



Vector-Borne Diseases in Tennessee

Abelardo C. Moncayo, Ph.D.
Tennessee Department of Health
& Vanderbilt University Medical Center
Nashville, TN



Mosquito and Tick-borne diseases

- ◆ WN
- ◆ LAC
- ◆ EEE
- ◆ SLE
- ◆ Ehrlichiosis
- ◆ Lyme disease
- ◆ STARI
- ◆ RMSF



West Nile Fever/Encephalitis

West Nile Indicators 2000-2005

	'00	'01	'02	'03	'04	'05
Human	0	0	56	26	14	17
Horse	0	1	141	103	17	4
Bird	8	46	823	275	35 ^ψ	7 ^{ψψ}
Mosquito	0	0	307	308	405*	504**

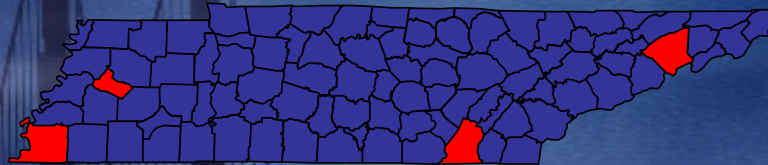
^ψOut of 107 at end of '04

^{ψψ}Out of 50 at end of '05

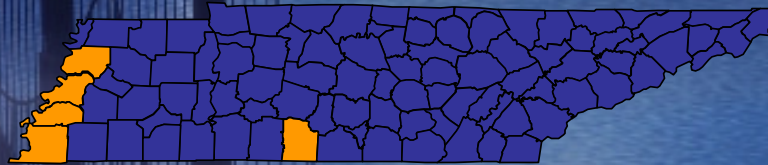
*Out of 1928 at end of '04

** Out of 2317 at end of '05

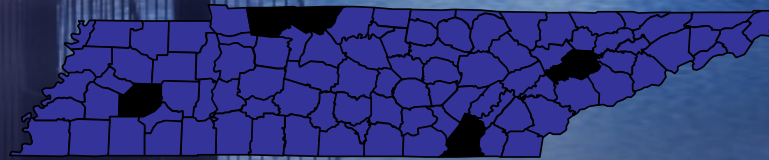
