
Arboviruses in Florida

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Arboviruses in Florida

□ Flaviviruses

- West Nile
- St. Louis Encephalitis

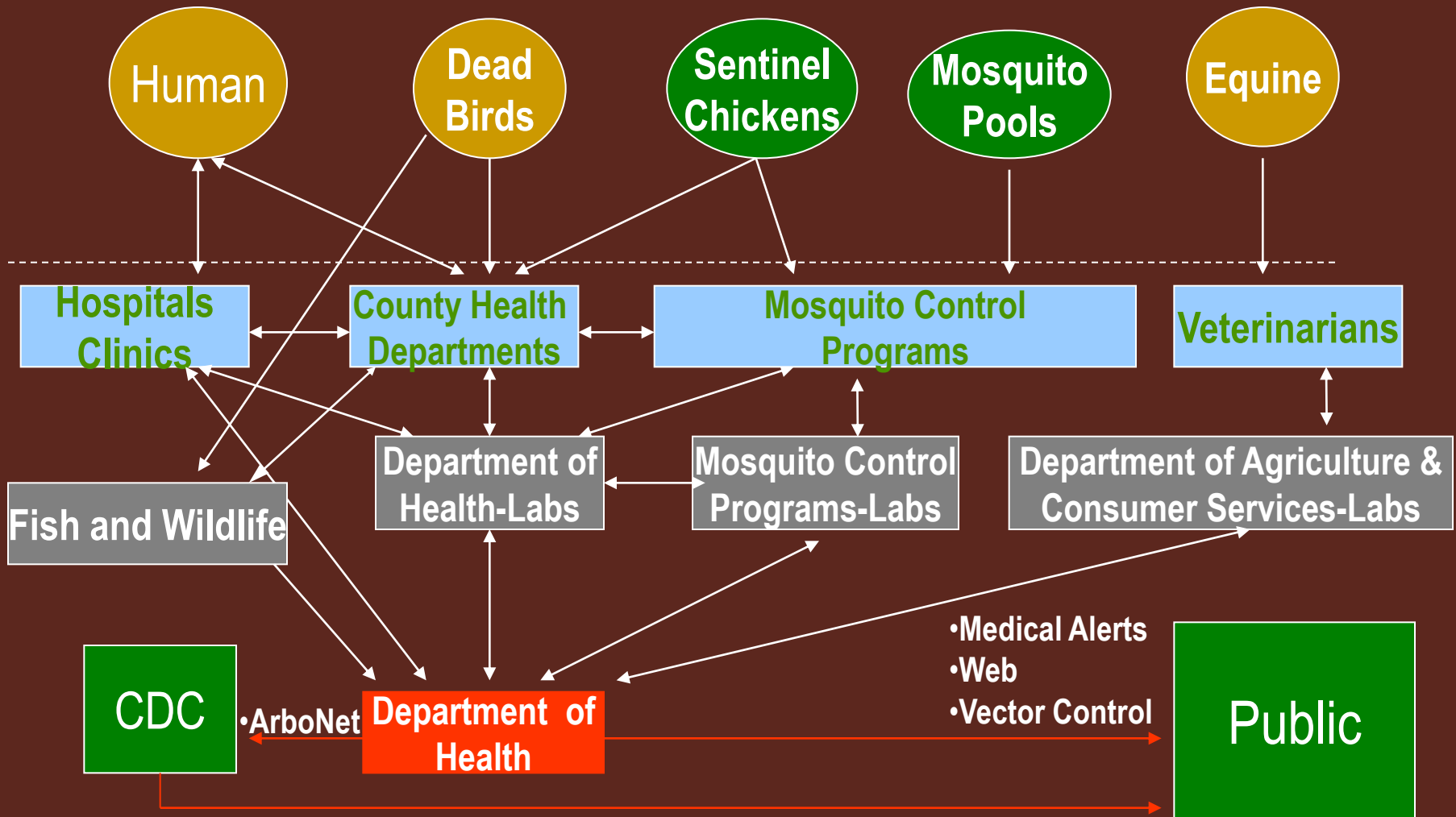
□ Alphaviruses

- Eastern Equine Encephalitis
- Highlands J

□ Dengue



Surveillance Coordination



Arbovirus Response Plan

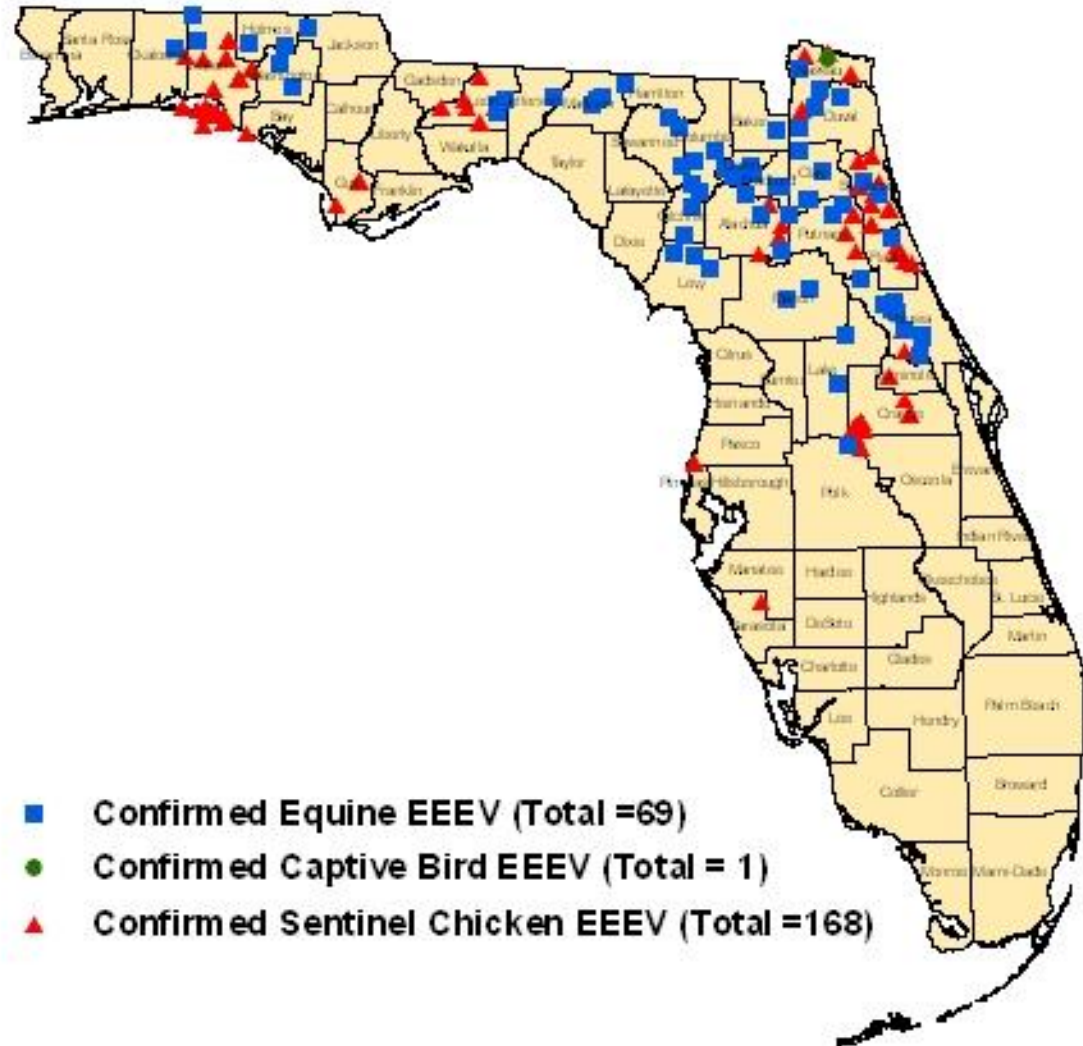
- Dept. of Health
 - Env Health
 - CHD
 - Lab
- Dept. of Agriculture
 - Mosq. Control
 - Vet. Med.
- Dept. of Env. Prot.
- Fish and Wildlife CC
- PHEREC
- USF
- UF
 - Vet Med
 - FMEL
- FMCA



