



Vector-Borne Diseases in California: 2006-2007 update

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Offices of CDPH Vector-Borne Disease Section

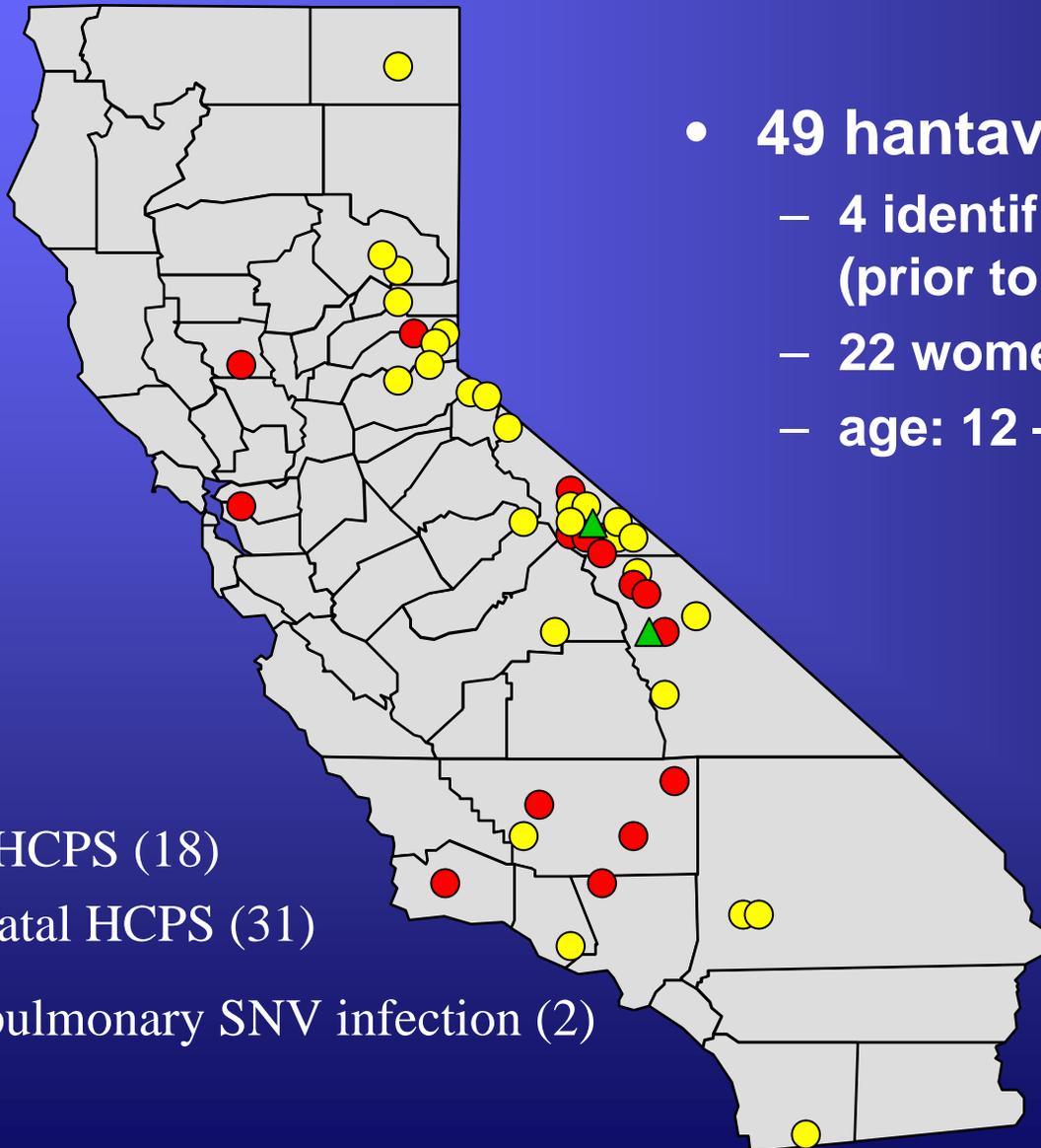


30 full-time positions

Hantavirus



Hantavirus Infection in California Residents 1980-2007



- 49 hantavirus infections
 - 4 identified retrospectively (prior to 1993)
 - 22 women, 29 men
 - age: 12 – 74 years

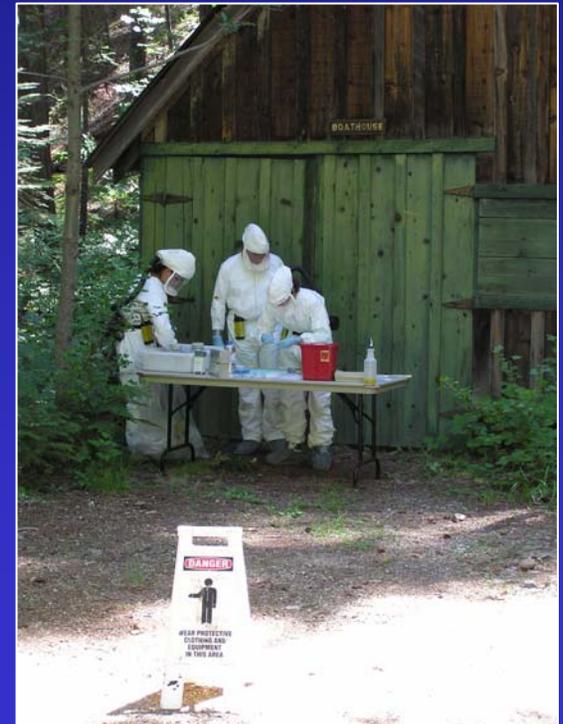
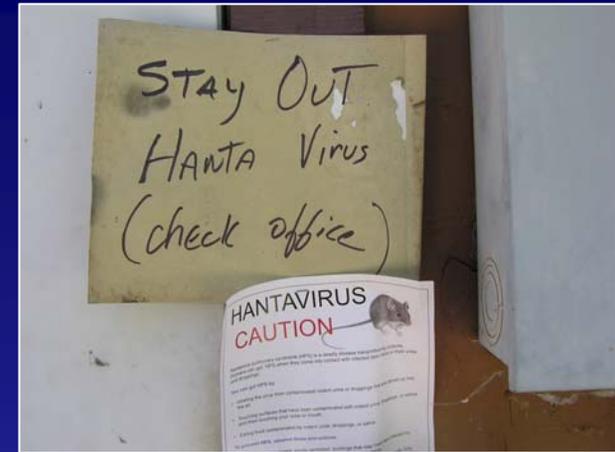


- Fatal HCPS (18)
- Non-fatal HCPS (31)
- ▲ Non-pulmonary SNV infection (2)

