

# Initiating and Maintaining an Integrated Vector Control Program

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# Acknowledgements

## NYCDOH

Communicable Disease  
Vector Surveillance and Control  
Environmental and Occupational  
Disease Epidemiology  
PH Laboratory  
Public Affairs  
Policy and Planning

## NYSDOH

## NYSDEC

## NYSDAgMarkets

## CDC (Fort Collins)

## National Wildlife Health Center

## USDA

## EPA

## USGS

Other state and local health and  
public works departments

American Mosquito Control  
Association (regional  
affiliates)

# Pre-WNV Mosquito Control in NYC

- Malaria prevention began in 1901
  - Sanitary Code regulates standing water
  - Physician education, hospital reporting
- 1935 WPA: 3200 miles of drainage ditches, larvicided 70,000 catch basins
- 1957 helicopter spraying of pesticide to reduce number of biting mosquitoes
- 1999 backyard pesticide application in response to public complaints

# Chief Elected Official Buy-In

- Mayor and Director of Emergency Management actively endorsed adult mosquito control
- Lack of buy-in limits program options

# Budget

- Local
  - Significant investment of local tax dollars
  - Subject to annual re-appropriation
- State
  - Formula grant (percentage reimbursement) supports local health department programs
- Federal
  - Grant award from CDC
  - 2<sup>nd</sup> year award less than 1<sup>st</sup> year

# Personnel

- Single office -versus- De-centralized
- Weekly Steering Committee meetings
- Summer Students
- Contracts for larval and adult control
- Critical Services:
  - Mosquito collection and identification
  - Laboratory testing (human, mosquito, birds)
  - Pesticide applicators

# Communication

- Medical community
  - Active surveillance
  - Broadcast faxes with current information
- Surrounding communities
  - Look for consensus
- Network of colleagues
  - Mosquito control programs
  - Mosquito control associations (e.g., AMCA)
  - Federal resources

# Regulatory Environment

- Emphasis on larval control
- Monitoring pesticide application
  - Set-backs from open water
  - Pre- and post-spray water testing
  - Park Rangers watch for fish kills
  - Delay application before heavy rain
  - Use of GPS to track pesticide application
  - State DEC and EPA staff present
- Environmental Impact Statement



# Public Perception of Risks Associated with Pesticides

- 29% (257/880) more worried about getting sick from WNV than pesticides
- 23% (198/880) more worried about getting sick from pesticides than WNV
- 31% (276/880) equally afraid of WNV and pesticides
- 17% (149/880) not afraid of getting sick from either

Source: Hinten S, CDC, et al. 2000 Staten Island Serosurvey, unpublished data.

