

# West Nile Virus Overview



Environmental Health Department  
March 25, 2013 City Council Meeting

# What is West Nile Virus?



- West Nile Virus (WNV) is a mosquito-borne virus that can infect humans, birds, horses and other mammals.

# How is West Nile Virus Spread?

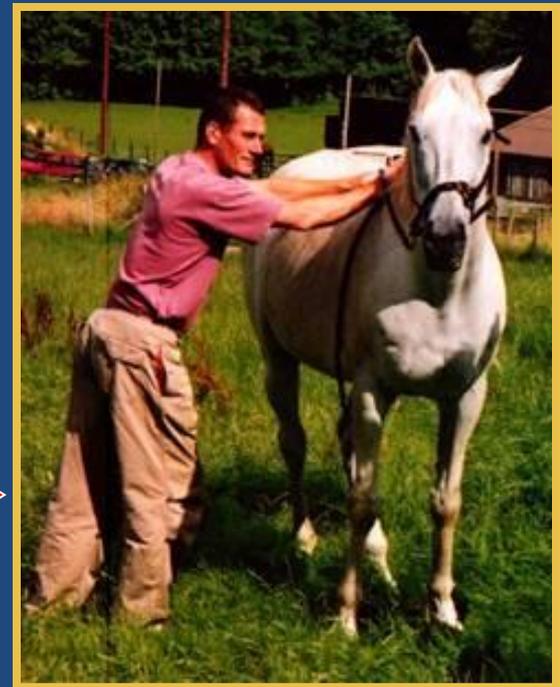


**Bird has WNV**



**Mosquito feeds on bird  
with WNV**

**Mosquito then bites and  
infects human, horses and  
other animals with WNV**



# WNV By the Numbers

## Plano – 2012

- 7 of 80 mosquito samples WNV+ (May – Sept)
- 28 cases WNV illness reported (July – Sept)
  - 19 WNF – 68%
  - 9 WNND (2 deaths) – 32%
- Texas: 1,800 + cases; 54% WNF, 46% WNND
  - Dallas Co: 400+ cases; 55% WNF, 45% WNND
  - Denton Co: 200 cases; 70% WNF, 30% WNND
  - Tarrant Co: 260+ cases; 60% WNF, 40% WNND
  - Collin Co: 76 cases; 70% WNF, 30% WNND

# Plano Integrated Mosquito Management Program

- Monitoring
  - City Crews
  - Citizens
- Prevention
  - Public Education
  - Habitat Reduction
  - Larviciding
- Additional Response
  - Adulticide (Mosquito Spraying)

# Monitoring

- Fixit Plano
  - Reports of dead birds
- Mosquito Trapping sites
  - Historic locations
  - Additional identified sites
- Identifying obstructed waterways
  - Drainage
  - Storm Water Program

# Monitoring

## Fix It Plano

NEW REQUEST

Map Satellite

REQUEST TYPE: None STATUS: Open

SORTING BY: Most Recent

- Unimproved Parking Surface**  
1504 E Parker Rd Plano, TX 750...
- Unimproved Parking Surface**  
Parker Towne Centre Plano, TX...
- Potholes**  
3405-3467 Shiloh Rd, Plano, TX, USA  
REPAIR I 1 1
- Sidewalk sinking section**  
2212 Chadbourne Dr, Plano, TX...  
REPAIR I 2 1
- Sidewalks**



# Monitoring



“Before”



“After”

# Prevention

- Remember the 3D's & R
  - Dusk and Dawn
  - Dress
  - Drain
  - Repellent

# Prevention

**Protect yourself  
from the West  
Nile virus  
with the 4 D's.**



- 1 Stay indoors at Dusk and Dawn.**  
This is the time of day that mosquitoes are most active.
- 2 Dress** in long sleeves/pants, loose and light-colored clothing when outdoors.
- 3 Defend** yourself from mosquitoes by using an insect repellent that contains DEET, Picaridin, or Oil of Lemon Eucalyptus. Follow label instructions.
- 4 Drain** standing water in your yard and neighborhood. Also make sure that flower pots, water dishes, bird baths, and wading pools are properly drained so they are not breeding grounds for mosquitoes.



West Nile Hotline: (972) 941-7180

[www.plano.gov/health](http://www.plano.gov/health)



# Prevention

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## PLANO TEXAS

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Department Home  
West Nile Virus Advisory

You are here: Home > Departments > Departments A - O > Environmental Health > Mosquito & Rodent Control > West Nile Virus Advisory

### West Nile Virus Advisory

**Chances of Being Infected Less than 1% in 10,000**  
Reports of the West Nile Virus (WNV), a form of encephalitis spread by mosquitoes, has created public concern since its detection in two dead birds found in Dallas in early July 2002.