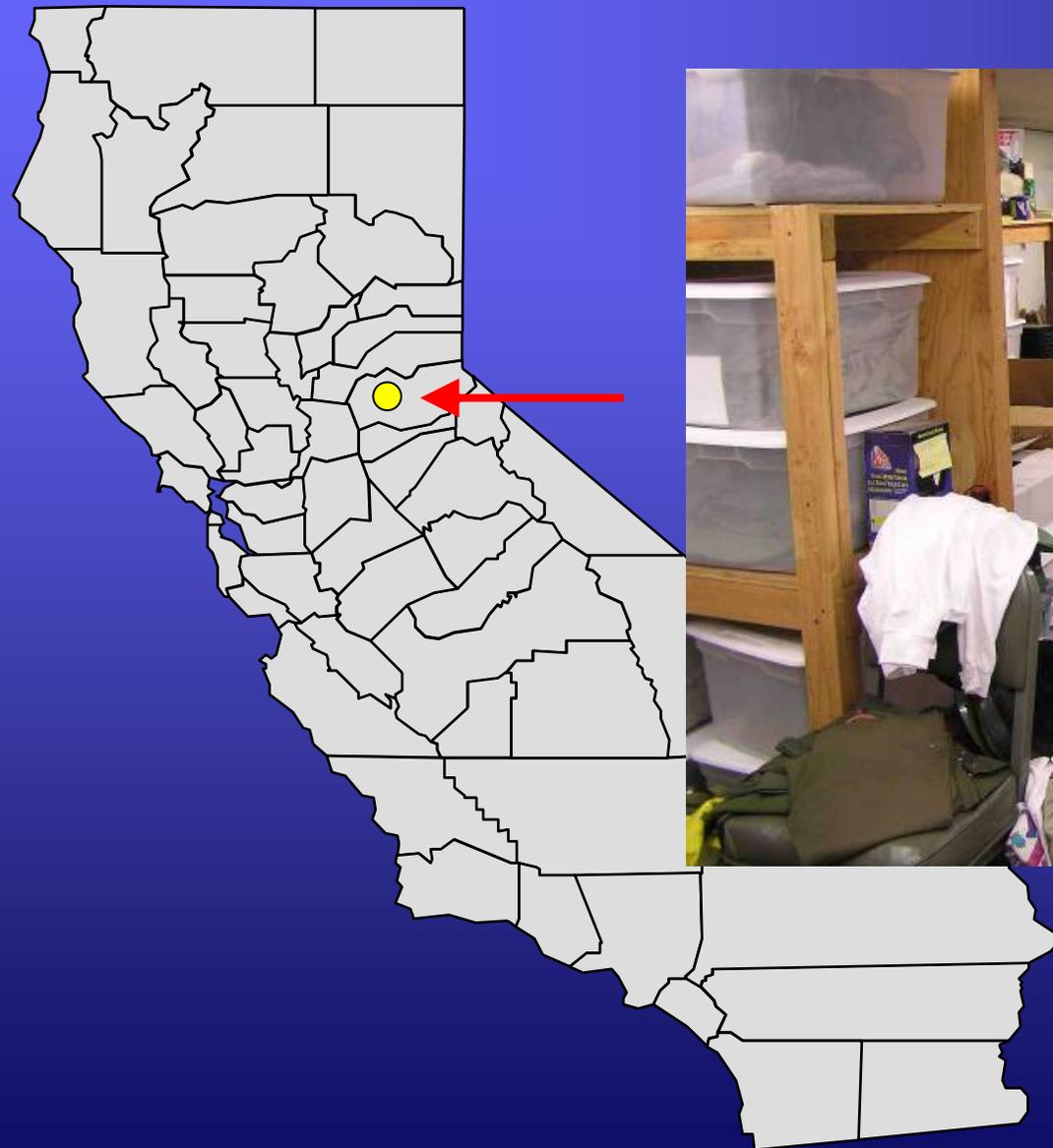


U.S. Forest Service

- **June 2007: HPS diagnosed in Eldorado NF staff, 48 yo female**
- **VBDS responded and investigated**
 - **Met with >70 USFS staff to answer questions and address concerns**
 - **Investigated work sites of case-patient**
 - **Conducted rodent surveillance**
 - **Provided recommendations for risk reduction**