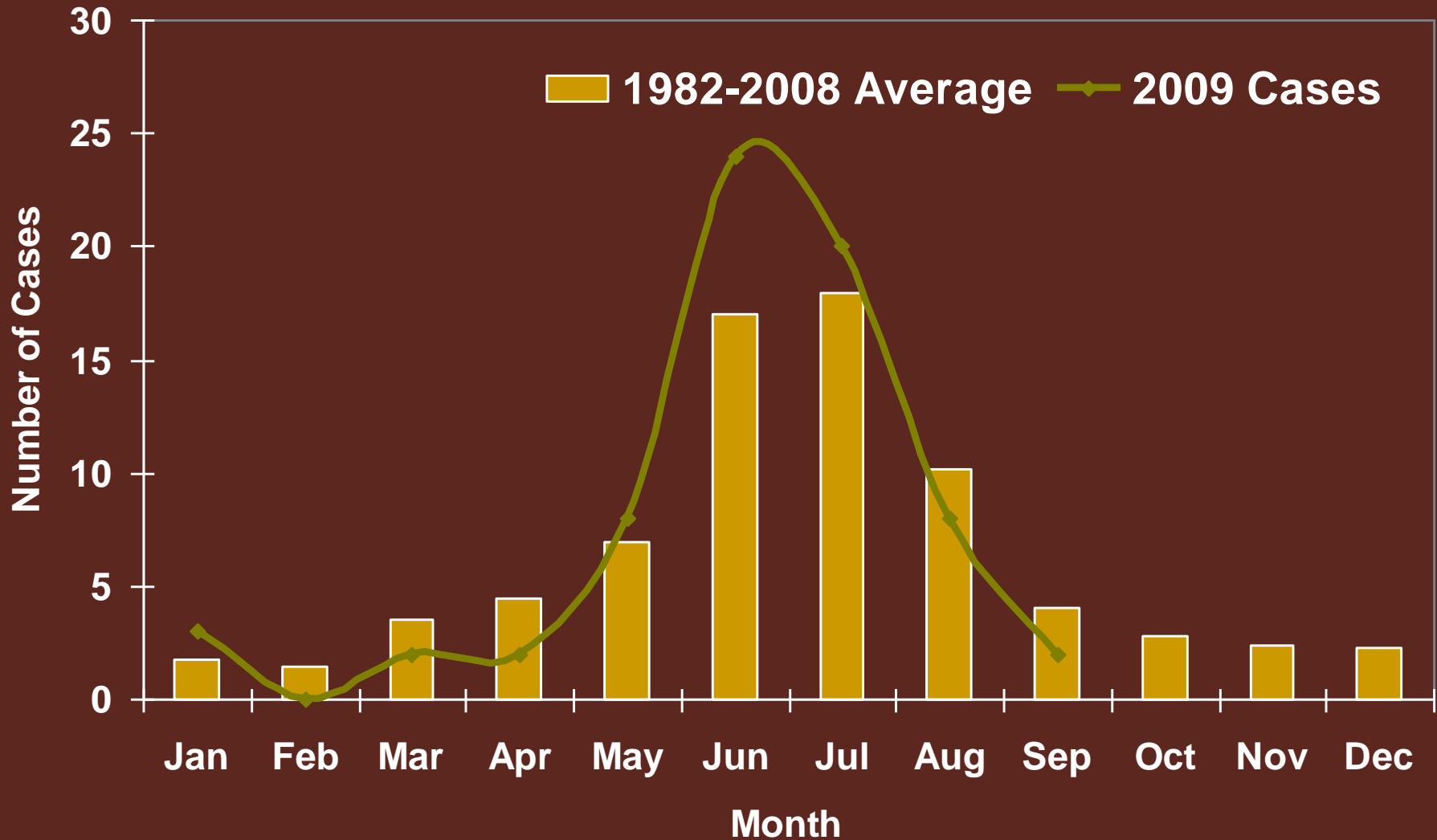
EEE in Florida, 2009

Through 10/10/09

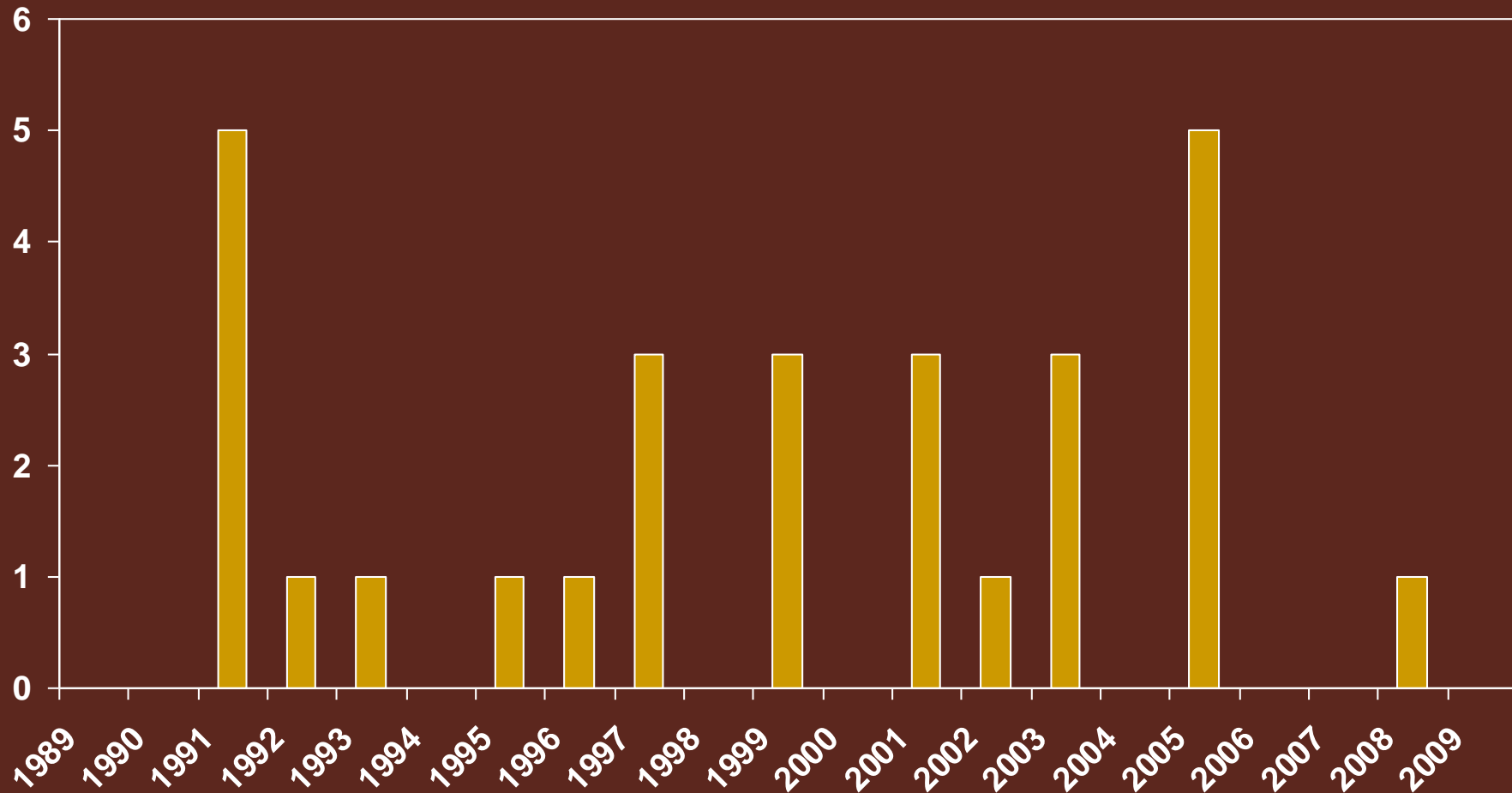
- 69 horses, 1 cassowary
- 168 sentinel chickens
- 3 mosquito pools
- 91 live wild birds



