

# ***MOSQUITO CONTROL: 2006***

PRESENTATION TO THE  
Neighborhood Quality of Life  
Committee

January 8, 2007

# Program Accomplishments in 2006

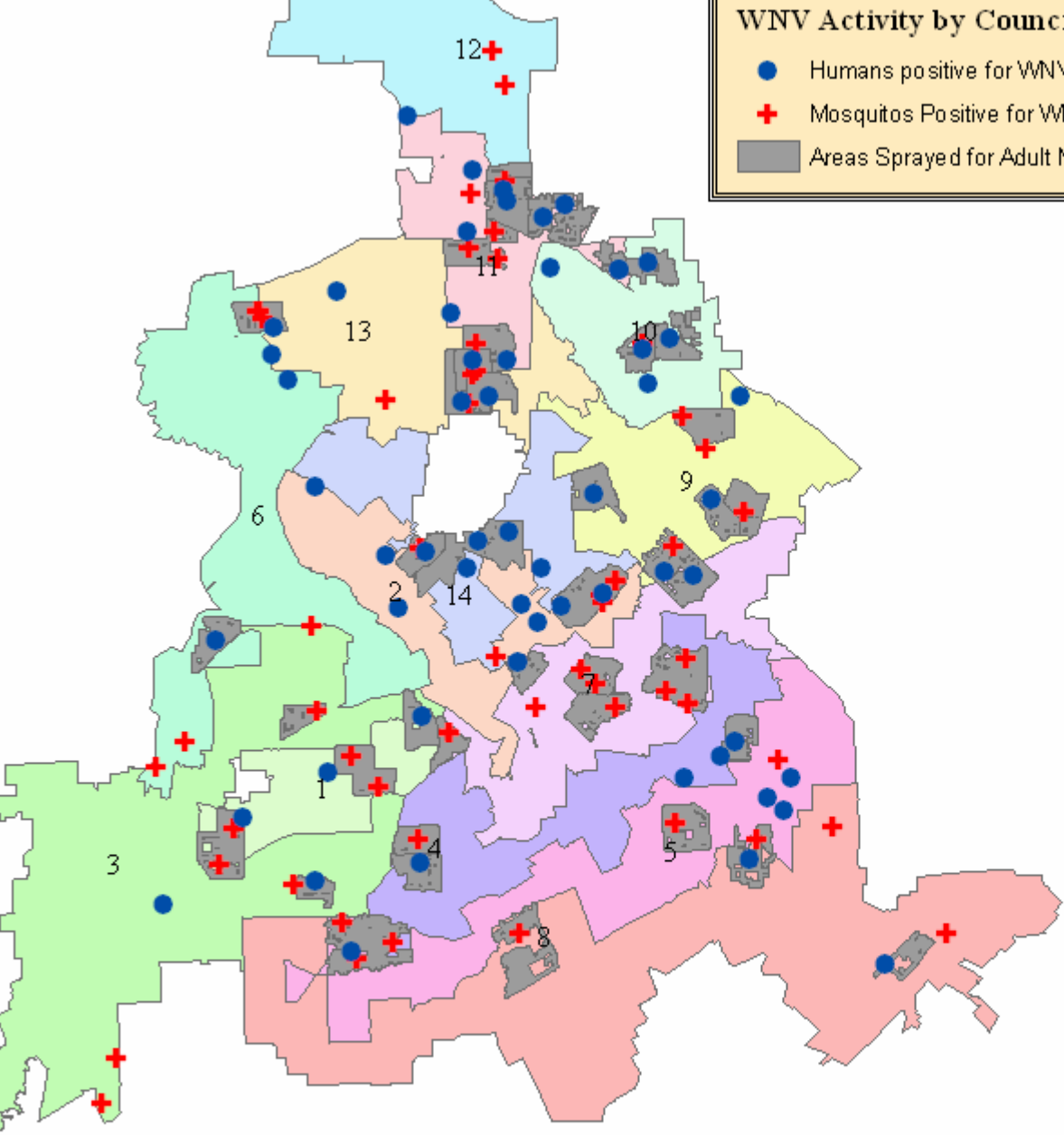
- Added two seasonal workers
- Utilized two borrowed workers from Street Department
- Increased the number of storm sewers sprayed.
  - Purchased a new, and newly developed, & easier to use sprayer
  - Treated 730 storm sewer openings which is just 30 less than the total treated in the last three years
- Increased the number of mosquito collections
  - Made 690 collections while increasing the number of gravid traps to 45% of total collections
- Sprayed 44 square miles

