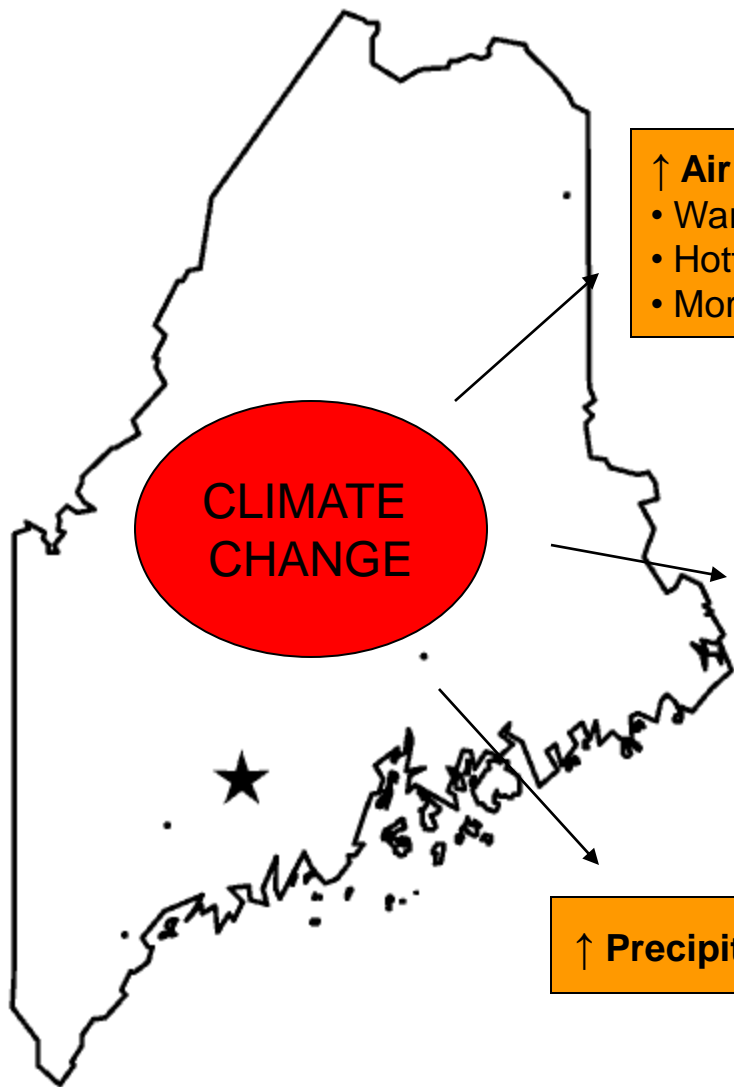


Public Health Impacts of Climate Change in Maine



Dr. Dora Anne Mills, MD, MPH
Director, Maine Center for Disease Control



↑ **Air temperatures**

- Warmer winters
- Hotter summers
- More heat waves

↑ **Water temperatures**

↑ **Precipitation**

↑ **Heat-related morbidity and mortality**

↑ **Vector-borne diseases**
(Lyme, EEE, West Nile)

↑ **Pollen, Ozone**

↑ **Asthma**

↑ **Frequency of severe storms, flooding**

↑ **Frequency of waterborne disease outbreaks** (crypto, E. coli, giardiasis)

↑ **Algal blooms**
(Red tide, cyanobacteria)