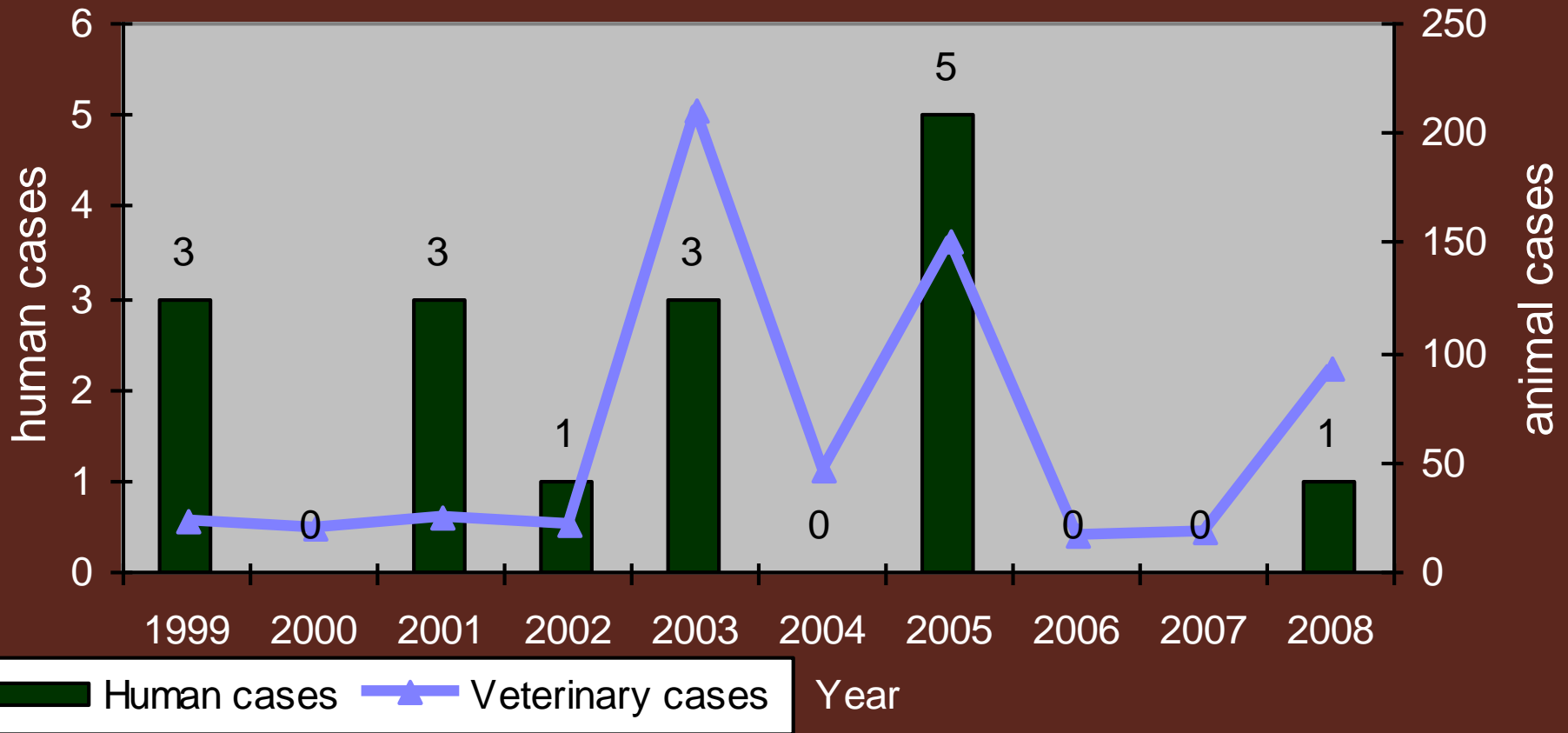
Veterinary EEE in Florida, 1982-2009



Reported Human Cases of EEE, 1989-2009



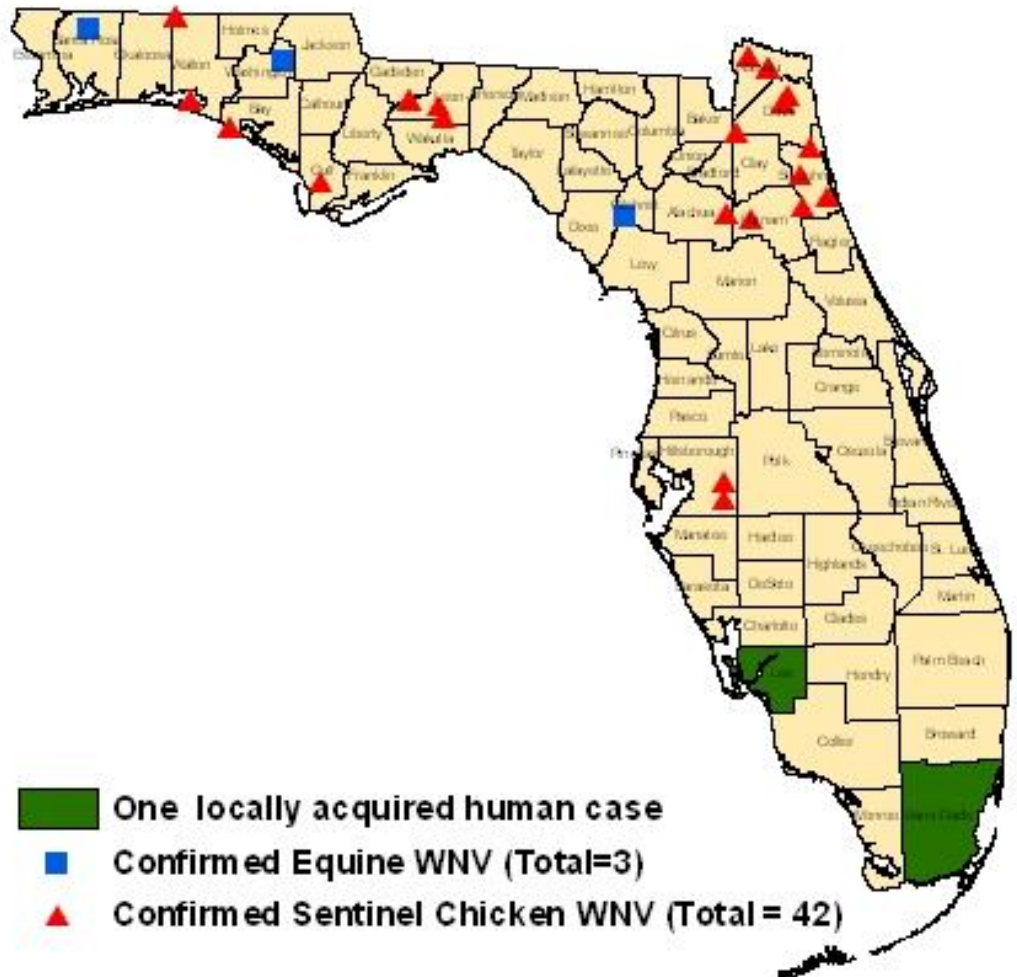
Eastern Equine Encephalitis in Florida, 1999-2008



