

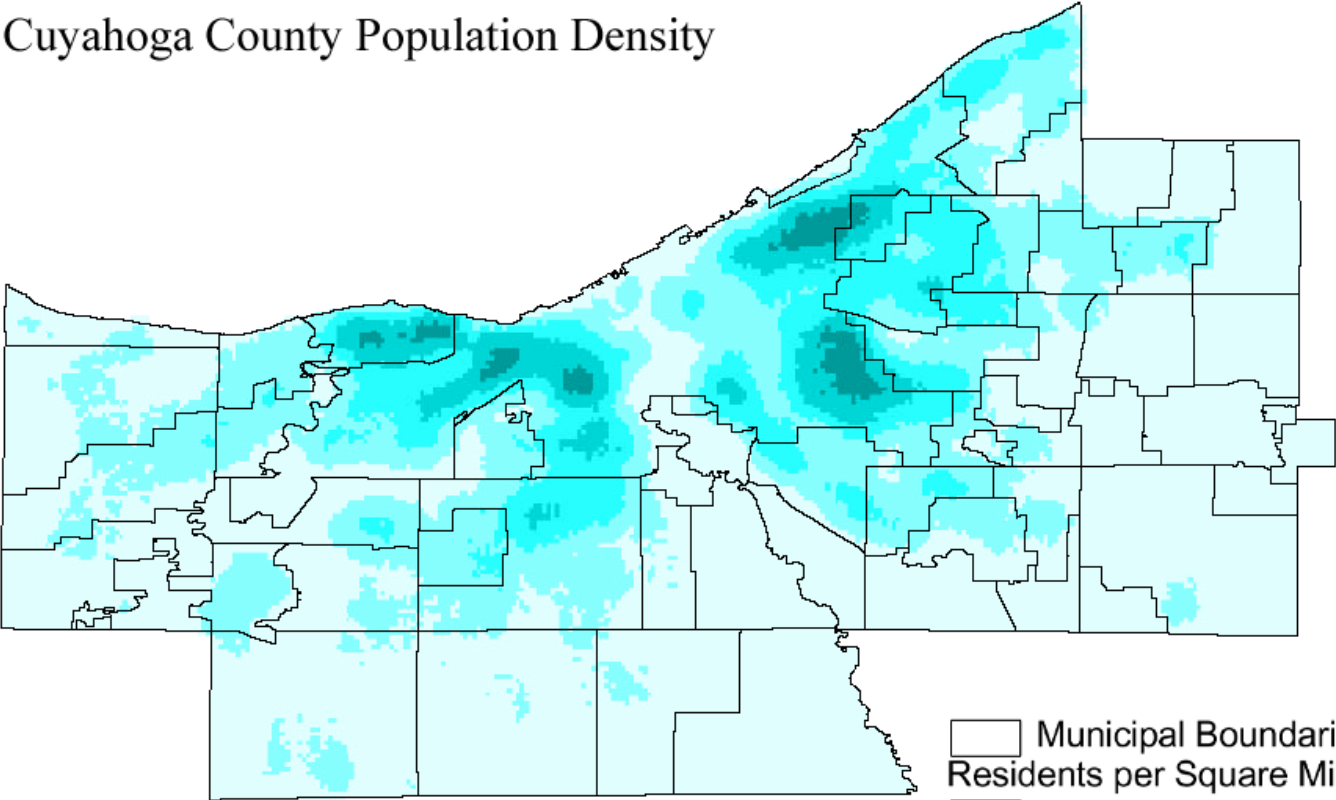


- Division of Environmental Health
- Division of Community Health
- Division of Nursing

Servicing 35 cities, 19 villages, and 2 townships  
representing a population of 830,000

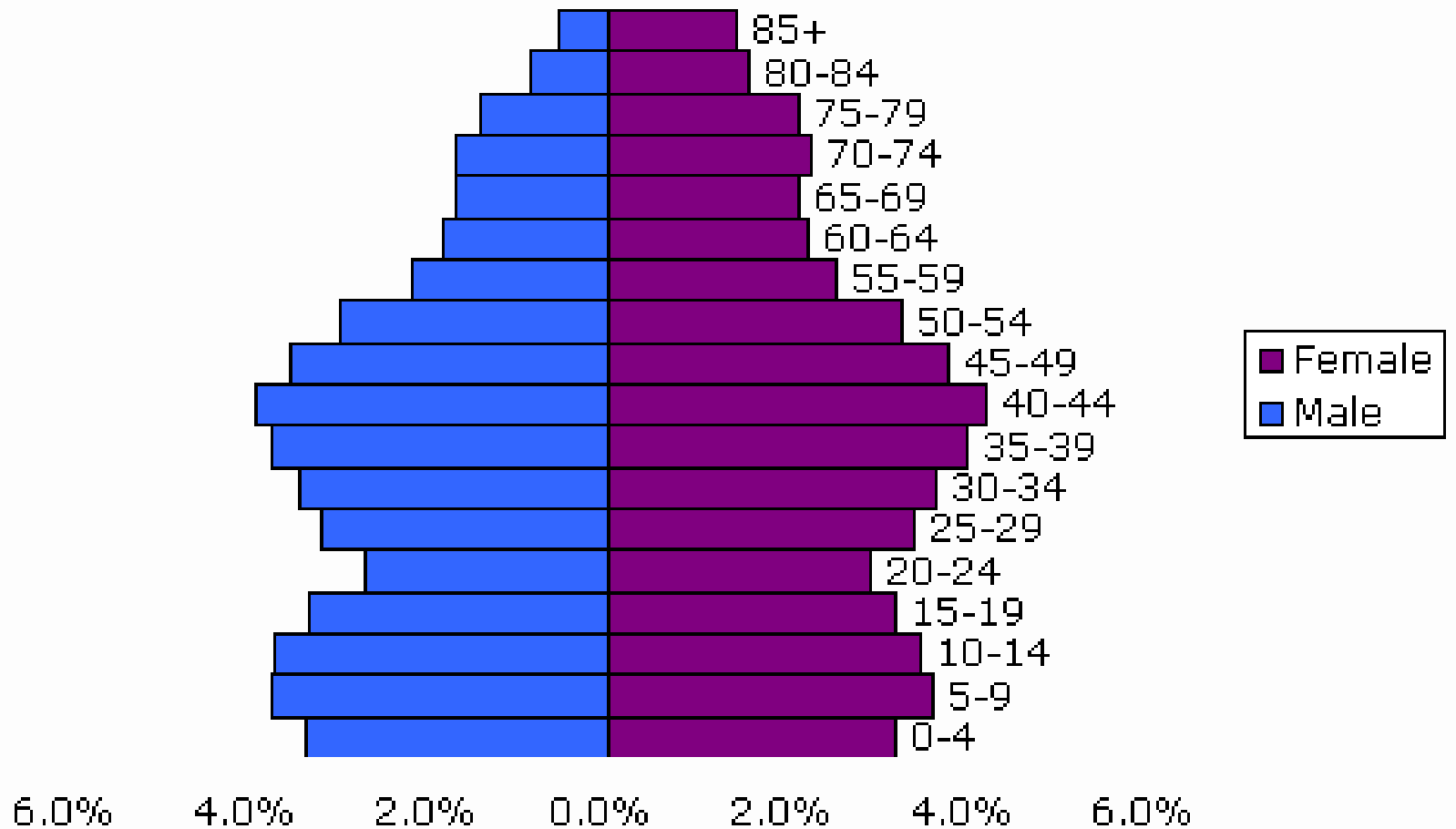
Employs 185 full and part time staff

# Cuyahoga County Population Density

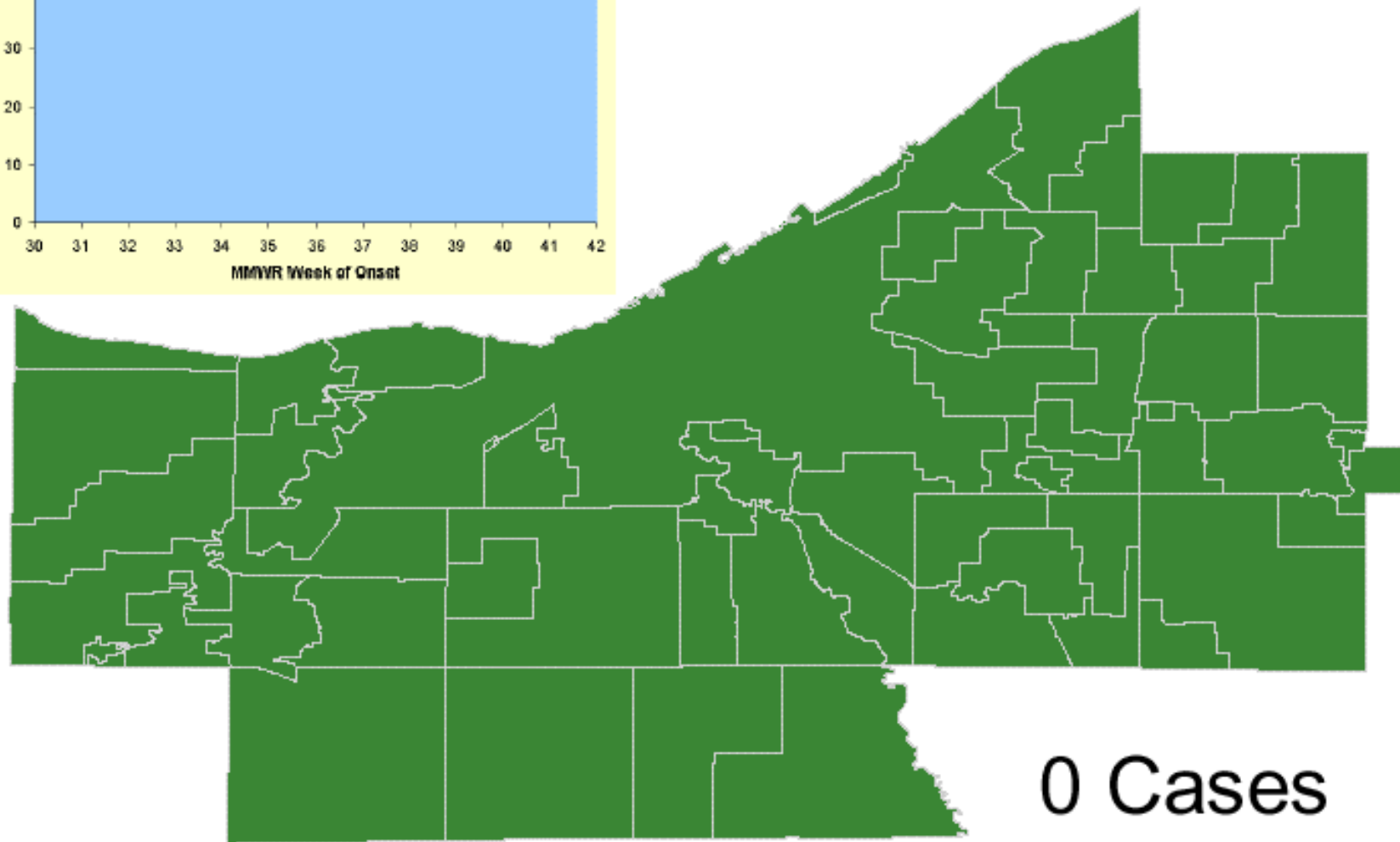
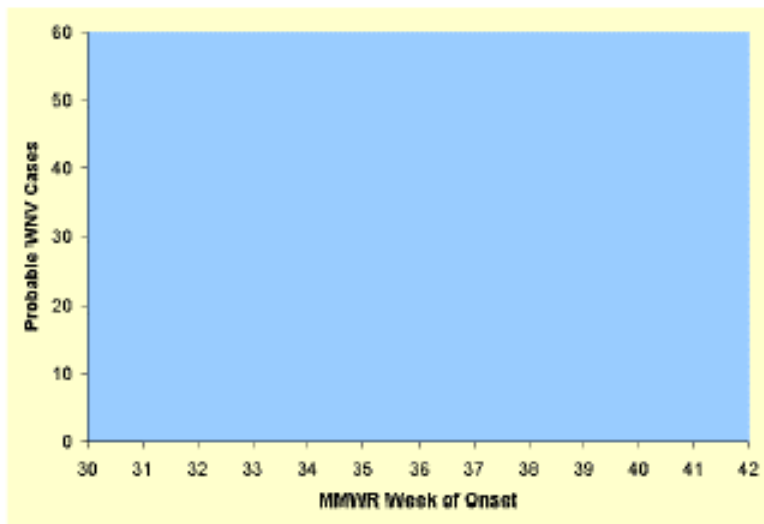


Municipal Boundaries	
Residents per Square Mile	
0 - 2094	Lightest Blue
2094 - 4188	Light Blue
4188 - 6282	Medium Blue
6282 - 8376	Dark Blue
8376 - 10470	Darkest Blue

# Cuyahoga County Age Distribution, 2000

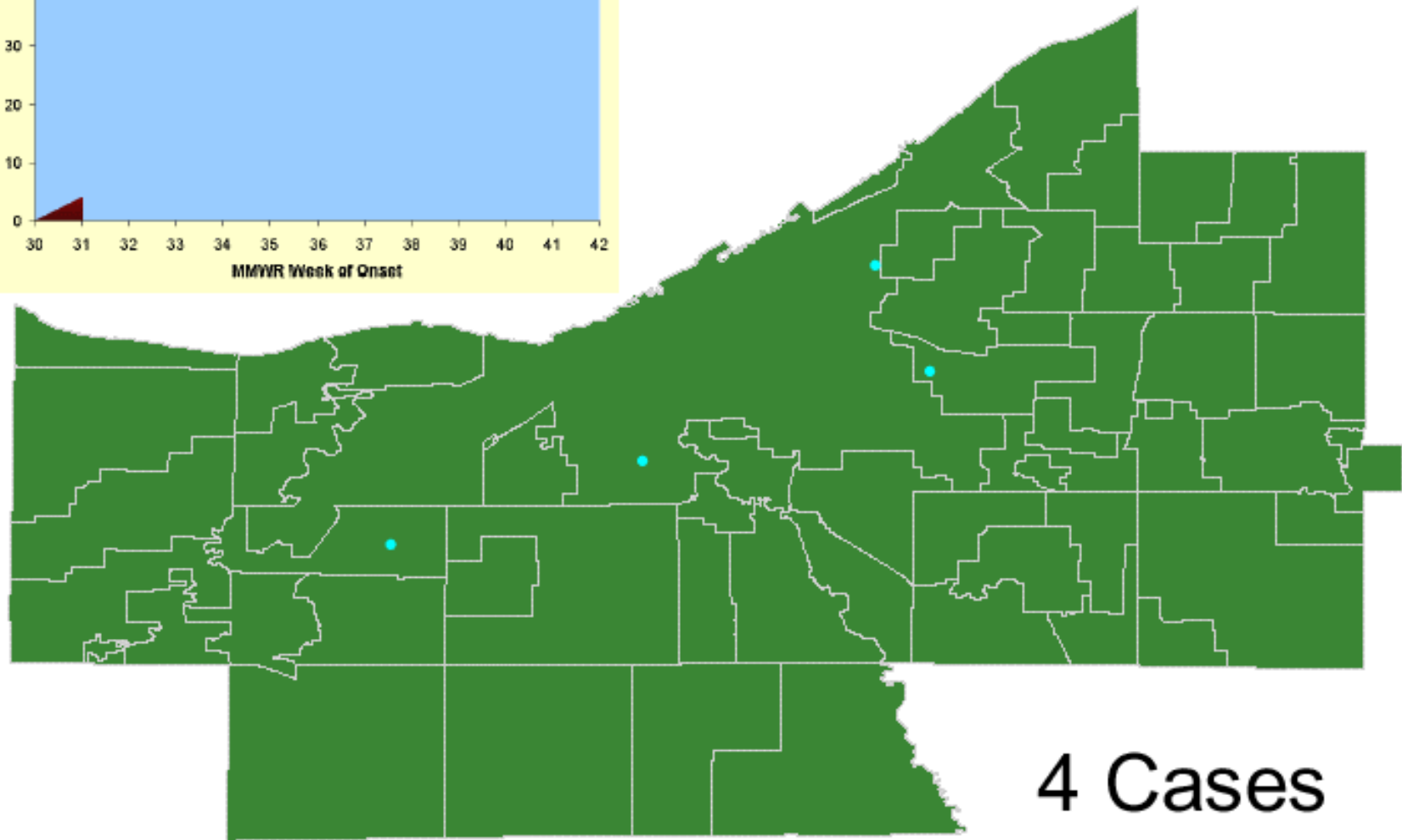
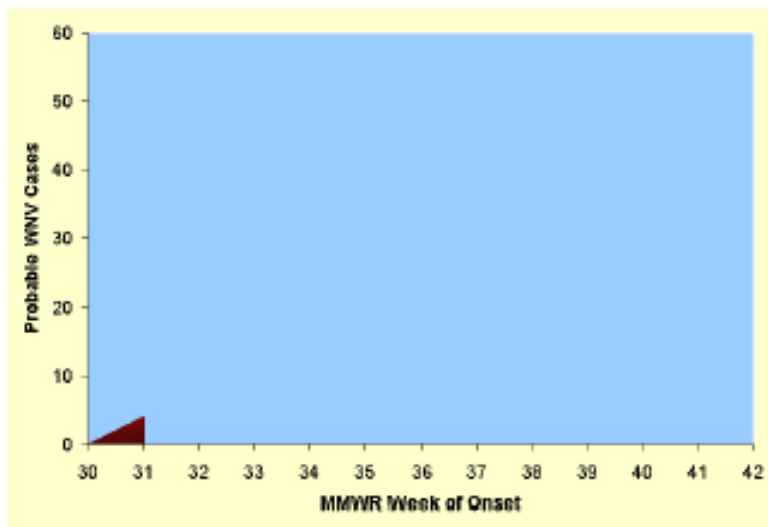


