

**STATE ENVIRONMENTAL HEALTH INDICATORS COLLABORATIVE (SEHIC)
CLIMATE CHANGE INDICATORS**

Indicator: CC5: Environmental/ecological changes

Measure(s): CC5.1: Prevalence of West Nile virus in Mosquitoes

CC5.2: Prevalence of West Nile virus in sentinel species

MEASURE DESCRIPTION

CC5.1: Prevalence of West Nile virus in Mosquitoes	
Last updated:	July 2, 2009
Measurement units:	Number of positive mosquito pools
Geographic scale:	Statewide, county
Time scale:	Annual, 1999-2008
Significance/background:	Changes in temperature, precipitation, and humidity can greatly impact the transmission of mosquito-borne diseases, specifically relating to disease incidence and vector range.
Rationale:	Establishing baseline data on the estimated prevalence of mosquitoes infected with West Nile virus in certain areas will allow for early detection of changes that may be related to climate issues.
Limitations:	Variation in resources can impact a state's ability to perform testing on mosquito samples. Testing rates can fluctuate by year and state. For this reason, the absence of a positive test result does not indicate the absence of circulating virus.
Data resources:	ArboNET/USGS Disease Maps: http://diseasemaps.usgs.gov/
Data limitations:	Data do not specify mosquito species, or provide information on the temporal relationship of infections by location.
Related data:	Minimum infection rate (MIR) calculated from individual state data. MIR = WNV-positive pools per number of adult mosquitoes tested (expressed as number positive per 1,000 adults tested)
Related SEHIC measures:	
Related indicators (from other projects):	
Recommendations:	States should use their own mosquito surveillance data to track the timing, location, and species for positive pools. Results should be interpreted in context with other available surveillance data.

CC5.2: Prevalence of West Nile virus in sentinel species	
Last updated:	July 2, 2009
Measurement units:	Number of positive sentinel species
Geographic scale:	Statewide
Time scale:	Annual, 1999-2008
Significance/background:	Changes in temperature, precipitation, and humidity can greatly impact the transmission of mosquito-borne diseases, specifically relating to disease incidence and vector range.
Rationale:	Establishing baseline data on the estimated prevalence of West Nile virus in sentinel species will allow for early detection of changes that may be related to climate issues.
Limitations:	Variation in resources can impact a state's ability to conduct surveillance of sentinel species. Program capacity can fluctuate by year and state. In states with limited programs, the absence of a positive test result does not indicate the absence of circulating virus.
Data resources:	ArboNET/USGS Disease Maps: http://diseasemaps.usgs.gov/
Data limitations:	Data do not provide information on the temporal relationship of infections by location.
Related data:	Sentinel seroconversion rates calculated from individual state data where active surveillance programs exist. Seroconversion rate = Number of positive sentinels / number of total sentinels tested. This is usually reported as a percentage on a weekly basis and can be tailored to the desired geographic level (state, county, flock, etc.).
Related SEHIC measures:	
Related indicators (from other projects):	
Recommendations:	Results of sentinel surveillance should be interpreted in context with other available surveillance data.

**HOW-TO GUIDE: CC5.1 and CC5.2: Annual cases of West Nile Virus in Mosquitos (5.1)
and sentinel species (5.2)**

1. Go to the USGS Disease Maps website: <http://diseasemaps.usgs.gov/>
2. At the top of the map, select **State** for the **Select By** options and click your state on the map (or from the menu at the right of the map) and click **Go** at the bottom right corner of the map.
3. From this first screen, select West Nile virus.
4. On the next screen, above the map, click on Mosquito.
5. Next, select your state from the drop-down box in the upper right corner above the map.
6. The next screen shows the counts by county in your state for 2006. Scroll down under the map to a table that shows the counts by county.
7. For cases in sentinel species, repeat the steps above and click on sentinel species in step #4.