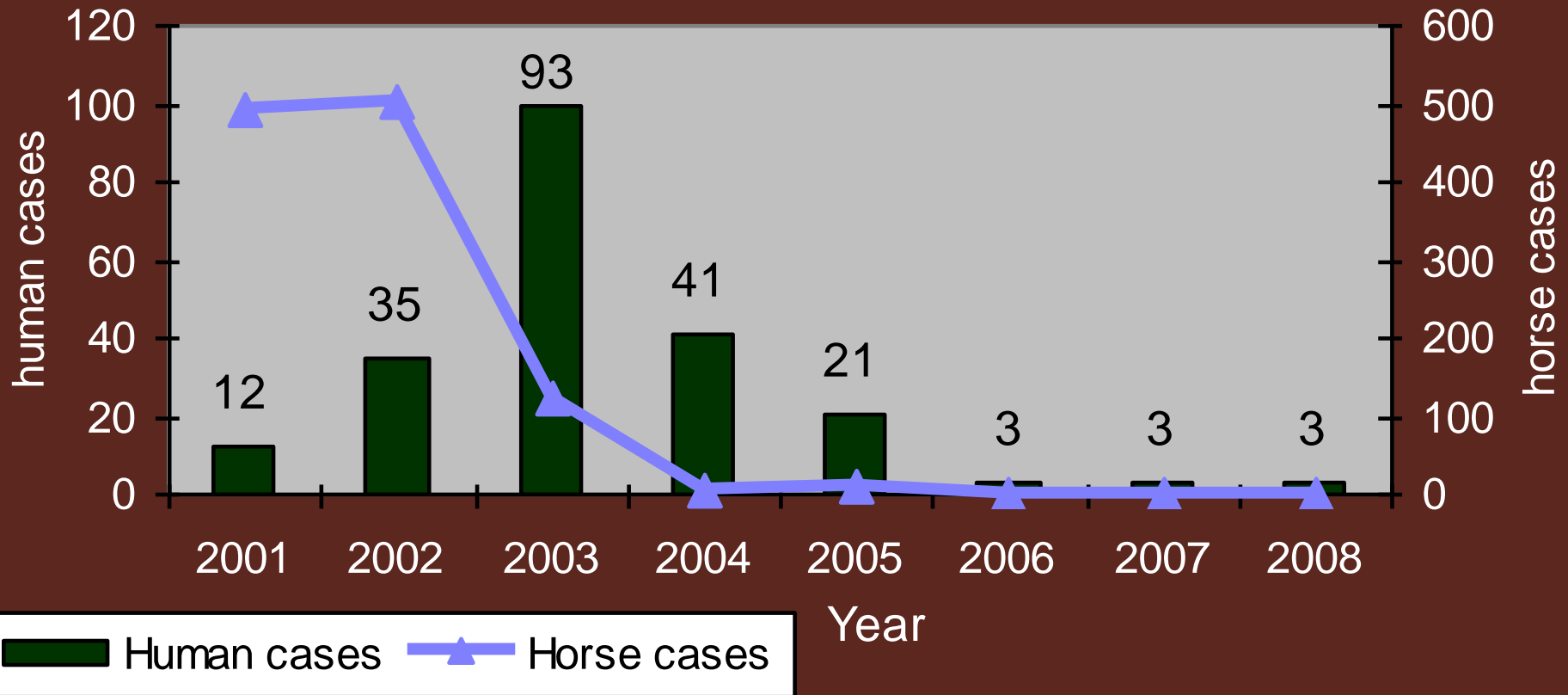
West Nile Virus in Florida, 2009

Through 10/10/09

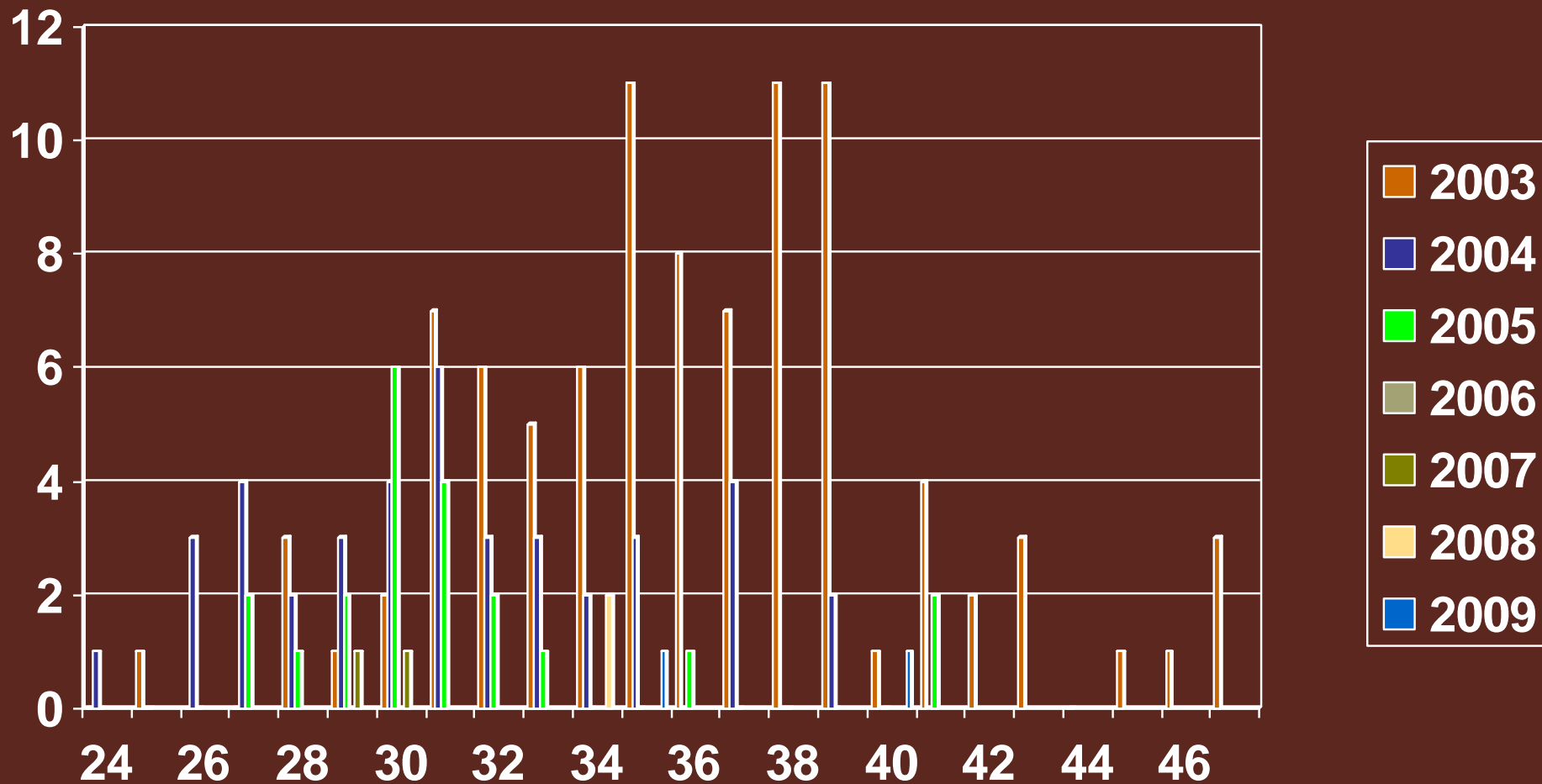
- 2 locally acquired human cases
 - 1 acquired out of state
- 3 horses
- 42 sentinel chickens
- 2 live wild birds