Source: CensusScope, Population Pyramid and Age Distribution Statistics



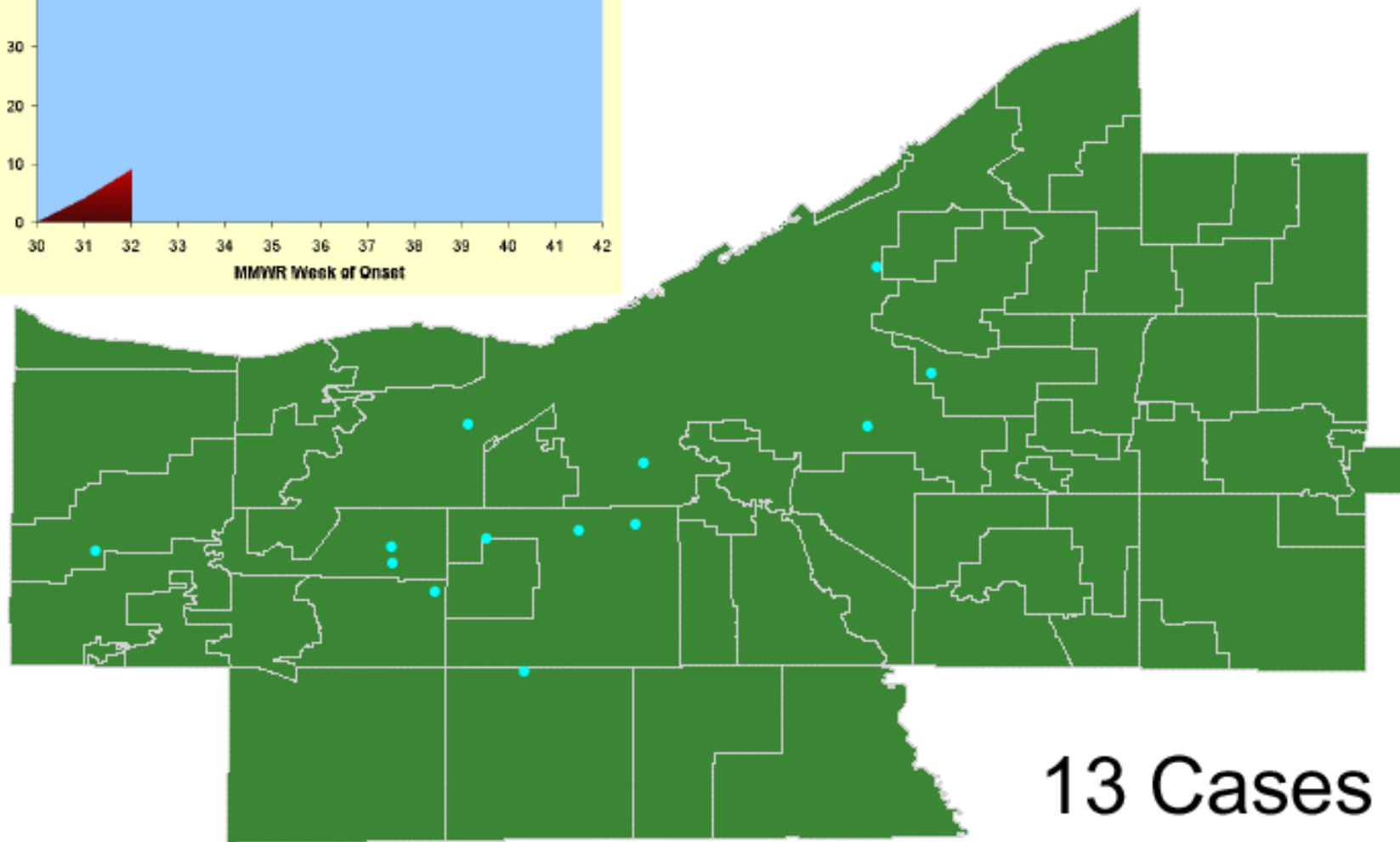
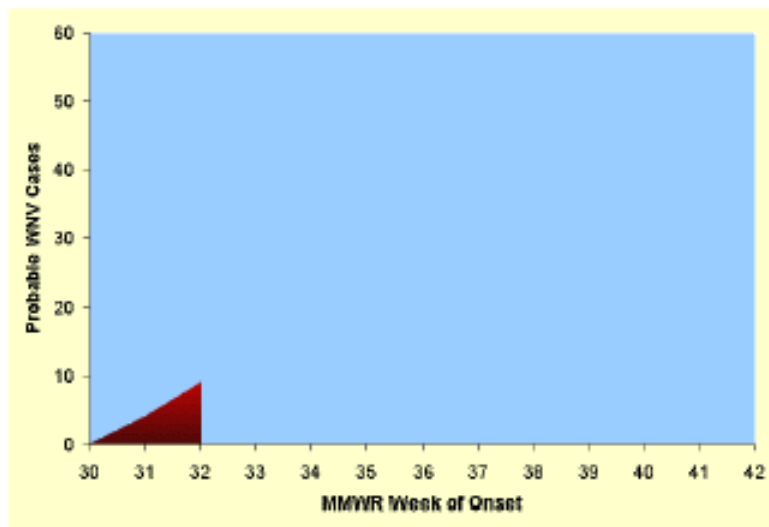
0 Cases

MMWR Week 30, July 21 to July 27, 2002  
Probable WNV Case Onset in Cuyahoga County



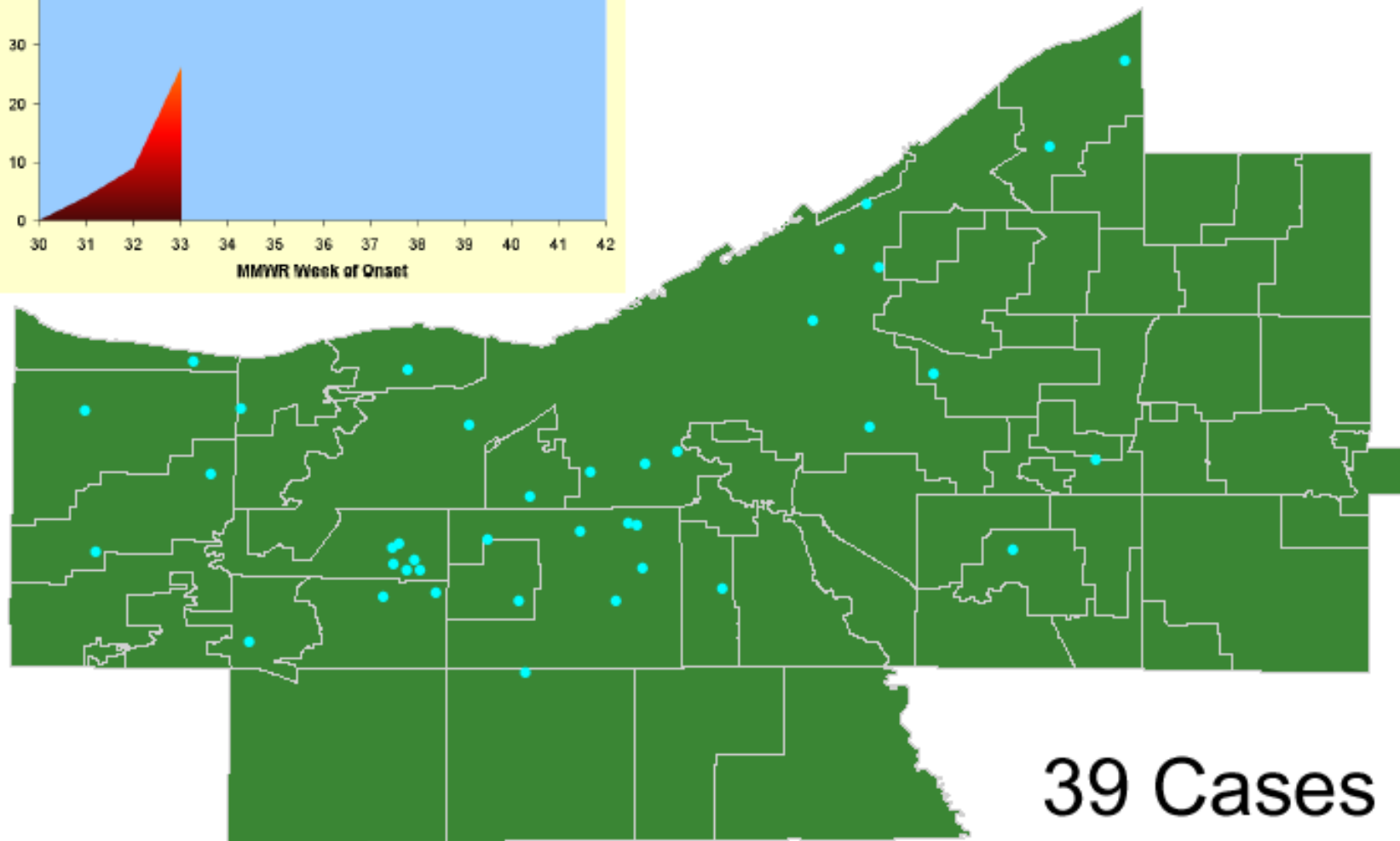
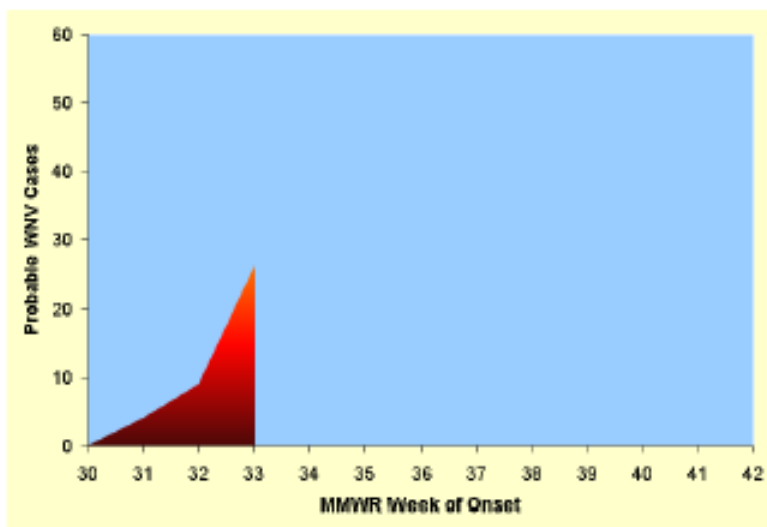
4 Cases

MMWR Week 31, July 28 to August 3, 2002  
Probable WNV Case Onset in Cuyahoga County



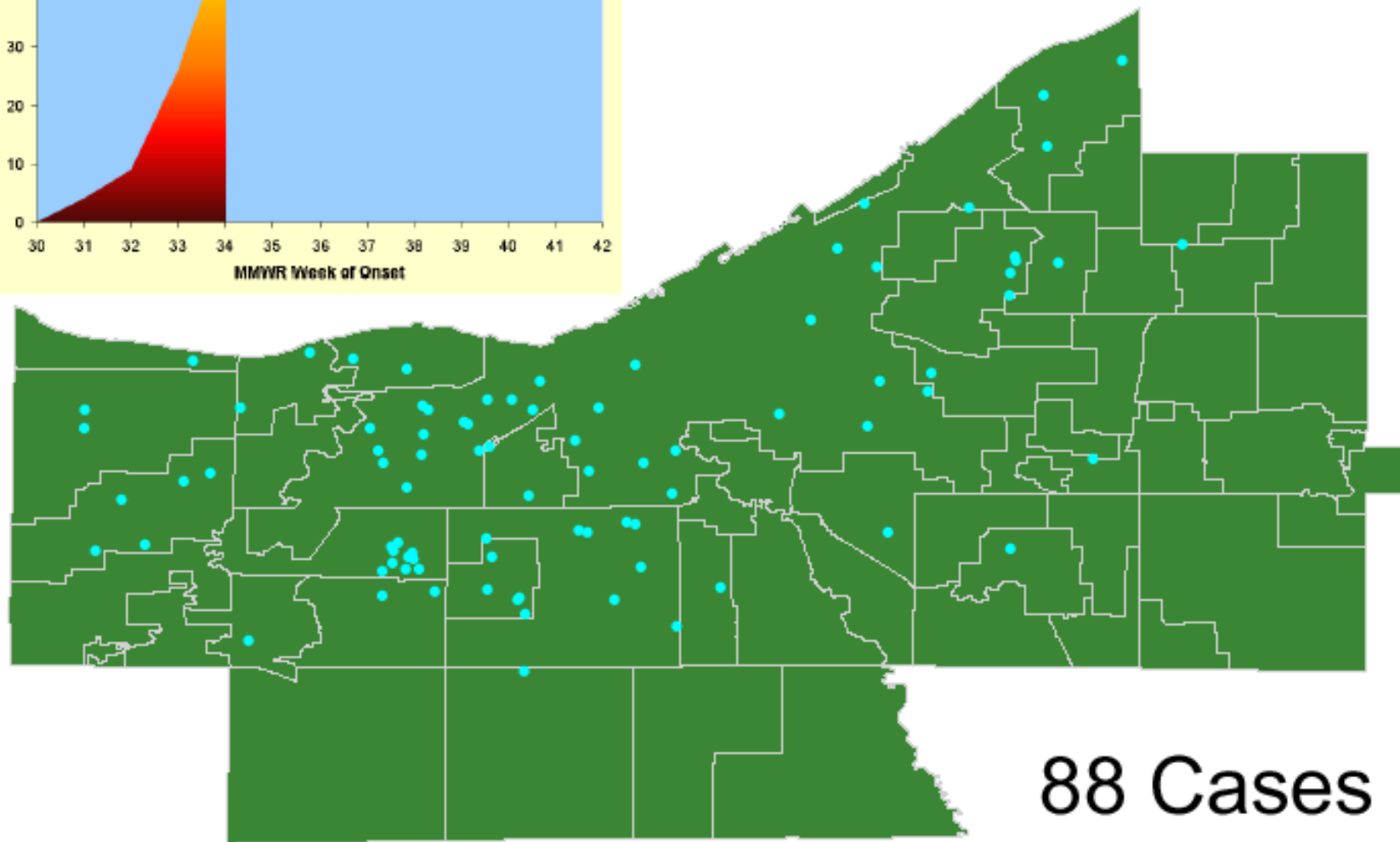
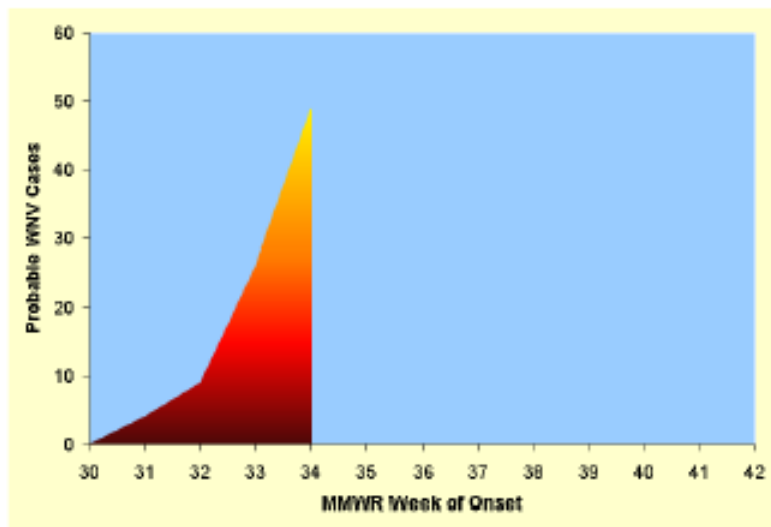
13 Cases