Vector Borne Disease

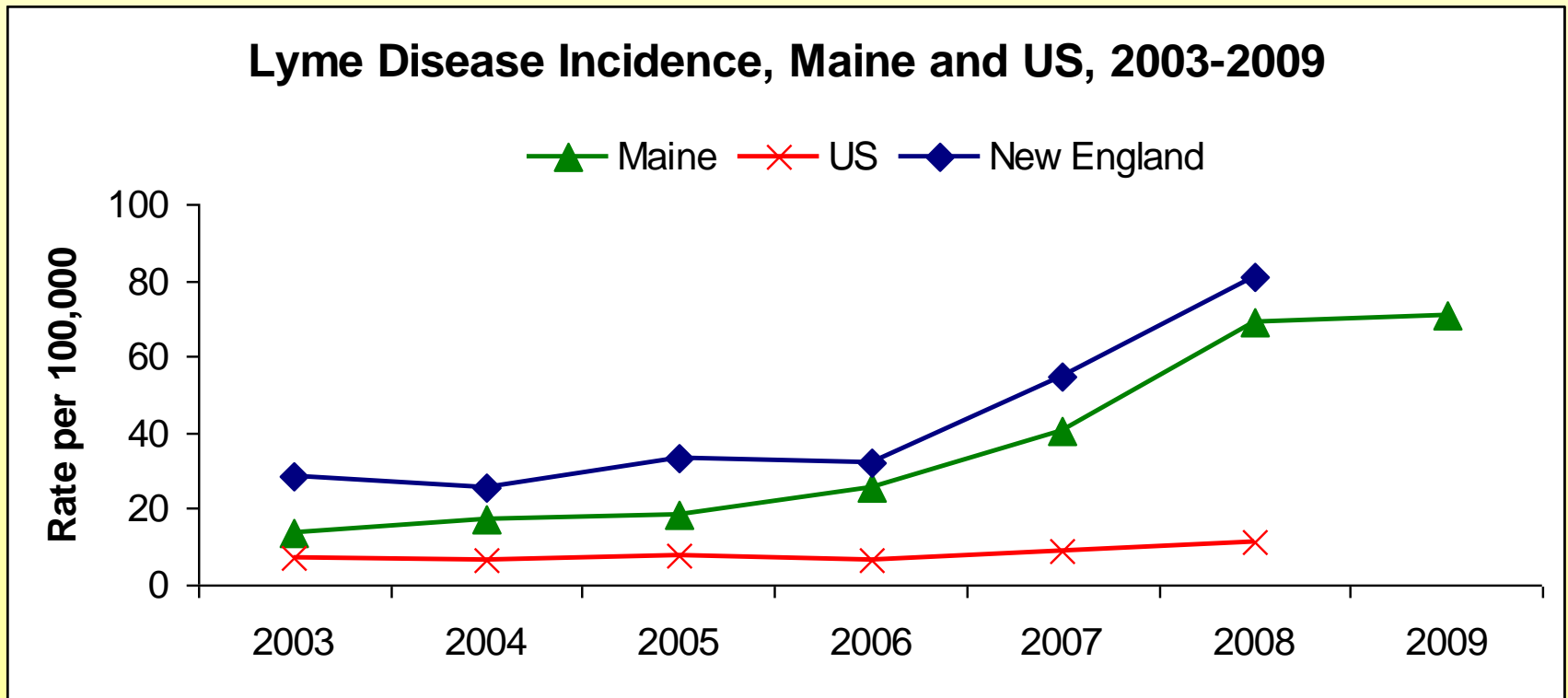


Lyme Disease



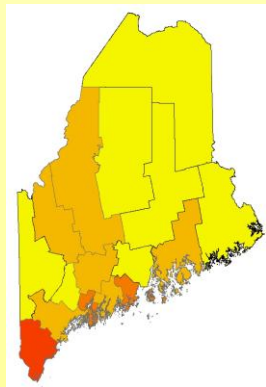
**Eastern Equine Encephalitis
West Nile Virus**

