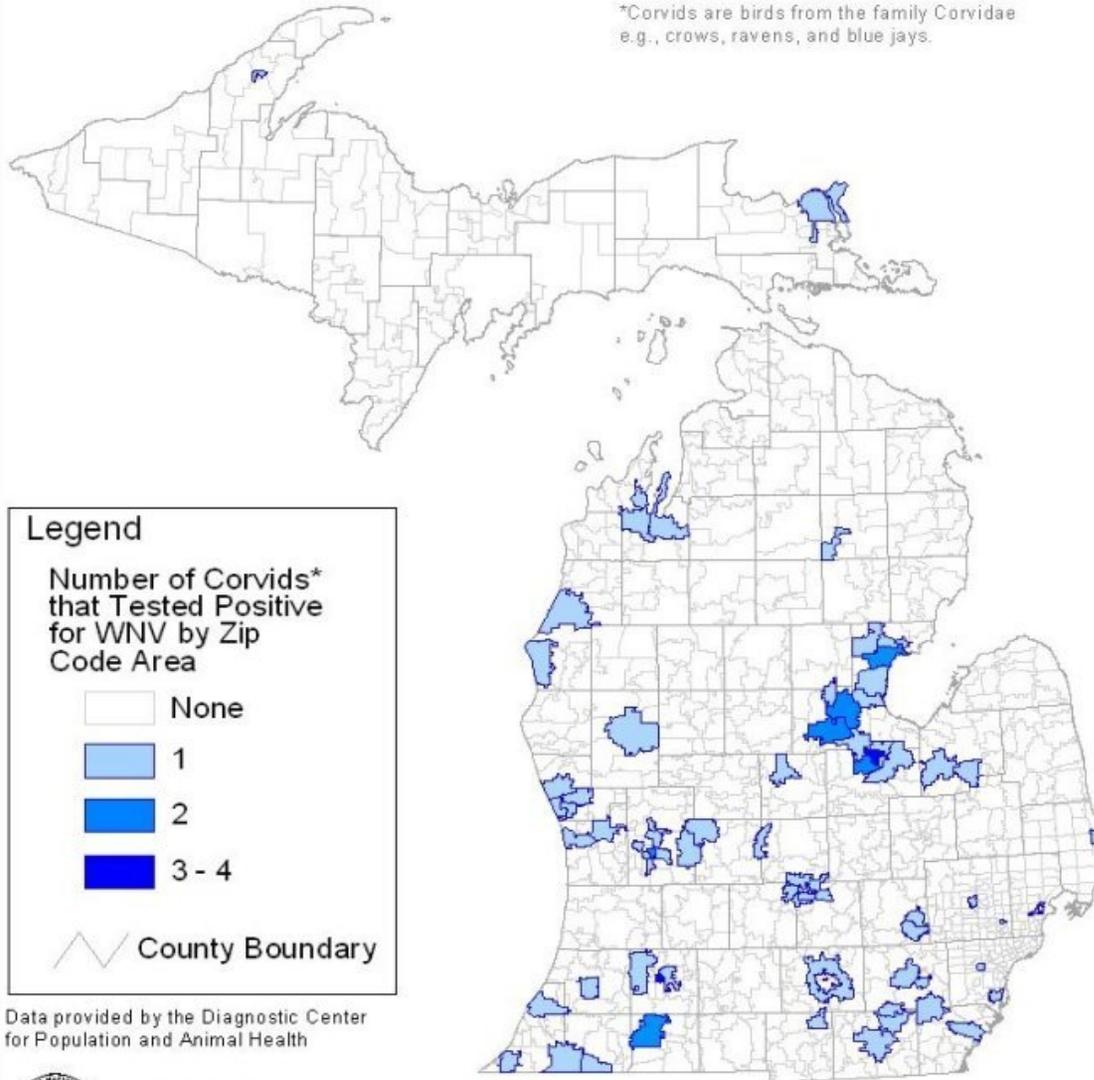
- 1 - 24 Case(s)
- 25 - 199 Case(s)
- 200 - 399 Case(s)
- 400 - 799 Case(s)
- 800 - or More Case(s)
- Not Detected

West Nile Virus Michigan

- Case numbers greatly reduced...
 - Equine
 - 2002: 341 cases, 85 euthanasias, 20 deaths
 - 2003: 10 cases, 2 euthanasias*
 - Human
 - 2002: 644 cases, 51 deaths
 - 2003: 19 cases, 2 deaths
 - Corvids
 - 2002: 75 Counties
 - 2003: 33 Counties

- 2003 -
POSITIVE CORVIDS* BY ZIP CODE
As of October 30, 2003

*Corvids are birds from the family Corvidae
e.g., crows, ravens, and blue jays.