2007: HPS in Eldorado NF



**Considerable evidence
rodent infestation; SNV
seropositive deer mice**

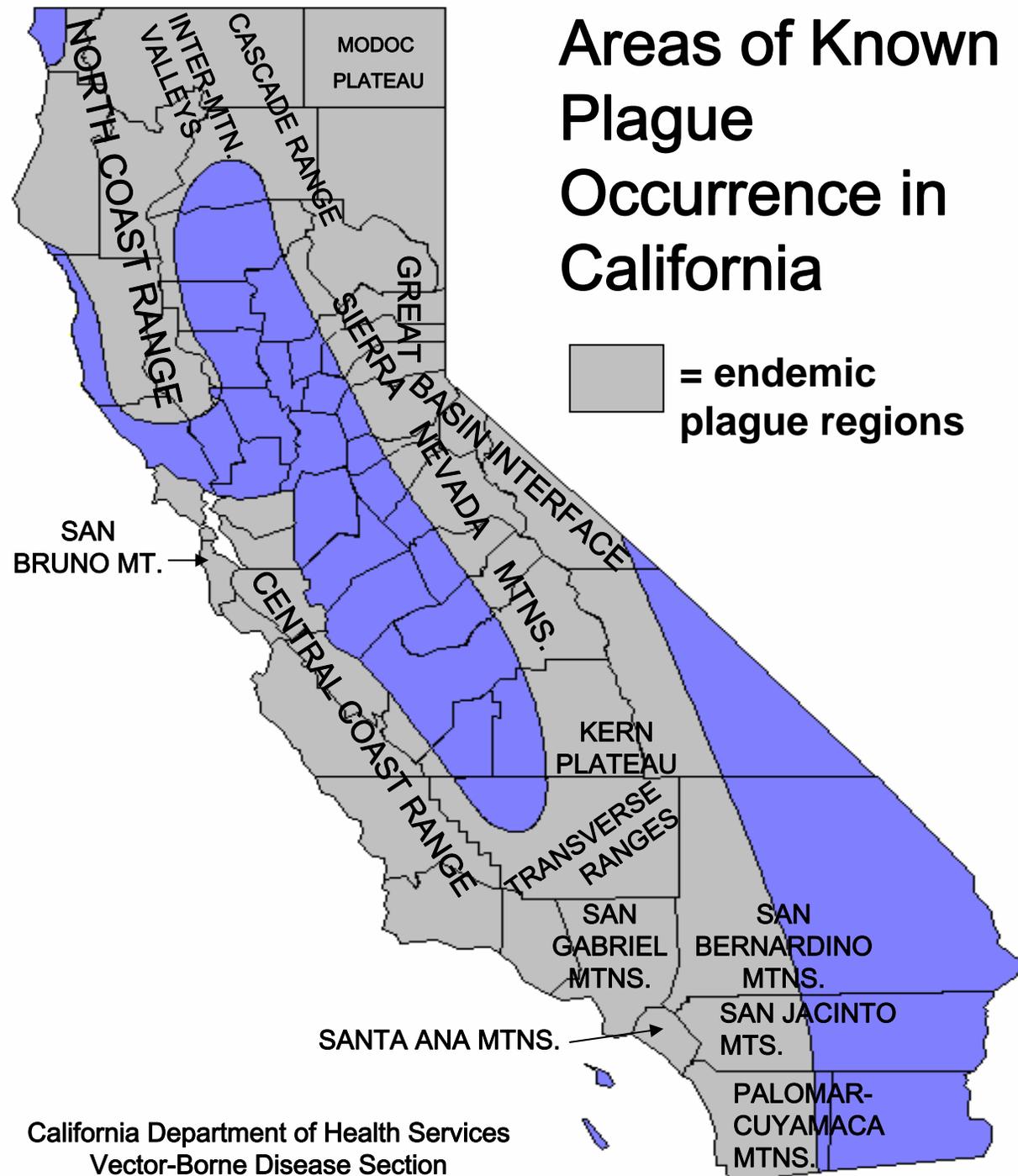
Plague



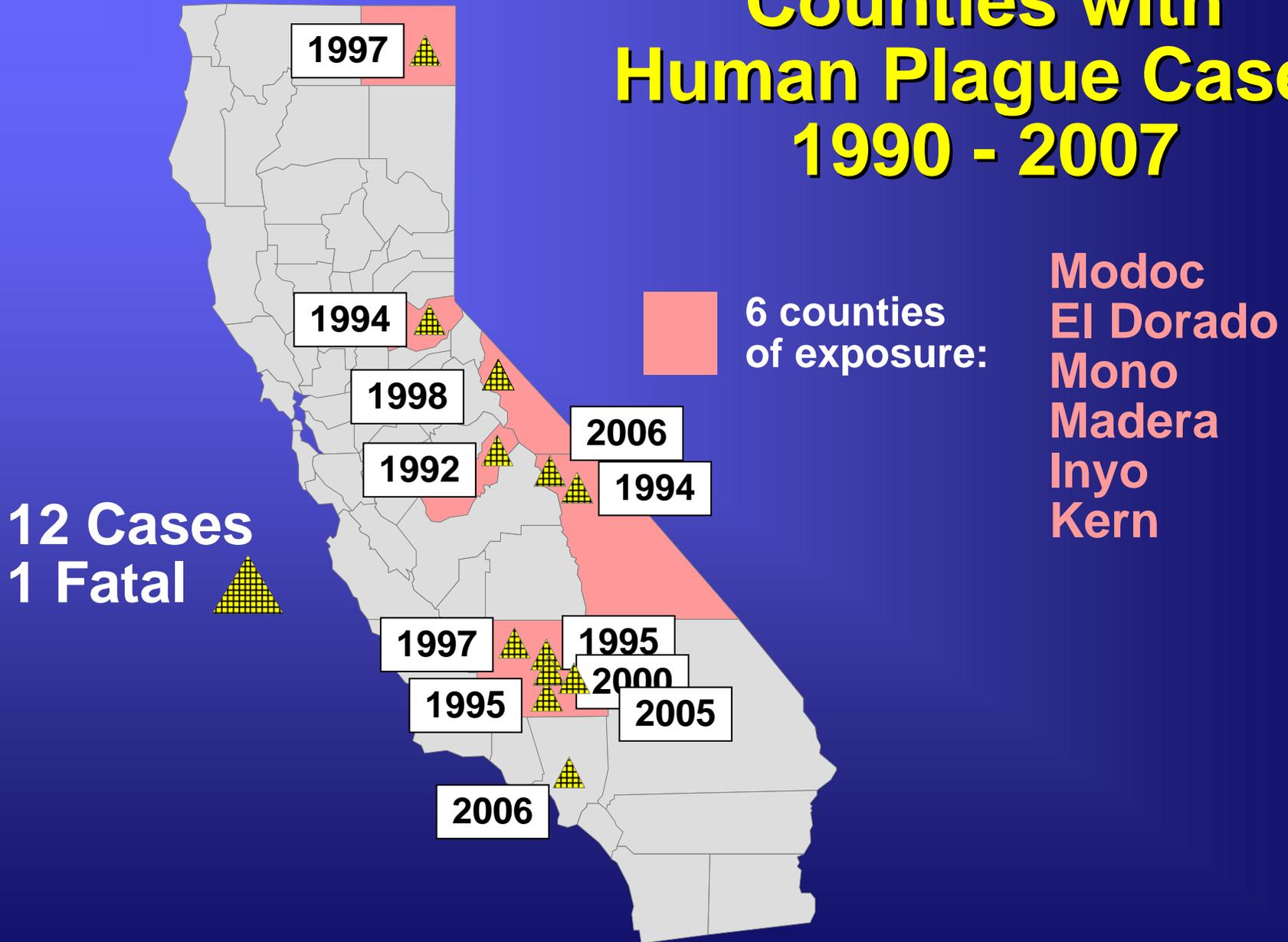
Plague Foci

- No two plague foci alike
- Rodent / flea complexes differ
- Environments differ
- Plague activity cycles up and down

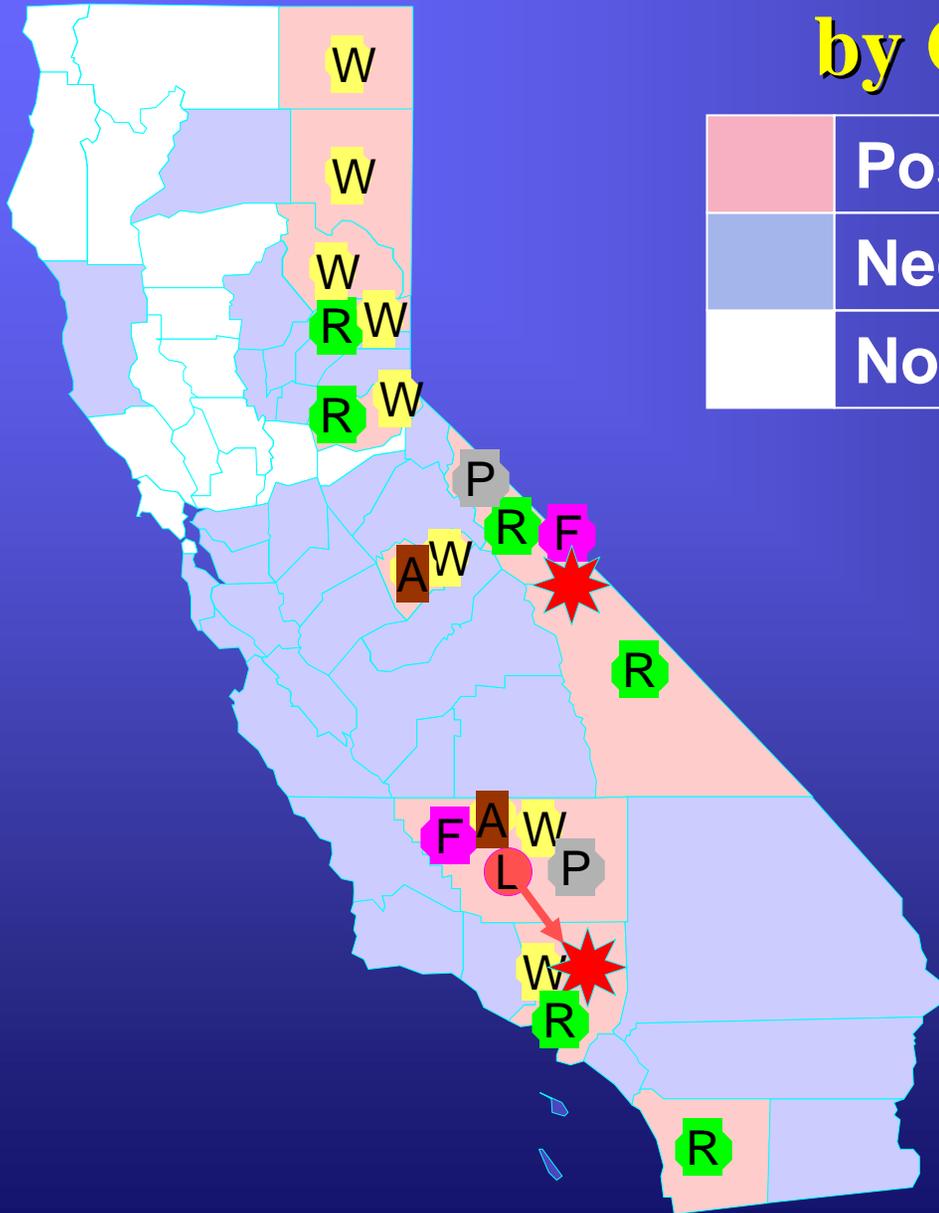
Areas of Known Plague Occurrence in California



