From John Shepard, MS Department of Environmental Sciences & Center for Vector Biology & Zoonotic Diseases The Connecticut Agricultural Experiment Station

Mosquito populations can be affected by climatic events such as drought, intense precipitation events (e.g. thunderstorms, hurricanes), and record high or low temperatures. These climate factors can cause changes in mosquito abundance on seasonal or annual timescales, which in turn, may affect mosquito-borne disease transmission. The environmental and ecological factors that lead to outbreaks of diseases such as malaria or chikungunya, denge, eastern equine encephalitis, West Nile or Zika viruses are complex and cannot be attributed to climate change alone. However, climate change can influence the geographic ranges of mosquito species, causing incremental changes in their distribution, which are can be observed over longer periods of time

One example of climate change influencing mosquitoes in Connecticut is the presence of the exotic and invasive mosquito species, *Aedes albopictus*, commonly known as the Asian Tiger Mosquito. Populations of this mosquito species were first documented in the United States in Houston, TX in 1985. Since that time, *Ae. albopictus* has become established throughout many areas of the southern and midwestern US (see https://www.cdc.gov/zika/pdfs/Zika-mosquito-maps.pdf). The ability of *Ae. albopictus* to persist at the northern edge of its range is regulated by winter temperatures. It is hypothesized that when the average daily temperature in January is below 0° Celsius, the overwintering of *Ae. albopictus* eggs is unsuccessful. This 0° Celsius line closely the Connecticut coastline, and when there have been mild winters, as in recent years, *Ae. albopictus* has been shown to survive the winter, primarily in areas of the state in coastal communities near Long Island Sound. Since 2012, we have collected *Ae. albopictus* on an annual basis as part of the Connecticut Mosquito Trapping and Testing Program (for a summary please see Armstrong et al. 2017 https://doi.org/10.1371/journal.pntd.0005623).