Legend

Number of Corvids*
that Tested Positive
for WNV by Zip
Code Area

- None
- 1
- 2
- 3 - 4

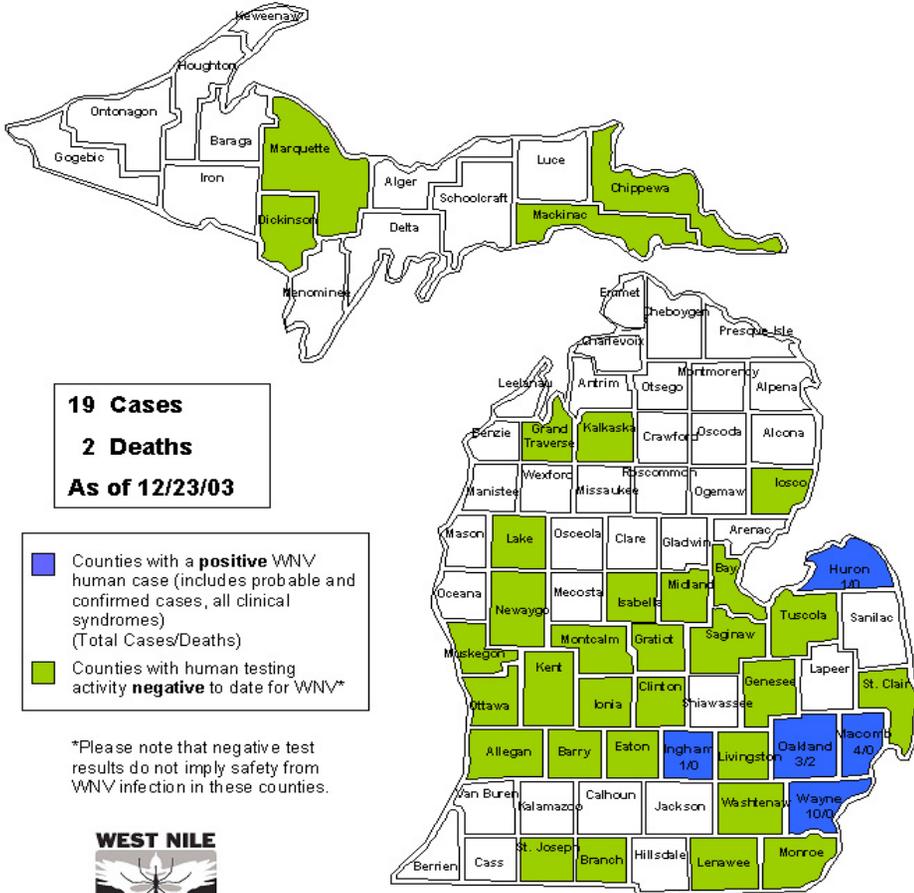
County Boundary

Data provided by the Diagnostic Center
for Population and Animal Health



Map produced by
Michigan DNR Wildlife Division
(Revised October 27, 2003)

2003 Michigan West Nile Virus Human Testing & Cases As of December 23, 2003



Michigan Department of Agriculture
Michigan Department of Community Health
United States Department of Agriculture
Michigan Department of Natural Resources
Michigan Department of Environmental Quality
Michigan State University

Note: In 2002, there were 644 human cases in 28 counties with 51 deaths in 8 counties.