Counties with Human Plague Cases 1990 - 2007



Distribution of Plague Specimens by County, 2006

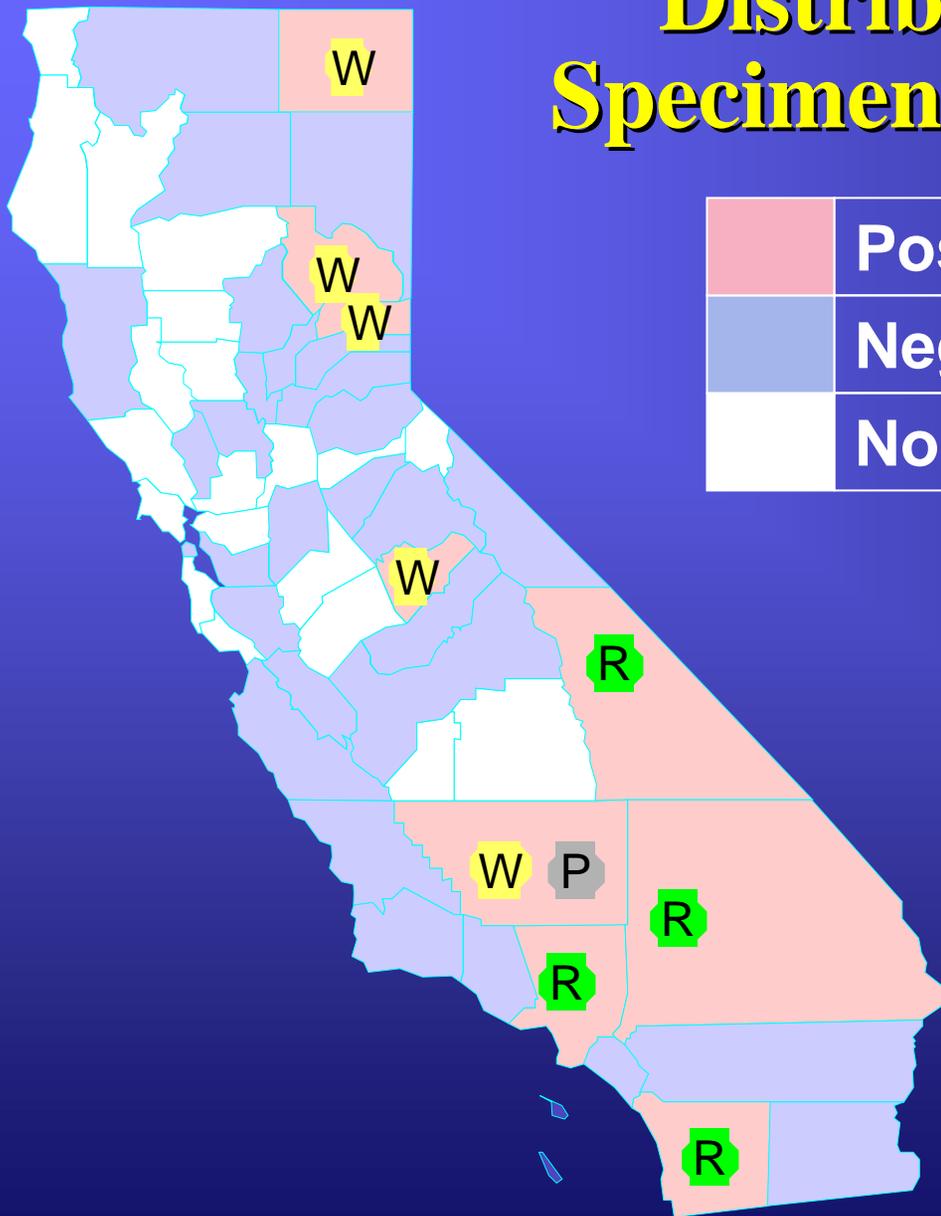


	Positive Test Results
	Negative Test Results
	No Sampling Done

-  Human Case
-  Domestic pet
-  Rodent flea pool
-  Wild carnivore serum
-  Rodent serum
-  Lagomorphs
-  Feral Pigs

10 / 41 counties positive
91 / 1781 specimens pos

Distribution of Plague Specimens by County, 2007



	Positive Test Results
	Negative Test Results
	No Sampling Done

-  Domestic pet
-  Wild carnivore serum
-  Rodent serum

9 / 38 counties positive
76 / 1537 specimens pos

Plague Case: April, 2006

Los Angeles County

- **29 yo Hispanic female (hospitalized/survived)**
- **Homemaker: no recent travel history or contact with animals**
- **Had prepared for family consumption a rabbit that the husband had collected in Mojave Desert, Kern County**
- **Site investigation detected *Y. pestis* by DFA in one rabbit carcass and antibodies to *Y. pestis* in 5 / 20 deer mice**

