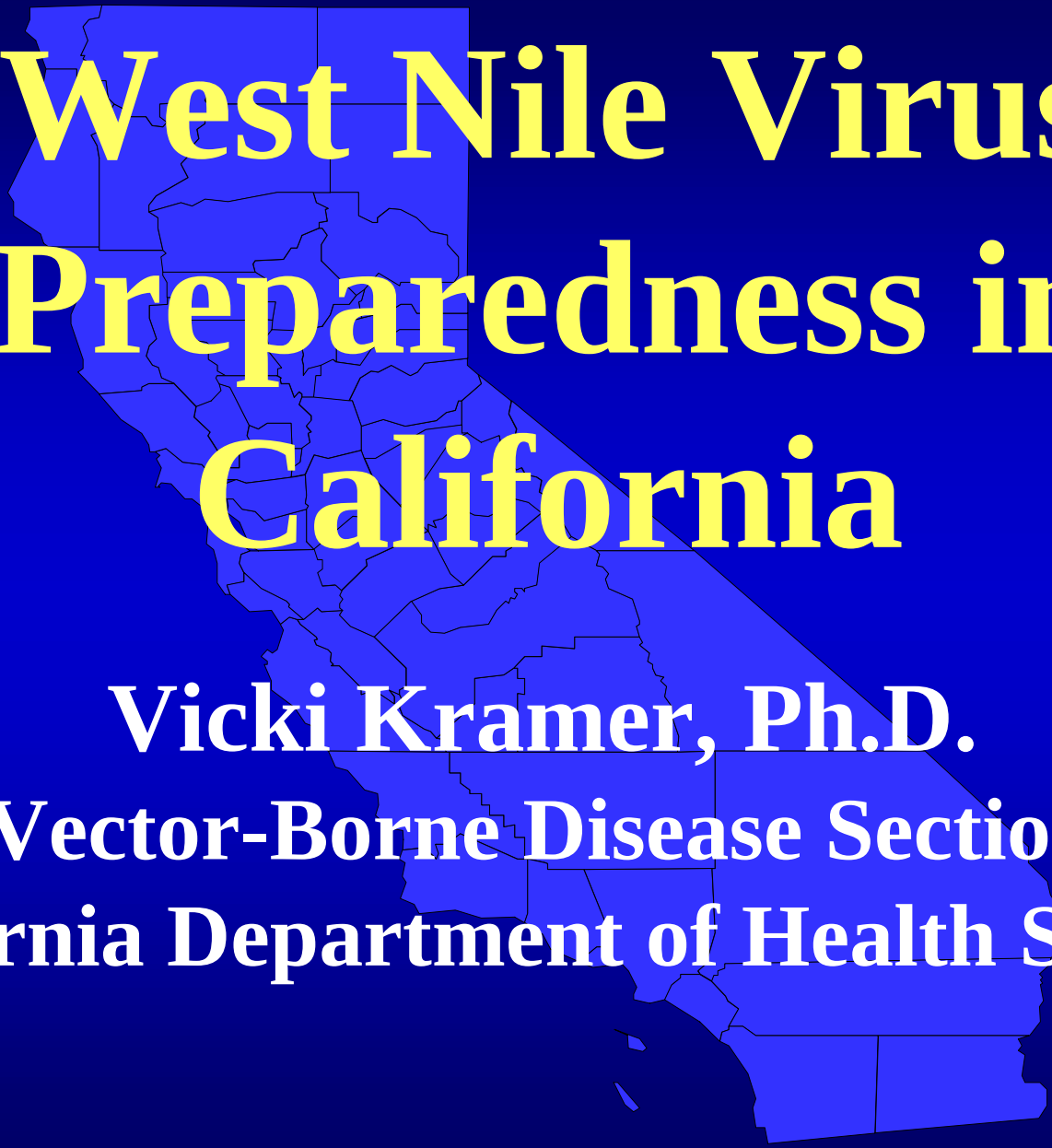
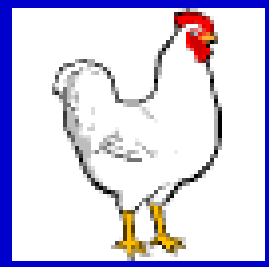
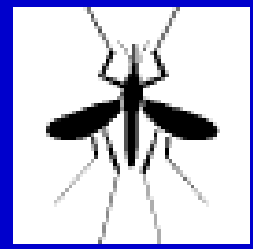
West Nile Virus Preparedness in California