Positive Human WNV Counties 2002

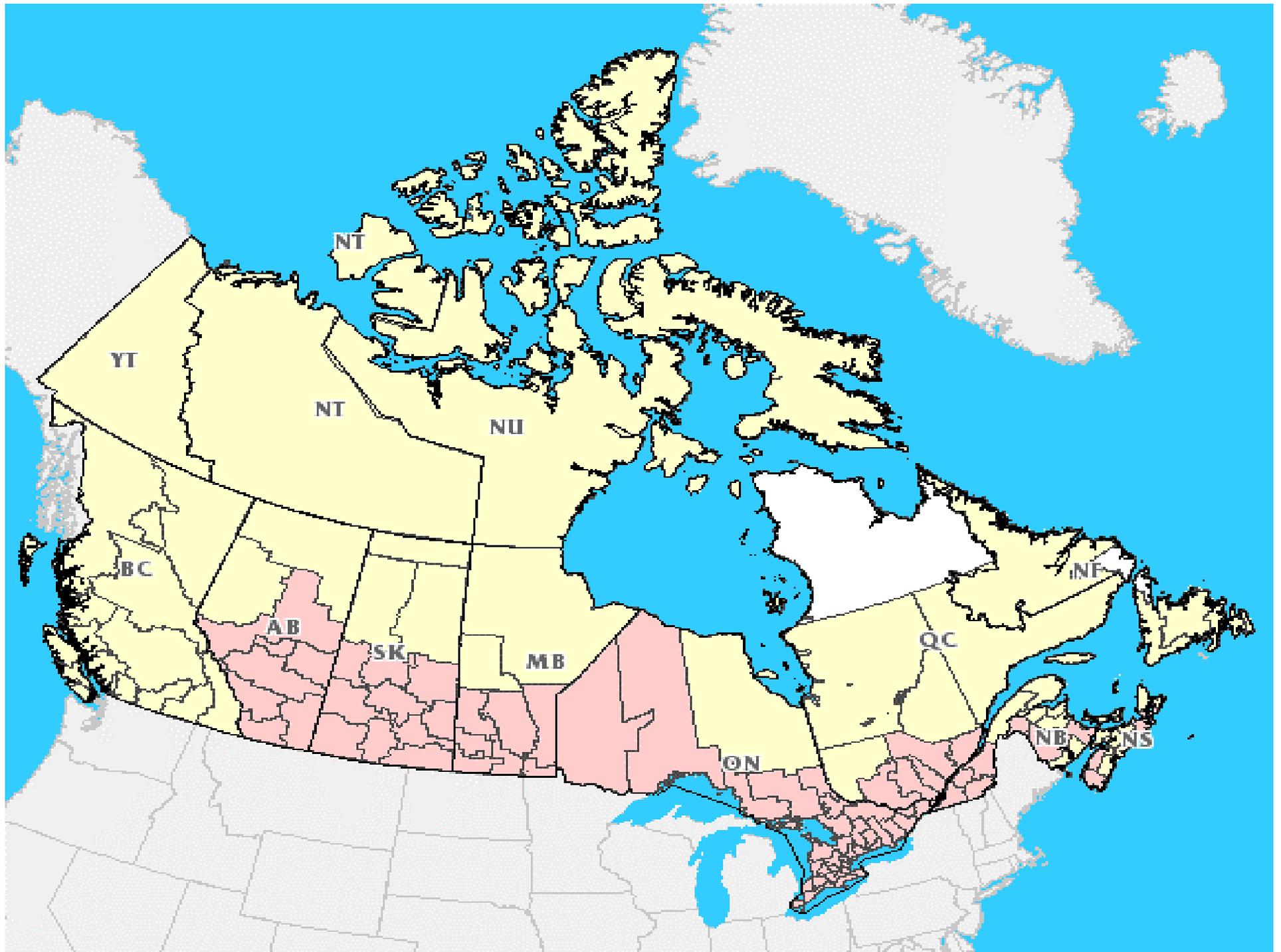
Last Updated 2/18/03



WNV in Canada 2003

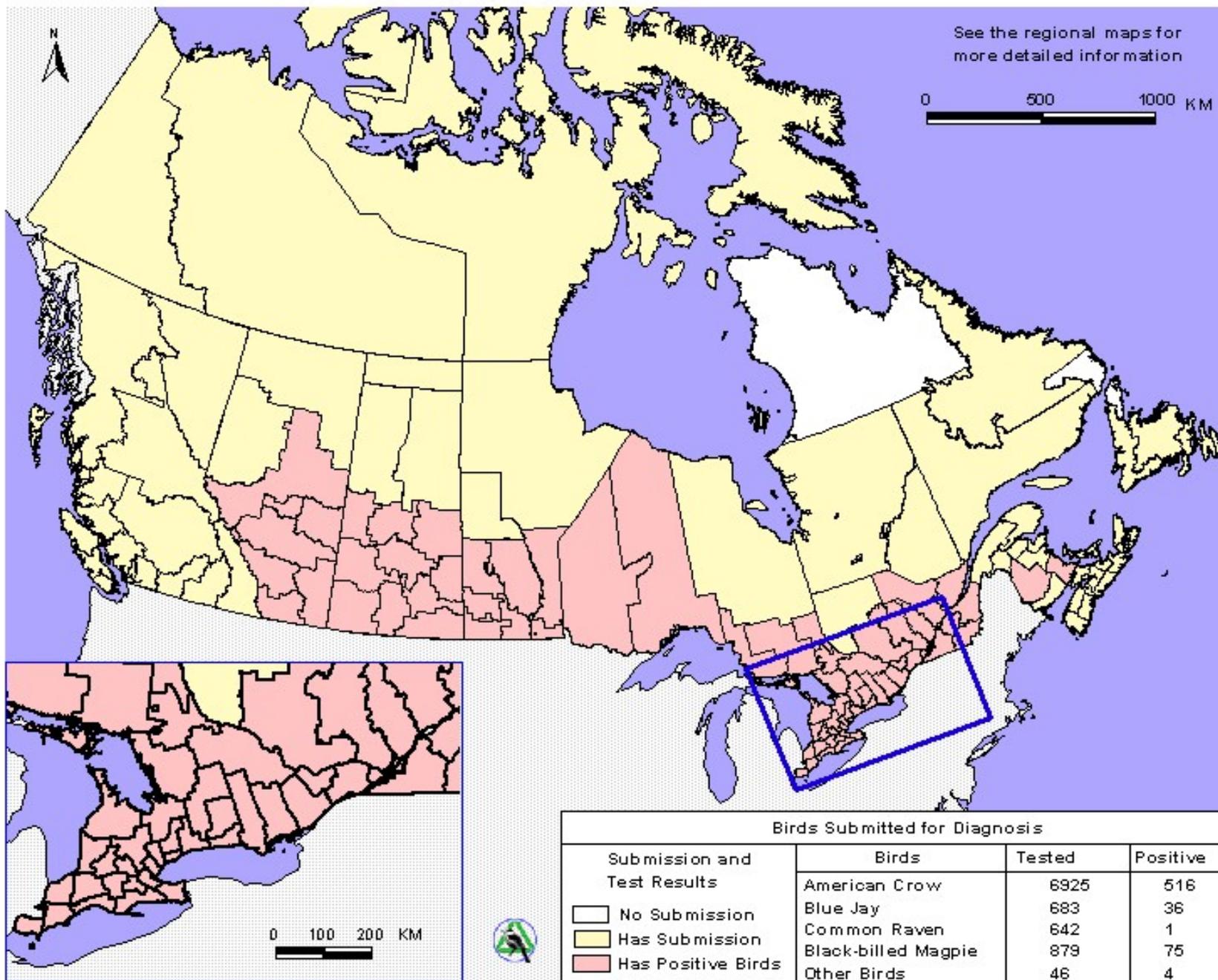
- Human:
 - 1306 probable/confirmed
 - 10 deaths

- Equine
 - 445 presumptive/confirmed cases
 - Nova Scotia (1)
 - Quebec (8)
 - Ontario (41)
 - Manitoba (53)
 - Saskatchewan (162)
 - Alberta (180).