Tick-borne Diseases



Tick-borne Diseases in California

Lyme Disease

Ehrlichiosis

Anaplasmosis

Babesiosis

Tick-borne Relapsing Fever

Rocky Mountain Spotted Fever

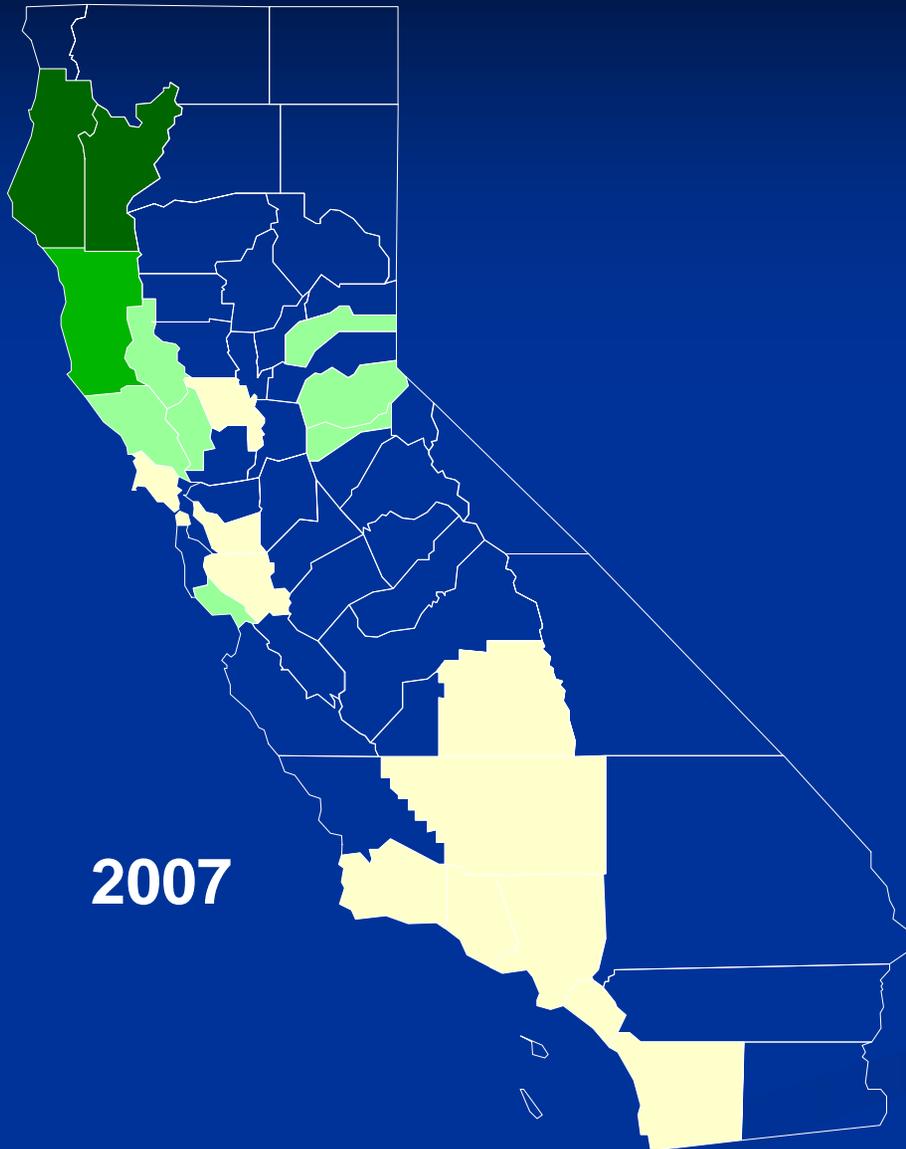
Tularemia

Tick Paralysis

Reported Lyme disease cases California, 1990-2007

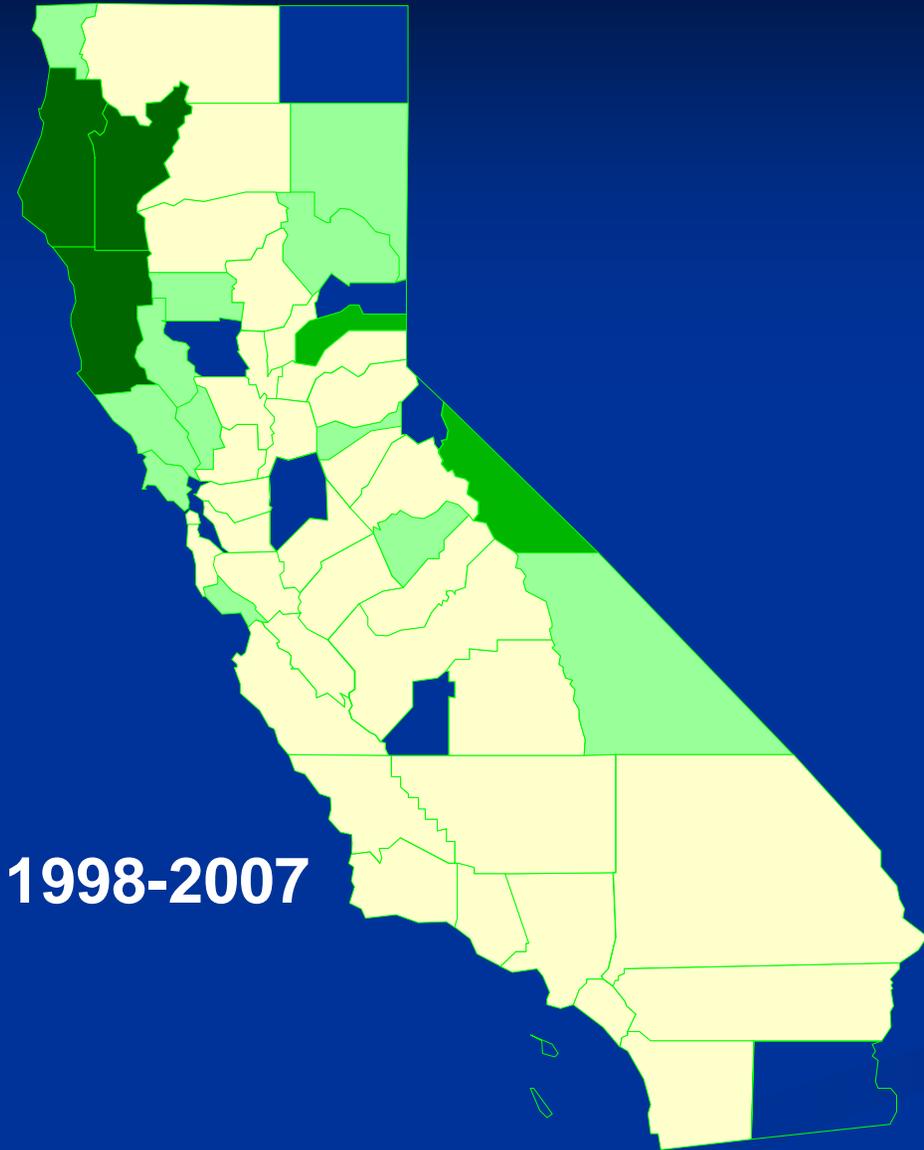


Reported cases per 100,000 person-years



Trinity	7.7	
Humboldt	5.5	≥ 5 
Mendocino	4.6	≥ 3 
Amador	2.8	
Napa	2.4	
Nevada	2.2	
Santa Cruz	2.0	
Sonoma	1.7	
Lake	1.7	
El Dorado	1.2	> 1 
Others		> 0 