# West Nile Virus

Year	Human Cases/ Deaths	Birds +/Test	Mosquitoes+/ Pools	Areas Sprayed
2002	25/2	22/32	18/449	66
2003	41/3	17/39	33/505	79
2004	7/0	8/71	15/557	11
2005	24/0	5/12	37/603	37
2006	59/2	Not tested	62/690	53

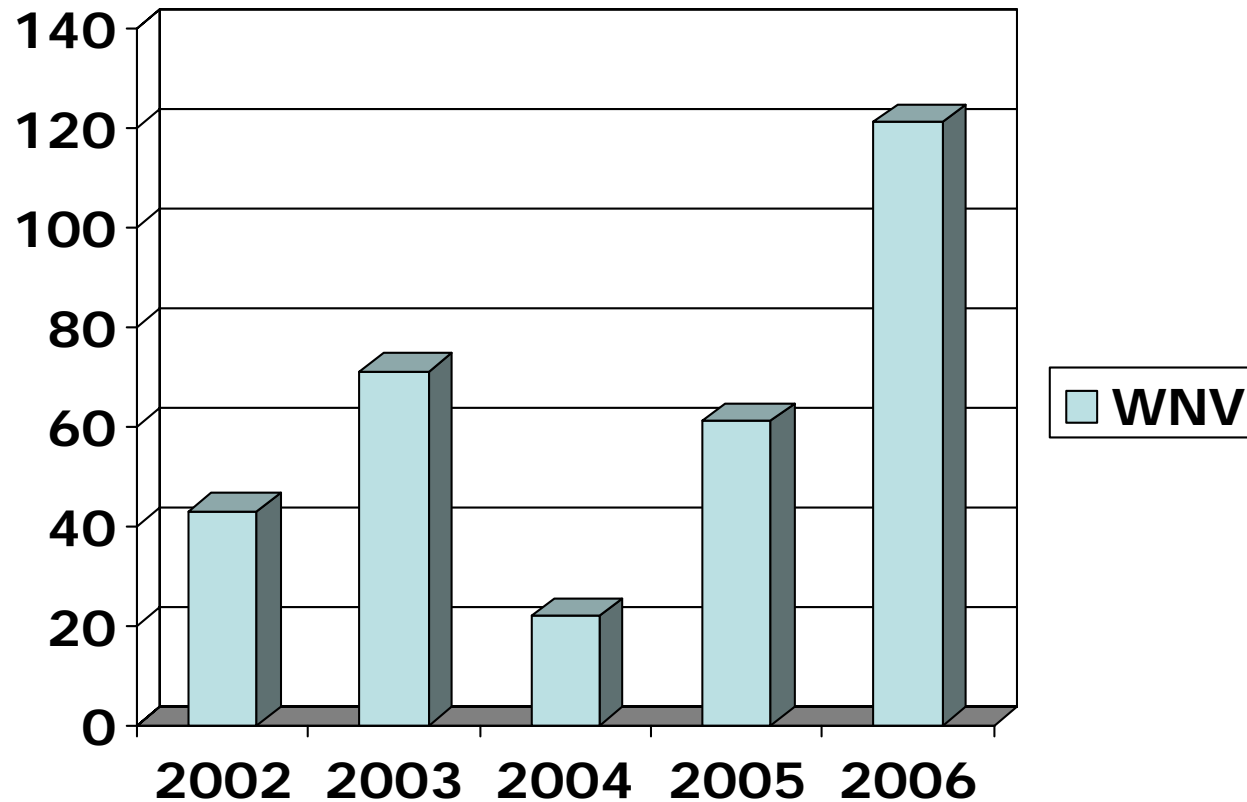
**WNV Activity by Council District, 2006**

- Humans positive for WNV (59)
- ✚ Mosquitos Positive for WNV (62)
- Areas Sprayed for Adult Mosquitos (44 sq . miles)