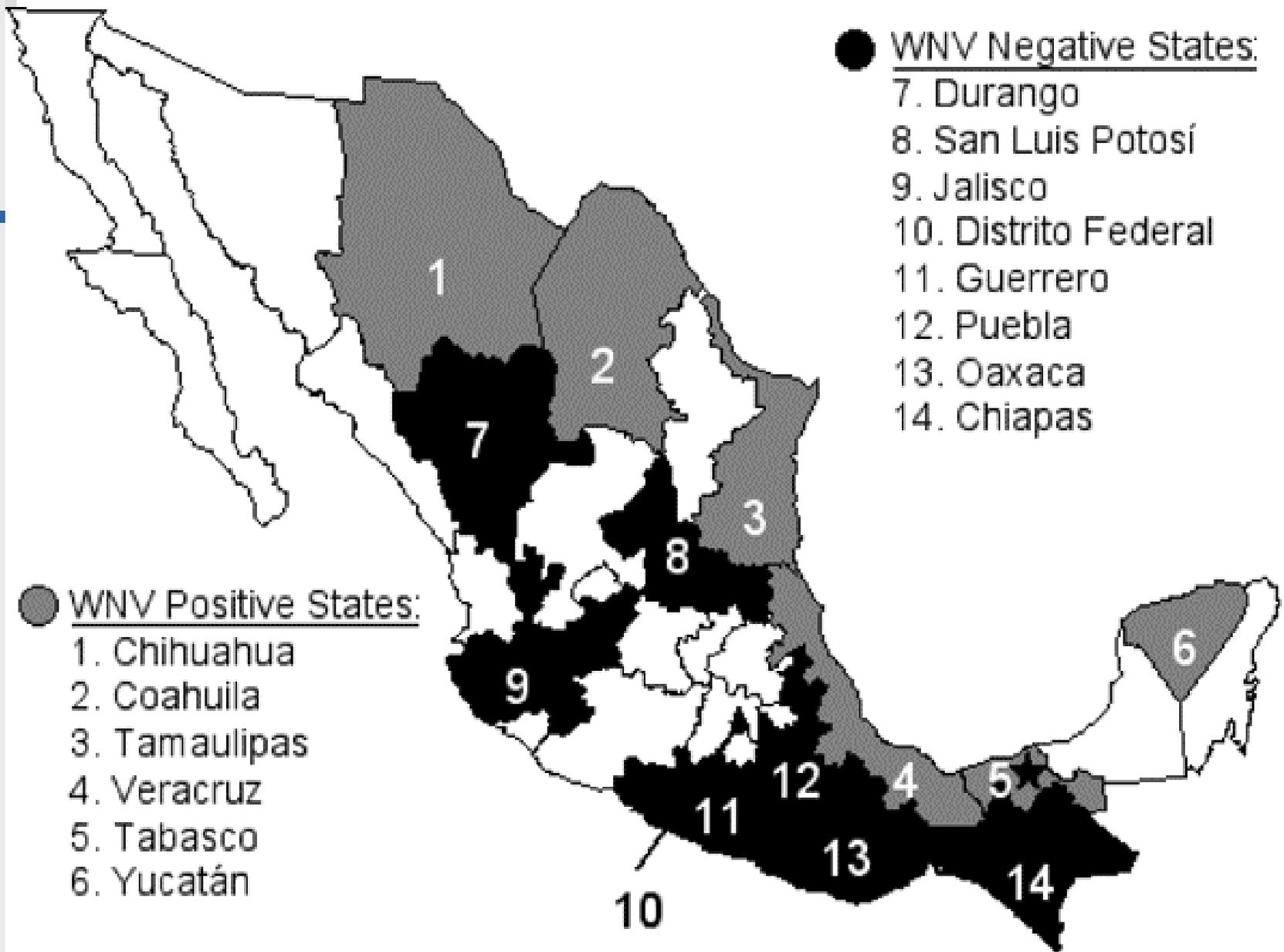
Dead Birds Submitted for West Nile Virus Diagnosis by Health Region in Canada as of August 26, 2003



WNV in Mexico 2003

- **Mexico Declares West Nile Virus State of Emergency**
- *The Horse*, 7/15/03
- Stephanie L. Church, News Editor