Lyme Disease in Maine

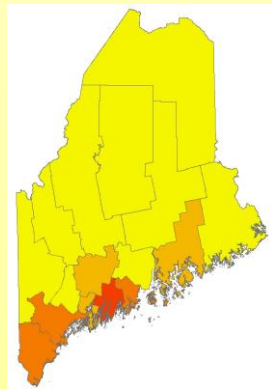


Lyme Disease Incidence in Maine has been Increasing

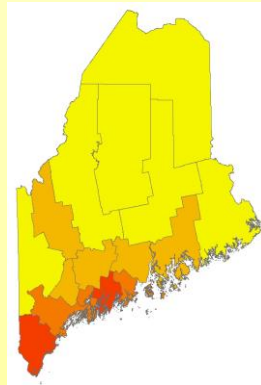
Lyme Disease in Maine



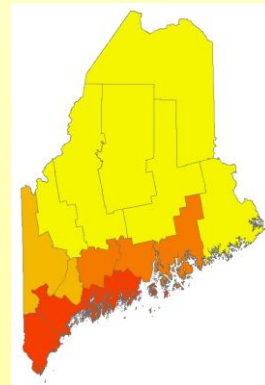
2004



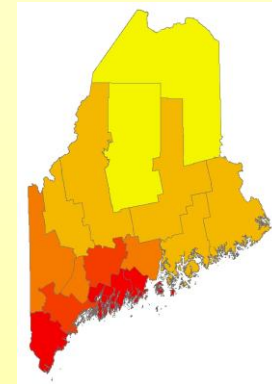
2005



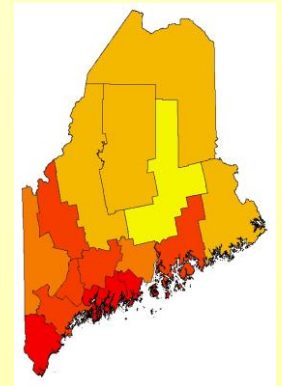
2006



2007

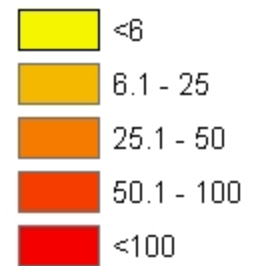


2008



2009

Rate



Lyme Disease is becoming more widespread in Maine

Eastern Equine Encephalitis

- First identified in ME in 2005
- One horse death and one human death (a visitor to Maine) in 2008
- 15 horses, 1 llama, 3 flocks of pheasants, and 2 mosquito pools diagnosed with EEE in 2009