Reported cases per 100,000 person-years



1998-2007

Trinity	19.2	
Humboldt	6.8	
Mendocino	6.8	≥ 5
Nevada	4.2	
Mono	3.9	≥ 3
Butte	2.1	
Plumas	1.9	
Sonoma	1.8	
Santa Cruz	1.6	
Lassen	1.5	
Marin	1.4	
Lake	1.4	
Napa	1.2	
Mariposa	1.2	
Amador	1.1	
Inyo	1.1	
Del Norte	1.0	≥ 1
Others	> 0	

Surveillance Activities 2007

Tested 4,198
Ixodes pacificus
for *Borrelia* spp. in
house and in
collaboration with
the US Army
(PCR/IFA/DFA)

 Negative

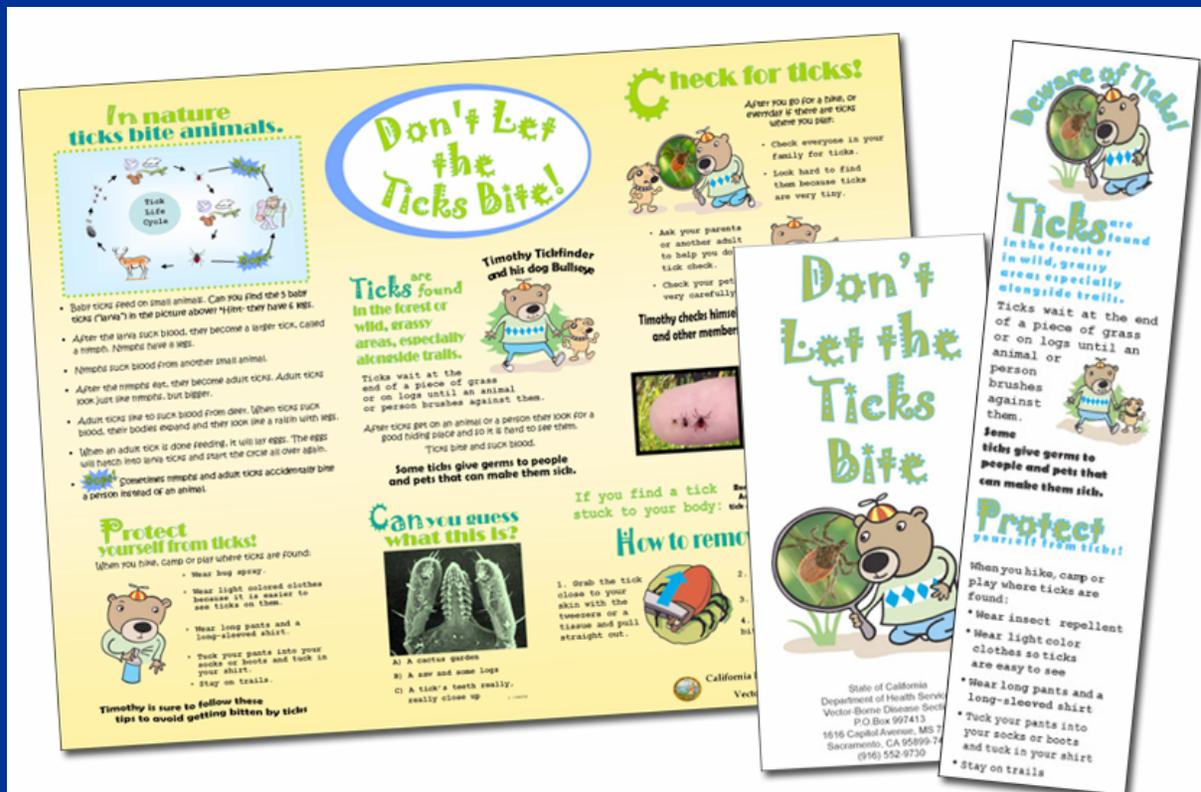
 Positive for *Borrelia* spp.



Education Activities 2007

School Children

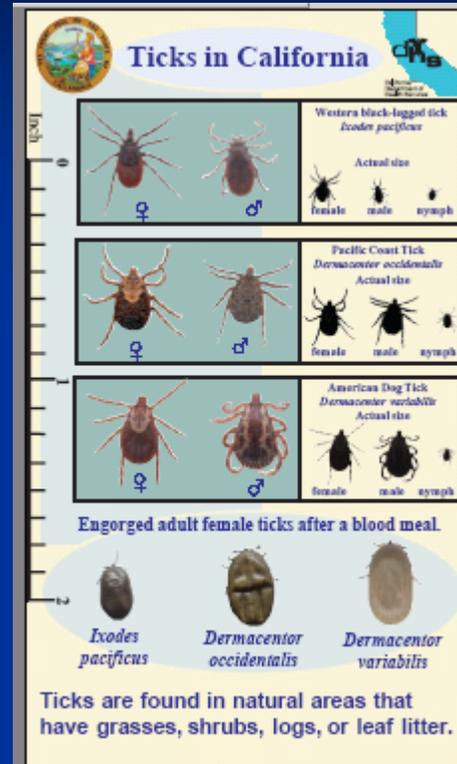
- “Don’t Let The Ticks Bite” Kids Campaign
 - Poster, Brochure, Bookmark
 - Gold Award: National PH Information Coalition



Education Activities 2007

Local Agencies

- Tick Wallet Cards in English and Spanish: Additional 10,000 cards distributed
 - National Forest Service
 - National Parks
 - State Parks
 - Local Mosquito and Vector-Control Agencies
 - Local Health Departments
 - VBDS Branch offices for further local distribution



In California can transmit disease. *Ixodes pacificus* may carry Lyme disease or ehrlichiosis. *Dermacentor* ticks may carry Rocky Mountain spotted fever or tularemia.

Proper removal of ticks can help prevent disease transmission!

To remove a tick:



- Use tweezers to grab the tick as close to your skin as possible.
- Pull the tick firmly, straight out, away from the skin (do not jerk, twist or burn the tick).
- Wash your hands and the bite site with soap and water after the tick is removed and apply an antiseptic to the bite site.
- See your doctor if you develop a rash or flu-like symptoms within 30 days after a tick bite.