The national [Center for Disease Control \(CDC\)](#) advises the chances of persons contracting the Virus are slim, even for persons who have been bitten by an infected mosquito. The CDC states that even in areas where mosquitoes do carry the virus, very few mosquitoes – much less than 1 % in 10,000 are infected. If the mosquito is infected, less than 1% of the people who get bitten and become infected will get severely ill with WNV as a result of a mosquito bite is less than 1 in 10,000. The chances you will become severely ill from any one mosquito bite are extremely small.

**Mosquito Populations in Plano**  
Based on results of routine monitoring, the Plano Environmental Health Department has determined mosquitoes carrying WNV are present in the City. The presence of WNV increases during summer months due to rise in Culex mosquito populations, which thrive in hot weather and may carry WNV after biting infected birds.

**Help Prevent the Spread of WNV**  
Aside from being vigilant in prevention of mosquito bites, the best prevention against any mosquito-borne disease is to implement appropriate measures to reduce the mosquito population. Mosquitoes need standing water to lay their eggs, producing adults in just ten days in hot temperatures.

The most effective methods to control presence of mosquitoes is to remember the four D's:

- **Dusk / Dawn** are times of day you should try to stay indoors. This is when mosquitoes are most active.
- **Dress** in long sleeves and pants when outside to keep skin covered. For extra protection, spray clothing with repellent.
- **DEET** is a desirable ingredient in insect repellents. Follow label instructions.

**CONTACT US**  
Environmental Health  
1520 Ave. K  
Suite 210  
Plano, TX 75074  
Ph: (972) 941-7143

# Prevention

## Eliminate larval habitats



# Prevention

PLEASE JOIN US FOR



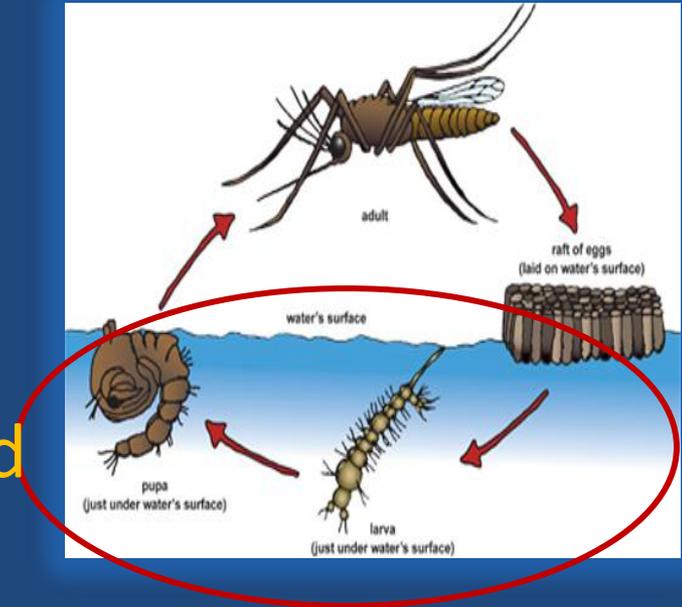
City of Plano's  
**Mosquito  
Awareness  
Seminar**

THURSDAY, APRIL 11TH  
2-3 P.M.

MUNICIPAL CENTER  
COUNCIL CHAMBERS  
1520 K AVENUE PLANO, TEXAS

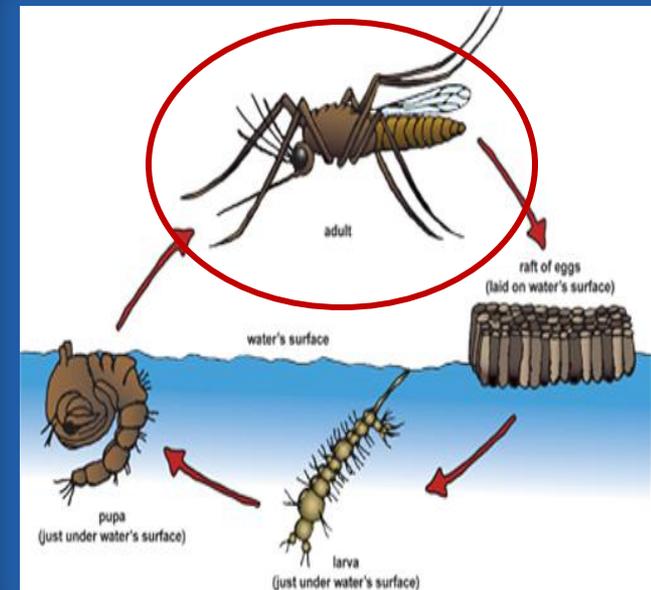
# Larvicide

- More effective and target-specific
- Used in smaller concentrated geographic areas
- Used when larvae are discovered in standing water which cannot be emptied.
- Most “bang for the buck”