MMWR Week 32, August 4 - August 10, 2002  
Probable WNV Case Onset in Cuyahoga County



39 Cases

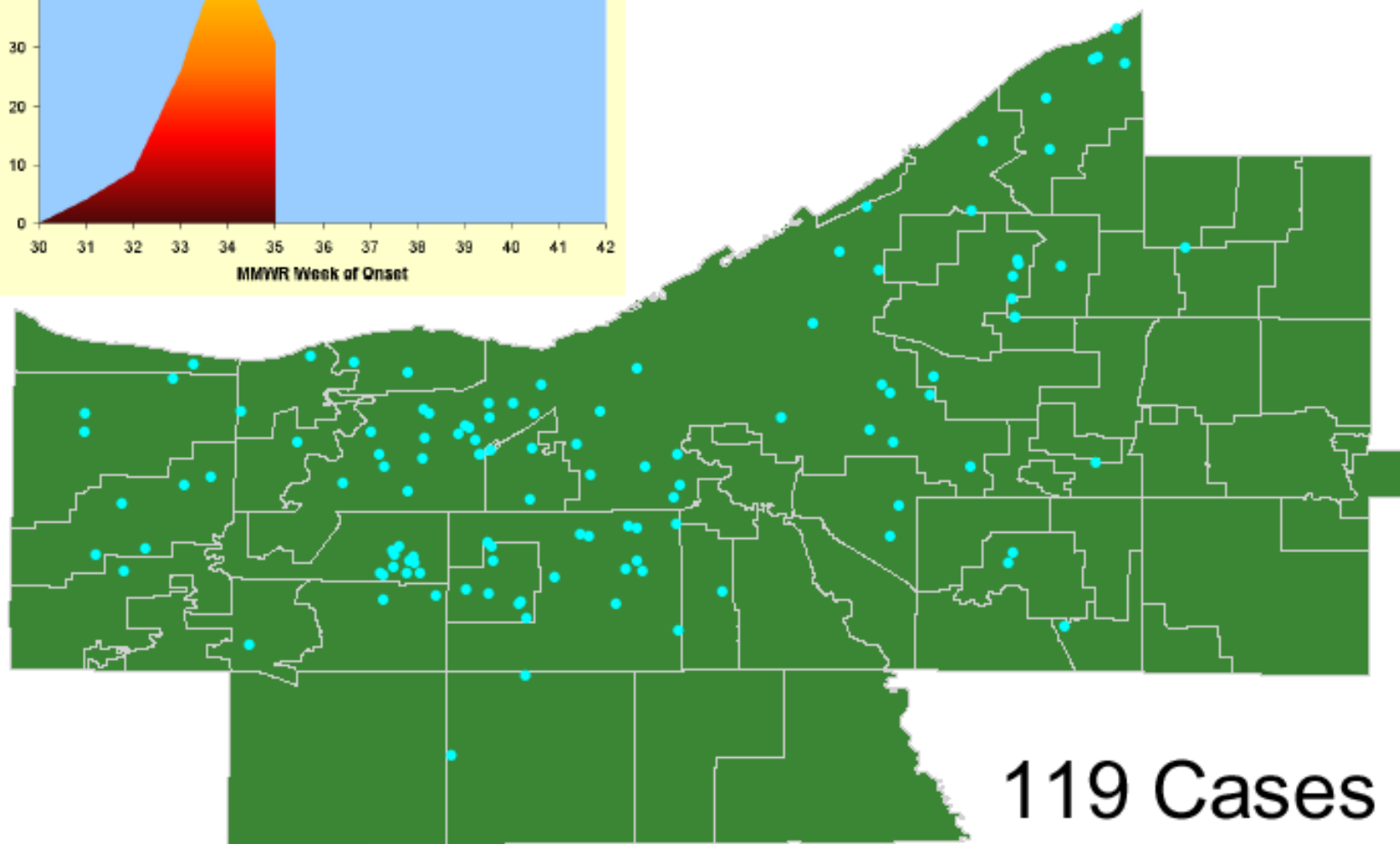
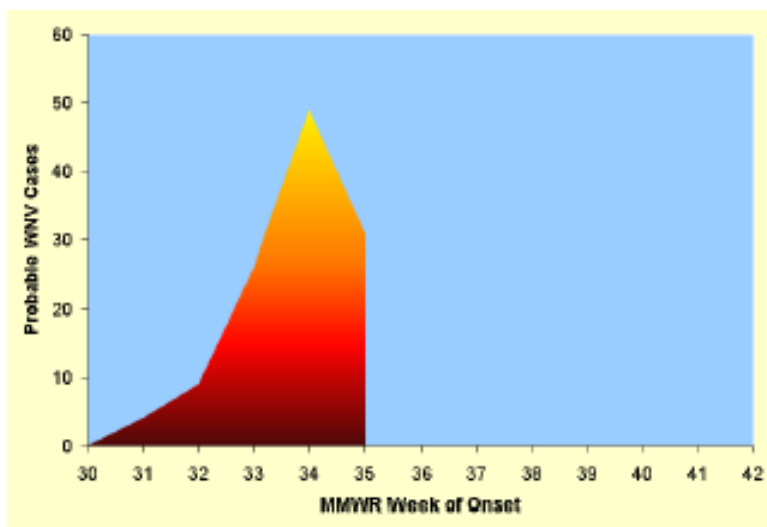
MMWR Week 33, August 11 - August 17, 2002  
Probable WNV Case Onset in Cuyahoga County



88 Cases

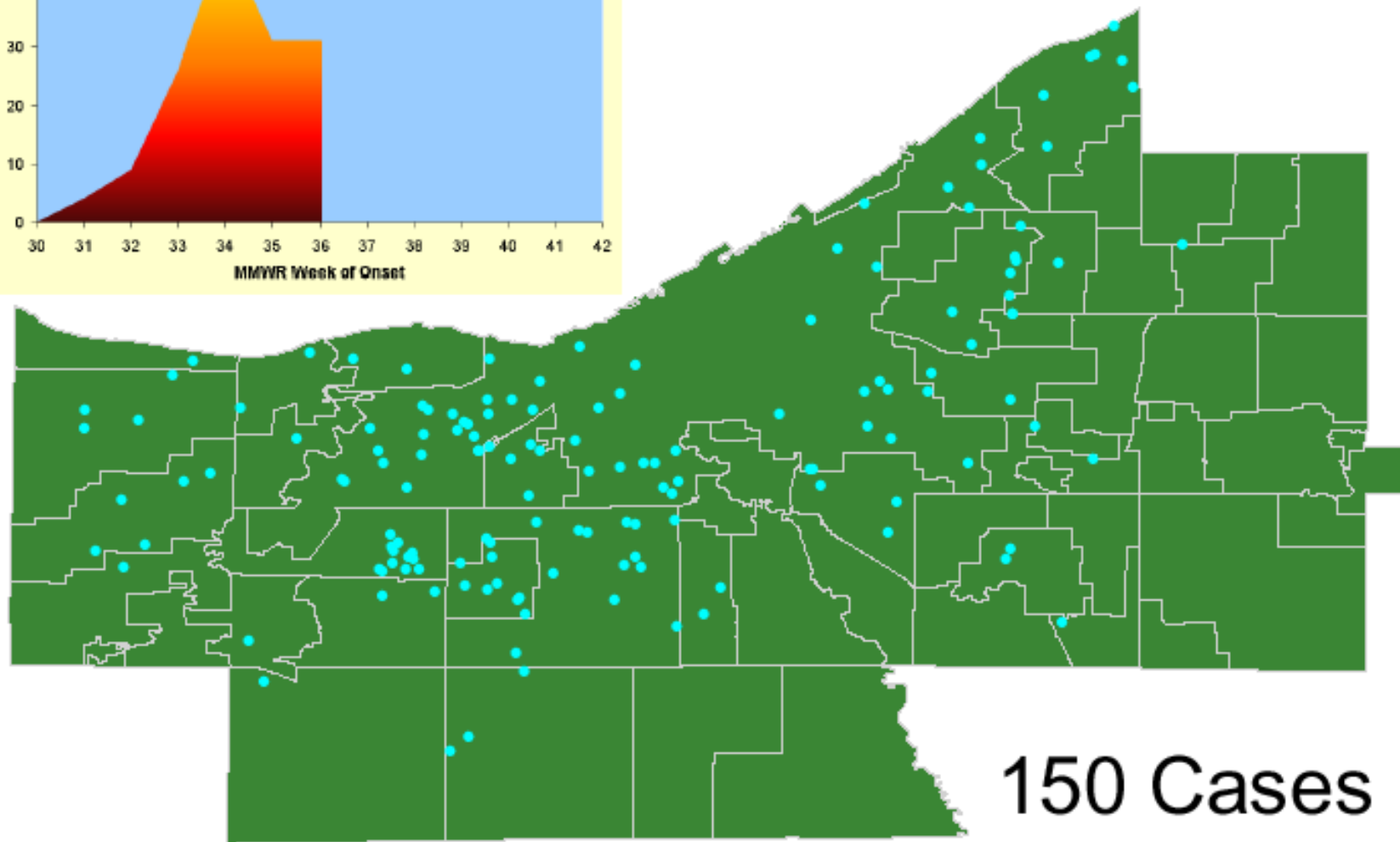
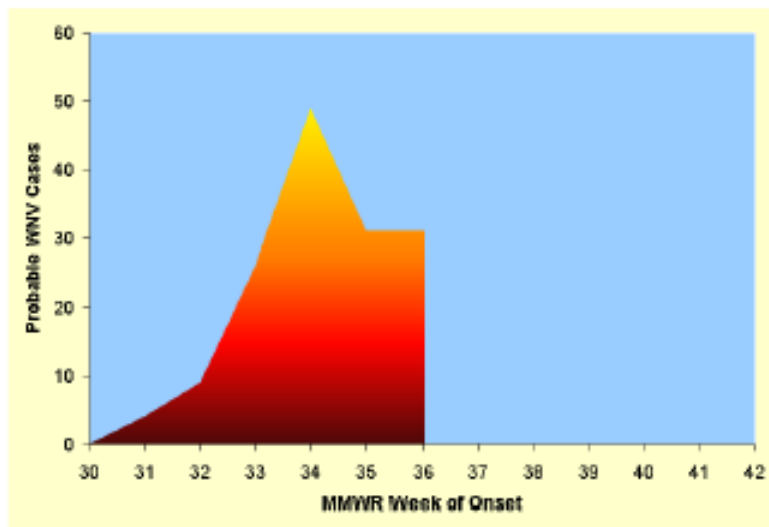
MMWR Week 34, August 18 - August 24, 2002  
Probable WNV Case Onset in Cuyahoga County





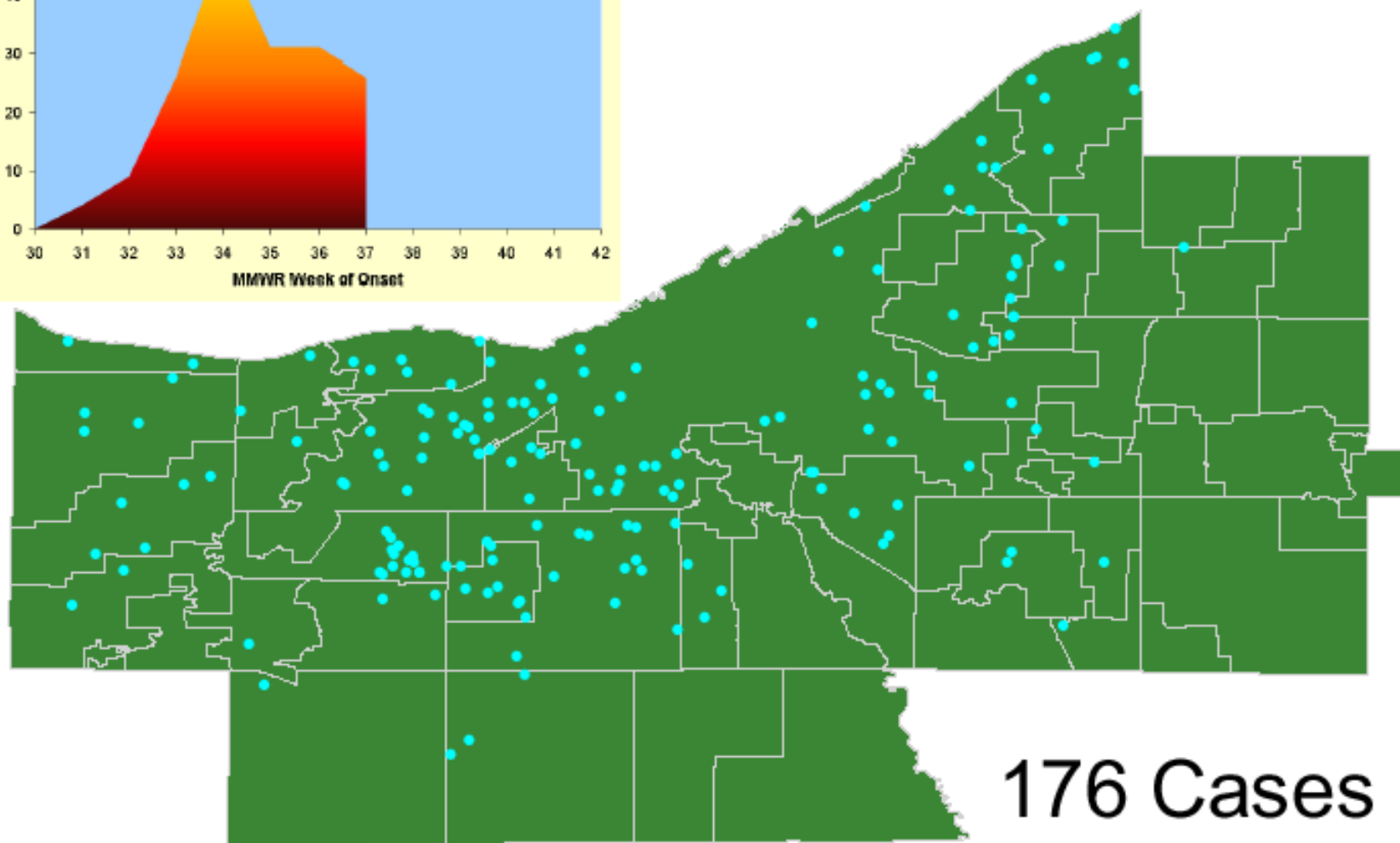
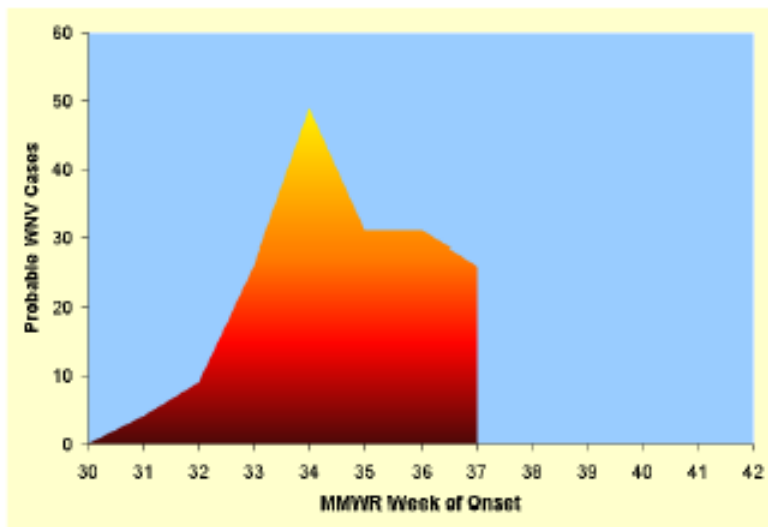
119 Cases