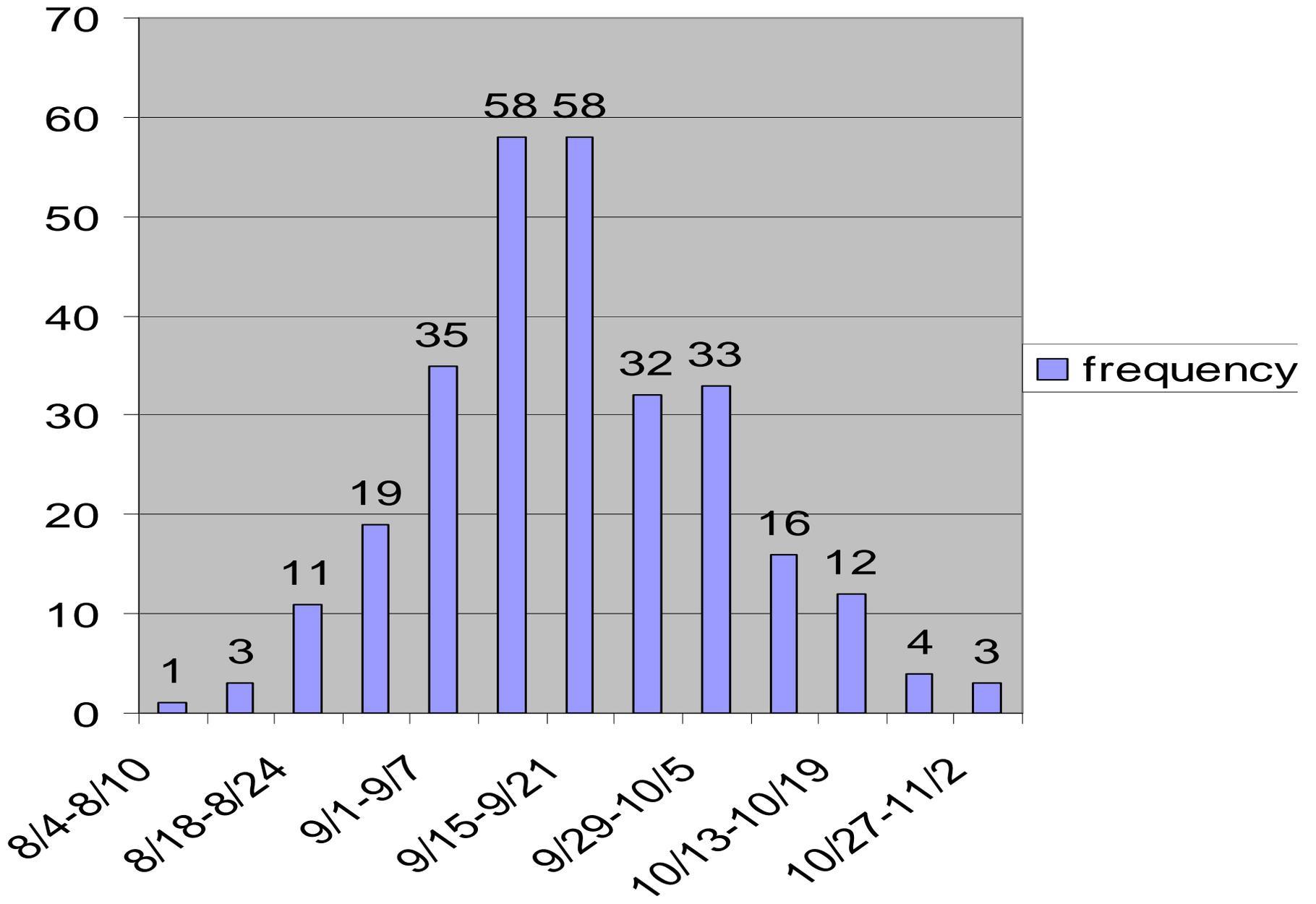
According to a Reuters health story distributed via ProMED-mail, Mexico has declared a state of emergency due to West Nile virus (WNV), declaring it a severe risk to the horse population and a growing public health threat....



WNV in humans 2002...

- Michigan cases:
 - 51 confirmed fatalities
 - 58.8% male
 - 84.3% over age 65
 - 577 confirmed cases
 - 55.1% male
 - Second in fatalities to Illinois at 54.
- National cases:
 - 284 fatalities (2003: 240)
 - 4156 total confirmed cases (2003: 9306)