West Nile in Tennessee, 2005



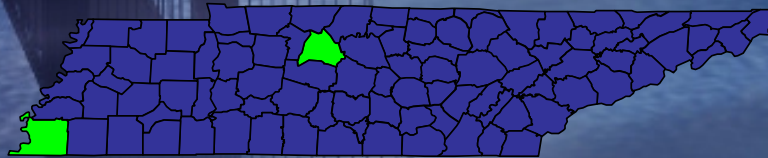
Humans



Horses

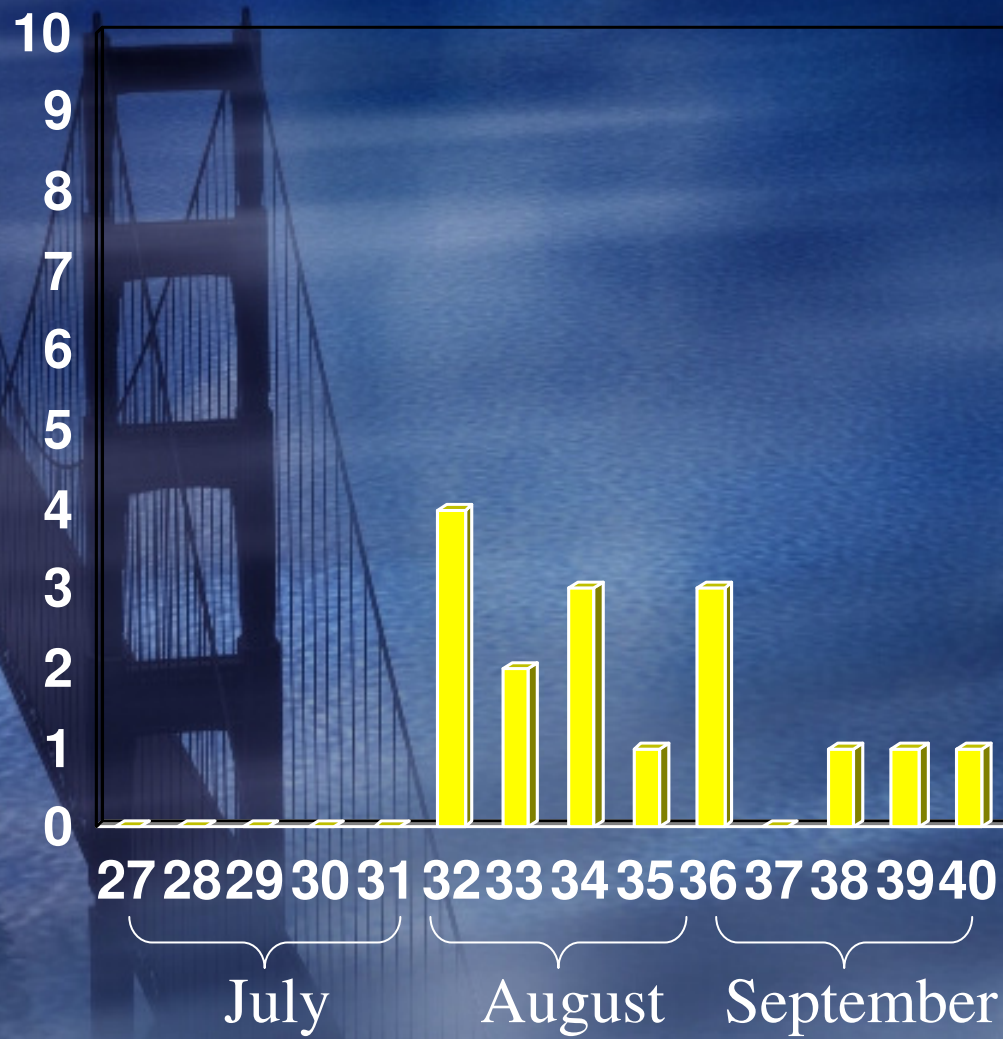


Birds

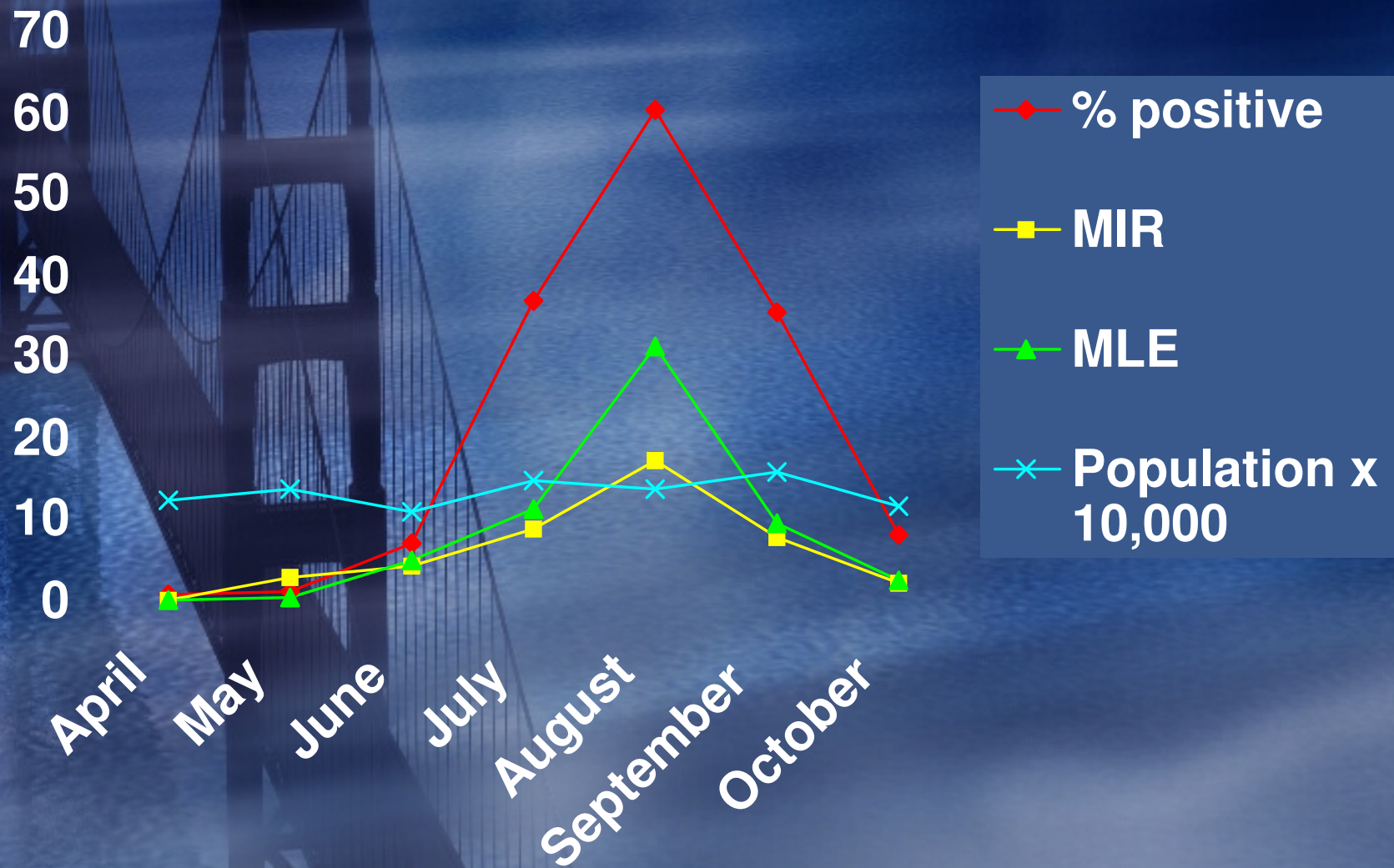


Mosquitoes

2005 Cases by dates of onset



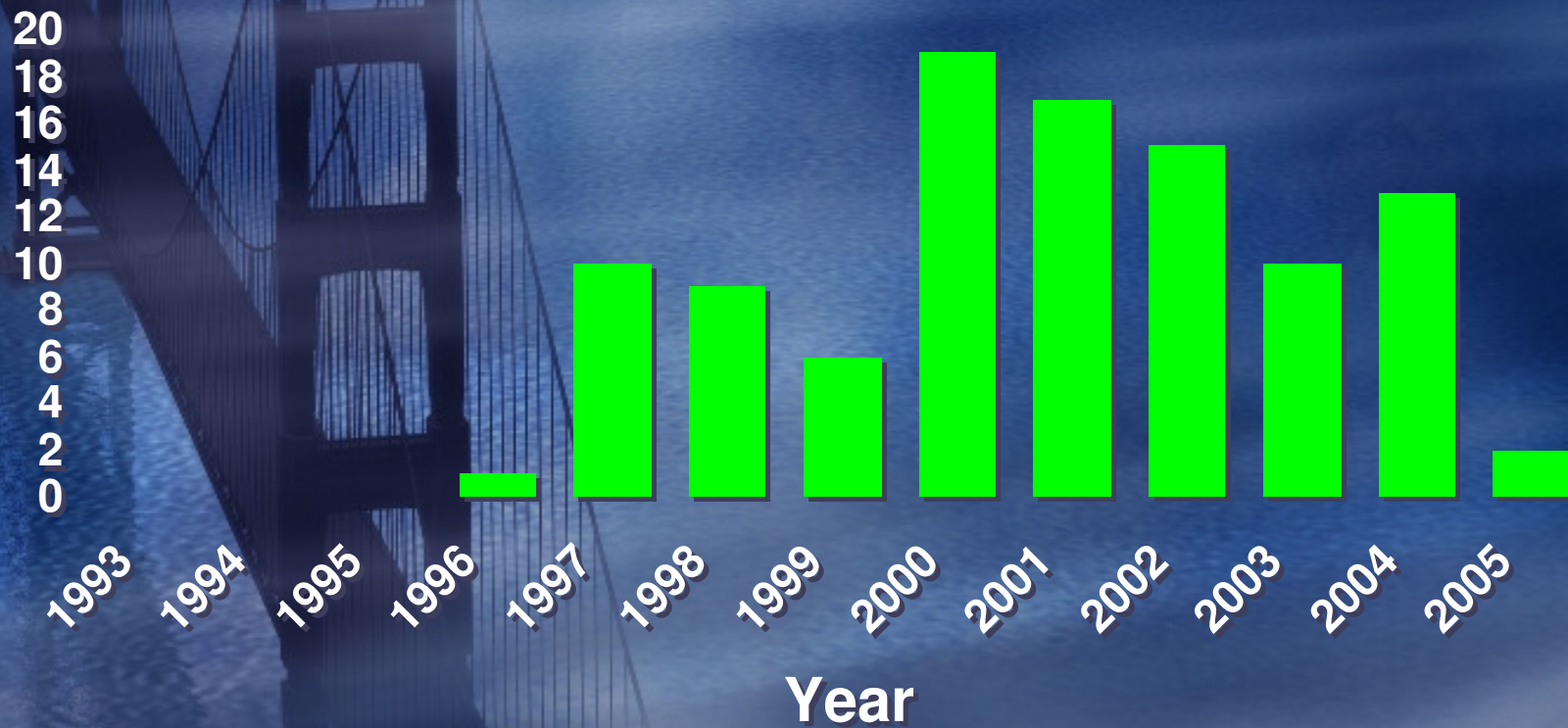
Memphis mosquito surveillance warns Tennessee