# Adulticide

- Adulticide (Mosquito Spraying)
  - Based upon conditions
  - In targeted areas
- The City of Plano may spray when a situation meets certain criteria:
  - WNV positive mosquitoes
  - Reported human WNV cases
  - Concurrent Larviciding



# Why Spraying is Not the First Option

- Generally less effective with higher cost
  - Must make contact with mosquito
  - Won't reach mosquitoes in backyards or through foliage
  - Mosquitoes will return (Temporary solution)
  - Increased cost due to increased requirements for resources
- Residents notified prior to spraying

## PRESIDENT'S MESSAGE



Brian Collins,  
MS, REHS, DAAS

## Crisis Communication: Apocalypse Now or Apocalypse Not

*Anything that  
scares—airs!*

Last summer north central Texas was considered the epicenter of the nation's West Nile virus outbreak. Specifically, Dallas, Collin, Tarrant, and Denton counties, with a combined population of approximately 6.1 million people, comprise the area of statistical relevance. The city of Plano (population 270,000) is in Collin County (population 927,466).

As you prepare for Thanksgiving, I am relatively sure this "crisis" will have passed and flu will be the "virus du jour." As of the date on which I am writing this article (August 31, 2012), however, West Nile virus (WNV) incidence in the city of Plano stands at 8.5:100,000 over the period June 1, 2012, to August 31, 2012. Morbidity is distinguished by West Nile fever (WNF; the less debilitating form of infection) and West Nile neuroinvasive disease (WNND). Incidence for WNF is 5.2:100,000, while incidence for WNND is 3.3:100,000. One death occurred. Collin County's WNV incidence rate is 6.1:100,000 with WNF at 4.3:100,000 and WNND at 1.8:100,000.

For comparison, allow me to provide general epi data for cursory review. Dallas County (population 2,484,816) has a WNV incidence of 13:100,000; 51.6% of cases are WNF and 48.4% of cases are WNND. Thirteen deaths have been reported in Dallas. Tarrant County, with the city of Fort Worth included, has a population of 1,920,714. WNV incidence in Tarrant County is 12.1:100,000; 65.1% of cases are WNF and 34.9% of cases are WNND. Five deaths are reported in Tarrant County. Finally, Denton County (population 770,509) reports WNV incidence of 18.3:100,000; 69.5% of cases are WNF and 30.5% of cases are WNND. Two deaths are reported for Denton County.

### Apocalypse Now?

Toward the end of July, all four counties were experiencing escalating incidence. Dallas and Denton counties were exceptional not only in WNV incidence but also by the character of the illness. Dallas's ratio of WNND to WNF was 2:1 as WNV case-load increased. It now hovers at 1:1. Denton County WNF case-loads spiked in one week. Originally, messaging stressed personal protection and mitigating mosquito habitat on private property. Quickly, however, media and some "officials" transitioned the conversation to "spraying." The headline on page one of the *Dallas Morning News* on July 31 read, "West Nile Deaths Break Record." On August 4, the page one headline read, "West Nile Mist, the Fog of War." On page two the headline read, "West Nile War Takes More Than Fogging."

On August 8, Dallas County Medical Society's Community Emergency Response Committee recommended aerial spraying to reduce adult mosquitoes. Dallas's county judge then stepped in as director of emergency management and preparedness to declare a state of emergency. On August 11, Dallas County initiated arrangements for the Texas Department of State Health Services to conduct contract aerial spraying. The *Dallas*