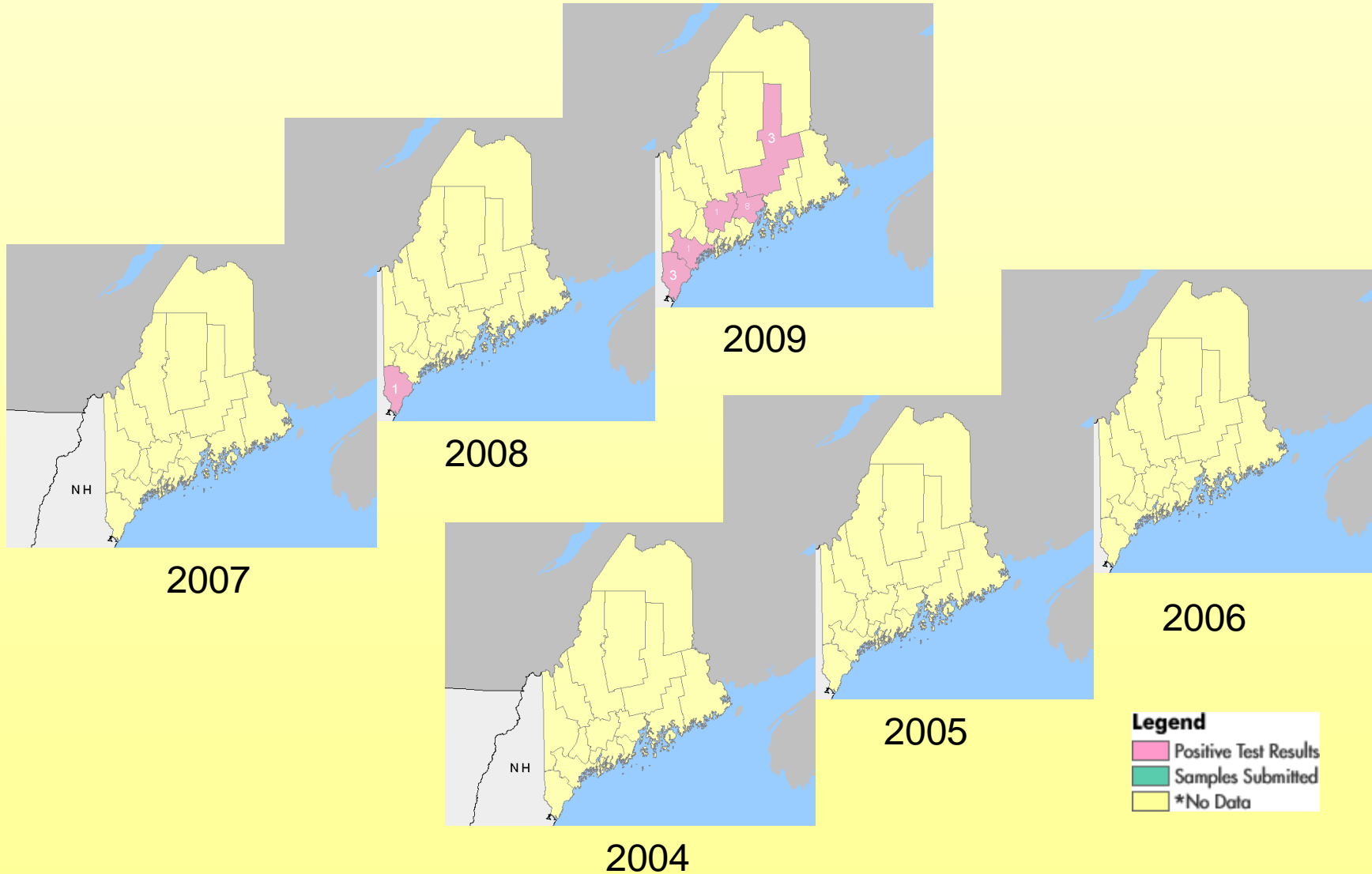
Mosquito. Image: Maine-CDC



Horses in a field, Biddeford, ME Image: dinidesign, Flickr

Eastern Equine Encephalitis

Positive Animals



West Nile Virus

- No human cases identified in Maine
- Bird monitoring – ended in 2007
- Mosquito monitoring