MMWR Week 35, August 25 - August 31, 2002  
Probable WNV Case Onset in Cuyahoga County



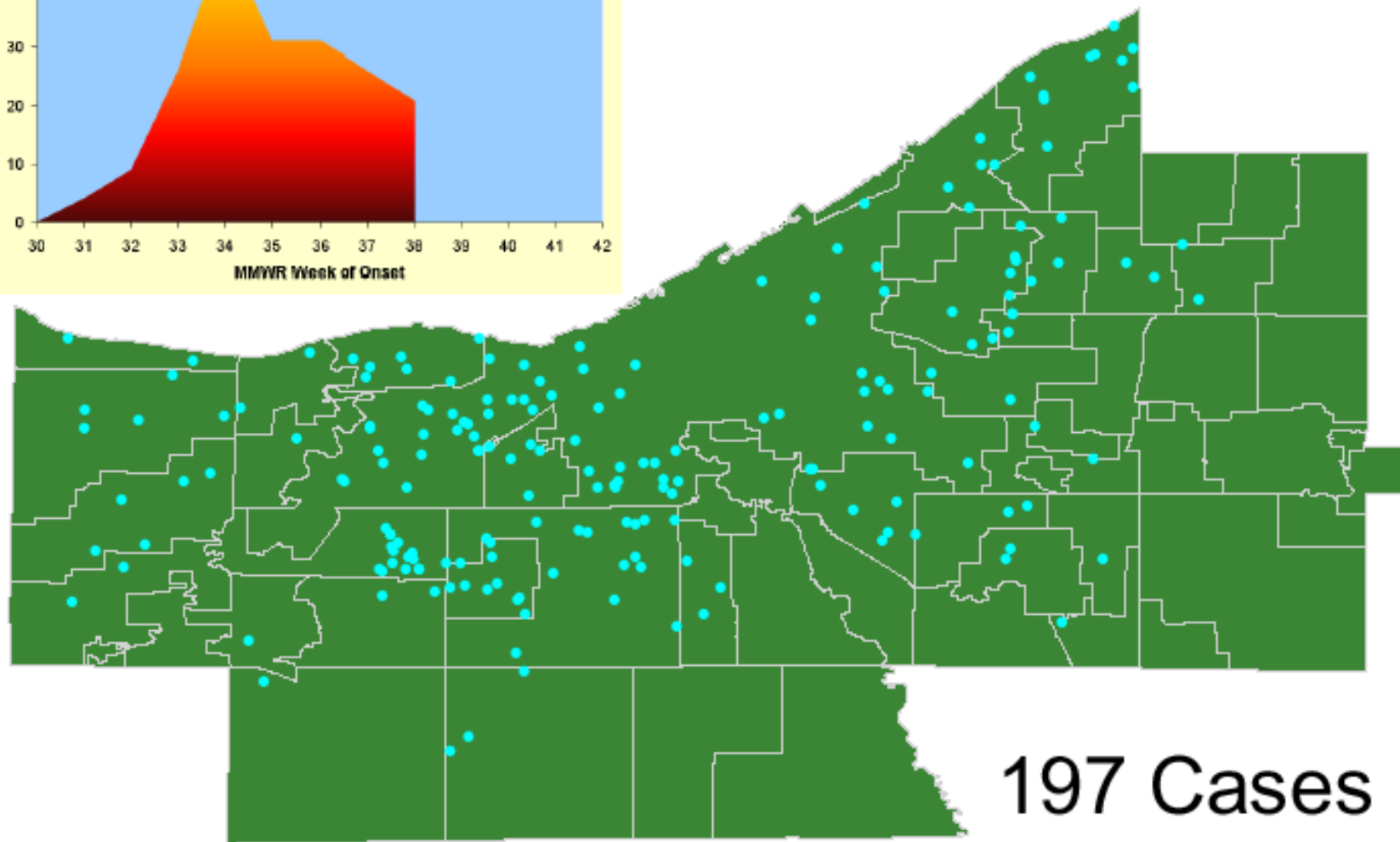
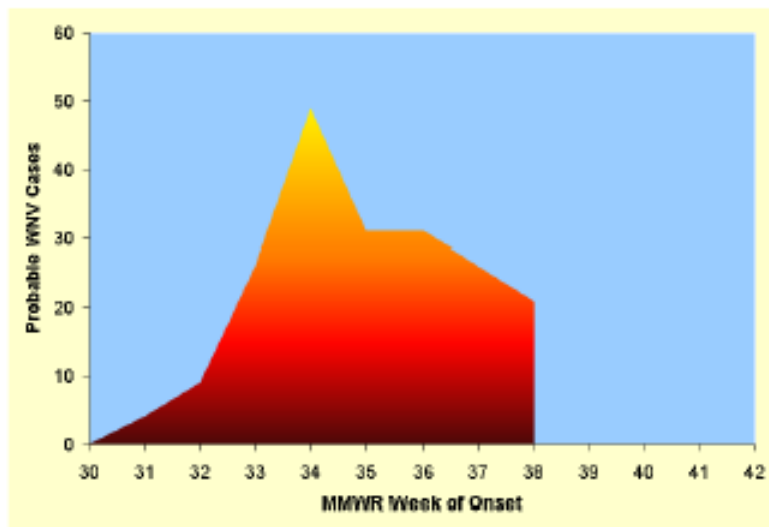
**150 Cases**

MMWR Week 36, September 1 - September 7, 2002  
Probable WNV Case Onset in Cuyahoga County



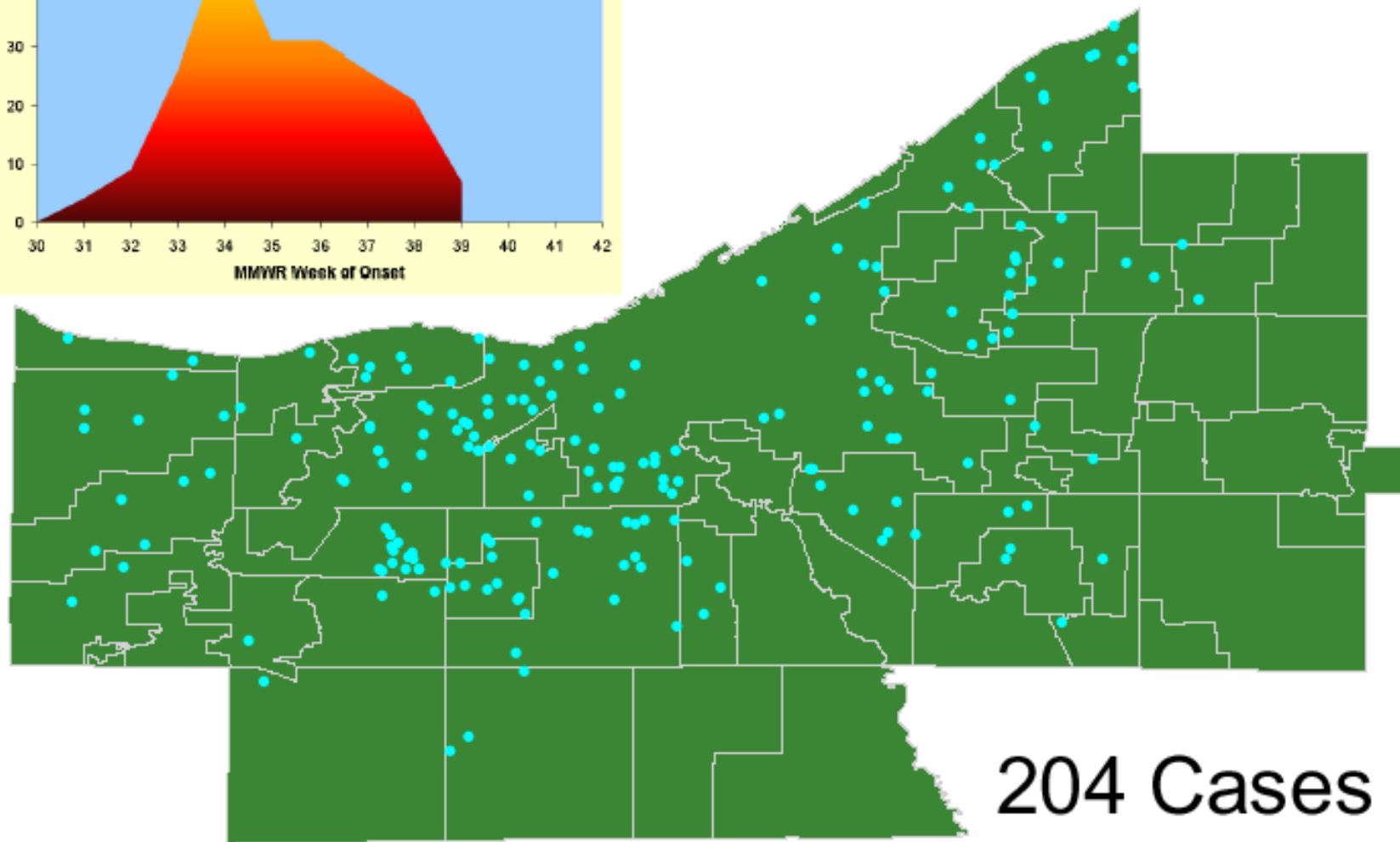
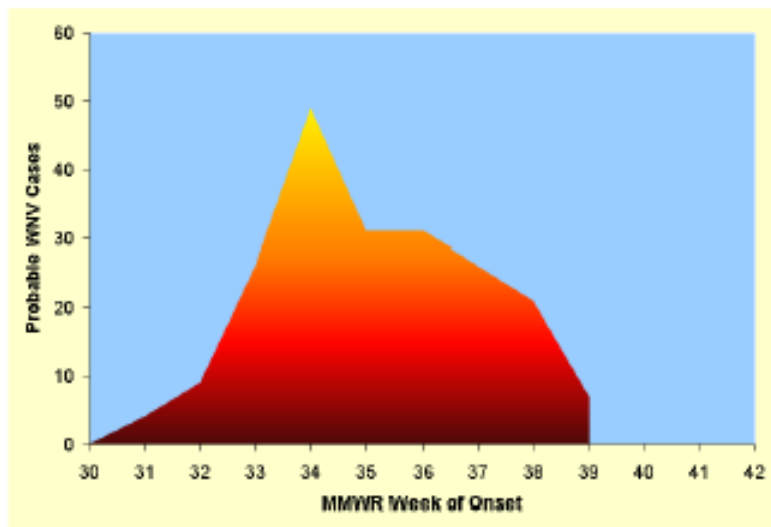
**176 Cases**

MMWR Week 37, September 8 - September 14, 2002  
Probable WNV Case Onset in Cuyahoga County



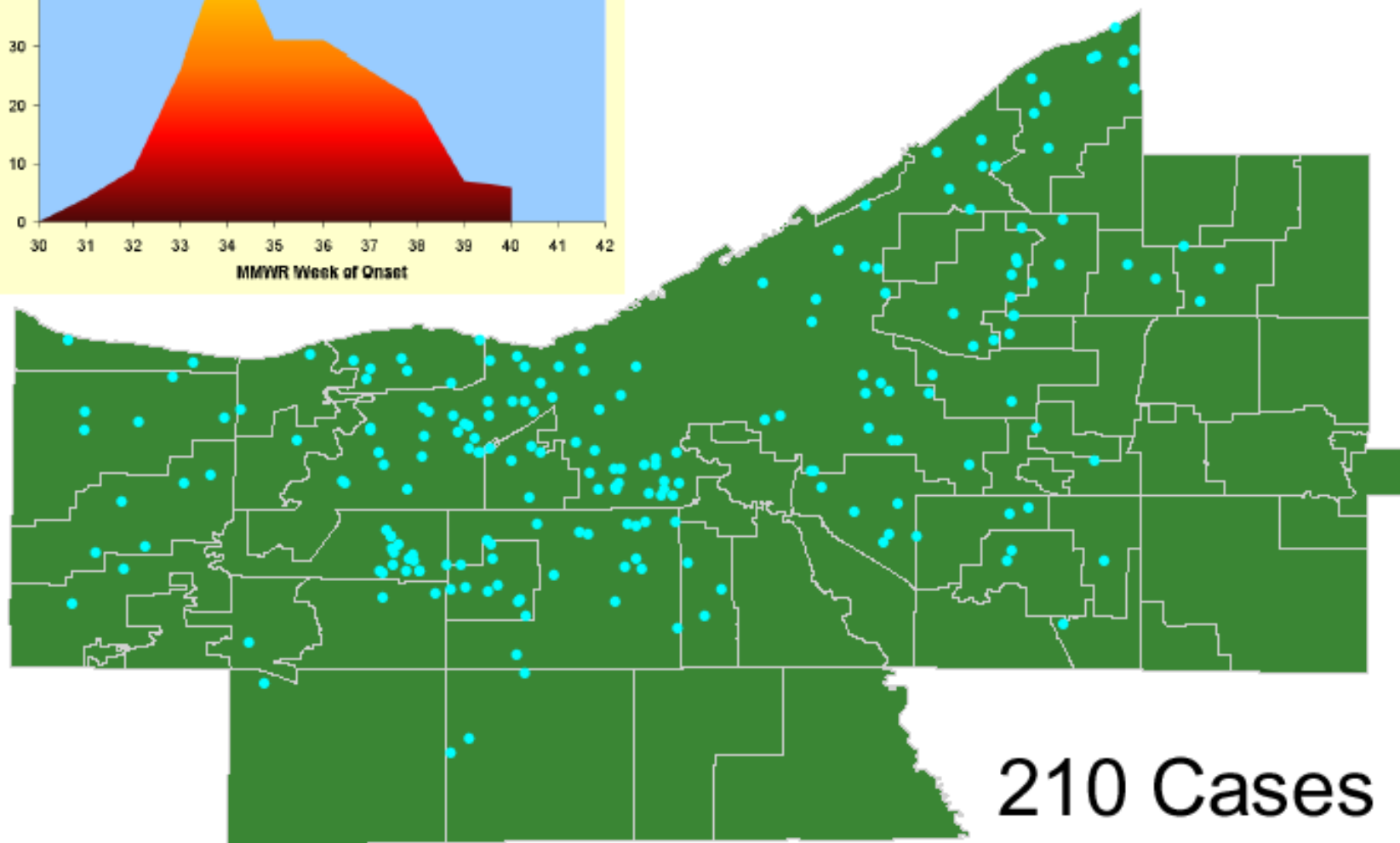
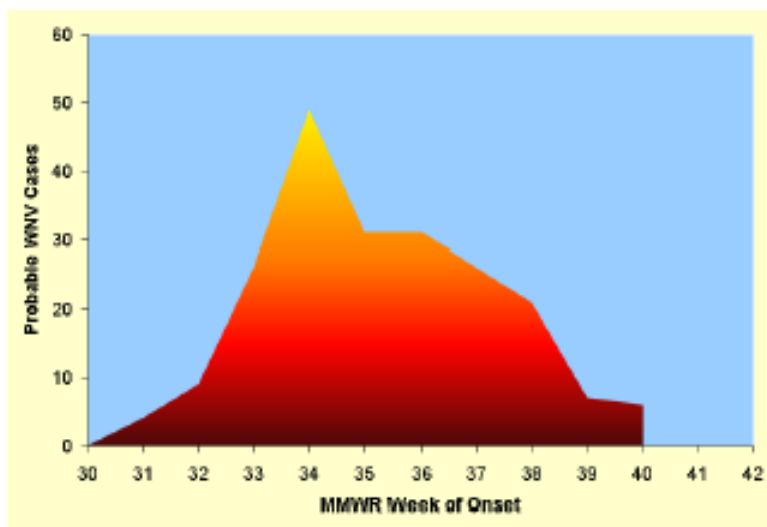
197 Cases

MMWR Week 38, September 15 - September 21, 2002  
Probable WNV Case Onset in Cuyahoga County



