

THE IMPACT OF CLIMATE CHANGE ON HUMAN HEALTH

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What Climate Change Topics are Most Reported?

Capital Weather Gang

Cracks in the Greenland producing massive wat scientists' concerns for

WORLD • CLIMATE CHANGE

As Smoke From Bushfires Chokes S Australian Prime Minister Dodges on Change



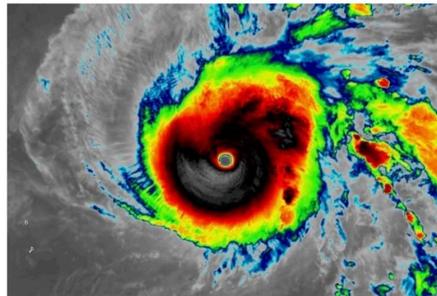
BY RACHAEL BUNYAN NOVEMBER 21, 2019



Earth May Have Just Seen Its 8th Strongest Tropical Cyclone on Record

An advanced satellite analysis found Supertyphoon Halong had 192-mph winds

By Jeff Masters on November 8, 2019



Himawari-8 infrared satellite image of Super Typhoon Halong at 18 GMT (1 pm EST) November 5, 2019. At the time, the Joint Typhoon Warning Center (JTWC) rated Halong a category 5 storm with 180 mph sustained winds and a central pressure of 897 mb; the University of Wisconsin CIMSS group rated Halong as having winds of 192 mph, making it the 8th strongest tropical cyclone on record since accurate satellite measurement began in 1979. Credit: NOAA RAMMB and CIIRA

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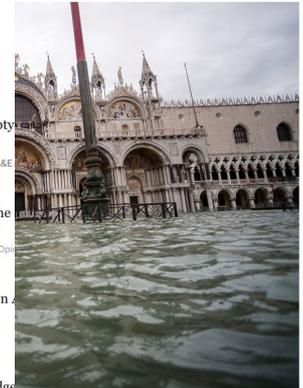
December 3, 2019 — Gaby Maimon | Op

NEUROLOGICAL HEALTH
It's Time to Shift Tactics on Disease

3 hours ago — Claudia Wallis

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nd Its Population's Future?



Tourists walk across flooded St. Mark's Square two days after Venice suffered its highest tide in 50 years. Filippo Monteforte/AFP via Getty Images

An Emphasis on Physical Events

- Temperature changes
- Severity and frequency of natural disasters
- Sea level rise
- Human welfare
 - Societal
 - Economic

All of these Relate to Human Health!

So How Does Climate Change Impact Health?



Famine in Somalia (2018; CNN Image)



Rohingya Flood Refugees (2019; BBC Image)

**But Climate Change
Also Hits Us Closer
to Home!**

*Florida Keys Deliver a Hard Message: As
Seas Rise, Some Places Can't Be Saved*



Sunset on Sugarloaf Key, Fla. Officials said Wednesday it's too costly to protect part of the island against rising seas. Angel Valentin for The New York Times