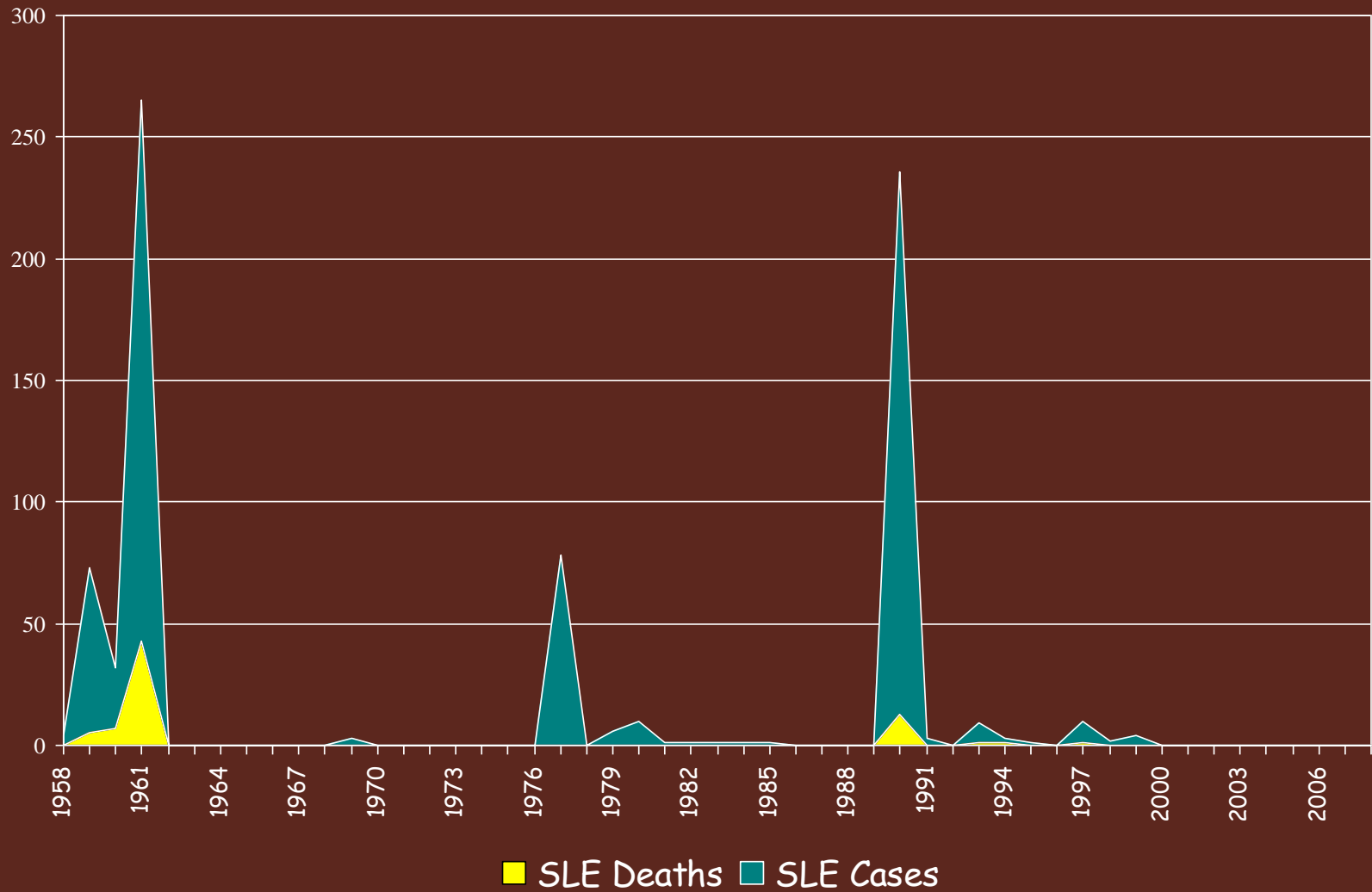
West Nile Virus in Florida, 2001-2008



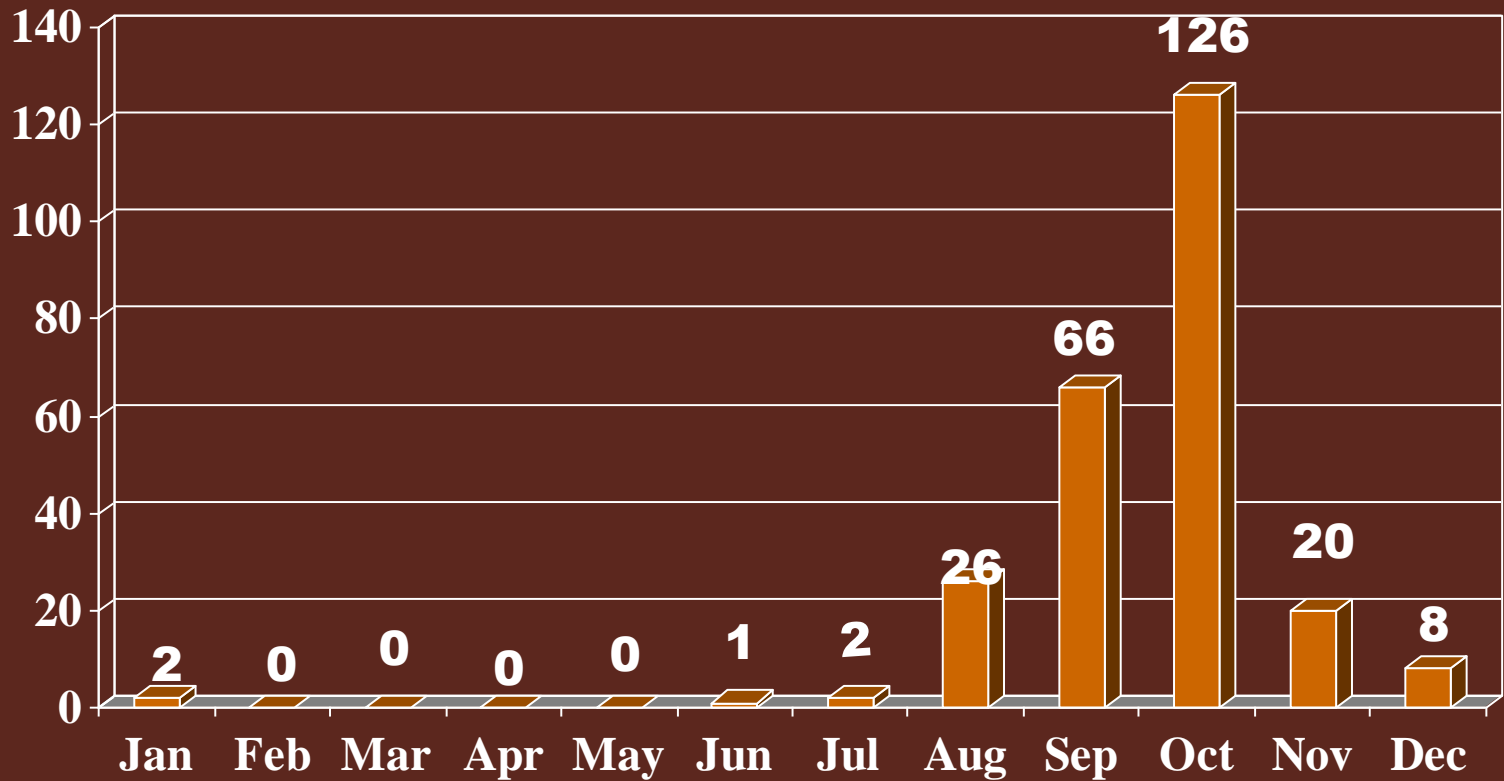
West Nile virus cases 2003-2009



SLE in Florida, 1958-2008



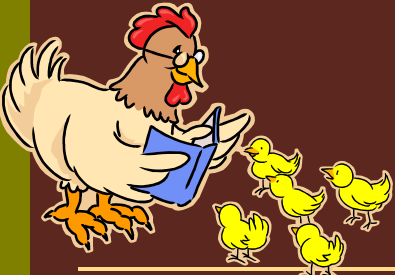
Reported SLE Cases by Month of Disease Onset, 1989-2008, Florida