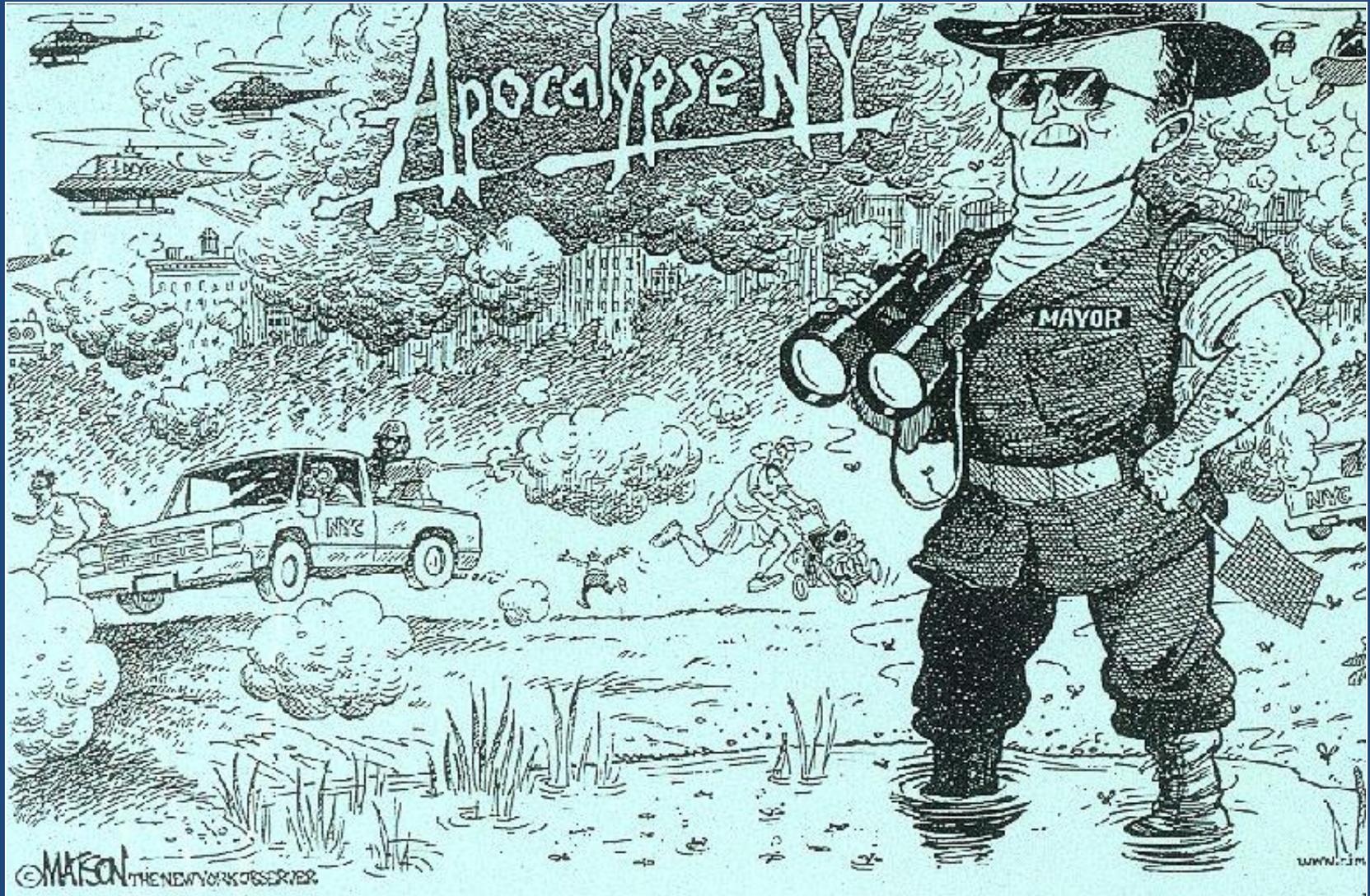
*Morning News* characterized aerial spraying as "air strikes" and "missions." After aerial spraying, the county judge was quoted in the newspaper saying, "I knew when I woke up this morning our citizens would be safer today." The majority of media coverage from this point forward linked mosquitoes to spraying. Fear had been anchored in the community through messaging and "aerial spraying" became a public panacea for "eradicating" mosquitoes and the threat of WNV. (BTW—the original aerial contract was reportedly \$1.2 million!)

### Apocalypse Not!

City of Plano Integrated Mosquito Management Program staff initiated seasonal mosquito surveillance in early May. Traps were set at empirically known high-density mosquito areas throughout the city's 72 square miles. The week of June 4 presented the first positive WNV pool of mosquitoes. The department immediately canvassed neighborhoods in proximity to the pool, notifying residents of findings; providing precautionary education; and larviciding known ponds, stagnant pools, and static creek water.

Areas with positive mosquito pools were immediately scheduled for truck-based ultra-low-volume fogging. Databases were created for positive pools of mosquitoes and reports of stagnant pools. GIS was employed to track dead birds, positive pools, and morbidity and mortality by topography and neighborhood. Multimedia pushes highlighted the "4 Ds": personal responsibility; and information about pesticides used to mitigate adult mosquito populations, mosquito larvae, WNV

Source: *Journal of Environmental Health*, 75(4), 4



**“I love the smell of malathion in the morning”**

Source: R.J. Mason, *New York Observer* 1999