

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

Indicator: CC4: Vector borne diseases

Measure(s): CC4.2: Annual number and rate of human cases of West Nile virus

MEASURE DESCRIPTION

CC4.2: Annual number and rate of human cases of West Nile virus	
Last updated:	August 17, 2008
Measurement units:	Number and rate per 100,000 population
Geographic scale:	Statewide
Time scale:	Annual, 1999-2010
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 location and count of WNV disease cases will allow for early detection of changes that may be related to climate issues.
Limitations:	Annual counts for many states are too small for producing stable rate calculations. Other options for presenting rates are to combine years or states (for example, by region).
Data resources:	CDC Wonder Morbidity and Mortality Weekly Report: http://wonder.cdc.gov/mmwr/mmwr morb.asp
Data limitations:	These data do not provide information on where cases are located within a state, which can vary greatly based on differences in geography and environmental conditions.
Related data:	ArboNET/USGS Disease Maps: http://diseasemaps.usgs.gov/
Related indicators (from other projects):	Blood donors who screen positive for West Nile virus (presumptively viremic blood donor (PVD)), but who may not meet the case definition for disease. Available at: http://www.cdc.gov/ncidod/dybid/westnile/index.htm .

HOW-TO GUIDE: CC4.2 Annual number and rate of human cases of West Nile virus

Obtain Data from the CDC Wonder Website:

1. Go to the CDC Wonder web site: <http://wonder.cdc.gov/mmwr/mmwr morb.asp>
2. On this first screen, select the last week of the year of interest. For example, week 52 for 2007.
3. On the next screen, select **Table II** and the appropriate part (for years 2003-2004 = part 1, 2005-2009 = part 9, 2010 = part 11). This is the section of the Report that contains West Nile virus data, which can also be listed as Encephalitis/Meningitis West Nile. Click **Submit**.
4. The next screen contains the results of the query. Note that the results are shown for neuroinvasive and non-neuroinvasive cases. Locate the columns labelled **Cum 2007** and note the counts for the row corresponding to your state. This is the total count of cases for 2007. The total for the previous year is also included in this table.
5. Go to the U.S. Census Bureau website <http://www.census.gov/popest/eval-estimates/eval-est2010.html>. Then select either the Excel or CSV file under “Preliminary Annual Estimates of the Resident Population” and get the population estimates for the years 1999-2010 for your state.
6. Record the total count of cases from step 4 for each year into a new Excel spreadsheet. Record the total population of your state from step 5 for the same year in the next row.
7. To obtain an annual rate per 100,000 population for your state, divide the total count by the total population of your state for the same year and multiply by 100,000 and format to 2 decimal places. Do the same calculation for each year recorded.