La Crosse Encephalitis

La Crosse in Tennessee

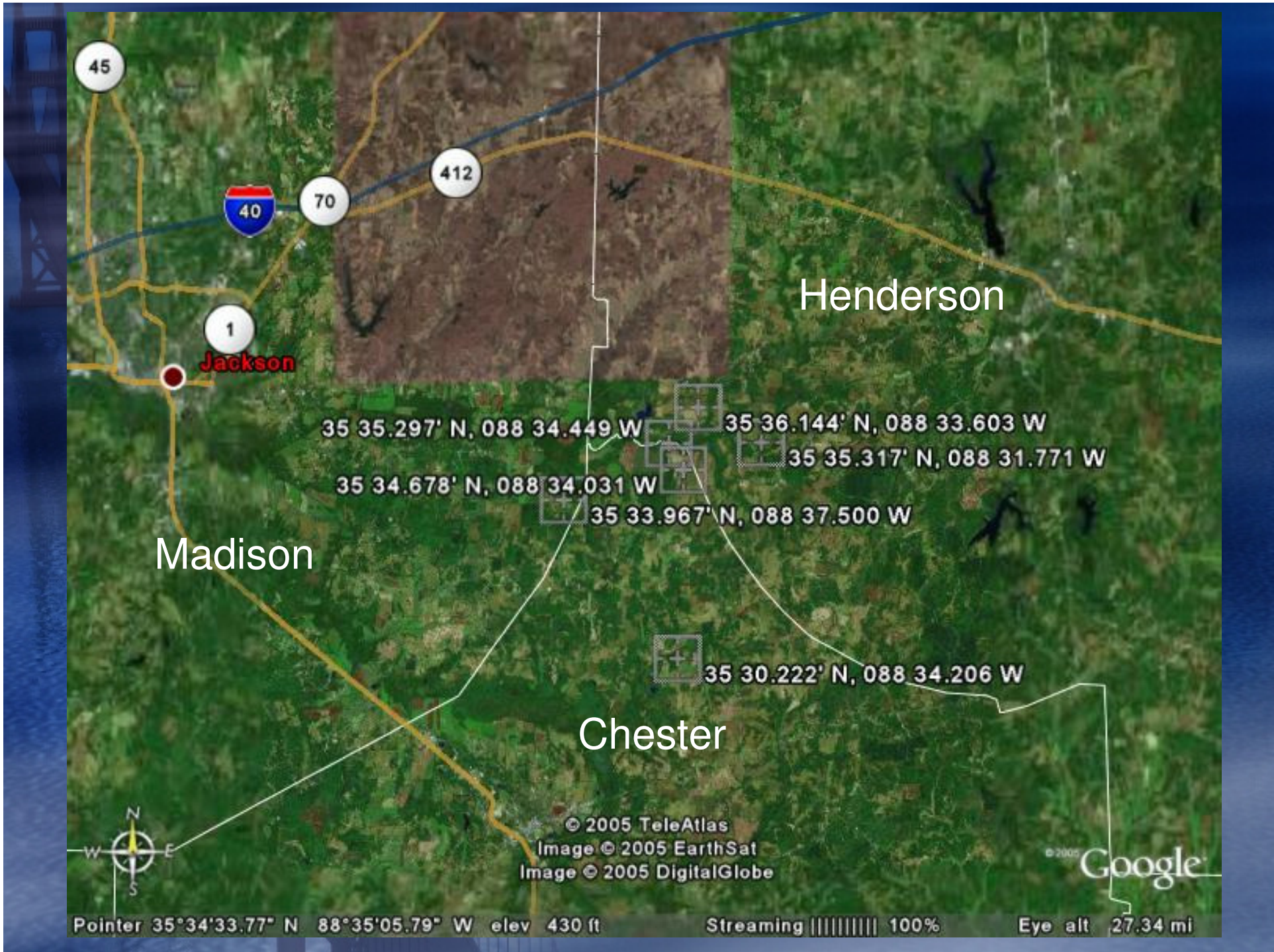


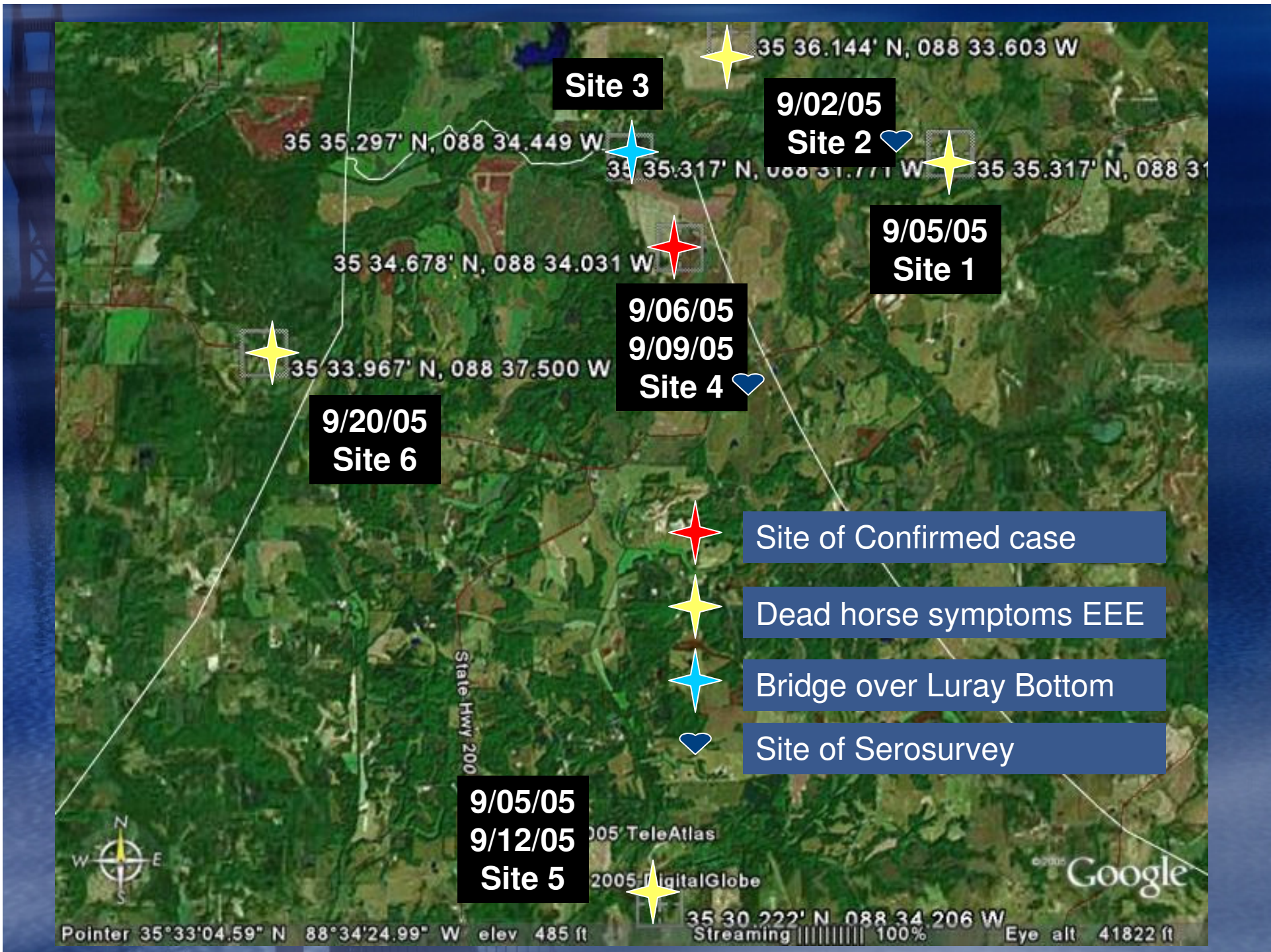


A blue-tinted photograph of the Golden Gate Bridge at night, with the title 'Eastern Equine Encephalitis' overlaid in white text.

Eastern Equine Encephalitis









Species Diversity

	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Total
<i>Cx. restuans</i>	73	91	3	113	1	7	288
<i>Cx. erraticus</i>	12	11	21	137	5	51	237
<i>Cq. perturbans</i>	0	22	0	149	2	2	175
<i>An. quadrimaculatus</i>	3	57	1	34	11	15	121
<i>Ae. vexans</i>	0	19	0	9	4	0	32
<i>An. punctipennis</i>	0	2	0	4	0	3	9
<i>Cx. territans</i>	0	0	0	0	0	1	1
<i>Oc. dupreei</i>	19	0	0	0	0	4	23
<i>Oc. fulvus pallens</i>	0	0	0	2	0	6	8