Vicki Kramer, Ph.D.
Vector-Borne Disease Section
California Department of Health Services

WNV Surveillance Initiated in California in 2000

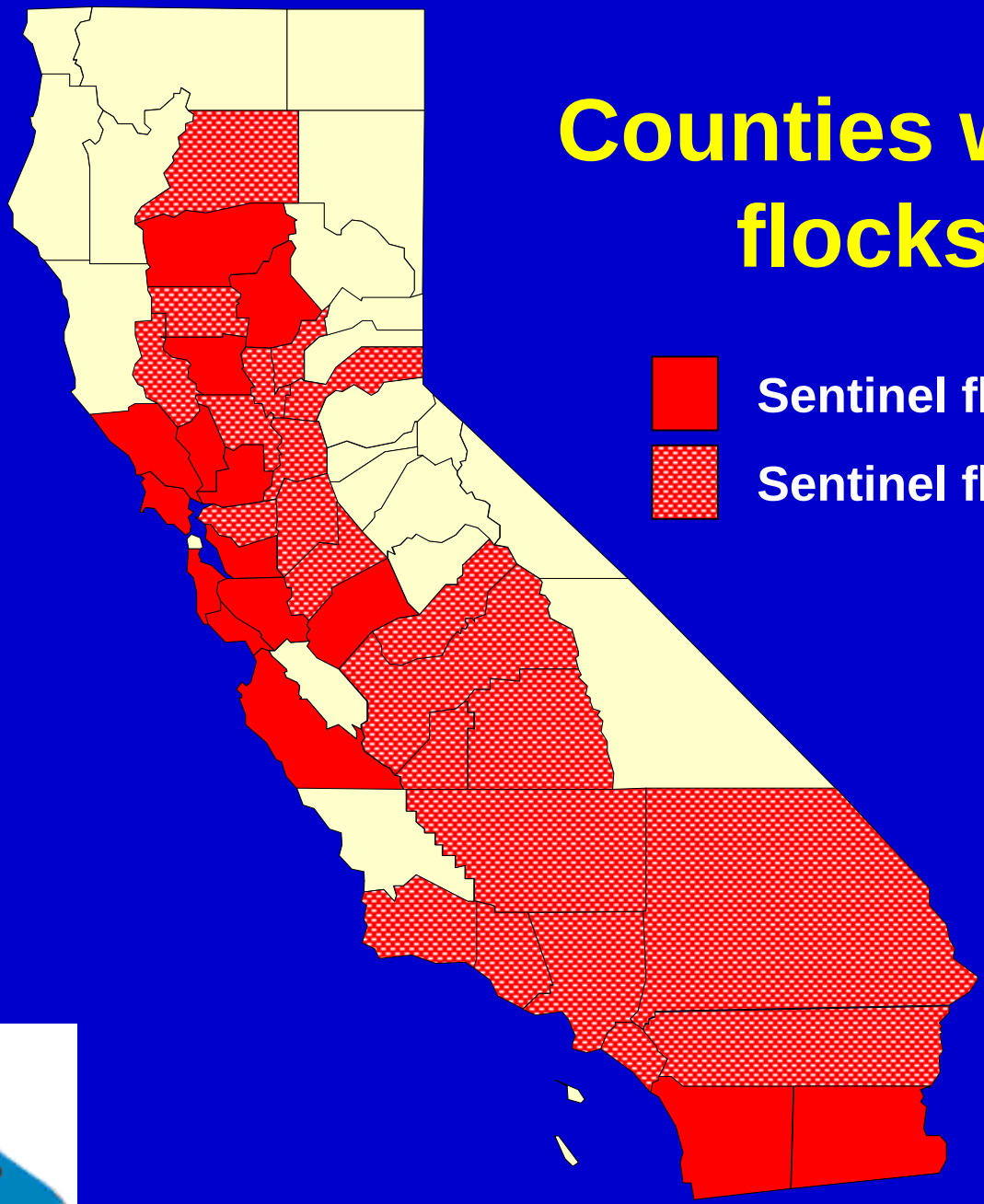




1. Sentinel Chicken Testing
2. Mosquito Testing
3. Encephalitis Case Surveillance
    - Human
    - Equine
    - Ratite (emus and ostriches)
4. Dead Bird Testing

Sentinel Chicken Testing

- Program established in 1979 with 31 flocks
- Early 1990s, number of chickens/flock reduced from 20-25 to 10 and number of flocks increased to expand geographical coverage
- Bleeding method changed from jugular puncture to a lancet prick of the hen's comb
- Flock placement is based on history of arbovirus activity and mosquito abundance



Counties with sentinel flocks in 2001

Sentinel flock surveillance only

Sentinel flocks and mosquito pools

46 agencies
191 flocks

24 agencies
mosquito pools