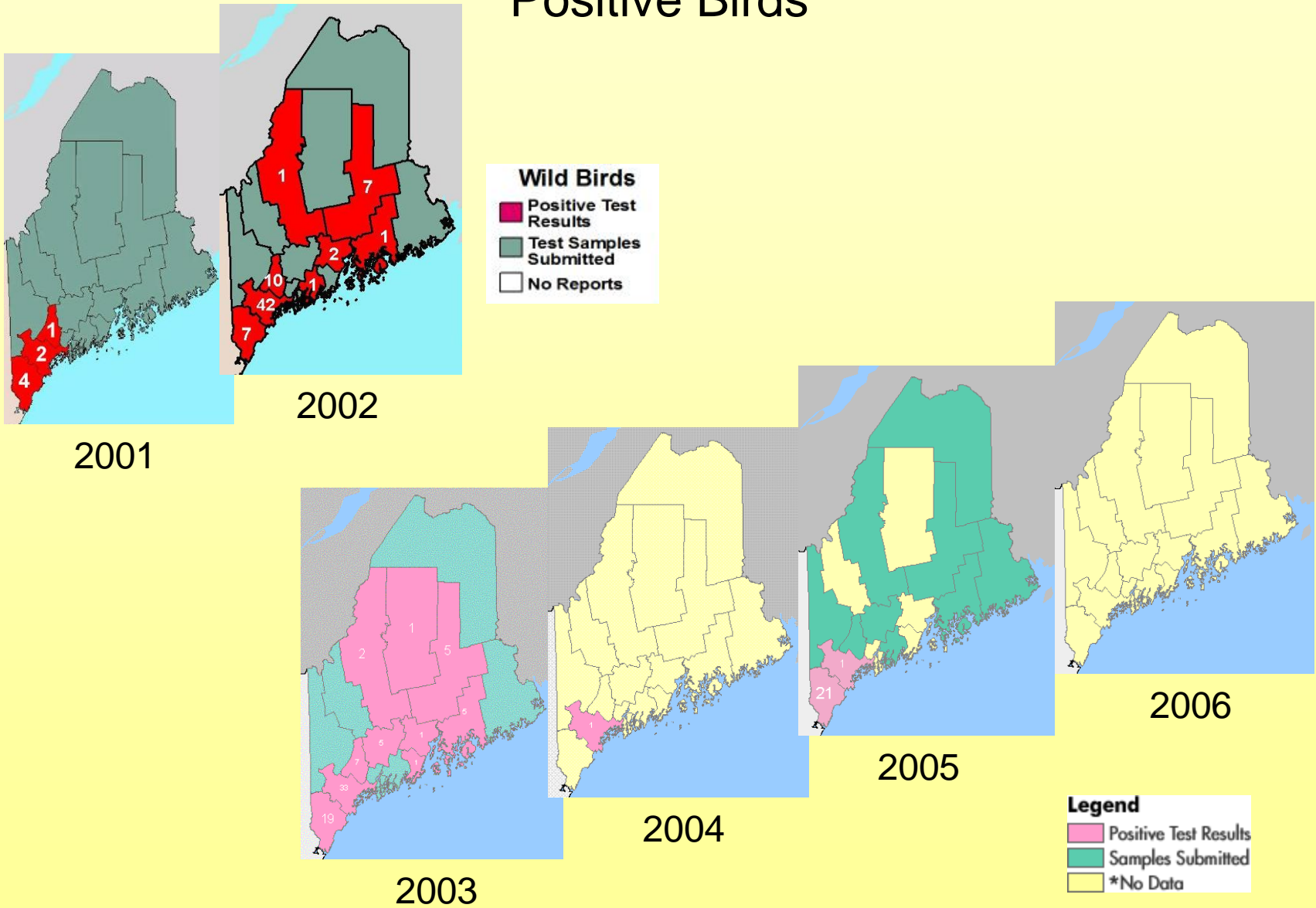


Mosquito. Image: Maine-CDC



West Nile Virus

Positive Birds



Heat Related Morbidity



Record heat wave blankets eastern U.S. - Americas - International Herald Tribune

By KATIE ZEZIMA

Published: Wednesday, August 2, 2006

BOSTON — Residents from Maine to Georgia and parts of the Midwest broiled under excessive heat Wednesday that strained power grids, taxed patience and, in some cases, proved fatal.

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RECOMMEND

☐ TWITTER

☐ E-MAIL

Air Pollution



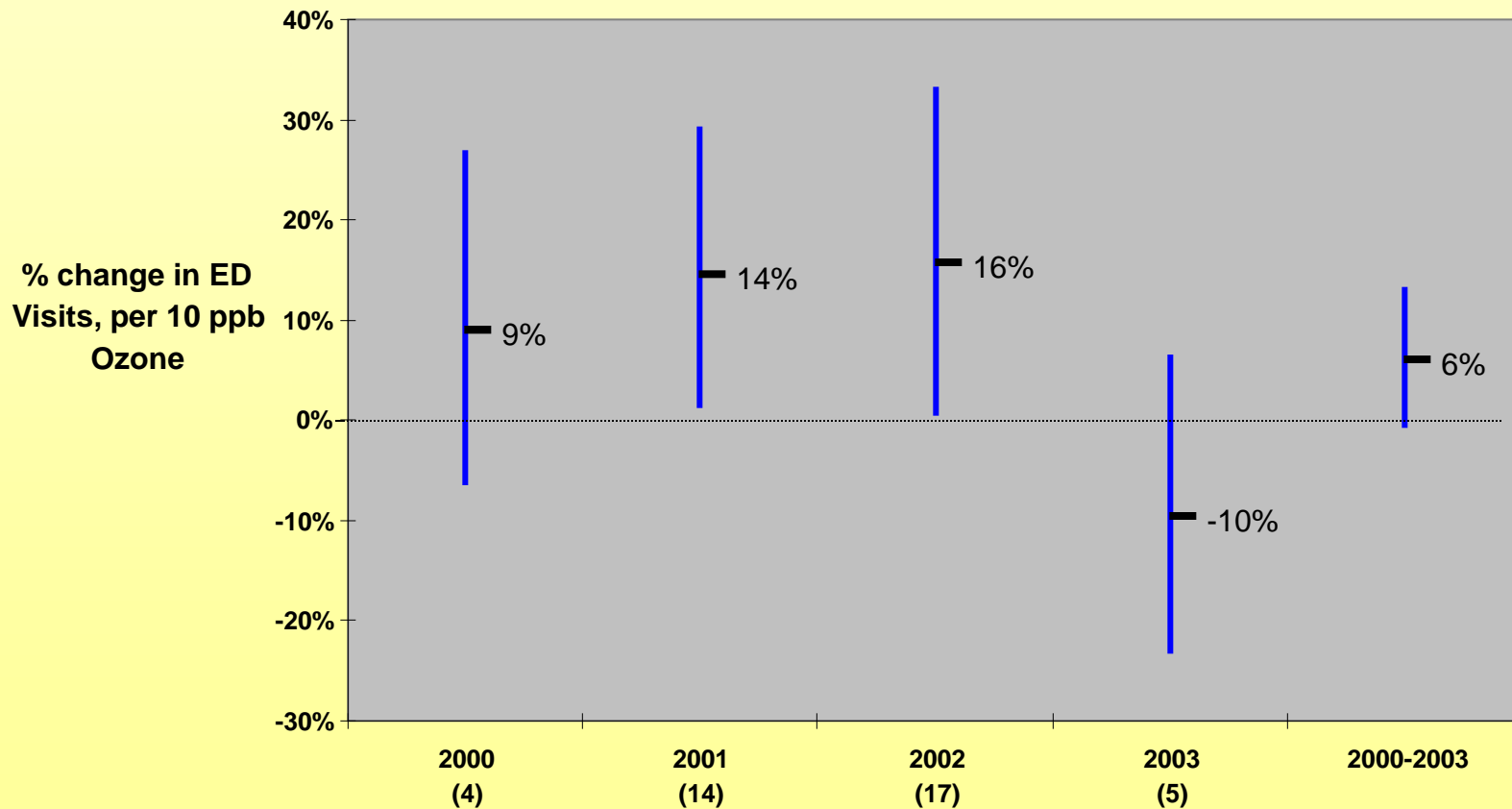
"Maine has one of the highest rates of asthma in the U.S."