<i>Ps. ferox</i>	4	0	0	0	0	0	4
<i>Oc. trivittatus</i>	1	0	0	0	2	0	3
<i>Oc. triseriatus</i>	0	0	0	2	0	0	2
<i>Ps. howardi</i>	0	1	0	0	0	1	2
<i>Ps. ciliata</i>	0	0	0	1	0	0	1



St. Louis
encephalitis



Ehrlichiosis

- ◆ Underrecognized
- ◆ Not routinely tested
- ◆ HME in Tennessee - one of the leading states in HME activity
- ◆ Vector: American dog tick and Lonestar tick
- ◆ *Ixodes scapularis* rarely found in TN - no HGE
- ◆ Most cases in mid-Cumberland and Nashville
- ◆ Incidence peaks June-September (nationally May to July)
- ◆ 70% over 40 y.a.
- ◆ 75% male



Lyme disease

- ◆ Challenge: some physicians claim we have it in Tennessee
- ◆ Clinical criteria for diagnosing is loose
- ◆ No cases with confirmed serology
- ◆ Primary vector, deer tick, rarely found in Tennessee
- ◆ Emotionally charged disease



Southern tick-associated rash illness (STARI)

- ◆ Vectored by Lone Star tick, found in Tennessee
- ◆ Similar symptoms to Lyme disease, Lyme cases we report may be STARI
- ◆ Non-reportable



Rocky Mountain Spotted Fever (RMSF)

- ◆ The most severe and most frequently reported rickettsial disease in U.S.
- ◆ Tennessee is one of the top 5 states for RMSF transmission, accounting for 12% of cases nationwide
- ◆ Most cases in mid and upper Cumberland regions
- ◆ Primary vector in TN is the American dog tick; secondary vector is the Lone Star tick
- ◆ 62% of cases over 39 y.a
- ◆ 55% in males

Comparison of reportable tick-borne diseases