Sentinel Chicken Testing for WNV

- The first SLE seroconversion in each geographic area was tested for WNV because SLE and WN cross-react
- 20,837 sera tested in 2001; 62 chickens were SLE positive (10 flocks, 2 counties)
- 69 sera (9 counties) tested for WNV

Mosquito Testing

- **Program initiated in 1969; 3500 pools tested**
  - **range 2000 – 8000 pools per year**
- ***Culex tarsalis***
- ***Cx. pipiens, Cx. quinquefasciatus, Cx. stigmatosoma, Oc. melanimon***

Mosquito Testing for WNV

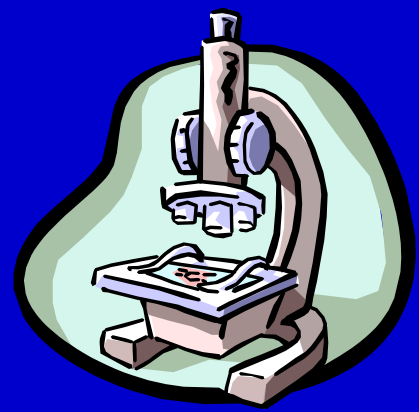
- SLE positive pools tested for WN
- 24 agencies submitted 3,919 mosquito pools for testing in 2001
- 70 SLE positive pools (Riverside County) were negative for WN

Equine Surveillance

- Letter sent in spring to over 6000 veterinarians and agencies regarding WN virus program; offered free testing
- 13 suspect cases tested; all negative for WEE and WNV