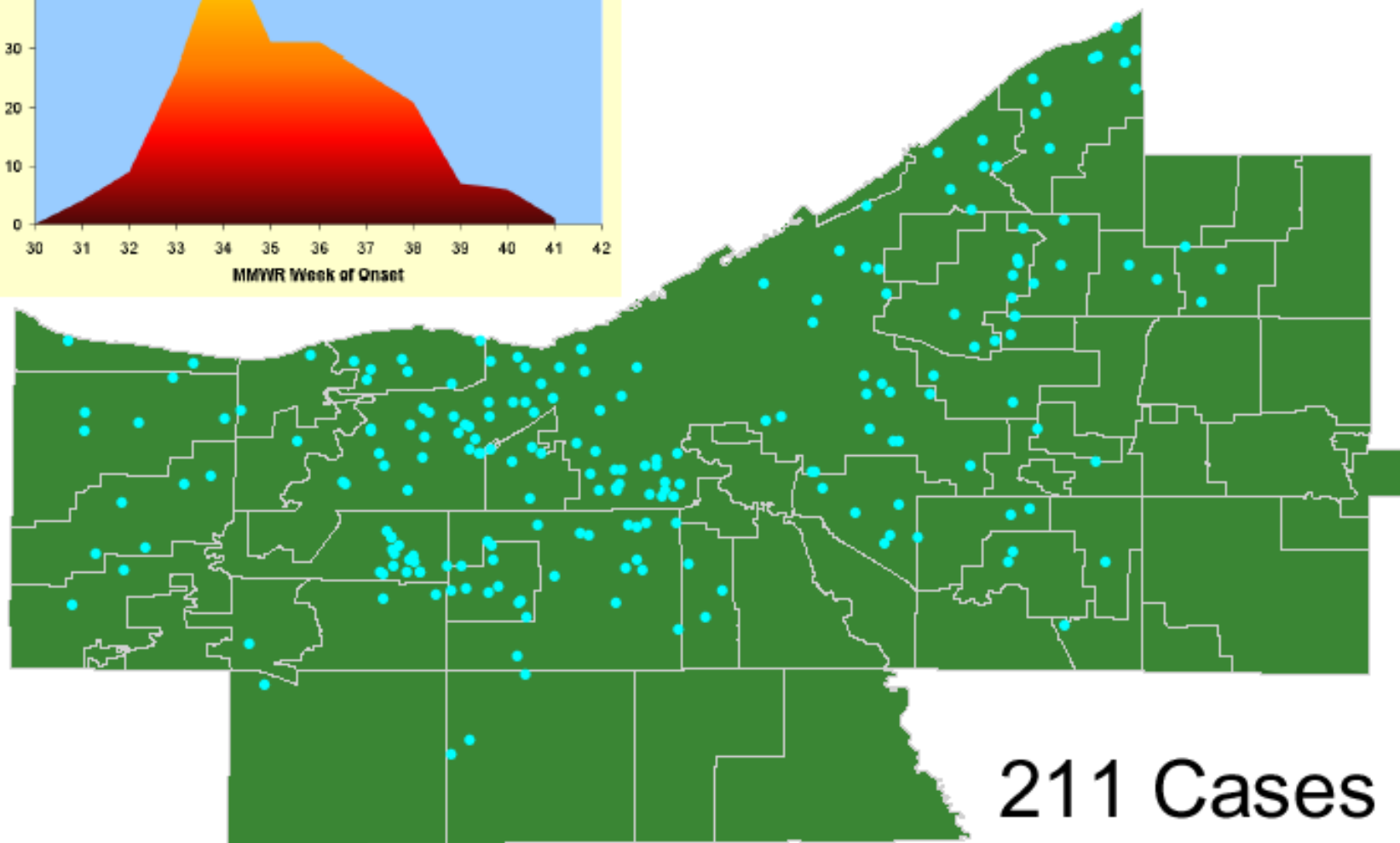
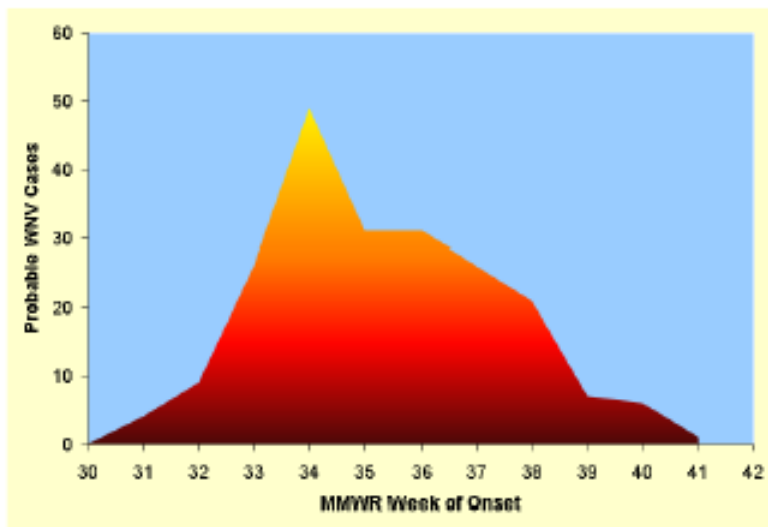
204 Cases

MMWR Week 39, September 22 - September 28, 2002  
Probable WNV Case Onset in Cuyahoga County



210 Cases

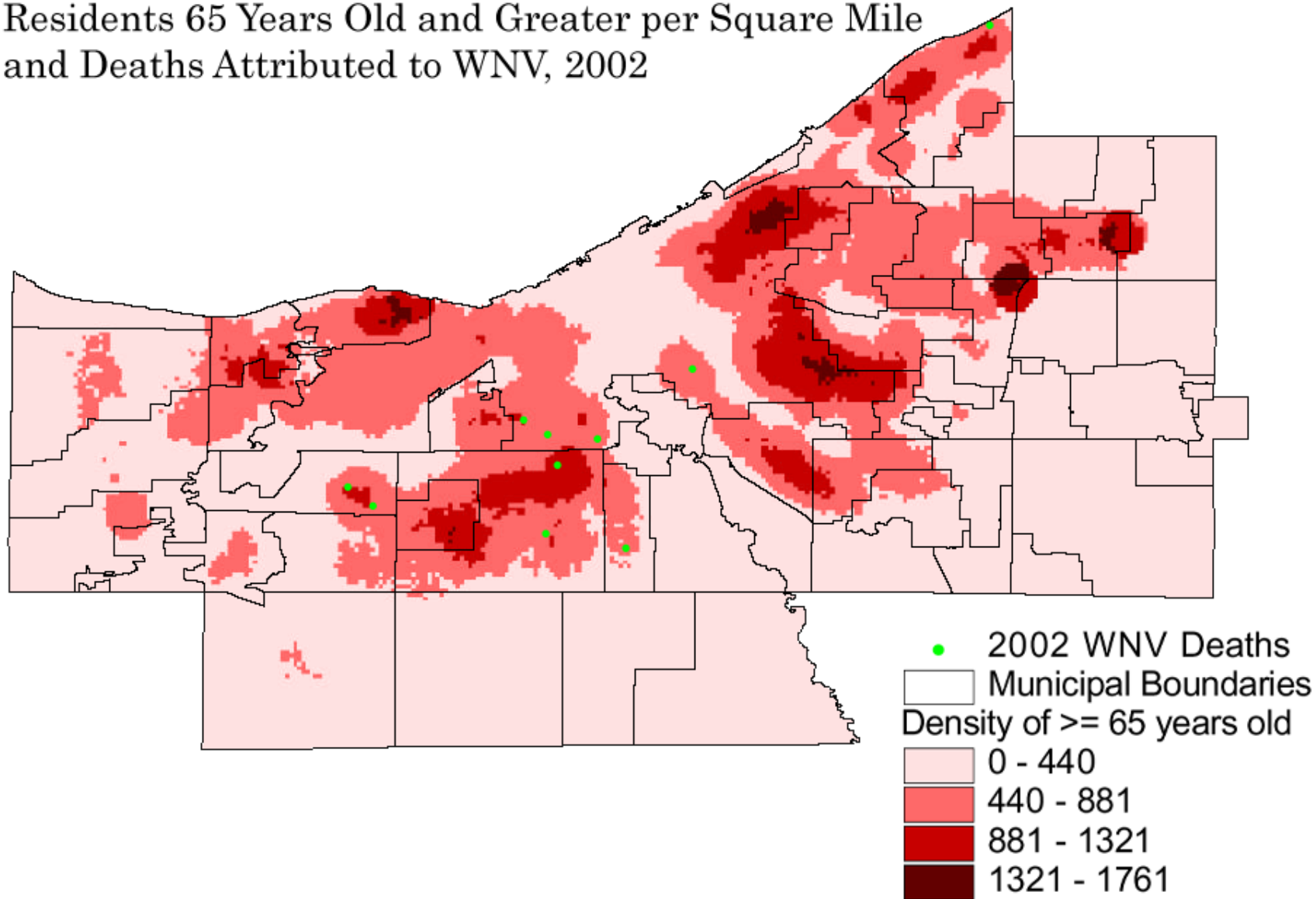
MMWR Week 40, September 29 - October 5, 2002  
Probable WNV Case Onset in Cuyahoga County



211 Cases

MMWR Week 41, October 6 - October 12, 2002  
Probable WNV Case Onset in Cuyahoga County

# Residents 65 Years Old and Greater per Square Mile and Deaths Attributed to WNV, 2002







# CCBH

Mosquito Program for over  
25 years

- Surveillance program
- Public education
- Mosquito control program

# CCBH

## Surveillance program

- Survey breeding sites
- Collect dead crows & blue jays
- Collect live mosquitoes
- Conduct live bird bleeding
- Collect treehole mosquito eggs

# Public Education

- Residents requesting an inspection
- City officials
- Senior groups
- Interested parties – Cleveland Metroparks, Animal Warden assoc., etc.

# Public Education

*Protect Yourself  
from  
Mosquito-borne  
Encephalitis*



1375 Euclid Avenue  
Cleveland, OH 44115-1882  
(216) 443-7500  
Fax: (216) 443-7537

# Public Education



## stop the west nile virus



call



Cleveland Residents  
**664-CROW**

Cuyahoga County Resident  
**443-5643**



for more  
information



to report potential  
mosquito breeding  
sites



to report dead crows  
or blue jays

[www.city.cleveland.oh.us](http://www.city.cleveland.oh.us)  
[www.ccbh.net](http://www.ccbh.net)



### how can you stop the west nile virus?

- remove old tires, tin cans, buckets, drums, bottles, or any water holding containers.
- fill in or drain any low places (puddles, ruts) in yard.
- cover trash containers to keep out rainwater.
- repair leaky pipes and outside faucets.
- empty plastic wading pool at least once a week and store indoors when not in use.
- fill tree rot holes and fill low stumps that hold water with sand or concrete.
- change the water in bird baths and plant pots or drip trays at least once each week.
- keep grass cut short and shrubbery well trimmed around the house so adult mosquitoes will not hide there.
- clean roof gutters and downspout screens regularly.
- store pet food and water bowls indoors when not in use.

# CCBH

## Mosquito control program

- Larviciding areas from March – October
- Adulticiding
  - Barrier treatments
  - ULV - Ultra Low Volume

# Summer Activities

- 9 Seasonal Staff, 3 Full Time Staff
- Extensive Support From Other Staff
- Larval Control Completed in Every Breeding Catch Basin In Our Health Jurisdiction
- Larval Control in Every Breeding Roadside Ditch in our Health Jurisdiction
- Attempted Two Rounds of Larviciding CB's
- Mosquito Surveillance
- Monitoring Dead Bird Reports



