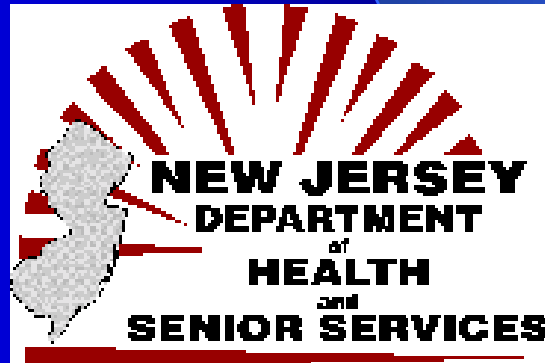


# Evolution of West Nile Virus Surveillance in New Jersey

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*Cheryl Farello, MS, CVT*  
*West Nile Virus Coordinator*



# Overview

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- **Surveillance: 1999, 2000- 2001**
- **Challenges**
- **Accomplishments**
- **New Surveillance Prototype 2002**
- **Goals for 2002**

# Dissemination of Results

## 2000



- 
- Data entered into Excel database then entered into CDC database
  - Results shared with counties via telephone
    - Avian: called Health Officers
    - Mosquito: called Mosquito Agencies

# Challenges 2000



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- Data entry cumbersome (double entry)
- Turn around time for results was 1-2 weeks
- Triaging birds at lab
- Rutgers collected & identified all mosquitoes
- Only shared confirmed mosquito results with counties
- Active Human Surveillance time consuming
- Confirmation of human samples

# Surveillance 2001



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- Data entered in Arbonet
- Stricter submission protocols
- Improved turnaround time

# ARBONET

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- **Access database designed by CDC personnel**
- **Avian, mosquito, chicken, human data**
- **Uploaded daily to secure CDC website**
- **Data are verified by DHSS**
- **Approved for publishing on the website.**

**CDC**

**Centers for Disease Control and Prevention**

**Office of Informatics**



**WNV Data Management**

**Human Data Management**

**Animal Data Management**

**Version 1.2 - August, 2001**

**Exit**

# Dissemination of Results 2001

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- **ArboNet data base exported to Excel files**
- **Attached excel files sent to LINCS agencies for distribution to LHD's each week**
- **Local HD shared results & dead bird sightings with local mosquito agencies**
- **Weekly summaries**





# Challenges 2001

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- Data entry cumbersome
- Technical glitches
- Turnaround time for result sharing with locals
- HD's sharing data with mosquito agencies
- Confirmation of human samples

# **Accomplishments 2001**

- **Stricter avian submissions resulted in efficient triaging**
- **Bio Robot 9604: isolates WNV RNA, sets up TaqMan PCR assay**
- **Turnaround time: 32-48 hours (TaqMan)**
- **Implemented new surveillance prototype**

# Accomplishments 2001



- Chill tables made available to all counties
- Revco freezers purchased
- Courier to transport specimens
- CO<sub>2</sub> & gravid traps available

# Rutgers Initiative

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- Rutgers trained Mosquito Agencies
- Each local mosquito agencies collected & identified
- Increased mosquito pool testing capacity from 90-375/week



# County Initiatives

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- Submitted 7 pools per week
- Started collections mid July
- Submitted almost half of total mosquitoes

# Education

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- **WNV trifold in English & Spanish**
- **State website**
- **PSA's**
- **Letters sent to all Camp Directors**
- **Annual Statewide WNV meeting**



# Human Results

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**162 Suspicious Reports**  
**20 Counties**