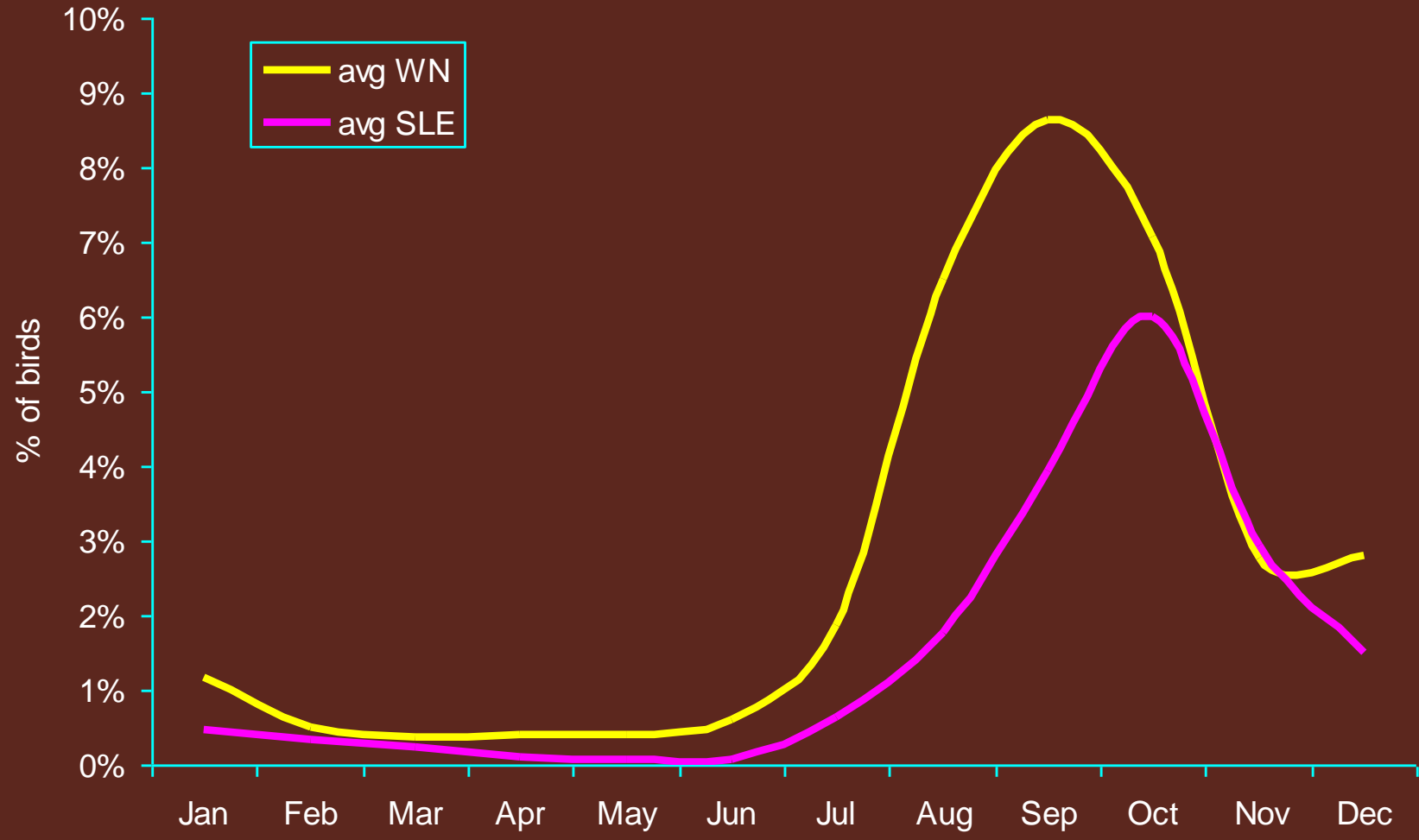


Sentinel Results

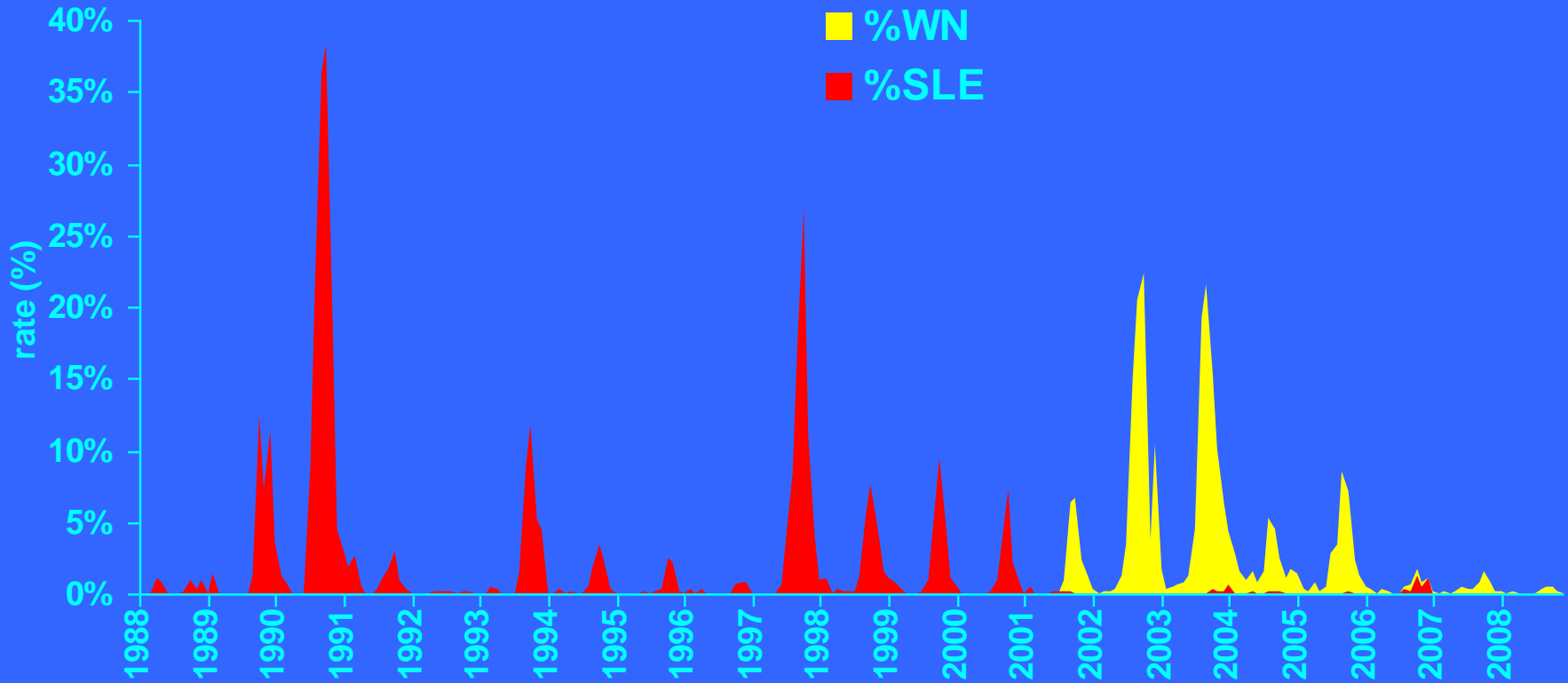
	2008	2007	2006	2005	2004	2003	2002	2001	2000
sites	268	282	277	279	281	289	230	204	181
Birds	2697	2752	2901	3801	3258	4,361	3,356	2,128	1,675
Sera	46,783	47,803	47,132	47,535	47,104	44,434	31,945	23,565	18,026
EEE HJ+	138 54	113 16	79 6	342 108	134 61	313	86	65	16
SLE+	0	2	40	5	12	11	0	7	144
WN +	21	67	30	414	352	1,346	1,102	202	0