# Shelter Collections



# Shelter Collections



# Bradley Woods Metropark



# Aerial Larvicide Application



# Woodland Pool with Larvicide



# Tree Hole with Larvicide



# Woodland Pools Dominate the West side of Cuyahoga County



# Suburban Area Density

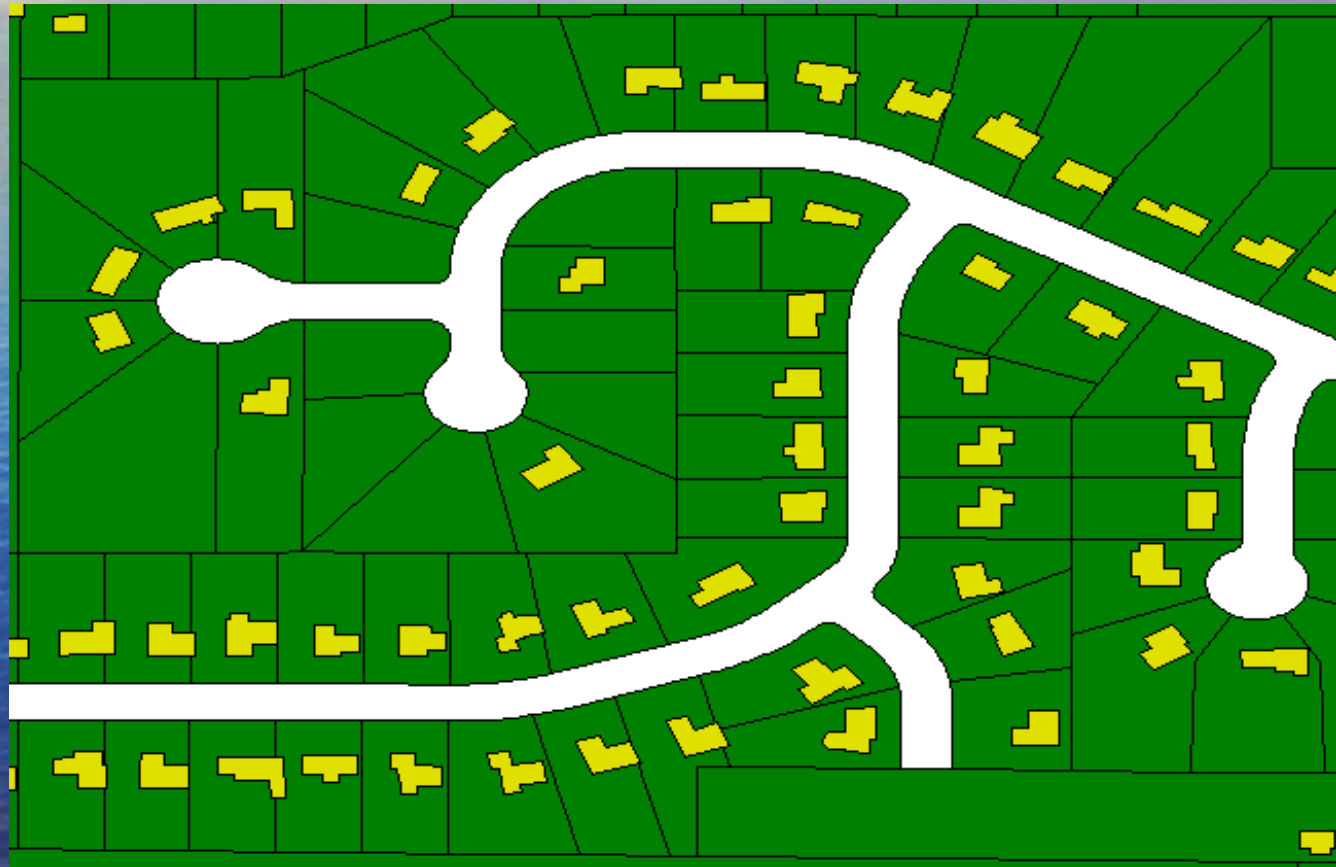




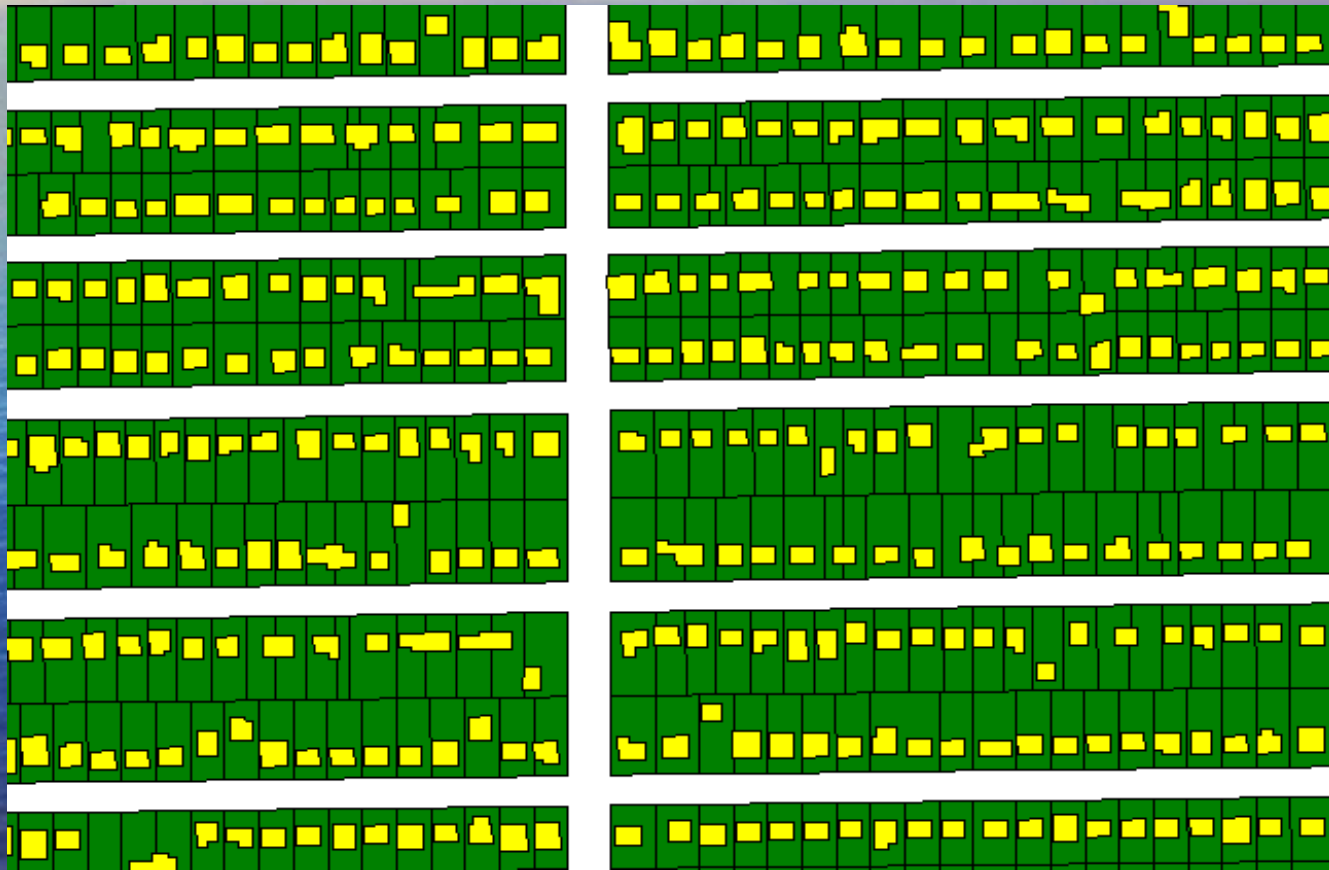
# Urban Area Density



# Aerial View of Suburban Density



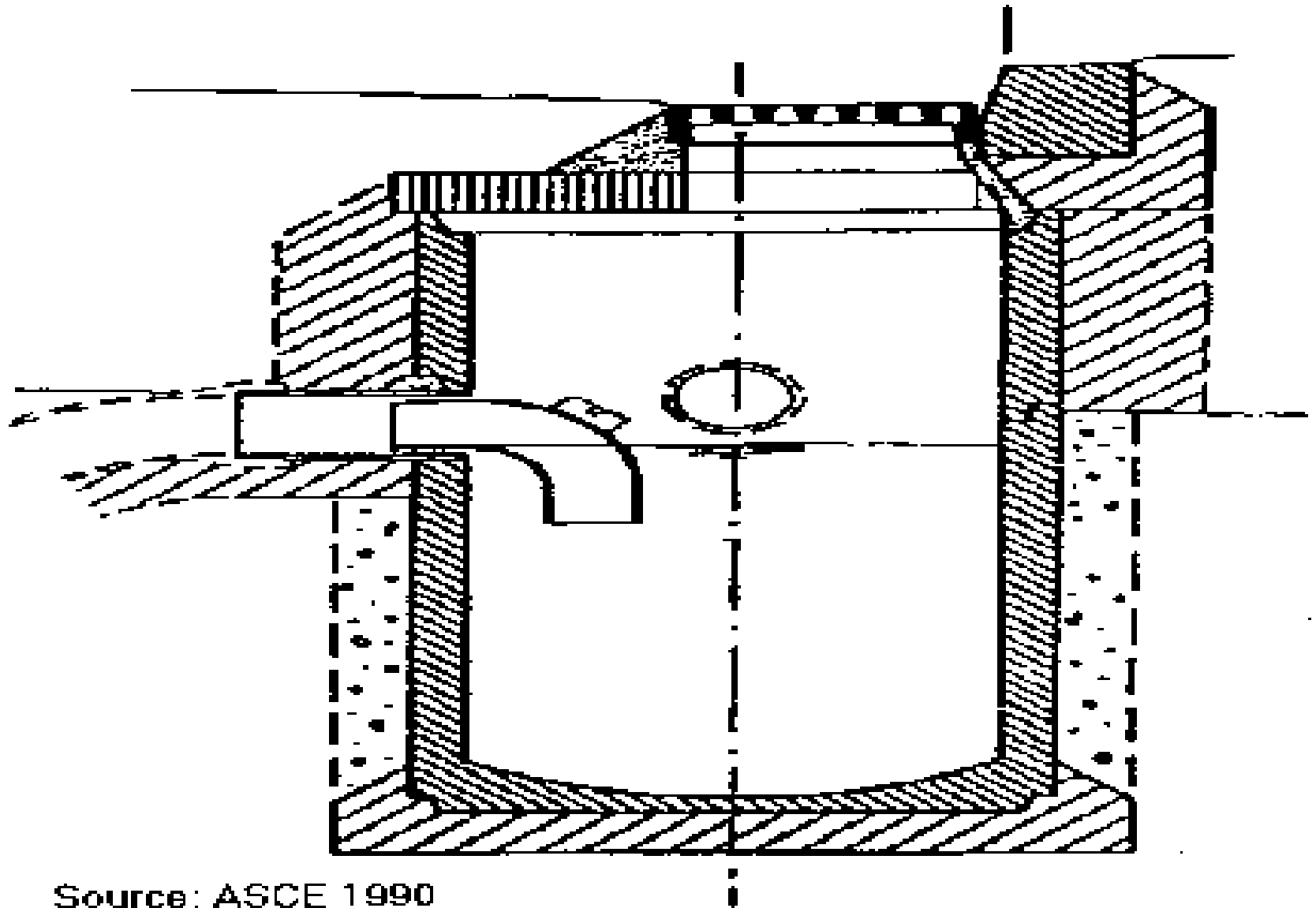
# Aerial View of Urban Density



# Curbside Catch Basins (East side of Cuyahoga County)



# Typical Catch Basin



Source: ASCE 1990

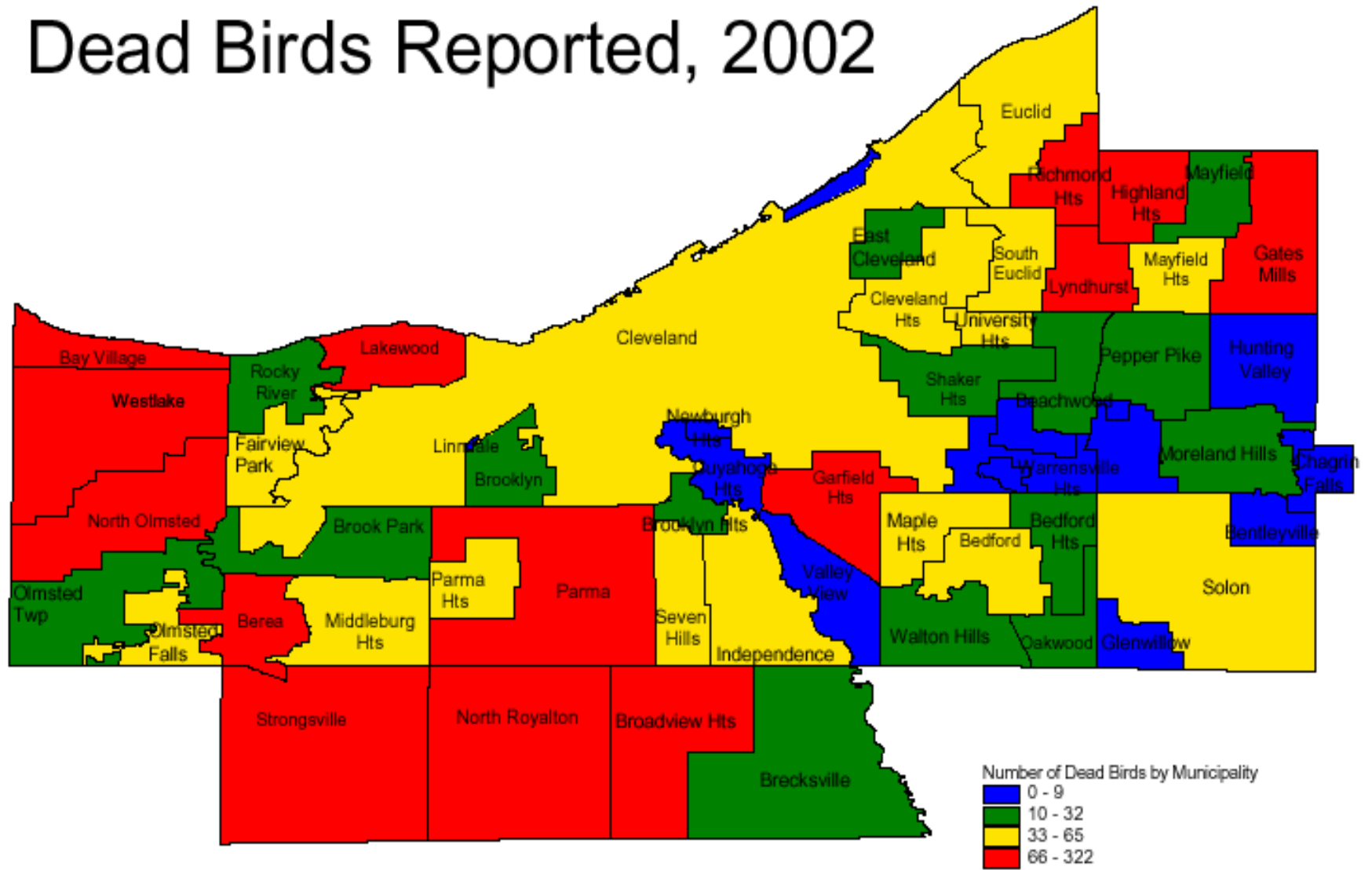
# Biological Larvicide



# WNV 2002

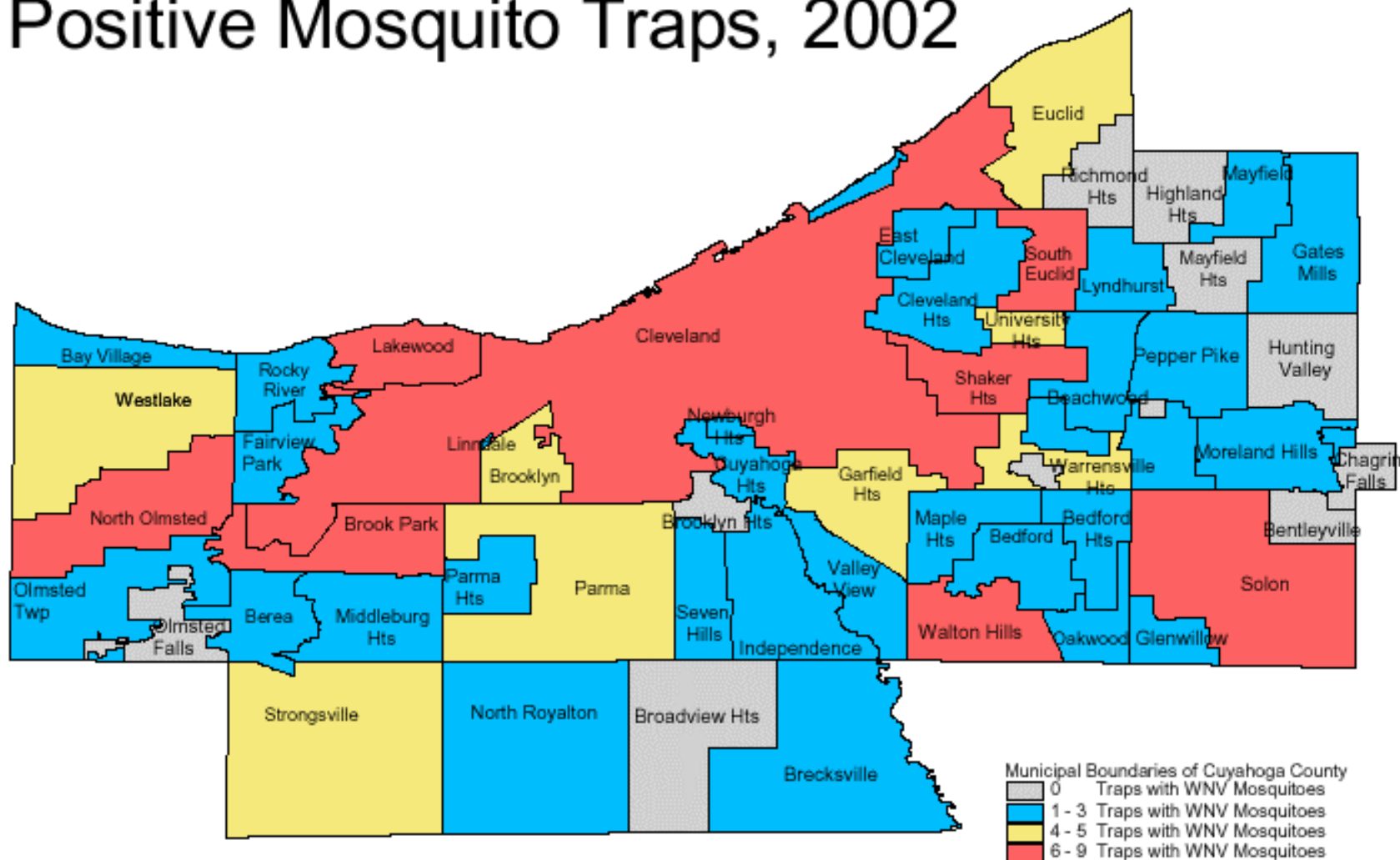
- Collected the first positive crow on May 20, 2002
- Collected the first positive mosquito pool on May 29, 2002
- Onset of first human case was July 31, 2002

# Dead Birds Reported, 2002

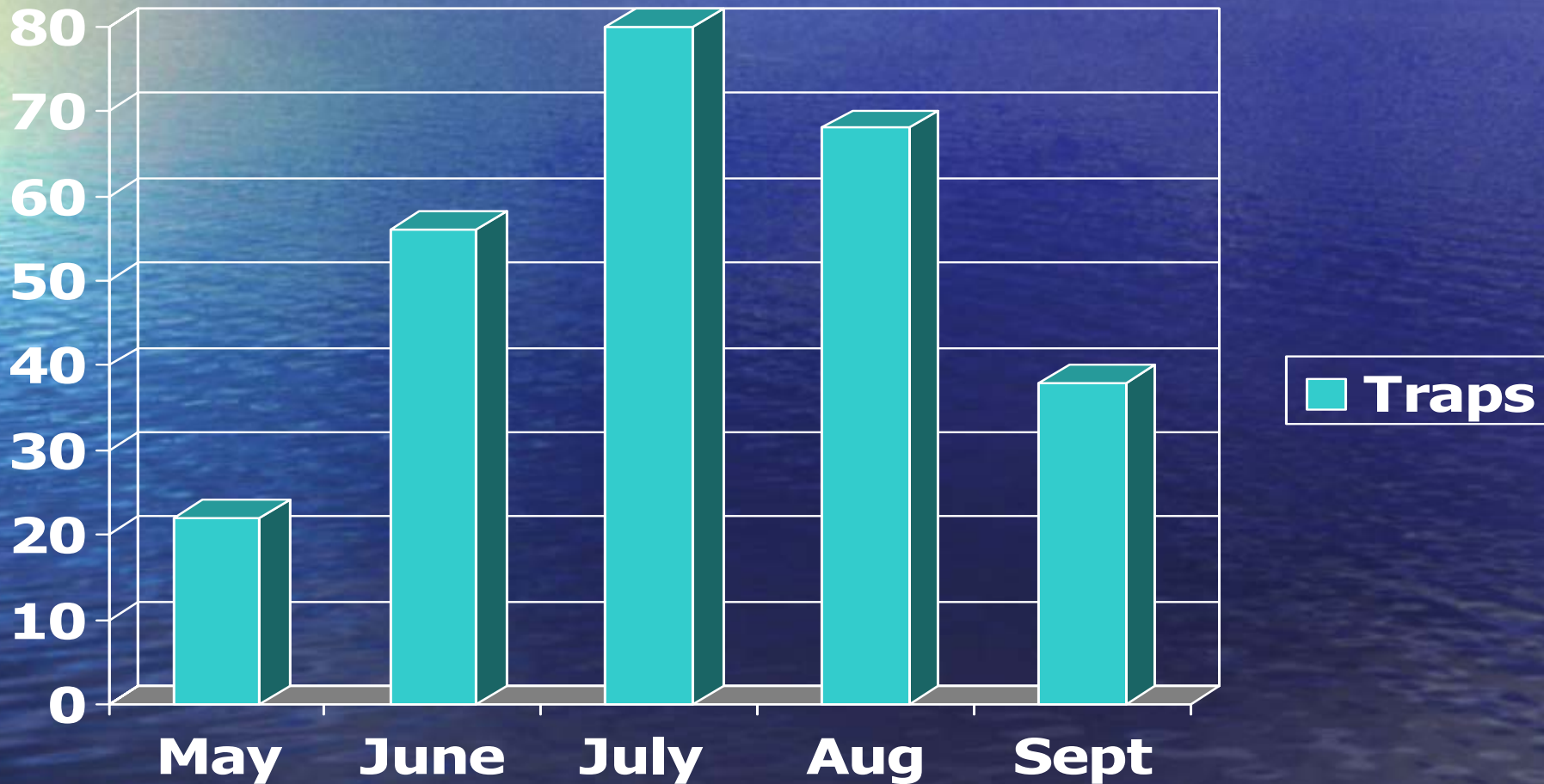




# Positive Mosquito Traps, 2002



# Mosquito Trapping Distribution



# Mosquito Infection Rate (CCBH)

Time Period	# Positive WNV Pools	Total # of Mosquitoes	Infection Rate
June	11	16276	1:1475
July	69	12127	1:175
August	112	6211	1:50
September	26	1926	1:75

# Mosquito Adulticiding



## ANVIL® 2+2 ULV

Contains An Oil Soluble Synergized Synthetic Pyrethroid For Control of Adult Mosquitoes (Including Organophosphate-Resistant Species) Midges, and Black Flies in Outdoor Residential and Recreational Areas.