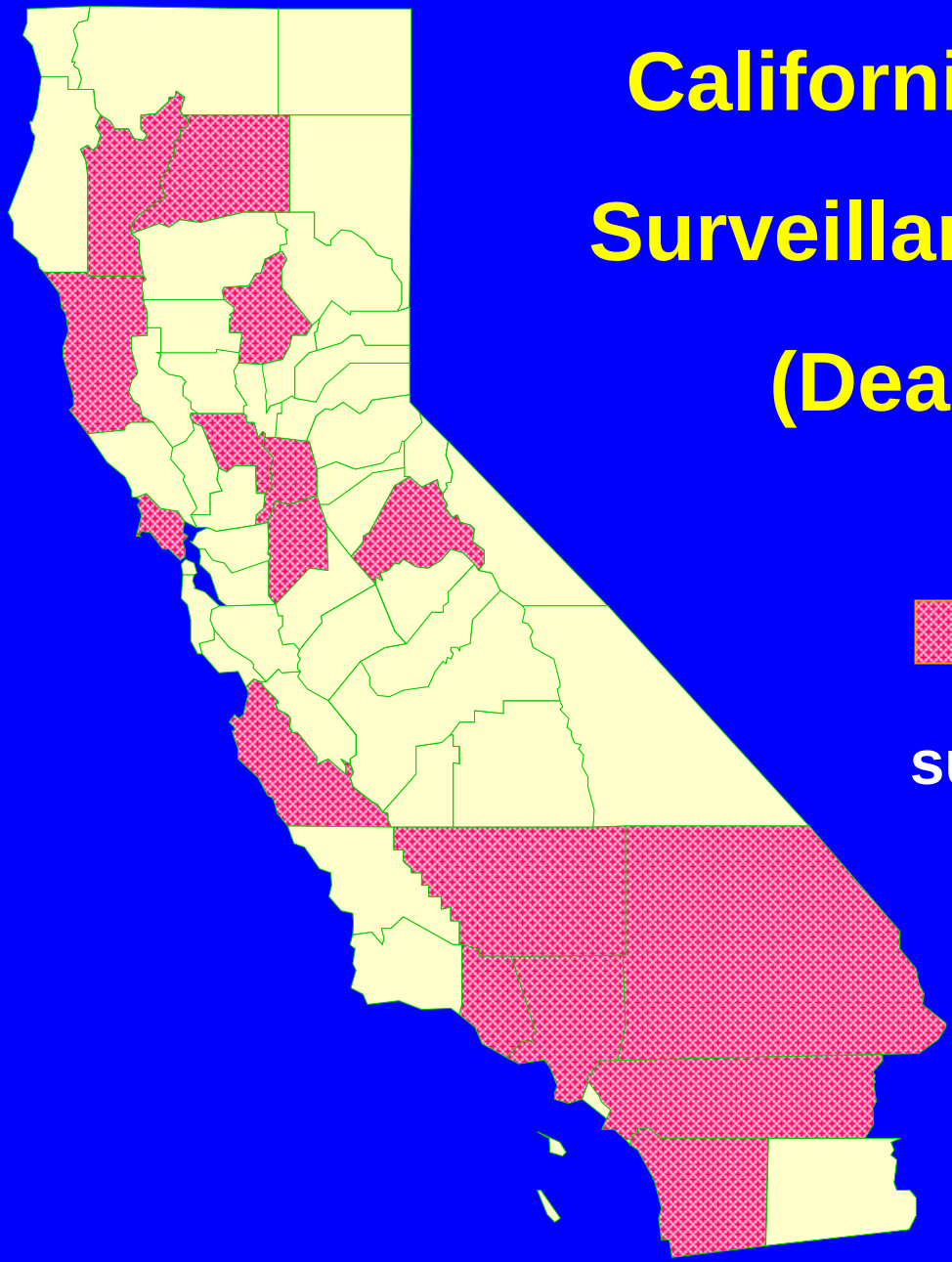
Human Case Surveillance
California Encephalitis Project (CEP)

- 600 cases referred to CEP since 1998
  - Core testing of 15 pathogens
- Suspect human cases of encephalitis / meningitis tested in 2001 for WEE and SLE: 210 (all negative)
- 166 tested for WNV
  (6 patients had traveled to east coast)



Dead Bird Testing 2001

- Over 600 agencies notified about WN dead bird surveillance program
- 68 dead birds were reported from 19 counties
- 18 birds (16 crows, 1 raven, 1 scrub jay) were tested for WNV; all negative
- Dead birds must meet certain criteria to be tested (dead <24 hours)



California West Nile Surveillance Program (Dead Birds)

Counties (16) that submitted dead birds

West Nile Virus Preparedness Workshop: December 2001

- Identify "gaps" in our WNV surveillance system
- Develop goals and recommendations to address identified "gaps"

➢ Enhance California's preparedness for detection and response to the introduction of West Nile virus

Four "Break-out" Groups

1. Surveillance: Dead birds, chickens, mosquitoes
2. Surveillance: Equine, human
3. Mosquito Control
4. Public Relations

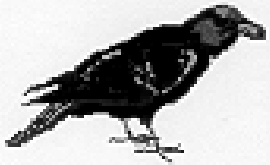
Dead Bird Surveillance

- Enhance lab capacity for dead bird testing
- Develop a preliminary matrix to assist with prioritization of dead bird testing
- Enhance public information regarding program to increase number of dead bird call-ins

WN Dead Bird Reporting Protocol for Sample Submission

California West Nile Virus Surveillance Project

DEAD BIRD REPORTING PROTOCOL



What do I do if I find a dead bird?