Active children and adults, and people with lung disease, such as asthma, should avoid prolonged or heavy exertion outdoors. Everyone else, especially children, should reduce prolonged or heavy exertion outdoors.

Air Pollution

Daily percent change in ED asthma-related visits for Greater Portland HSA area
for 10 ppb change in ozone levels



Severe storms & flooding



Harmful Algal Blooms

ScienceDaily

Your source for the latest research news

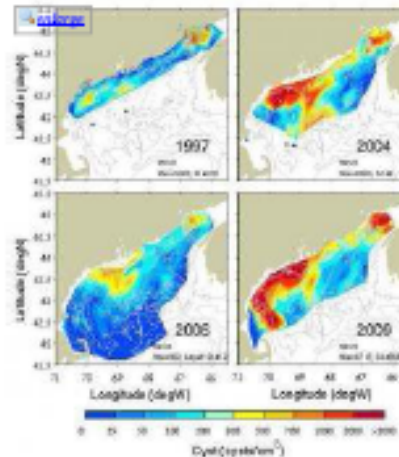
Web address:
<http://www.sciencedaily.com/releases/2010/02/100224142042.htm>

Red Tide: Researchers Issue Outlook for a Significant New England Bloom of a Toxic Alga in 2010

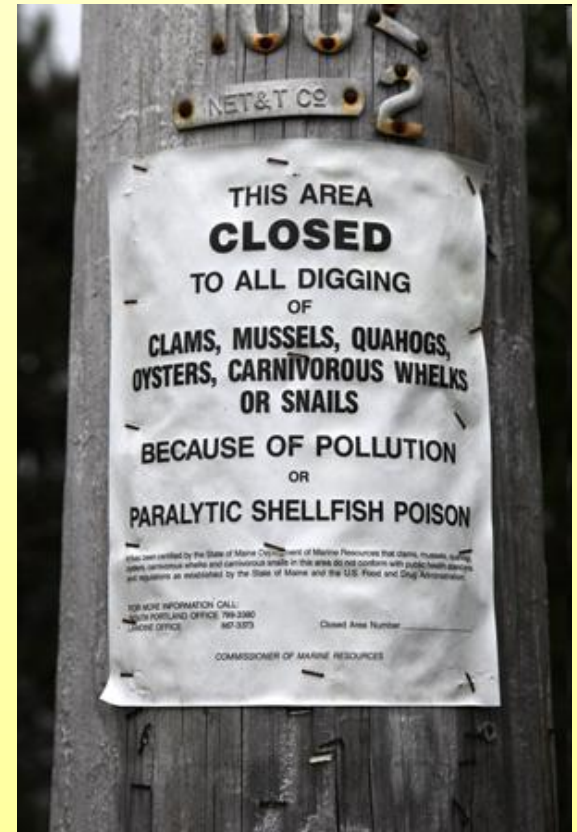
ScienceDaily (Mar. 3, 2010) — Scientists from the NOAA-funded Gulf of Maine Toxicity (GOMTOX) project have issued an outlook for a significant regional bloom of a toxic alga that can cause 'red tides' in the spring and summer of this year, potentially threatening the New England shellfish industry.