### Precautionary Statements HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Avoid or minimize contact with the insecticide. Do not ingest or swallow because of aquatic organisms. Avoid contact with skin, eyes or clothing. In case of contact, flush with plenty of water. Wash with soap and water after use. Observe safety precautions in aquatic areas. Avoid contamination of food and feedstuffs.

### ENVIRONMENTAL HAZARDS

Do not contaminate ground water by leaking or dripping. Cleaning off equipment or disposal of excess must be done in a manner that avoids contamination of bodies of water or wetlands. This product is toxic to fish. For residential use, do not spray directly to water or for areas where surface water is present or it may be present below the spray-high water level.

### PHYSICAL OR CHEMICAL HAZARDS

Do not use in more than one open space.

### DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.  
USE ONLY FOR USE IN MOSQUITO ADULTICIDING PROGRAMS INVOLVING OUTDOOR RECREATION AND RESIDENTIAL AREAS WHERE MOSQUITOES ARE PRESENT IN CONCENTRATIONS IN AN OUTDOOR RECREATION PARK, WETLANDS, SWAMP, MARSH, WOODLAND AND BAY WATERS.  
ALSO USE ONLY FOR USE AS APPROVED BY COUNTY HEALTH DEPARTMENT, STATE DEPARTMENT OF HEALTH SERVICES, WISCONSIN AND VECTOR CONTROL or MASSACHUSETTS VECTOR CONTROL ONLY.  
Do not use in areas where mosquitoes are not a pest and weather conditions are unfavorable to keeping the fog down to the ground, i.e., cool temperatures and wind speed greater than 10 mph.

E.P.A. REG. NO. 4008-A-01  
EPA REG. NO. 100-108-0100  
NET CONTENTS 55 GALLONS  
LOT NO. 001306-7-1

**ACTIVE INGREDIENTS**

1. Cyfluthrin (95% PVP) (95% ULV)	2.20%
2. Pyrethrin (95% PVP) (95% ULV)	2.20%
3. PVP (95% PVP)	95.60%
4. Inert Ingredients	98.20%
5. Inert Ingredients	100.00%

100% Total

### KEEP OUT OF REACH OF CHILDREN CAUTION

PRECAUTIONAL STATEMENT: To avoid risk to humans, do not use with products which are also toxic to humans.

### STATEMENT OF PRACTICAL TREATMENT

IF SMALL CHILD: Call a physician or Poison Control Center immediately. Do not induce vomiting because of respiratory depression hazard.  
IF IN EYES: Flush eyes with plenty of water. Call a physician if irritation persists.  
IF ON SKIN OR CLOTHING: Remove contaminated clothing and wash before reuse. Wash skin with soap and water. Use medical attention if irritation persists.  
IF SWALLOWED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth.  
For information regarding medical emergencies or poisons, call the International Poison Center at 1-800-468-6172.

### CLARKE MOSQUITO CONTROL PRODUCTS, INC.

100 N. DAVENPORT AVE. • MOBILE, ALABAMA 36682-0012

### GROUND ULV APPLICATION

APPLICATION AND DILUTION DIRECTIONS: Consult the following table for information on mixing ratios and use rates for ground ULV applications. This product should be used in an outdoor residential area of approximately 1/2 acre or less. For larger areas, use a higher concentration of product.

Area	Rate	Rate	Rate	Rate
ULV	ULV	ULV	ULV	ULV
0.250%	0.250%	0.250%	0.250%	0.250%
0.500%	0.500%	0.500%	0.500%	0.500%
1.000%	1.000%	1.000%	1.000%	1.000%
2.000%	2.000%	2.000%	2.000%	2.000%

### AERIAL APPLICATION

Preparation for aerial use: Mix for aerial application in those areas specified and approved by the Bureau of Entomology and Plant Quarantine and the Department of Agriculture and Consumer Services.

### STORAGE & DISPOSAL

Do not contaminate water, food or feed by storage or disposal.  
STORAGE: Store in cool, dry place. Keep container tightly closed.  
CONTAINER DISPOSAL: This container should be recycled if possible. If not, it should be disposed of in a sanitary manner. In no other manner should this container be disposed of.

FOR MORE INFORMATION CALL: 1-800-363-8227

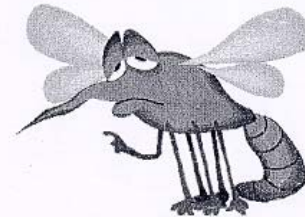
# ULV-Ultra Low Volume



# A Community's Response to WNV Infected Mosquitoes



**Save  
Our**



**Mosquitoes**

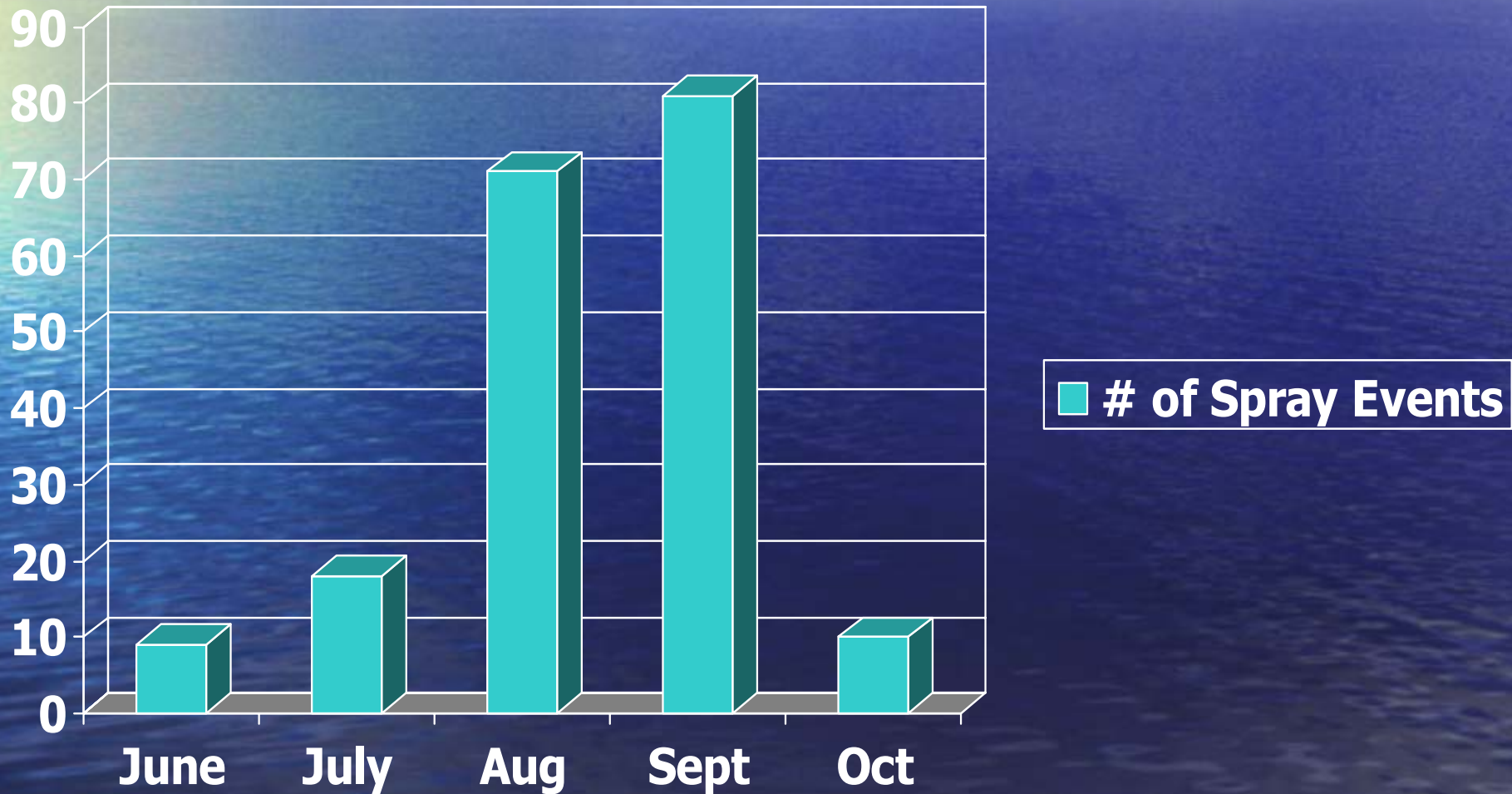
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*Chagrin Falls, Ohio*

# Adulticiding Highlights

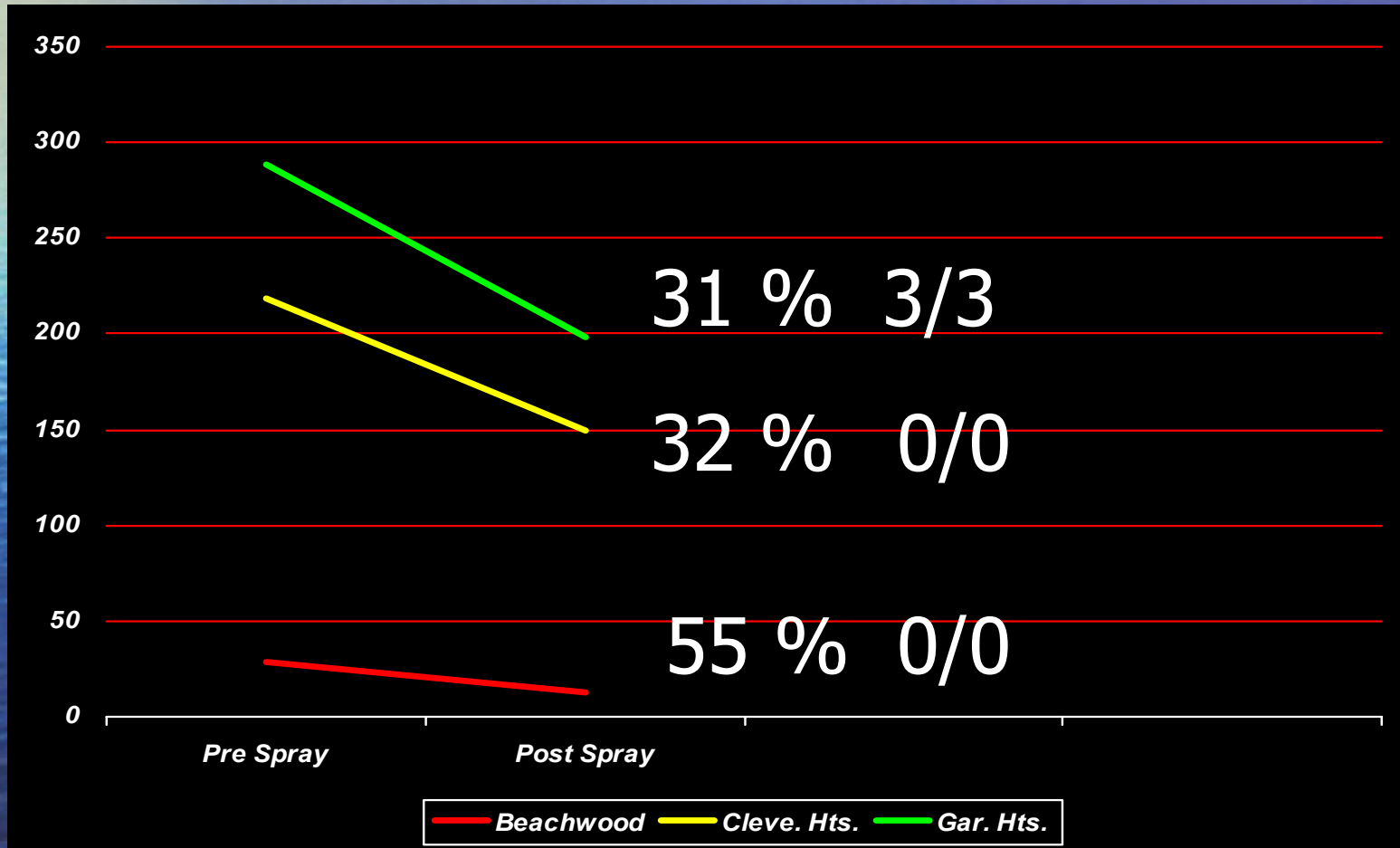
- Treated in 45/56 communities (194 events)
- Treatment occurred on 54 different nights
- Various areas within a single community were treated 12 times in 6 weeks
- Treatment area was a one mile radius around a positive mosquito pool or human case

# Frequency of Adulticiding





# Adulticiding Efficacy



# Variations in IPM

Friday, March 15, 2002

Metro | B3

## ACTIVITIES

### Starts as assistant

Independent Linda Williams will be leaving almost two months as assistant superintendent. The school board has appointed assistant superintendent Marty Santolito, who will give her a brief time to finish up her duties. Williams will be paid her salary for the time from about mid-May to the end of the year. She will be paid her salary, which totals \$95,000 a year, as assistant superintendent.

### RTA fares today

Required today by the Greater Cleveland Transit Authority. Incorrect information in yesterday's editions of the Plain Dealer's Harvest for Hunger. RTA fare reductions today for the National Cancer Institute separate from other fare reductions. RTA fare reductions today for the National Cancer Institute separate from other fare reductions.

### After investigation

Teacher at Garrett Morgan School returned to his classroom, following a district investigation of the teacher's conduct. District officials learned last week that the teacher had accused Alan Joseph of molesting them to expose their bodies while he was a Toledo teacher. He pleaded no contest. The judge in the case and the record of the case were sealed. In applying to teach, the teacher was not given a conviction or having one pending on the matter. It was de-

## Shaker may alter West Nile strategy

### Plan urges spraying pesticides only if a human contracts the virus

EBONY REED  
Plain Dealer Reporter

**SHAKER HEIGHTS** A blood-sucking insect has two sides squaring off in a debate that centers on a rare but deadly disease.

Health experts and residents around Cuyahoga County are debating whether spraying insecticides to kill mosquitoes to prevent the West Nile Virus from spreading is more dangerous than the virus. Some say insecticides are far more harmful.

In Shaker Heights, the West Nile Virus Community Task Force presented a plan Wednesday night at a community meeting that calls for using insecticides only after a human contracts the virus.