NOTE: Do NOT touch the carcass unless you are veterinary, public health, or wildlife personnel.

1. **Call the Department of Health Services at (510)540-2356**

   First call the above number to report the dead bird.
   Not all carcasses will be in condition to be tested for West Nile virus (WN) but the program office will record ALL dead bird reports regardless of carcass condition and will determine if WN testing is appropriate. DHS is particularly interested in crows and other corvid species (e.g. jays, magpies, ravens, etc).

- **Establish a toll free number for dead bird call-ins**

  (877) WNV-BIRD

- **Develop a web site with dead bird submission form and information**

http://westnile.ca.gov

CA WN Surveillance

California West Nile Surveillance Information Center

Library News Search

California
West Nile Virus
Surveillance

- What Is West Nile Virus?
- California West Nile Surveillance
- Mosquito Control and the Environment
- Symptoms of West Nile
- Horses and West Nile
- Finding Dead Birds

Welcome to the California Department of Health Services West Nile surveillance site. This site exists to become a clearinghouse for public information on West Nile Virus in California.

Here are some related agencies you may be looking for:

dhs CDFA MVC THE UNIVERSITY OF CALIFORNIA 1868

On this site, you can always return to this page by clicking on the icon in the upper left hand corner:

- **Educate health or EH departments in regions without a vector control program so they will be prepared to submit dead birds once WN arrives**
- **Contact zoos for surveillance purposes and information distribution**
- **Provide training on ID of key bird species, and dead bird handling and shipping procedures**

Human Case Surveillance

- Enhance the CA Encephalitis Project in likely regions of introduction
- Expand emergency room surveillance regionally for aseptic meningitis
- Prepare information for rapid dissemination to medical community once WN detected

Human Case Surveillance Lab Capacity

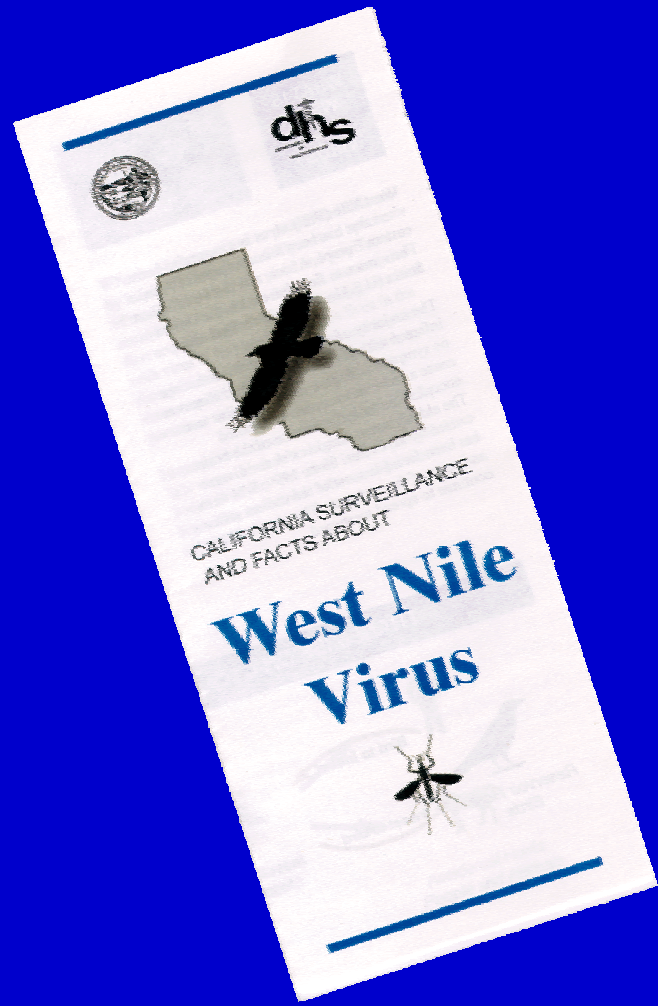
- VRDL currently has the capacity to handle a surge in the number of human specimens that would be submitted subsequent to WN detection