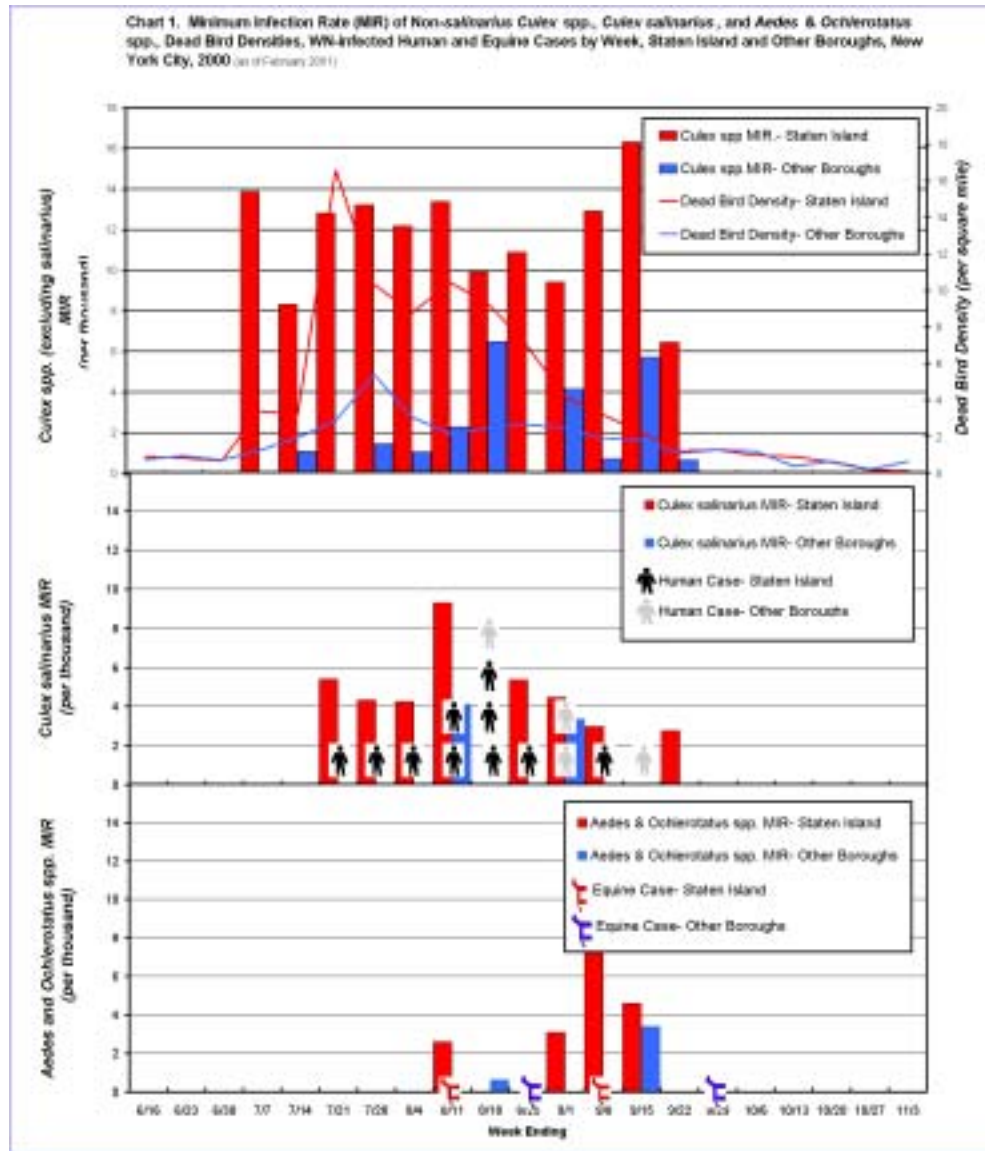
# NYC's Environmental Impact Statement

- Eye and skin irritation may occur
- Respiratory tract irritation may occur
- Organophosphate (OP) impact on aquatic crustaceans, especially if OP applied before a rainstorm
- Noise associated with pesticide application
- Potential harm to health from spraying less significant than disease risk of not spraying
- Available at: <http://cityweb.nycnet/html/doh/html/wnv/feis.html>

# Public Confidence

- Outreach
  - Poster, flyer, hotline, web, press release
- Participation
  - Standing water
  - Dead birds
- Notification
  - Articulate rationale for control
  - 48-hour advance notice
  - NYPD escorts/park closure
- Legal Challenge and Protests