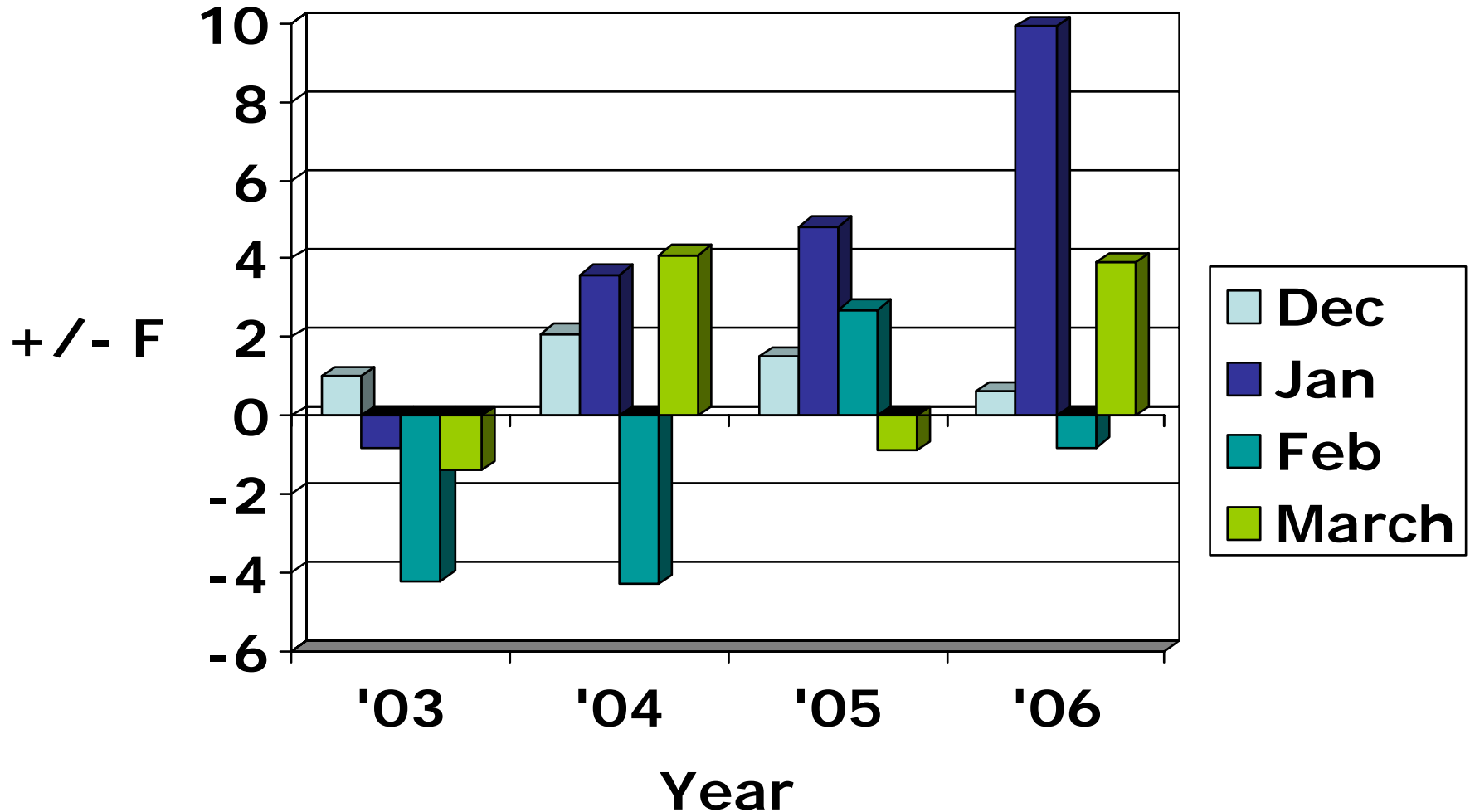


# West Nile Virus Cases by Year

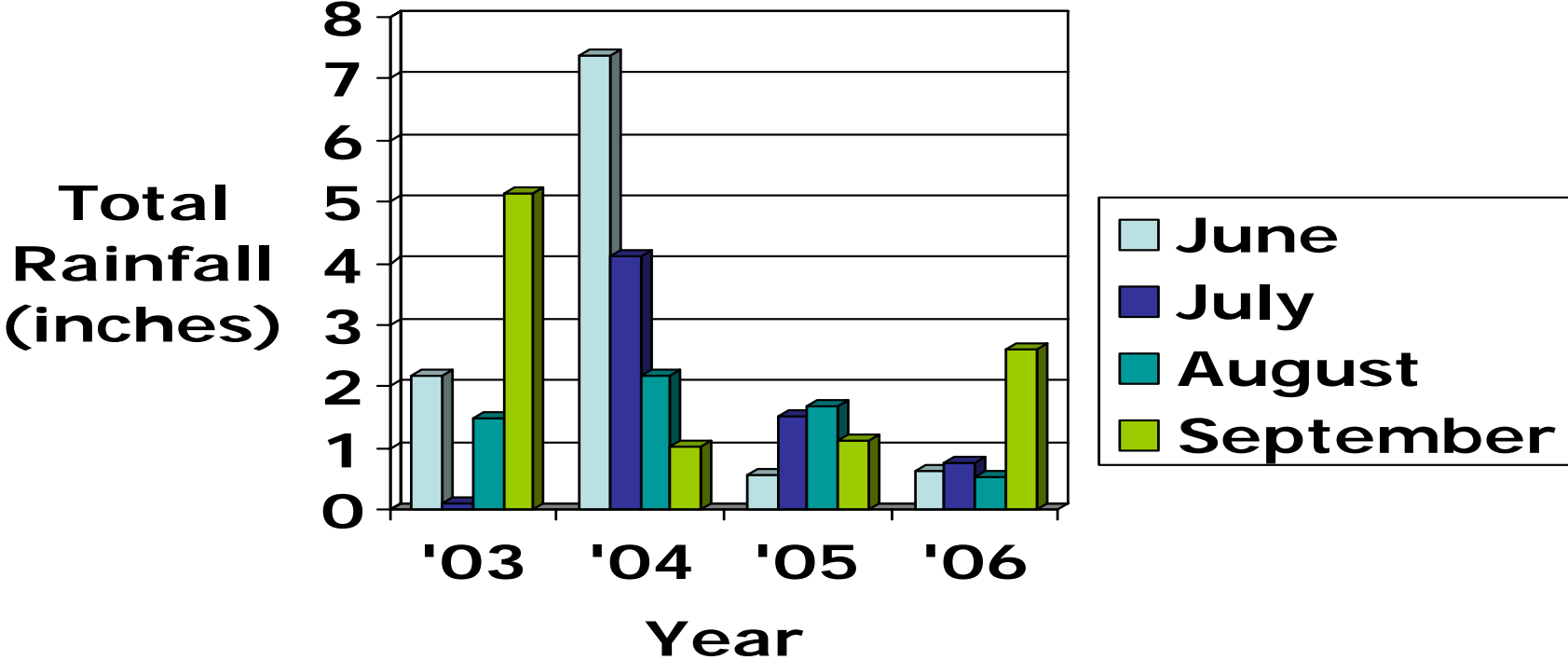