For more information: <http://www.dhs.ca.gov/>
Call: 916-552-9730 or your local health department

West Nile Virus



WNV Activity in California, 2006

Humans, reported	292
Horses, reported	58
Dead birds	1,446
Mosquito pools	832
Sentinel chickens	640
Squirrels	32

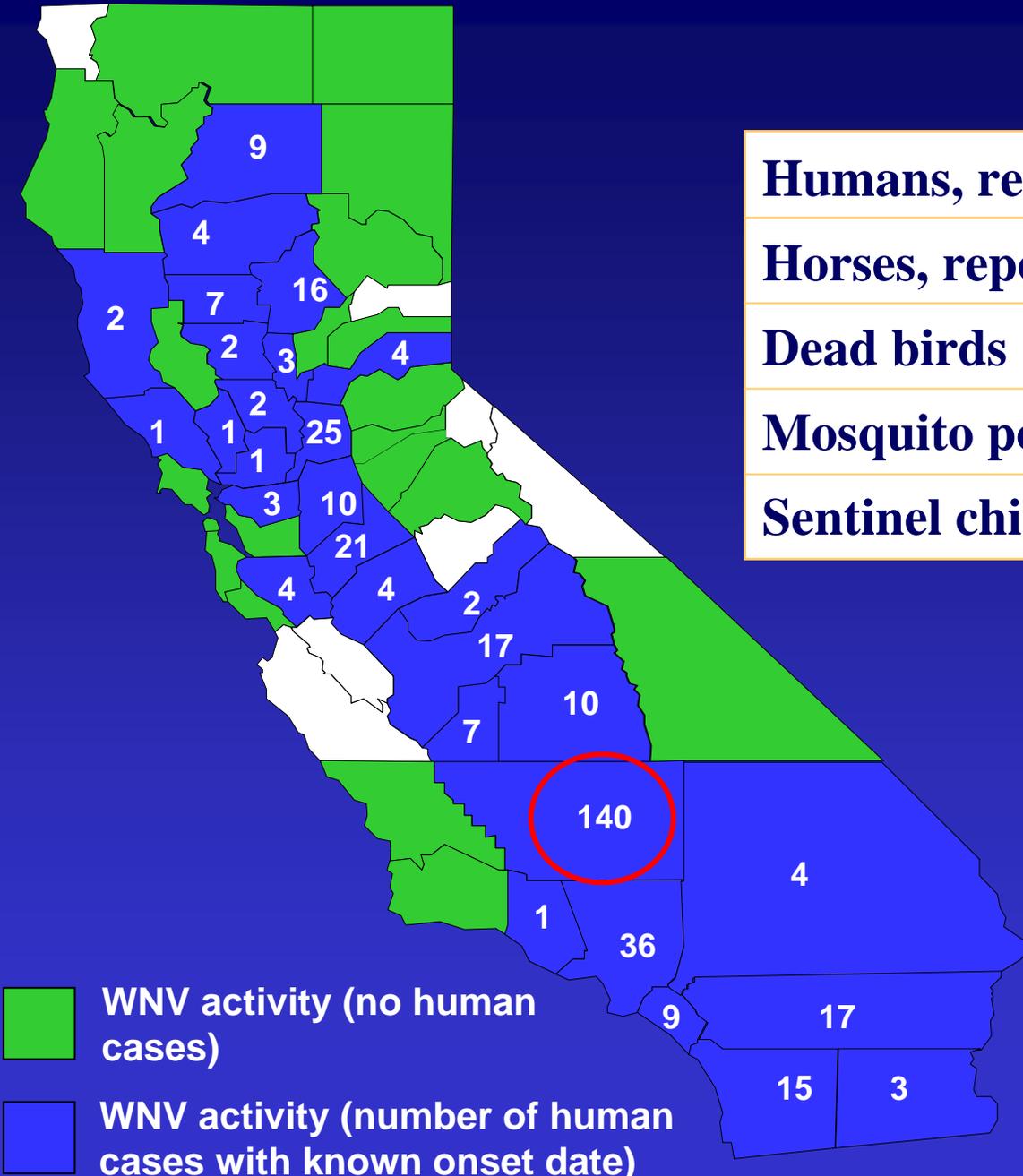


N = 36 counties with human infections

WNV activity (no human infections)
 WNV activity (number of human infections)

2007

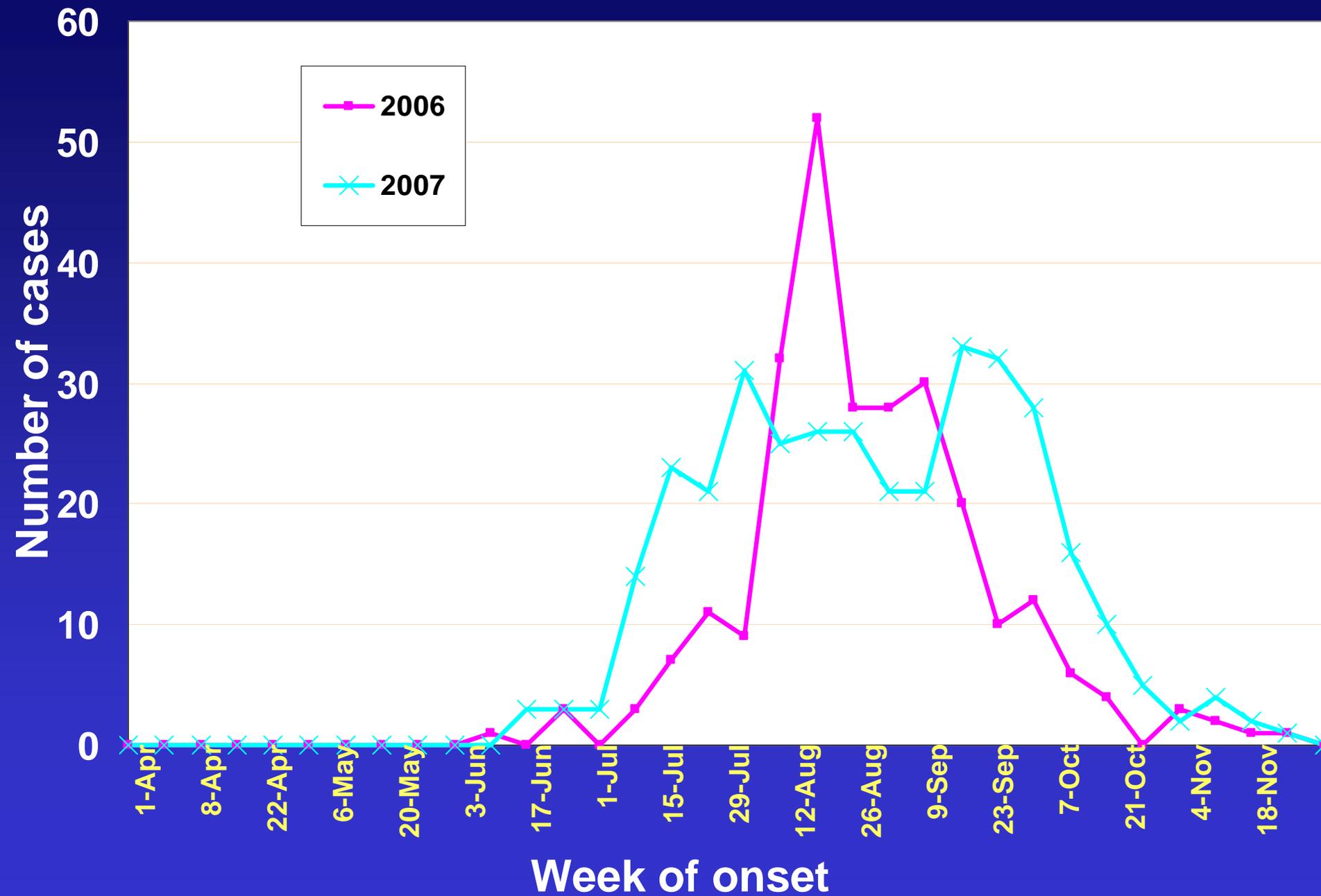
Humans, reported	380
Horses, reported	28
Dead birds	1,396
Mosquito pools	1,007
Sentinel chickens	510