**110 Specimens Accepted**

**12 Confirmed**  
**1 fatality**

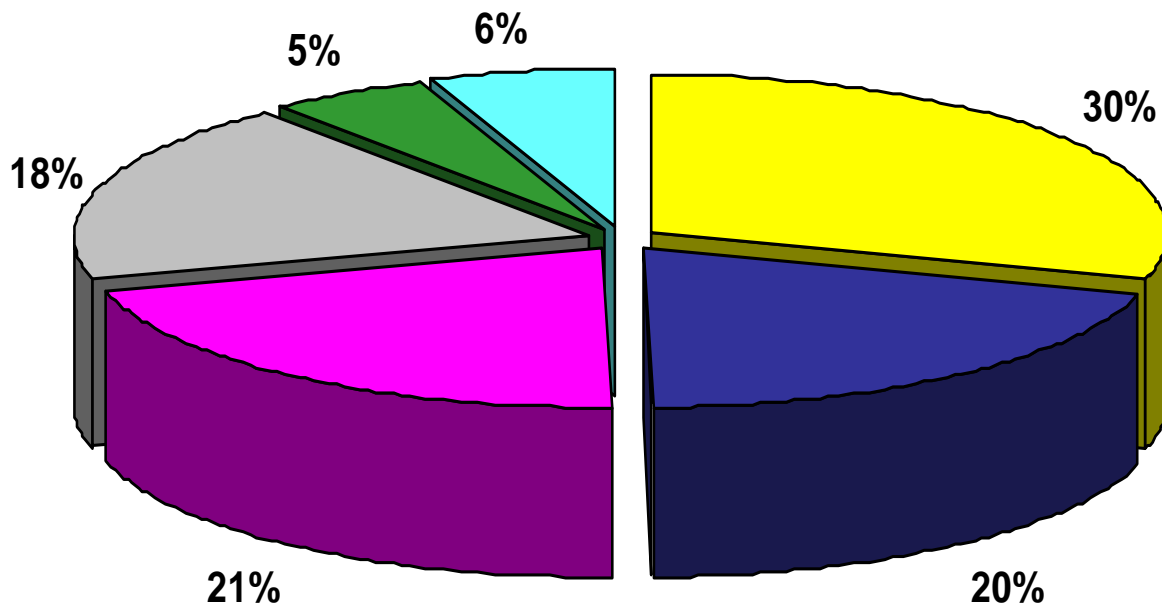


# Results



	<b>NJ 2000</b>	<b>NJ 2001</b>
<b>Avian</b>	<b>1283/2358</b>	<b>1073/1560</b>
<b>Mosquito</b>	<b>82/3547</b>	<b>357/4937</b>
<b>Human</b>	<b>6/55</b>	<b>12/110</b>
<b>Equine</b>	<b>28/74</b>	<b>30/110</b>

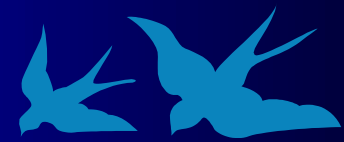
# Statewide Unaccepted Avian Submissions 2001



- Decomposed
- Misbagged
- Incomplete
- Paperwork
- Wrong Form

# West Nile Virus Surveillance Prototype 2002

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**Pilot Counties:**  
**Bergen, Monmouth, Hunterdon**

# Objective

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- **Provide uniform reporting & powerful analytical functions statewide**
- **Serve as a coordinating & integrating system**



# **Project Description**

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- **Web based system with GIS at the core**
- **3 Initial Pilot Counties:**
  - **T1 internet connections**
  - **GIS savy**
  - **Proactive HD's & mosquito agencies**