## Humans and positive mosquitoes



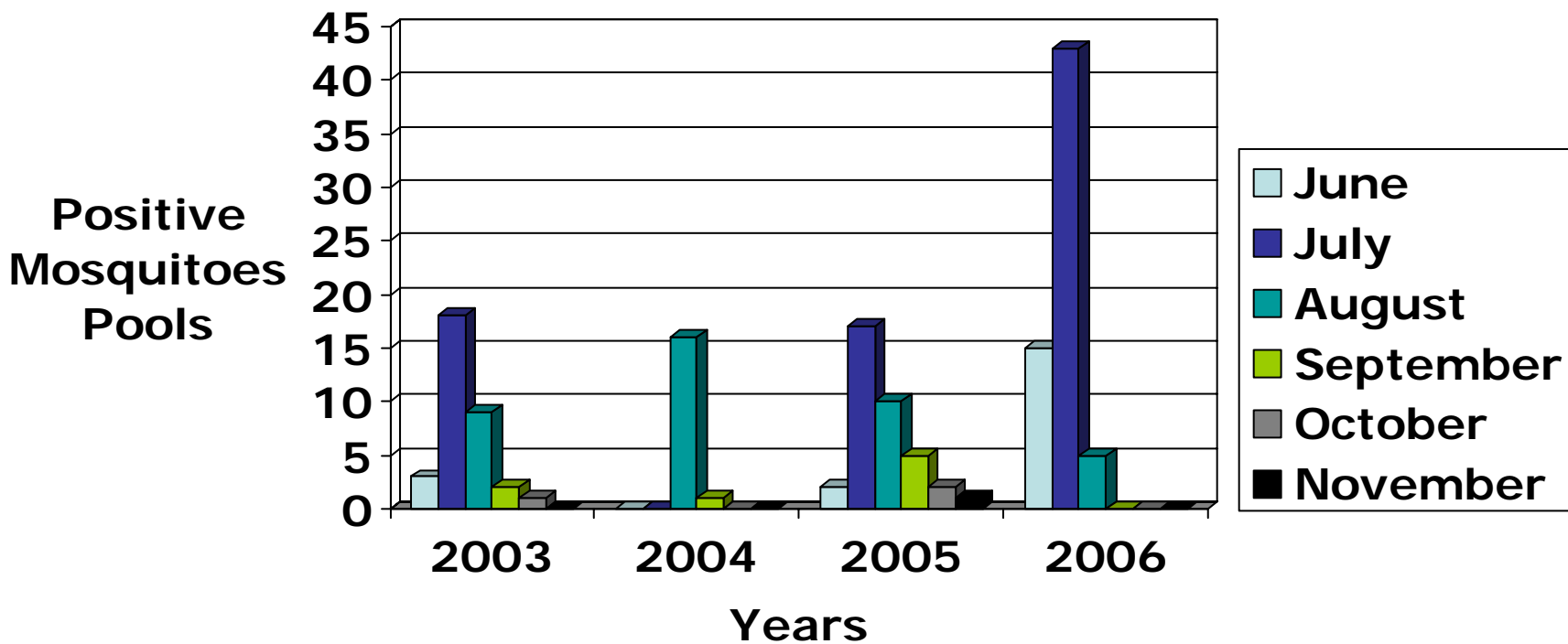
# Winter Temperatures, Departure from Normal