The proposal is unlike any other in

the county.

Last summer, 50 people marched on Shaker Heights City Hall after city officials decided to spray insecticide that contained permethrin when five dead birds tested positive for West Nile Virus.

The Department of Public Health in Cleveland also sprayed to kill mosquitoes when dead birds were found with the virus.

The U.S. Environmental Protection Agency has said permethrin, one of the insecticide's ingredients, is safe when used as directed, but others disagree.

"It brings on reactions in those with asthma and... has been linked to breast cancer," said Laurel Hopwood of the Northeast Ohio Sierra Club.

Under the proposed plan, Shaker

Heights would not have sprayed last summer. But Dr. Frank Scott, Shaker Heights health director, who is part of the task force, said it was not a mistake.

"We worked with the information we had," he said at the meeting.

Birds and people contract West Nile Virus when mosquitoes bite them. Symptoms include headaches, fevers and a rash. The virus is a type of encephalitis and in some cases can lead to seizures, coma and death.

Richard Berry, chief of the Ohio Department of Health's vector-borne disease program, said in an interview that only 1 percent of the mosquito population carries the virus and less than 1 percent of people infected become severely ill. City officials in Cleveland and Lakewood say they

will spray this summer if it is necessary and not wait until a human contracts the virus. County Board of Health officials said they will also spray if it is necessary, based on mosquito and virus levels.

"It's not clear out," Matt Carroll, Cleveland Public Health assistant director, said after the meeting. "It's not one single thing we look at to decide to spray."

Members of the task force and county and Cleveland health representatives suggest people fix window and door screens, wear long pants and shirts, use low-concentrated DEET repellent and eliminate standing water in gutters and puddles.

Contact Ebony Reed at:  
ereed@plaind.com, 216-959-4849



## Geauga will bus seniors to hospitals

# Politics and Public Health

## Lakewood cancels mosquito spraying

KERA RITTER  
*Plain Dealer Reporter*

**LAKWOOD** — City officials canceled — at least temporarily — spraying for mosquitoes to prevent the West Nile virus last night after City Council held back its approval.

Money was available for spraying, but the city needed council's approval to contract with the Cuyahoga County Board of Health to spray.

Only five of the seven council members were available for last night's special meeting and all five votes were needed to suspend the rules and let the city pay the bill.

Lacking a consensus, council unanimously voted to defer the issue.

Councilor-at-large Denis Dunn repeatedly aired his concerns about the pesticide used in spraying.

"I'm concerned the antidote is worse than the disease," Dunn said. "This also gives false hope to people and they let their guard down."

However, Mayor Madeline Cain said the issue is a public health emergency that requires immediate action.

"This is new to all of us but we have to take this seriously," Cain said. "I would not want to be the mayor of a community that turned up with a human death after not spraying."

The city's Department of Health has been taking incremental steps to prevent West Nile, such as treating standing

water in catch basins to kill mosquito larvae.

However, the number of dead birds in the city continues to increase, said Judy Carey, director of human services for the city.

City officials decided last week that they should spray after mosquito pools tested positive for the virus. Cain said city officials consulted with state and county health officials before making the decision.

The Centers for Disease Control and Prevention also recommend spraying once mosquito pools test positive, according to Judy Carey, director of human services for the city.

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To reach this Plain Dealer reporter:  
kritter@pland.com, 216-999-4835

# First spray in 2002 for WNV

## Spraying is defended

*City says virus is health risk*

By KAREN KURDZIEL  
Staff Writer

BEACHWOOD—The city will continue to follow the advice of the Cuyahoga County Health Department and spray pesticides should more mosquitoes with the West Nile virus be discovered within its borders.

It will also work harder to warn residents of any plans to spray, officials said.

There are no plans to spray at this point because, according to Joe Lynch of the county health department, the most recent batch of mosquitoes here tested by the state showed no infection.

Meanwhile, officials said this week they have studied the research and listened to experts who support spraying and those who do not.

Their conclusion: the possibility of even one resident contracting the disease—which in rare cases leads to death—makes spraying mandatory should infected mosquitoes turn up again.

With little warning, a portion of the city was sprayed June 22. Many residents were upset and attended the July 15 council meeting to say they were against the spraying.

Lynch also attended and argued in favor of spraying.

Officials promised they would study the matter and make a decision. They felt pressure to decide quickly because Lynch had said another group of mosquitoes from the part of the city that was sprayed in June were being tested for infection.

See SPRAYING, page A10

# CUYAHOGA COUNTY WEST NILE VIRUS RESULTS 2002

- BIRDS

CROWS – 18

BLUEJAYS – 4


OTHER – 26 (GRACKLE, CANADA GOOSE,  
ZOO BIRDS, 21 LIVE BIRDS)


- MOSQUITO POOLS – 386

- HUMANS - 218 cases/ 9 Fatalities

# Vec Test Validation

		VEC TEST	
		Positive	Negative
ODH PCR	Positive	<b>32% (12/38)</b>	<b>47% (18/38)</b>
	Negative	<b>0</b>	<b>21% (8/38)</b>

 **Sensitivity**  
0.40

 **Specificity**  
1.0

# WNV Cartoon

## REAL LIFE ADVENTURES

GARY WISE & LANCE ALDRICH



'Tis the season to be jolly.

# Mosquito Facts

- Light traps were used sparingly.
- Gravid traps often collected mammal biting mosquitos. *Oc. tris.* was most often collected.
- *Oc. sollicitans* and *Oc. japonicus* were detected for the first time in Cuyahoga County in 2002.

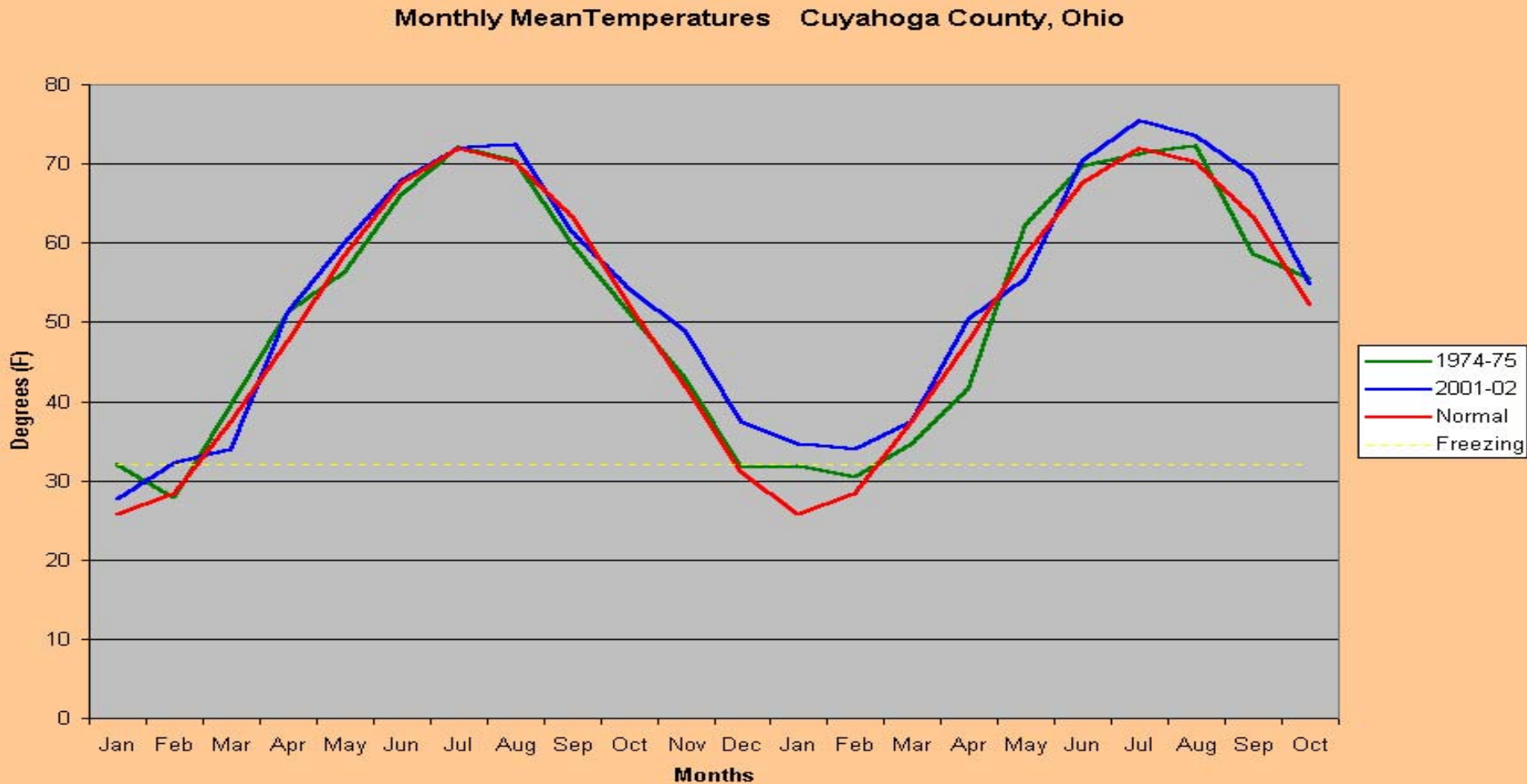


# National Statistics WNV 2002

	Human cases	Deaths
Nationally	4007	263
Ohio	434	30

Ohio ranks third in the nation with the number of cases and deaths (CDC).

# Monthly Mean Temperatures



# Adulticide Litigation

## Suit against spraying delayed, set for March trial

A lawsuit seeking to stop the Cleveland and Cuyahoga County health departments from spraying pesticide to kill mosquitoes won't be resolved until next year.

Lawyers for the health departments and for eight county residents who sued Sept. 5 agreed to the delay yesterday. A trial is set for March 18 on the residents' request for a permanent injunction to stop the spraying.

In their complaint, the residents argue that officials lack authority to spray their property. They say that because they have chronic health problems, the pesticide is a greater risk to them than West Nile virus.

Since an outbreak of the disease here in mid-August, the health departments have been spraying almost nightly to kill mosquitoes that could be infected with the disease.

Ten new likely cases of West Nile pushed the Cuyahoga County total to 24 yesterday, 30 of them in Cleveland. Across Ohio, the virus is believed to have infected 110 people and killed seven, including a Wayne County woman whose Aug. 31 death was reported yesterday. Two Cleveland men and a Parma man also have died.

Federal officials list 1,201 likely victims, including 46 who have died, in 36 states and the District of Columbia.

Weather permitting, mosquito spraying is scheduled tonight in the following areas. Health officials recommend keeping windows closed between dusk and dawn and bringing pets and children's toys indoors.

**Cleveland:** Areas surrounding West 150th Street and Puntis

Avenue, West 63rd Street and Meadowbrook Avenue, and East 127th Street and Miles Avenue.

**Highland Heights:** West Mill Drive, Oakview Drive, Colony Drive, Eastlawn Drive, Furd Road, Brainard Road, Millridge Road, Cranbrook Drive, Stanwell Drive, Rose Boulevard, Burkston Drive, Belwood Drive, Fay Drive, Lander Road. All streets south of Wilson Mills Road and west of Lander Road.

**Lakewood:** All streets from Madison Avenue, Hilliard Road and Franklin Boulevard south to city limits.

**Linddale:** Bellaire Road Memphis Avenue and all other streets.

**Lyndhurst:** All streets from Ridgeway Boulevard south to Meadow Wood Boulevard and Kenton Circle, from Winchester Road, Irene Road and Sunview

Road on the west to the city limits on the east.

**Mayfield:** Joyce Road, Wor-ton Park Drive, Hemingway Road, North and South Wood-lane drives, Norman Lane, Woodlane Drive and Robin Circle.

**Mayfield Heights:** Ridgeway Boulevard and all streets south to Marsol Road, Westerham Road, Circle Drive and Rugby Road, west to Iniquois Avenue and Temple Road and east to Giesse Drive and Woodroy Avenue, excluding Ranchland Drive.

**University Heights:** All streets bordered by Raymond Boulevard and Cedar Road on the north, Jackson Boulevard, Allison Street, Eaton Road and portions of Meadowbrook Boulevard on the west. South Green Road on the east and Fairmont Boulevard on the south.

# Media Assistance

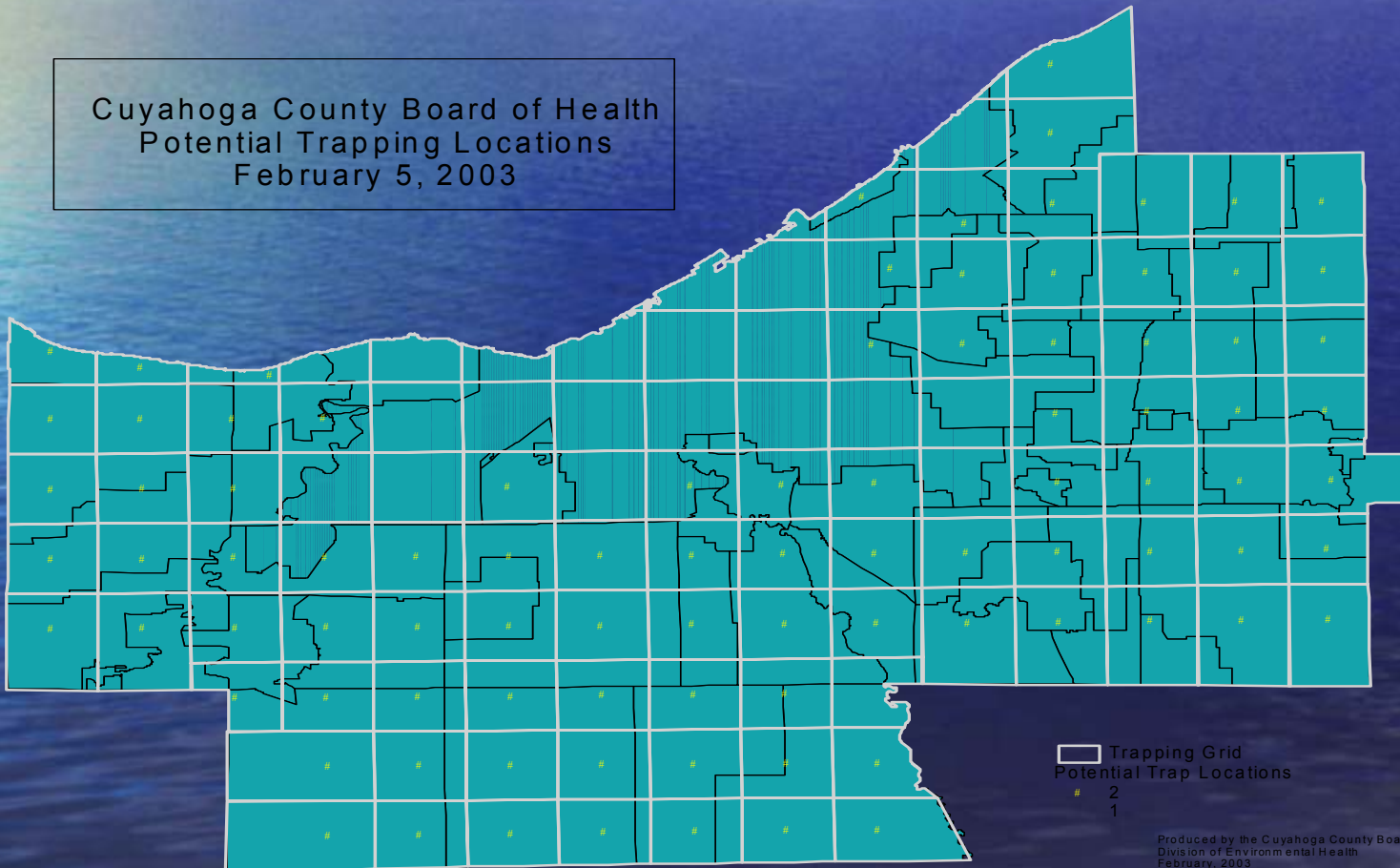


# New for 2003

- Mosquito surveillance will be conducted at fixed locations with a gravid and CO2 light trap(92-2x2 mile grids)
- Databases being created to handle complaints, surveillance, GIS mapping
- A 150 day briquette will be used for catch basin larviciding

# Proposed Mosquito Surveillance

Cuyahoga County Board of Health  
Potential Trapping Locations  
February 5, 2003



# Catch Basin Mapping