Impact of Climate Change on Human Health

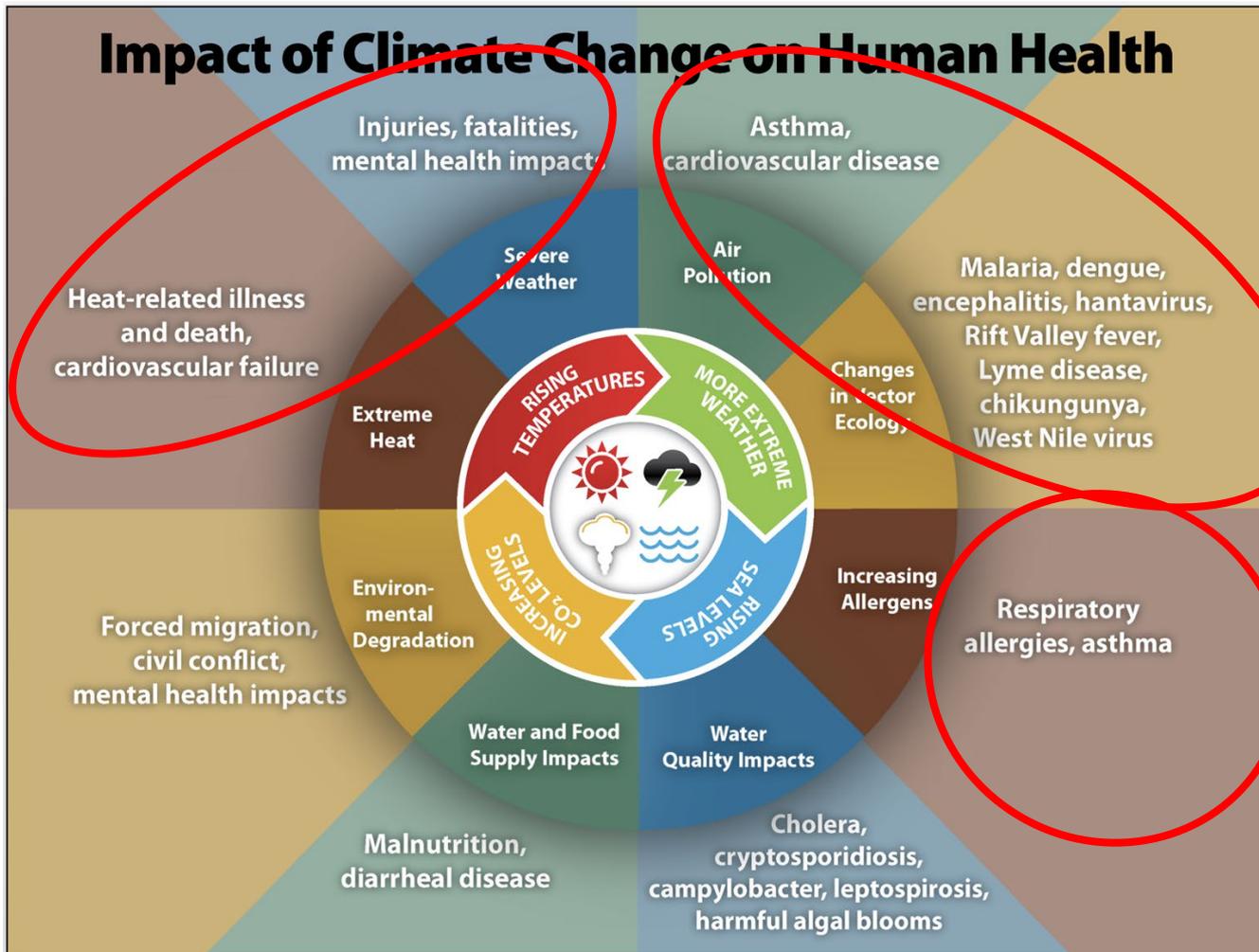


Image from the Centers for Disease Control Climate and Health

Climate Change and Vector-borne Disease



Aedes mosquito



Deer tick

Changing climate can impact the distribution and range of vectors.
Allows disease to spread into new areas and populations

Lyme Disease

Best known and most common of the U.S. vector-borne diseases

Classic “bullseye” rash

Potential long-term neurological effects and inflammation

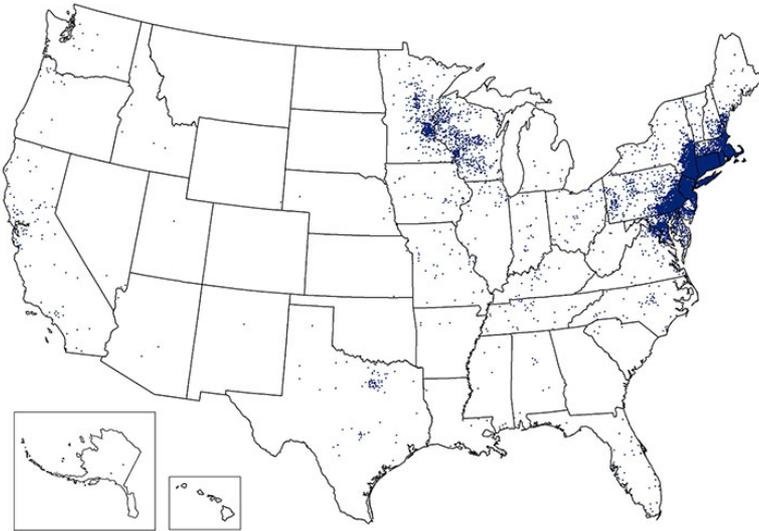


Image from the CDC

Lyme Disease

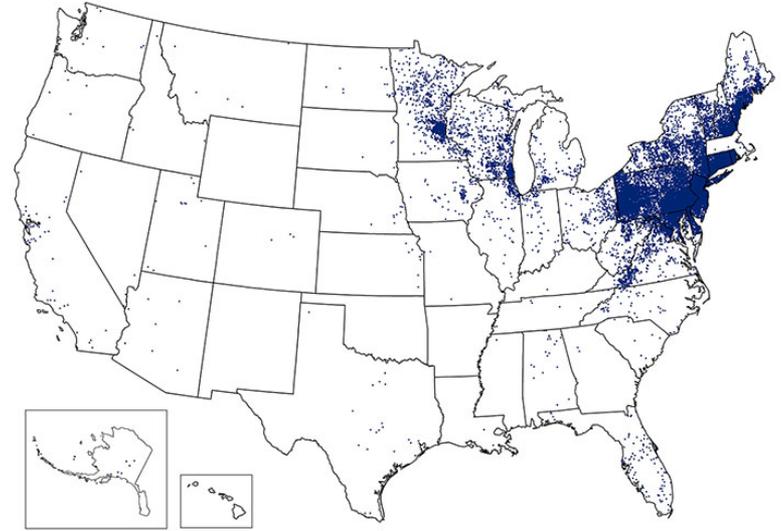
Cases are increasing and ranges expanding. Climate is likely culprit

Reported Cases of Lyme Disease -- United States, 2001



1 dot placed randomly within county of residence for each reported case

Reported Cases of Lyme Disease -- United States, 2018



1 dot placed randomly within county of residence for each confirmed case

Invasive Asian Longhorn Ticks

- New arrival to the U.S. (2017)
- Climate change allows it to spread far more widely

So What's the Big Deal?