# Summer Rainfall



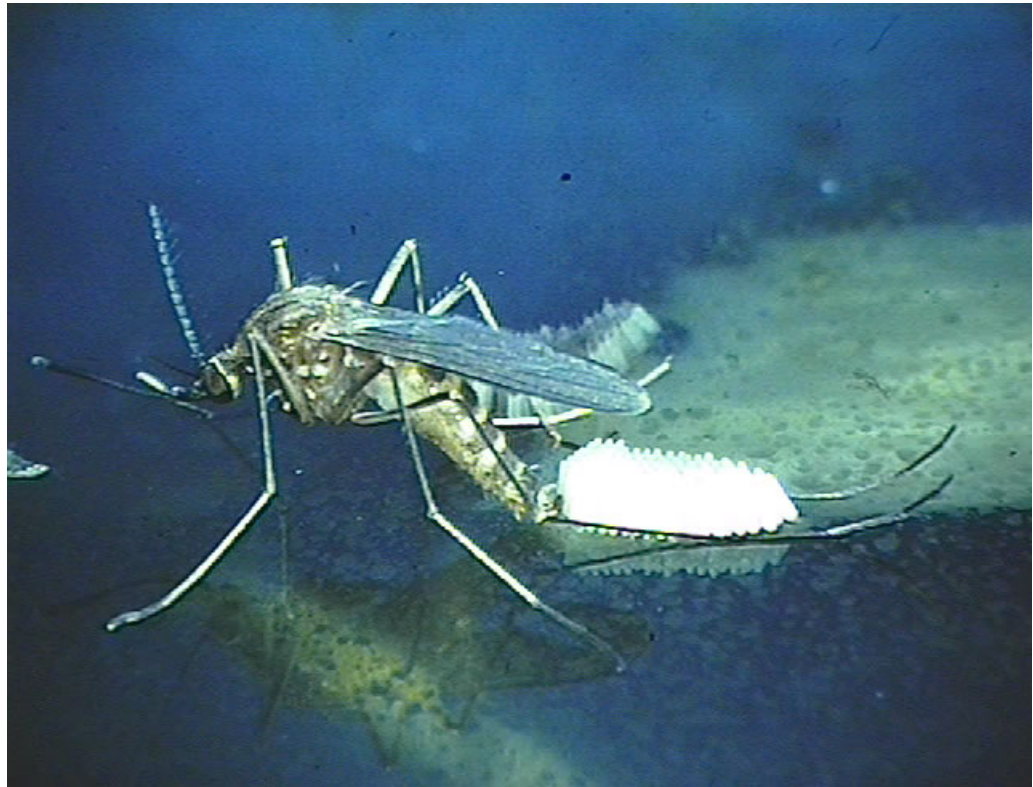
# Mosquitoes Positive for West Nile Virus by Month