Mean Monthly Seroconversion rates, WN (2001-2008) & SLE (1988-2008)



Sentinel Chicken Seroconversions to Flavivirus, Florida: 1988-2008



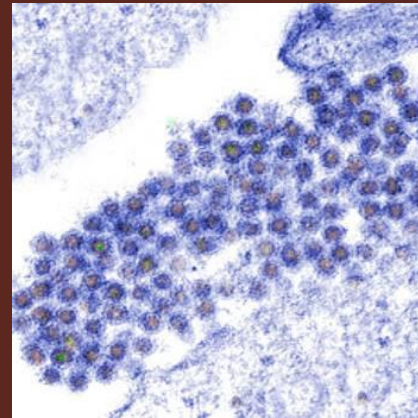
Dengue in Key West



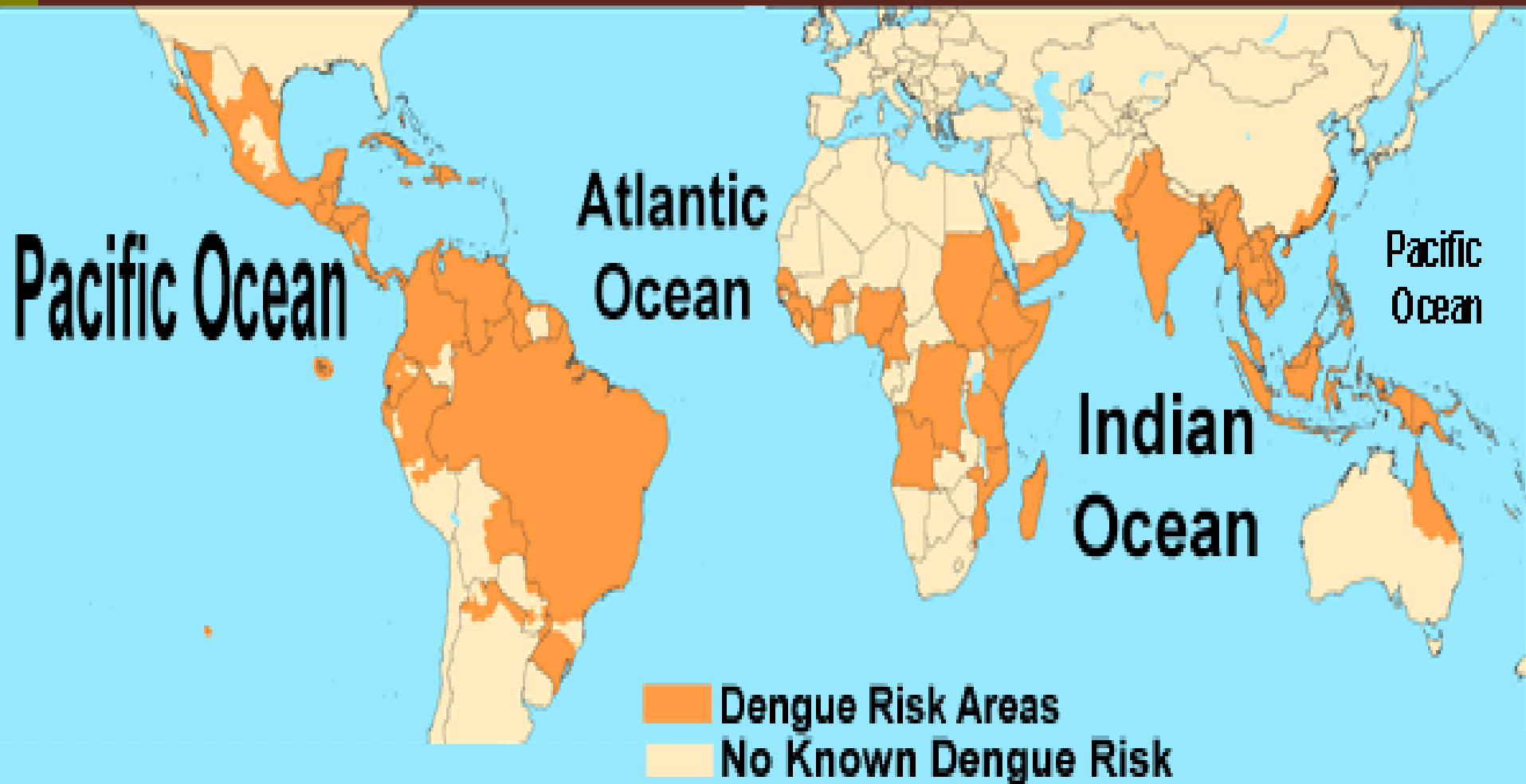
- ❑ Monroe County Health Department notified on 9/1/09 of a 34-yr-old F New York resident diagnosed with dengue after travel to Key West
- ❑ Alert sent out to public and health care providers
- ❑ Florida Keys Mosquito Control District implemented enhanced trapping and control of *Aedes aegypti*

Virus

- Single-stranded RNA flavivirus
 - Same family as the viruses that cause West Nile fever, St. Louis encephalitis, and yellow fever
- Four serotypes – DEN-1, 2, 3, 4
- Causes dengue and dengue hemorrhagic fever
- No animal vector



World distribution in 2008



Dengue Fever

- ❑ Often mild, non-specific
- ❑ Sudden onset of high fever
- ❑ Severe headache
- ❑ Pain behind the eyes
- ❑ Body aches and joint pains
- ❑ Nausea or vomiting
- ❑ Rash