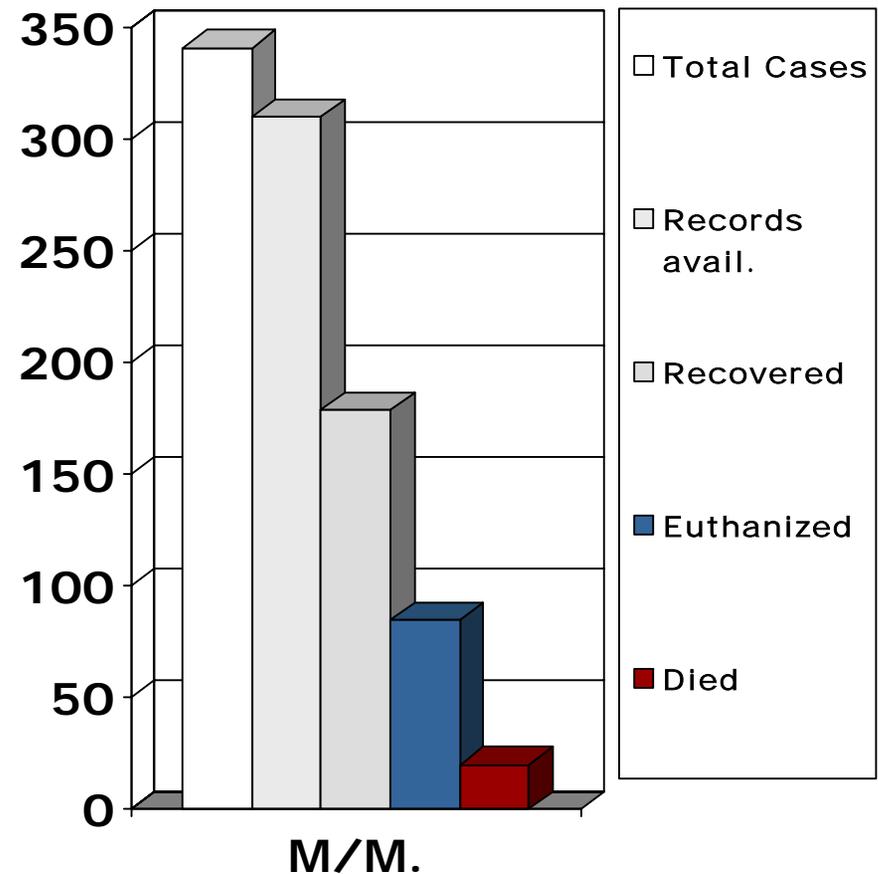
West Nile Virus onset in 2002



Michigan 2002 Equine WNV cases:

■ Morbidity/Mortality Stats...

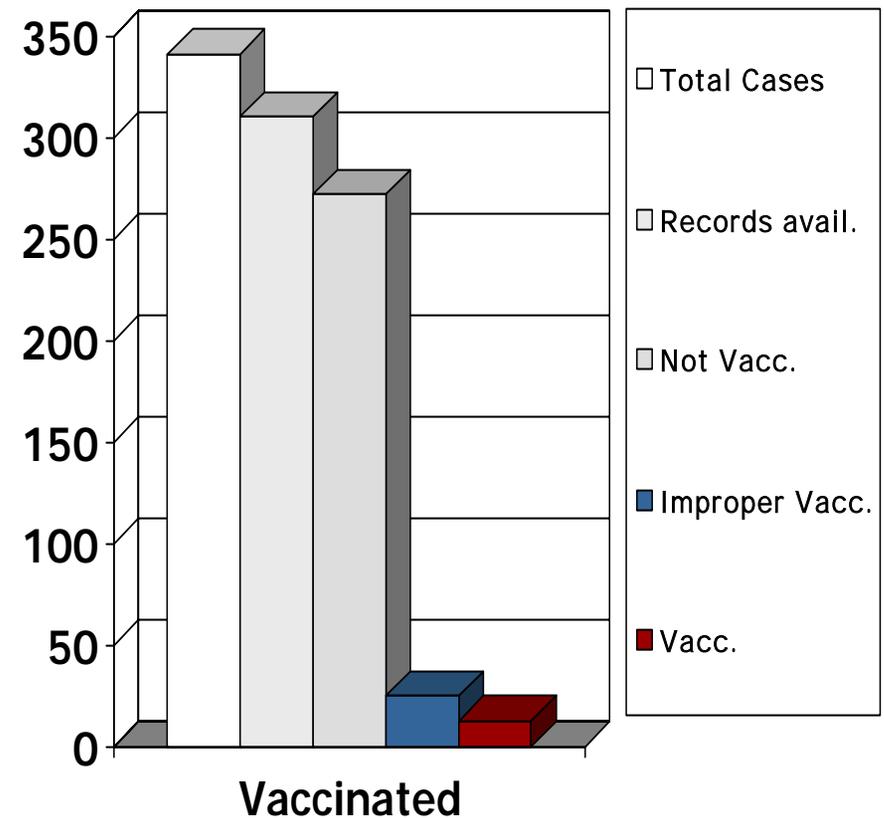
- Mortality reports available on 310 of 341 total cases.
- 179 recovered (63%)
- 85 euthanized (30%)
- 20 deaths (7%)



Michigan 2002 Equine WNV cases:

■ Vaccination Stats...