# **Critical Success Factors**

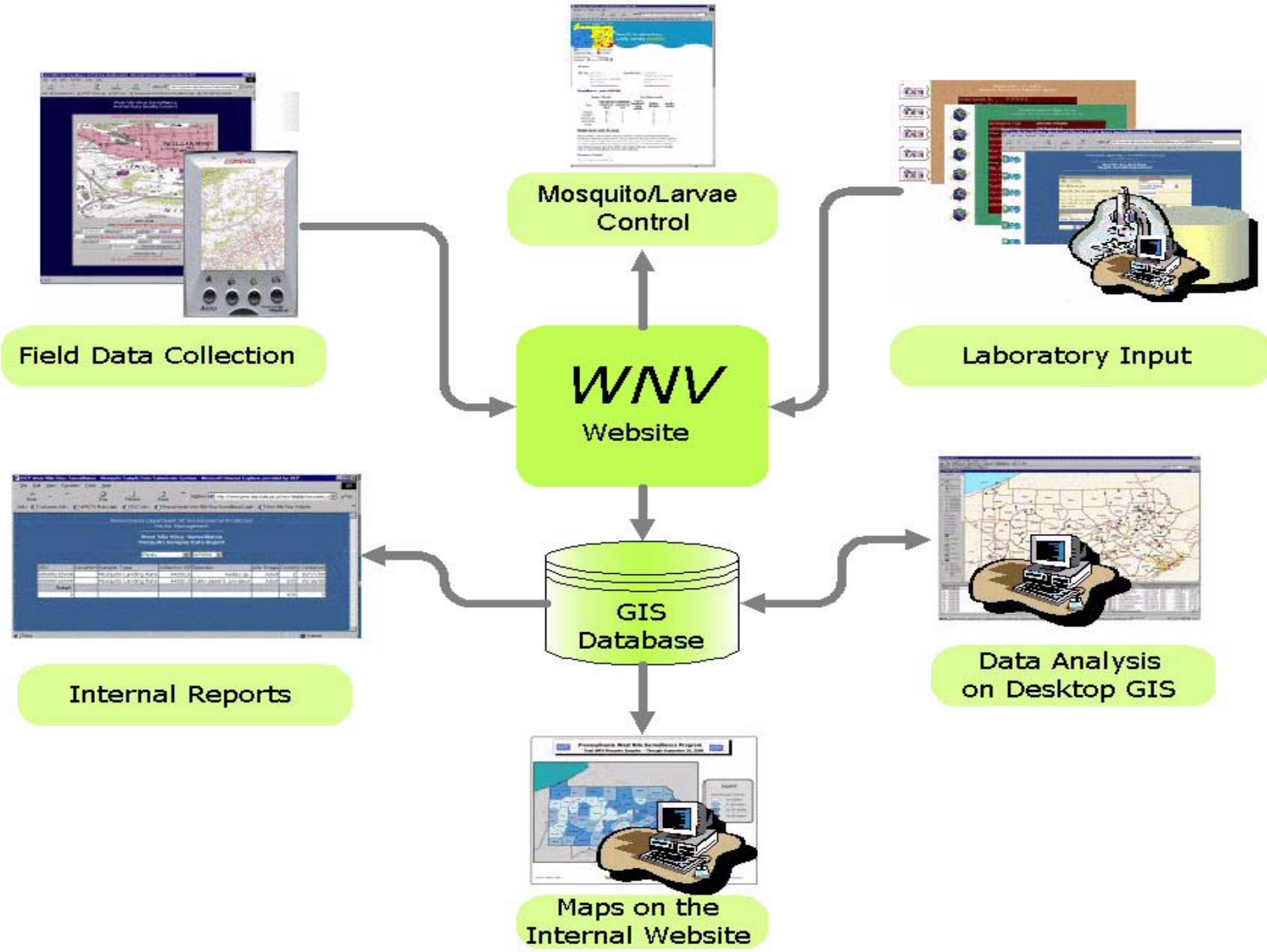
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- **Local agency ability to access system, input data & track laboratory samples.**
- **Dead/III Bird Reports entered on line**
- **Field investigators will be capable of entering data in the field, noting exact location of sample using GPS**
- **Access to reports and maps in real time**
- **Data extract for analysis**

# **Data Extraction & Analysis**

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- **Raw data extracted for ad hoc queries**
- **Statistical analyses:**
  - **Epi-Info**
  - **SPSS**
  - **SAS**
  - **ArcView/GeoStatistical Analyst**
  - **Prediction modeling**





# Hand Held Units

- Multiple data formats
- Map navigation
- Map display
- Queries
- Data capture
- Forms interface
- GPS interface
- Integration with desktop GIS



# Point Locator

http://wnvtest/nycwnv/PointLocator/PointLocatorverify.asp?address=6+W.+32+St.&zip=10001 - Mic

NEW YORK CITY DEPARTMENT OF HEALTH  
**WEST NILE VIRUS**  
surveillance system

[Fullextent](#) [ZoomIn](#) [ZoomOut](#) [Re-center](#) [Put a Point](#) [Done](#)