# Dallas Mosquito Control Plan

- Plan approved by City Council
  - To control disease carrying mosquitoes



# Dallas Mosquito Control Plan

- Provides for:
  - Notification of public in case of mosquito borne disease
  - Control of mosquito breeding by treating and eliminating standing water
  - Disease surveillance by collection and testing of mosquitoes and collection of information on reported deaths of certain wild birds
  - Preset spraying triggers in response to mosquito borne disease
  - Aerial spraying plan with Dallas County when Public Health Emergency is declared

# Dallas Mosquito Control Plan

- GOALS
  - Minimize human illness through:
  - Integrated Pest Management (IPM)
    - Public Education
    - Source Reduction
    - Surveillance
    - Mosquito Control
      - Larvicide
      - Adulticide

# Public Education

## TOOLS

- Media conferences in conjunction with Dallas County
- Press Releases
- Signs on DART busses (June and August)
- Home Owners & Neighborhood Associations
- Displays at Earth Day, health fairs, etc.
- Brochures
- Web Site

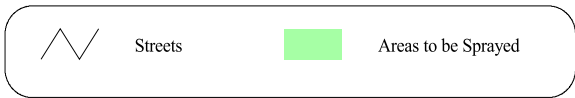
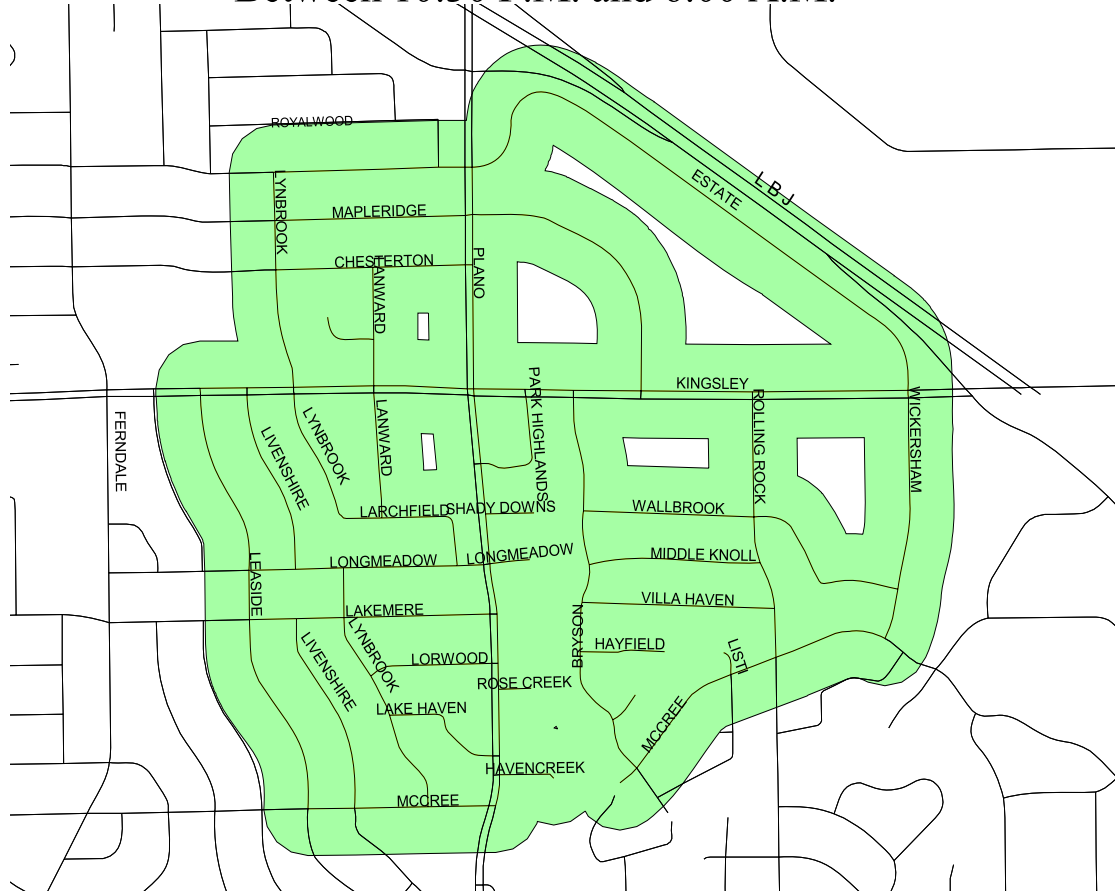
# Dallas Mosquito Control Plan