An abundant seed population in bottom sediments has set the stage for a significant bloom of the toxic alga *Alexandrium fundyense*. This organism swims in the water, and divides again and again to form a "bloom" or red tide, but it also produces dormant cells or cysts that fall to the ocean bottom at the end of these blooms.

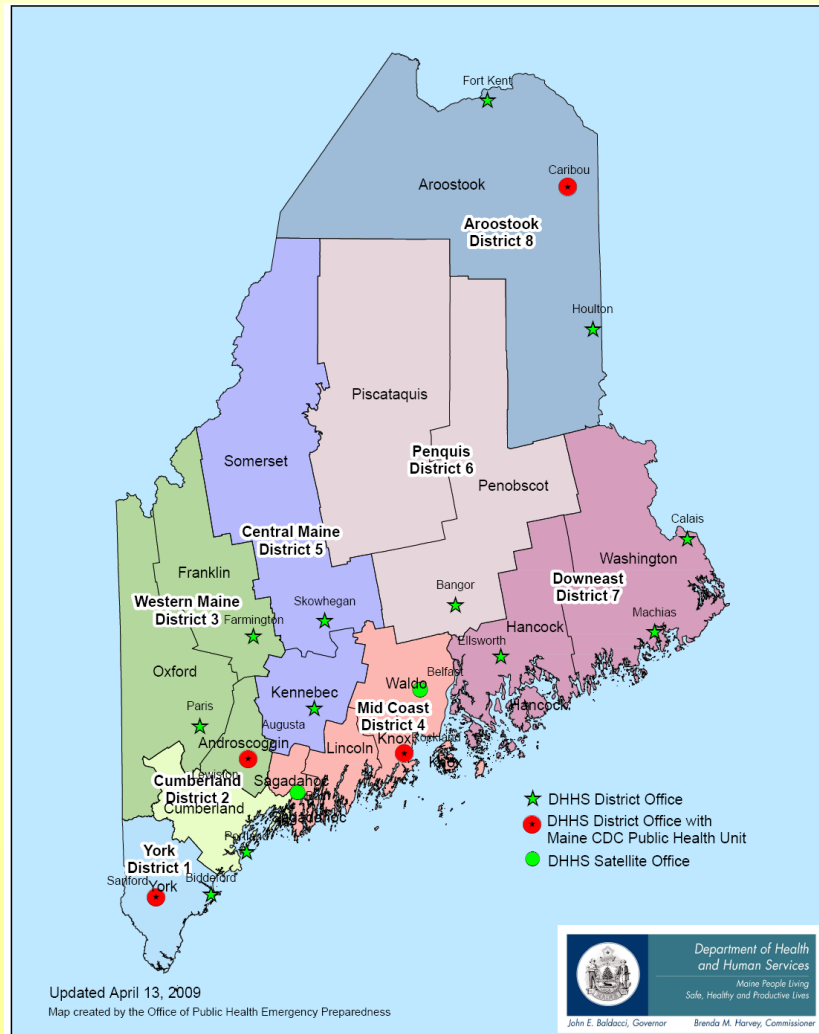
A cyst survey conducted in late 2009 shows the highest amount of cysts the team has ever measured, more than 60 percent higher than what was observed



Map of the Gulf of Maine showing the



Public Health Infrastructure



Eight Public Health Districts • 28 Healthy Maine Partnerships

Adapting to Climate Change



It's not enough to be busy. The question is: What are we busy about?
- ***Henry David Thoreau***