- Vaccination history available on 310 of 341 total cases.
- 272 not vacc. (88%)
- 25 improperly vacc. (8%)
- 13 vaccinated (4%)



Michigan 2002 Equine WNV cases:

No statistical difference in sickness and/or death based on age, breed or gender.

- 1/3 of known affected horses die
 - Euthanasia (4/5) or fatal encephalitis (1/5)
 - Nationally and Michigan 2002

- Unknown denominators:
 - Vaccine saturation of State/National herd
 - Sub-clinical infection level
 - Naturally acquired immunity

WNV Vaccine Concerns...

- Denver Post, 30 May 2003
 - "West Nile Vaccine Eyed In Foal Losses: Some Horse Breeders Say Mares Had Miscarriages, Deformed Offspring After Vaccination."
 - "Lost Foals Group"

WNV Vaccine Concerns...

- **USDA: Clarification on the issue of the west Nile virus vaccine: vaccine safe for use**

Some recent stories have suggested that the fort dodge animal health west Nile virus vaccine approved by the U.S. Department of agriculture (USDA) may cause pregnant mares to abort or give birth to deformed foals. The misleading information in those articles has sparked many anxious phone calls from horse owners, veterinarians, and others involved with horses.

Unfortunately, as a result, USDA is concerned that horse owners may not use an effective preventive measure against west Nile virus available to them, that of vaccinating their horses.

Horse owners should be assured that the vaccine is *safe*, and it *should be used as protection* against west Nile virus. Millions of doses of the vaccine have been used since USDA's center for veterinary biologics approved its use in 2001.

USDA: Clarification on the Issue of the West Nile Virus Vaccine: Vaccine Safe for Use (Continued)

The Center for Veterinary Biologics, within USDA's Animal and Plant Health Inspection Service, maintains a toll-free telephone hotline (800-752-6255) and a mailbox on its Web site (www.aphis.usda.gov/vs/cvb) and actively encourages veterinarians and other vaccine consumers to report problems with vaccines. To date, there have been a very small number of reports regarding a possible association between the use of West Nile virus vaccine and abortions, birth defects, or other reproductive anomalies or failures. **It does not appear that there is a relationship between West Nile virus vaccine use and these reproductive problems or any other major problems.** The Center and the vaccine manufacturer will continue to collect, monitor, and track the performance of this vaccine.

Since West Nile virus' detection in the United States in 1999, the number of horses affected by the virus steadily continues to grow. In 2002 alone, there were 14,717 equine West Nile virus cases. To help reduce the number of cases in 2003, USDA recommends that horse owners not only vaccinate their animals but implement safeguards to prevent animals' exposure to mosquitoes, which spread the virus.

WNV Vaccine Concerns...

- The Horse magazine
 - www.thehorse.com
 - "Veterinarians Debunk Suggested Link Between WNV Vaccine and Birth Problems."

West Nile Vaccines

Fort Dodge Animal Health

- **West Nile Innovator™**
 - WNV
 - WNV + VEWT
 - WNV + EW
 - WNV + VEW

■ www.equinewestnile.com

Merial

- **RecombiTEK™**
 - Live canarypox vector

■ www.merial.com

WNV Equine Treatment...

- Supportive and symptomatic.
- Equine-specific immune serum
 - Novartis Animal Vaccines, Inc.

WNV Information Resources

- www.michigan.gov/westnilevirus
- www.aphis.usda.gov/lpa/issues/wnv/wnv.html
- <http://westnilemaps.usgs.gov/>
- www.thehorse.com
- www.aphis.usda.gov/vs/cvb
- <http://www.hc-sc.gc.ca/english/westnile/>
- <http://www.inspection.gc.ca/>