Dengue Hemorrhagic Fever

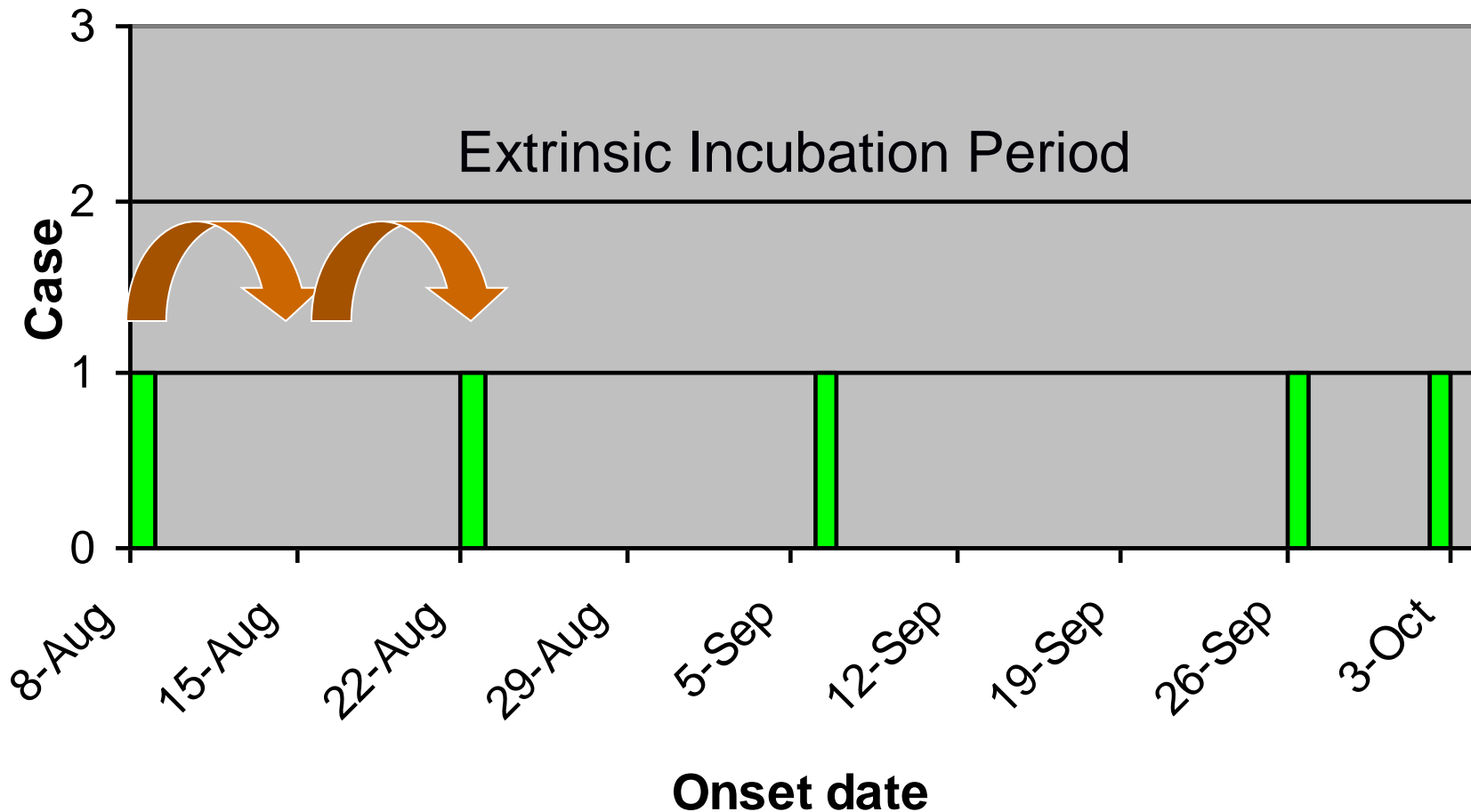
- ❑ Severe abdominal pain
- ❑ Bleeding from the nose, mouth, and gums
- ❑ Frequent vomiting with or without blood
- ❑ Black stools
- ❑ Excessive thirst
- ❑ Pale, cold skin
- ❑ Restlessness or sleepiness

Dengue in Key West

- Case 2: 48-yr-old m Key West resident onset 8/25
- Case 3: 47-yr-old f, onset 9/9
- Case 4: 24-yr-old m, onset 10/2
- Case 5: 60-yr-old m, onset 10/6
- High numbers of *Aedes aegypti*



Epi Curve, Dengue Fever, Key West, 2009

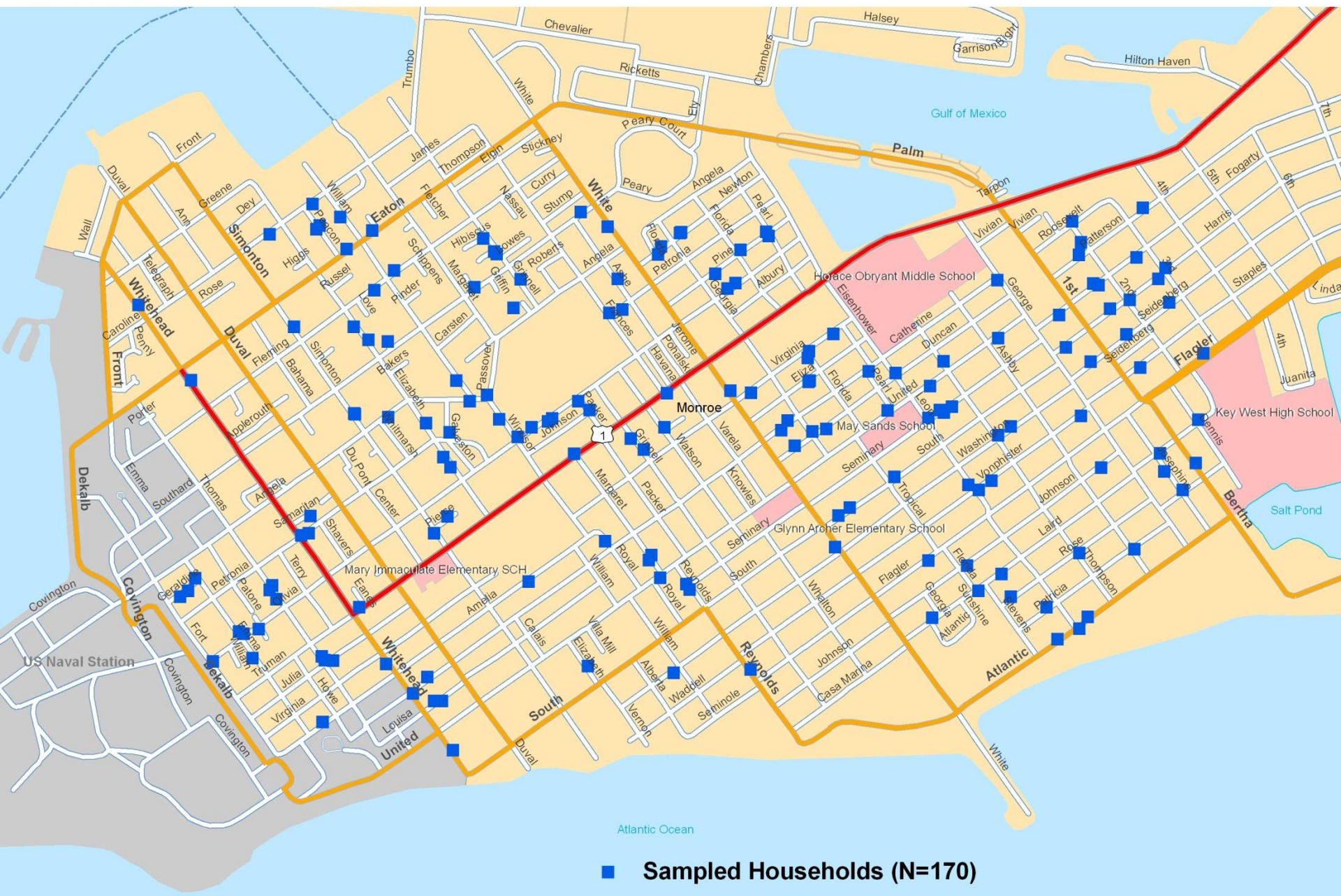


Active Surveillance

- Medical record search
 - Identified 6 patients from 7/15-9/15 with symptoms consistent with dengue and collected blood for testing
- Serosurvey of Key West residents in radius around confirmed cases
 - Sampled 170 houses, 240 individuals
 - Test for recent infection with dengue virus
 - Results pending



Participating Households in Key West during Dengue Investigation



■ Sampled Households (N=170)

Dengue vs. Flu

- Fever
- Severe headache
- Pain behind the eyes
- Body aches
- Joint pains
- Nausea or vomiting
- Rash
- Fatigue

- Fever
- Cough
- Sore throat
- Runny or stuffy nose
- Body aches
- Headache
- Chills
- Fatigue
- Nausea or vomiting
- Diarrhea

Obstacles

- ❑ No vaccine (prospects in development)
- ❑ Difficult to control mosquito-borne diseases
- ❑ Free movement of people from endemic areas (repeated introduction)



Advantages

- No animal reservoir
- Established mosquito control
- U.S. Lifestyle
 - Water management
 - Waste management
 - Good housing with air conditioning and screening
 - Staying indoors

DOH Contact Info

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Epi curve, Dengue fever, Key West, 2009