- Media Sources

- Television: Fox 4, WFAA 8, KXAS 5, WB 33, CBS 11, KUVN 23, Telemundo 39,
- Radio: KRVA Radio Hispanic Broadcasting, KHAZ,, WBAP 820, KRLD 1080,, KERA Radio, KLIF AM, Metro Network, WRR, Dallas Morning News, Ft. Worth Star Telegram Dallas Observer, KCBI Radio,
- Print: Associated Press, The Weekly, Chinese Times, Korean Times, Dallas Examiner, Elite News, Post Tribune, Minority News, People Newspapers, Dallas Business Journal, Oak Cliff Tribune, White Rocker, El Sol de Texas, El Extra Spanish Newspaper, El Hispano Newspaper, Novedades News, La Estrella Spanish Newspaper, El Hernando News

# Map of Area to be Sprayed

Area to be Sprayed for Adult Mosquitos  
Friday August 5, 2005 and Saturday August 6, 2005  
Between 10:30 P.M. and 6:00 A.M.



Created by EHS Planning & Evaluation, 8/3/2005



"Dallas, the City that Works: Diverse, Vibrant and Progressive"

# Source Reduction

- Reduce the number of breeding sources
  - Standing, stagnant water
    - Anything that will hold water
    - Swimming pools
    - Poorly drained ditches
    - Water and sewer leaks
    - Tires



# Source Reduction

- Drained by the Street Department





# Disease Surveillance

- Mosquitoes –Mosquito collections and trapping across the city (600 collections in 2005, 690 thru September 30, 2006)
- Reports of dead jays, crows and hawks doves, recorded and plotted. Used to determine mosquito collection location
- Increased use of gravid traps that attract female mosquitoes that have had a blood meal

# Mosquito Collection: Gravid Trap



# Mosquito Collection

- Collecting by aspirator



# Disease Surveillance (cont.)

- Track reports of equine, other animal and human cases as provided by TDH and Dallas County & animal owners
  - Began collection April 11, to determine concentration & species of mosquitoes
  - TDH and Dallas County accepted mosquitoes for virology testing beginning May 1
  - Dallas county tested mosquitoes collected thru November 9, 2006

# Mosquito Control

- Breeding sites - Check and larvicide known sites.
- Complaints – Check identified locations for water used for mosquito breeding, take enforcement action, apply larvicide, and provide information to all parties.
- Gambusia stocking program, mostly off season. Native fish are stocked in temporary bodies of water.
- Treating for adult mosquitoes in storm sewers if indicated by number of mosquitoes, positive mosquito collections or human cases.

# Mosquito Fish: *Gambusia affinis*



# Response To Risk Levels Of Mosquito Borne Disease

- Guidelines for phased response to mosquito borne disease surveillance.
- Risk levels are related to the probability of human outbreak of disease.
- Developed with input and reference from Concerned Citizens, Texas A & M Entomology, CDC, other municipal mosquito programs.
- Reviewed by Dallas County in 2006

# Risk Level 0

Off season; adult vectors inactive, climate unsuitable

- Response
  - Source reduction
  - Public education
  - Minnow Stocking



# Risk Level 1

- Probability of human outbreak remote. Early season, April, May, no positive mosquitoes.
  - Public education
  - Complaint response
  - Surveillance- collect and trap from pre-selected locations
  - Record locations of dead jays, crows etc.
  - Control-larvicide and minnow stocking, source reduction