Equine Case Surveillance

- **Enhance dissemination of information to veterinarians**
- **Develop a fact sheet on equine movement restrictions that would be initiated if WN detected in California**
- **Prior to WN detection, administer a questionnaire and collect baseline sera at an equine horse show (Indio 2002)**

Public Relations

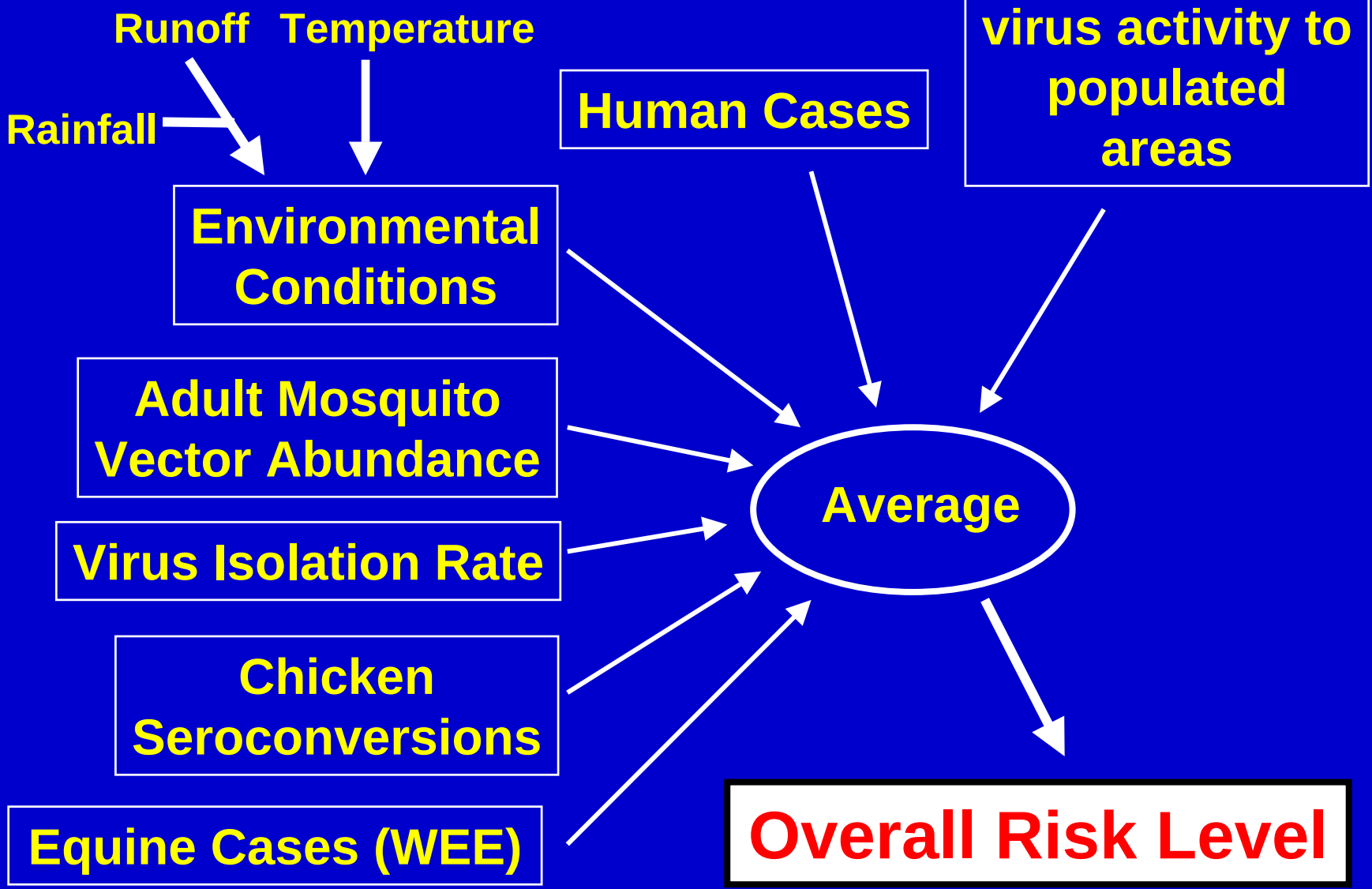
- Prepare boiler-plate press releases
- Prepare and disseminate a spring press release on dead bird surveillance program
- Develop fact sheets targeted to different interest groups
- Develop a brochure for the general public