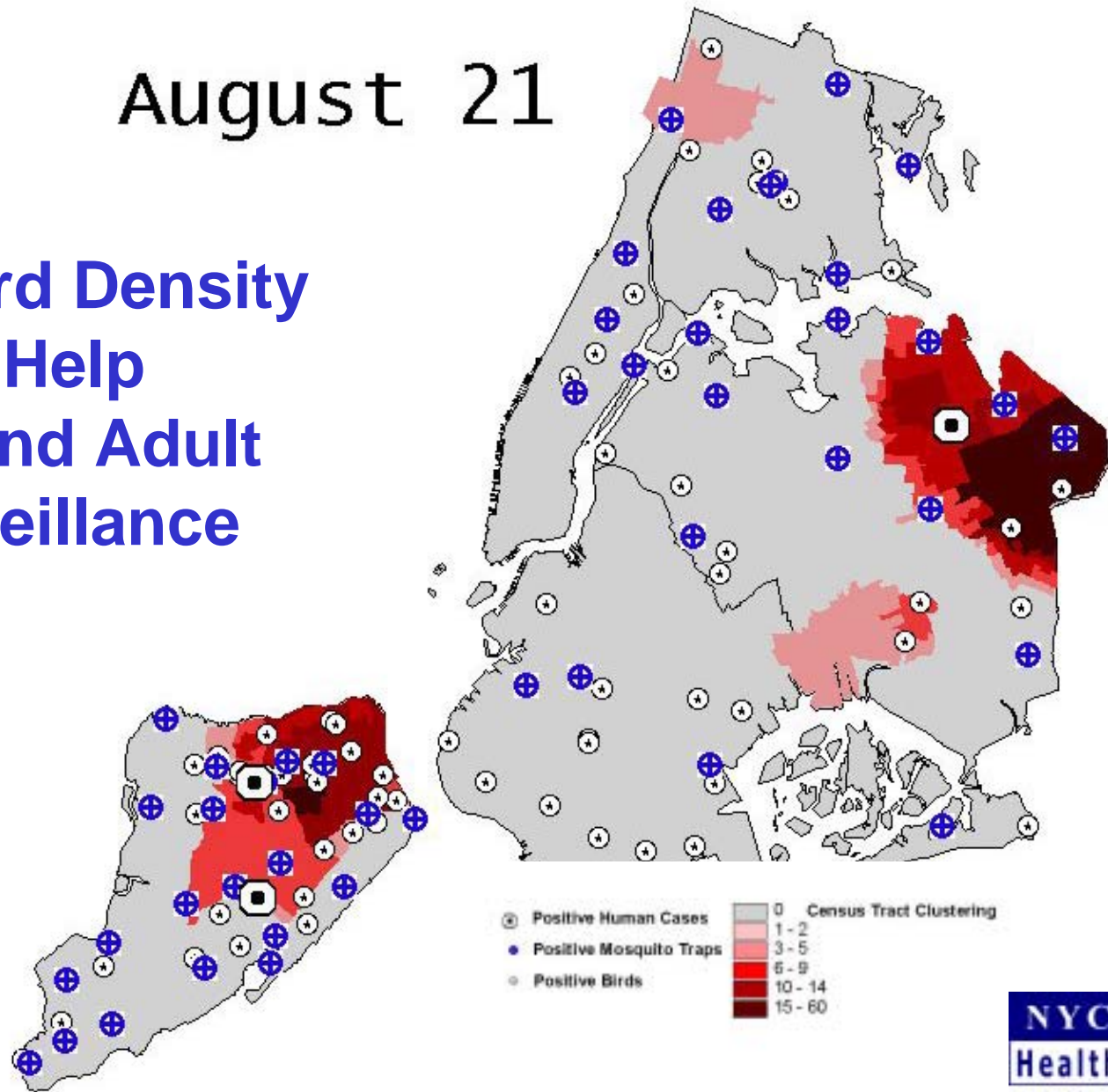
# Using Mosquito and Bird Data to Explain Need and Timing of Pesticide Application



From: Kulasekera V et al. EID 2001; 7(4):724.

# August 21

## Using Dead Bird Density Information to Help Direct Larval and Adult Mosquito Surveillance and Control



# Surveillance for Pesticide-Associated Health Effects

## Poison Control Center

Physicians and public asked to self-report symptoms

## Physician Office Visits

DOH telephoned offices during 5 days following pesticide application

No reports of pts adversely effected

## Emergency Department Visits

DOH chart review of all visits x5 days (3 hospitals)

No apparent patients with pesticide exposure

No increase in asthma calls to 911

## Asthma Care Regression Analysis

Population-level ecologic study-no apparent increase

# Integrated Database

- Standing water reports
- Dead birds
- Larval mosquito surveillance
- Adult mosquito collection and testing
- Suspect and confirmed human cases
  
- GIS-based
- Model for other programs

# Beyond WNV

- Other mosquito-borne infections
  - Small NYC malaria cluster in 1993
  - EEE in Boston mosquitoes in 2000
  - SLE, LaCrosse
- New mosquito species
  - *Aedes albopictus*, *Oc. japonicus*
- Tick-borne diseases
  - LD, RMSF, babesiosis, ehrlichiosis