30 counties with human cases

WNV activity (no human cases)
 WNV activity (number of human cases with known onset date)

Onset of Human Illness 2006-2007



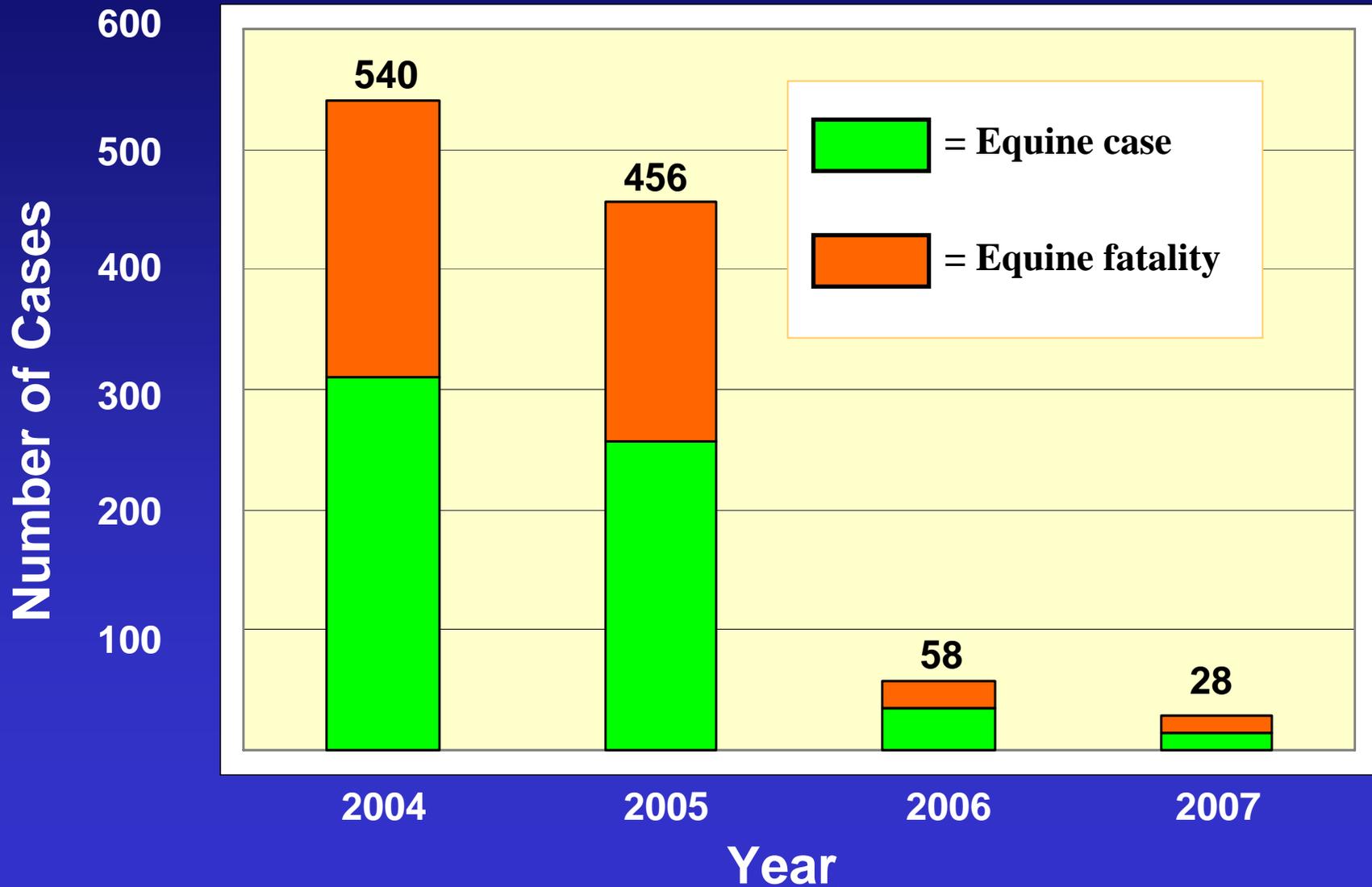
Comparison of Surveillance Factors

2006

2007

Counties	54	51
Human Cases	278	378
Horses	58	28
Dead Birds	1446	1396
Sentinel Chickens	640	510
Squirrels	32	26
Mosquito Pools	832	1003

WNV Equine Cases 2004 - 2007



West Nile Virus Website

- Redesigned for 2007
- Caters to general public, local and state agencies, media outlets
- Visitors viewed 80% more pages than previous year
- New web database interface increased hotline efficiency (from 5 to 2 min/call)
- Awarded NPHIC Silver Medal

The screenshot displays the WestNile.ca.gov website interface. At the top, there is a navigation bar with links for HOME, REPORT A DEAD BIRD OR SQUIRREL, WNV FAQs & BASICS, NEWS, RESOURCES, and REPORTS. Below this, a main section titled "Latest West Nile Virus Activity in California" features a map of California with color-coded counties. To the left of the map is a table of "CASE COUNTS BY COUNTY" listing 57 counties and their respective human cases. To the right of the map are sections for "HUMAN CASES", "HORSES", and "DEAD BIRDS", each providing a summary of recent activity. Below the map is a "Latest WNV News" section with a link to "Governor Schwarzenegger Orders Enhancements to Fight West Nile Virus".

At the bottom of the screenshot is a "WELCOME ERVC" section containing a "WNV HOME PAGE | CHANGE PASSWORD | LOG-OUT" link and a "WEBSITE ADMIN" menu. Below the menu is a "Report Lookup" form with fields for "Search by:" (Report ID), "Zip Code", and "Start New Report". The form is populated with a report for Report ID 83854, dated Oct 18, 2007, at 11:17 AM, from a live call. The report details include the operator's name (Sandra Crossley), the caller's name (Alice Rivera), and the address (608 Hume Ave, Apartment 8, Hunford, Kings County, CA 95741). The form also includes fields for "Bird Info" (Species: Sparrow, Condition: Dead Less Than 24 Hours, Zone: Home) and "Submission Info" (Dead Bird Number: 07-7738, Status: Submitted, Submitting Agency: Kings MAD, CAHFS Lab: Fresno).

Acknowledgements

Vector-Borne Disease Section

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