California Mosquito-Borne Virus Surveillance and Response Plan

- Provide response guidelines for vector control and public health agencies during periods of normal and increased risk for virus activity
- Identify key agency responsibilities
- Quantify the risk of WEE and SLE outbreaks in California

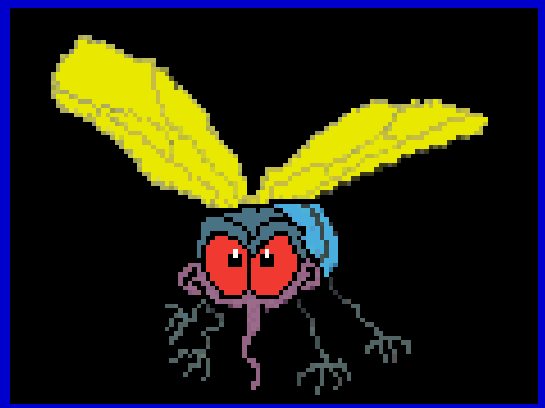
Risk Factors



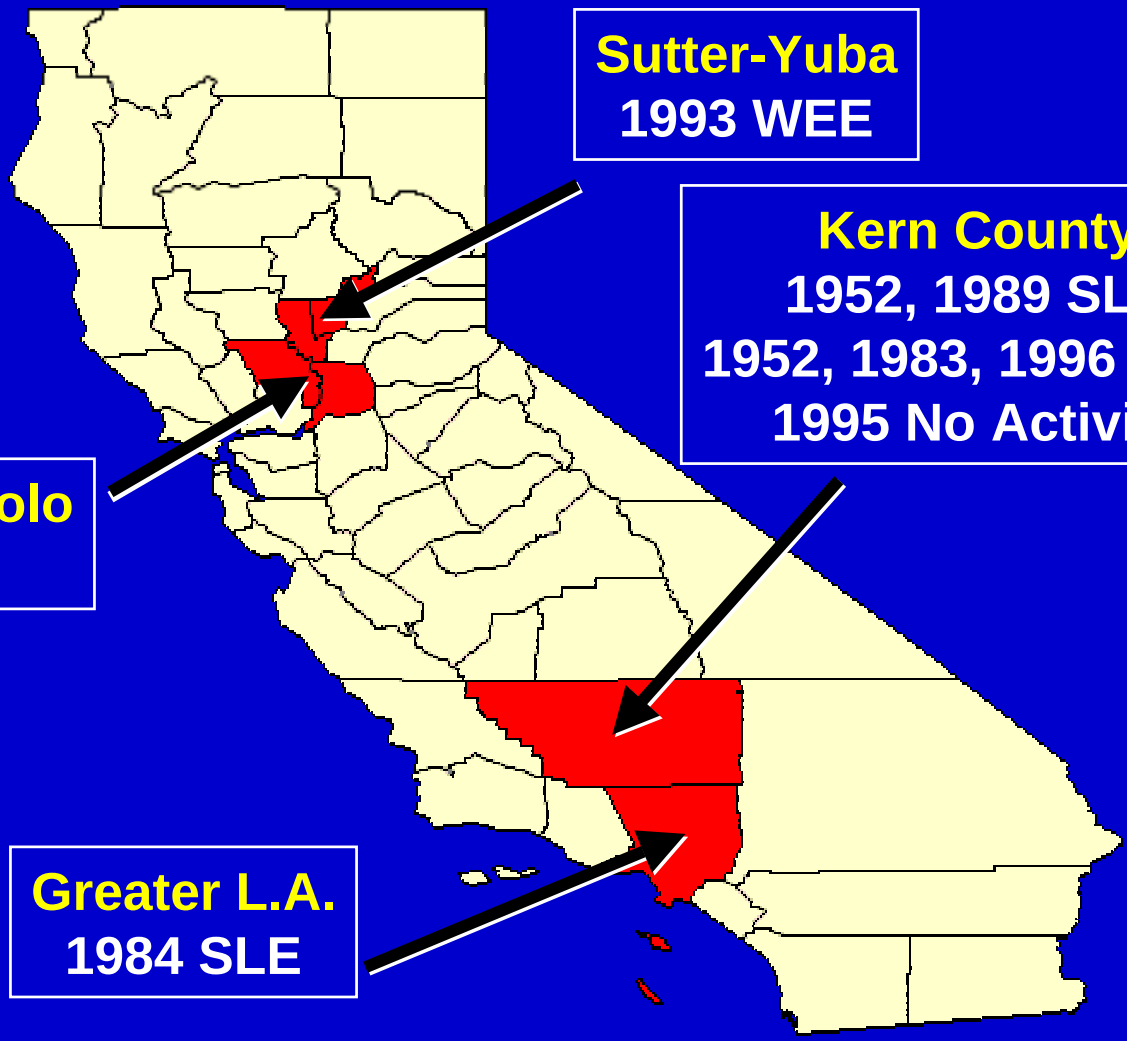
Risk Factors Rated

Average rating determined for seven risk factors and correlated with response level

Normal season	**1.0 to 2.5**
Emergency planning	**2.6 to 4.0**
Epidemic	**4.1 to 5.0**

Surveillance Factor	Value	Benchmark
Adult mosquito vector abundance 	1	Vector abundance well below average (< 50%)
	2	Vector abundance below average (50 – 90%)
	3	Vector abundance average (90 – 150%)
	4	Vector abundance above average (150 – 300%)