*Use one of the following  
methods:*

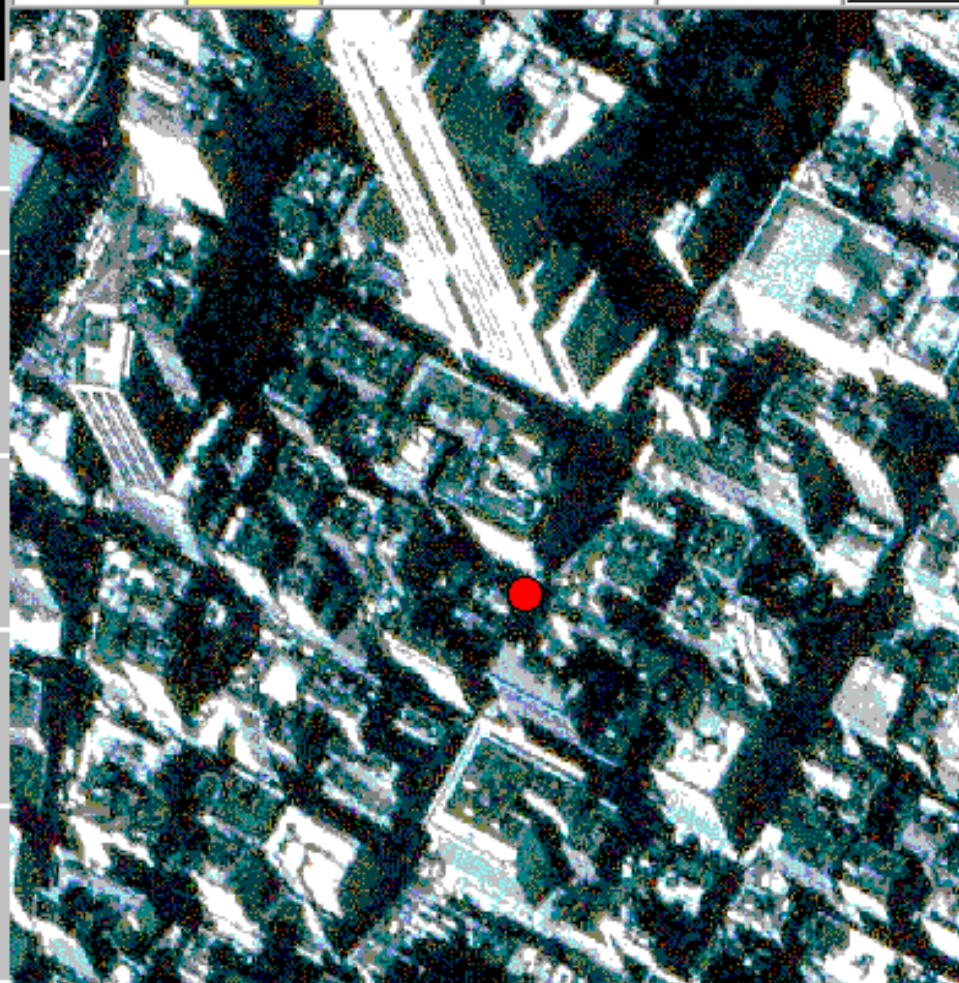
• Borough:

• Other:

• Search anything like:  
  
in

• Mailing address:  
  
ZIP:

• Latitude and Longitude:  
Lat:   
Lon:



[Help](#)

Lat:40.747244 Lon:-73.98571

PointLocator

New York City West Nile Virus Surveillance

# Lessons Learned

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- **Success of surveillance depends greatly on the efforts expended by the local agencies**
- **Crows were excellent predictors**
- **Public's participation in reporting dead/ill birds critical**
- **Interagency teamwork!**



# Goals 2002

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- **Crow & kestrel surveillance**
- **County mosquito collection initiative**
- **Increase mosquito test capacity from 375 to 750 pools per week**
- **Maintain 2001 TAT**
- **Additional traps to focus on bridge vectors**
- **Improve outreach**
- **Validate WNV/EEE multiplex TAQMAN assay for use in 2003**
- **Statewide rollout**
- **One uniform reporting & tracking system with analytical functions for all diseases including bioterrorism & emergency response**



# ACKNOWLEDGEMENTS

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- **Center for Disease Control & Prevention**
- **NJ Department of Health & Senior Services**
- **Rutgers University, Mosquito Research & Control Unit**
- **Department of Environmental Protection, Office of Mosquito Control**
- **Department of Agriculture**
- **NJ Division of Fish & Wildlife**
- **Office of Local Health**
- **Office of Information Technology**
- **Local Health Departments & Mosquito Agencies**