# Risk level 2

- Probability of human outbreak low, no positive mosquito pools but with isolated high counts of *Culex quinquefasciatus*, or numerous reports of dead crows or blue jays
  - Notice on web site-mosquitoes are out take precautions
  - Surveillance-additional targeted collections
  - Birds-recording, testing from non positive areas
  - Control-increase larval surveillance, storm sewer treatments, targeted enforcement

# Risk Level 3

- Moderate probability of human outbreak; Positive mosquito pools and/or many dead birds concentrated in a small area
  - Notify Council/Manager's Office
  - Public Education-Press release, targeted information for areas to be sprayed
  - Surveillance-Targeted mosquito collections, continue bird testing in non-positive areas
  - Control-Targeted larval surveillance, adulticiding (spraying), storm sewer treatment, targeted enforcement including citations for standing water,
  - Ground based adulticiding to begin in areas with multiple positive indicators. (combination of mosquito pools, birds, horse and/or human cases)

# Risk Level 4

- High probability of human outbreak. Multiple positive mosquito pools, many reports of dead birds, one or more human cases.
  - Notify Council and |Manager's Office
  - Public Education-press release & targeted communities
  - Surveillance-targeted & citywide continues
  - Control-targeted larviciding, storm sewer treatment, concentrated enforcement
  - Ground based adulting to continue in areas with multiple positive indicators. (combination of mosquito pools, birds, horse and/or human cases)

# Risk Level 4(CONTINUED)

Spraying Triggers (for a defined area or neighborhood, The following may trigger spraying:

- A human case (recommended change)
  - If received within two weeks of onset, otherwise must be confirmed by mosquito collection, can be a previous collection or one set in response to the human case
- A positive mosquito pool &
  - a positive horse or other mammal
  - additional positive mosquito pools
  - several dead birds
  - High numbers of Culex quinquefasciatus mosquitoes found in the area (change)

# Risk Level 5

- Human Outbreak; multiple human cases
  - Notify Council and Manager
  - Public Education-press releases and targeted communities
  - Surveillance – mosquito collection, bird recording continues city wide
  - Control-Larviciding and enforcement in positive areas, storm sewer treatment as indicated
  - Continue to adulticide areas with multiple positive indicators or human cases

# RISK LEVEL 6

- Public Health Emergency
  - Determined by Dallas County Medical Advisory Committee
  - Based on rapidly expanding numbers of human cases
  - Public education, surveillance and control work continues
  - Ground based adulticiding continues in areas with where WNV is active
  - A plan for aerial spraying would be developed jointly with Dallas County, City of Dallas and other Dallas county Cities affected
  - On approval of the City Council aerial spraying would take place in the areas of the city affected by the outbreak of mosquito borne disease

# Meeting of Dallas County Mosquito Control Programs, November 16, 2006

- Requested by the Public Health Advisory Committee
- Attended by mosquito control programs from Dallas, Dallas County, Coppell, Carrollton, Farmers Branch, Richardson, Garland, Mesquite, Cedar Hill, Plano & Denton.
- Items for discussion
  - Indexing mosquito numbers and infected mosquito numbers
  - Reporting human cases more expediently (county to city)
  - Use of GIS and GPS
  - Public education
  - Storm sewer trapping and spraying
  - Proposed a model mosquito control plan
- Next meeting in January, 2007



# The 2007 Mosquito Season

- Phase in a water base mosquito control chemical
  - No smell or orange like smell
  - No oil residue waste
  - Same active ingredients as current adult mosquito spray
- Place light traps in storm sewers
  - Determine number and species of mosquitoes in storm sewers
- Increase use of GPS/GIS
  - Mapping
  - Data
- Mosquito collection sites
  - 32 permanent gravid trap locations
  - 58 aspirator sites in storm sewer outfalls & culverts
  - Other collection sites determined by indicators
- Coordination with Dallas County and other cities in the county
  - Communication
  - Exchange of ideas
  - Actual assistance in case of in case of severe human outbreak of mosquito borne disease
- Assist NTSU in study to determine feeding habits of *Culex* mosquitoes