	5	Vector abundance well above average (> 300%)

Case Studies



Data analysis by C. Barker and W.K. Reisen, UC Davis

Case Studies: Summary

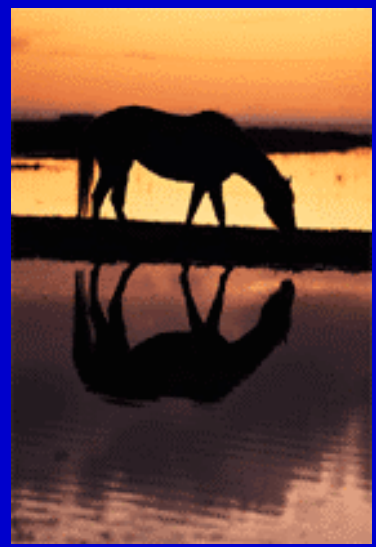
- In general, model is predictive of SLE and WEE epidemics; emergency planning conditions reached
- Epidemic conditions occurred following first human case
- Definitions of risk factor benchmarks need to be improved
- Conditions for amplification of WEE and SLE differ; separate models required

➢ **Modify for WNV: Add dead bird component**

West Nile Virus:

Are We Prepared?

Yes, we are relatively well prepared, but we still have a lot of work ahead of us.



Advice is welcome!

Thanks to the California West Nile Virus Steering Committee

MVC

CDFA

dhs

DHS: Carol Glaser, Michele Jay, Evelyn Tu, Stan Husted & Al Hom