- More aggressive biters
- Can reproduce without mating
- Thousands can be found on animals at once



Image from James Gathany/CDC DVBD

ENVIRONMENT

'Clone tick' swarms, new to U.S., are killing cattle by draining their blood, chasing after humans

Updated Jul 12, 2019; Posted Jul 12, 2019

Climate Change and Valley Fever

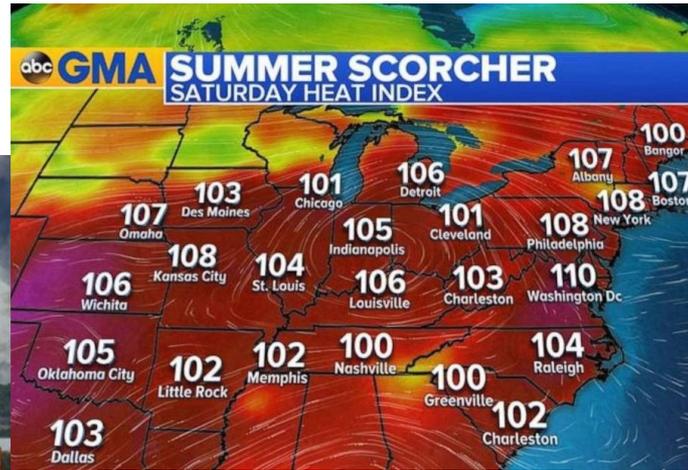
- Severe respiratory infection caused by inhalation of *Coccidioides*, a soil fungus

How is Valley Fever Affected by Climate Change?

- Wet conditions cause rapid growth
- Extreme heat or drought cause dusty soil and airborne particles



Climate Change and Cardiovascular and Respiratory Related Disease



Heat Wave Event (2019)



Brush Fire in Bastrop, TX (2011)



Dust Storm in Phoenix, AZ (2011)

Climate Change and Cardiovascular and Respiratory Related Disease

- Wildfires, dust storms, higher temps increase harmful **air pollution**
- More asthma, decreased lung function, more school absences, increased premature death

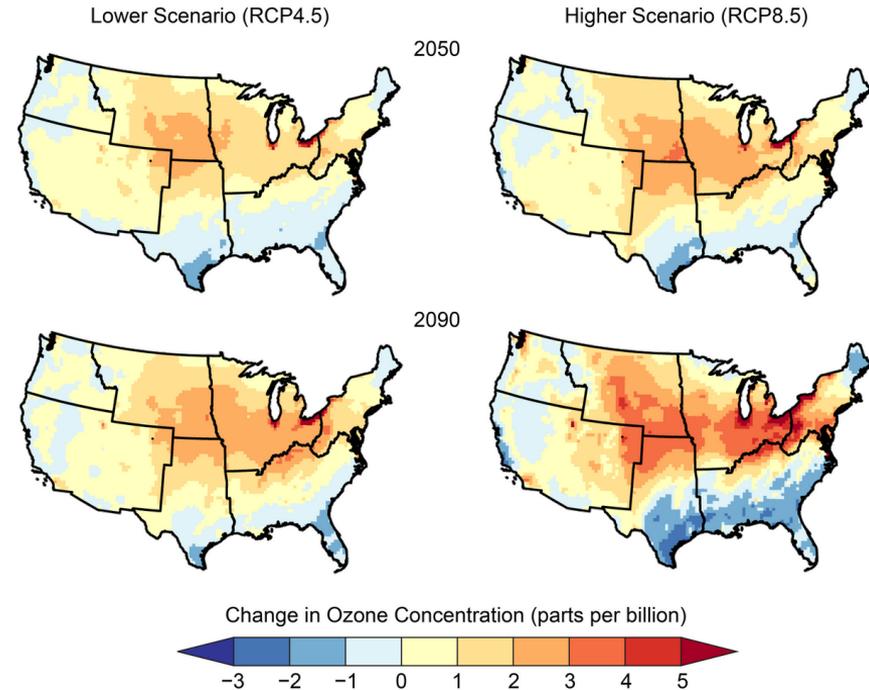


Image from the National Climate Assessment (2018)

Climate Change and Cardiovascular and Respiratory Related Disease

- Increased allergens due to longer pollen seasons
- Extreme heat related illness and death
 - Concerning for outdoor workers, elderly, children

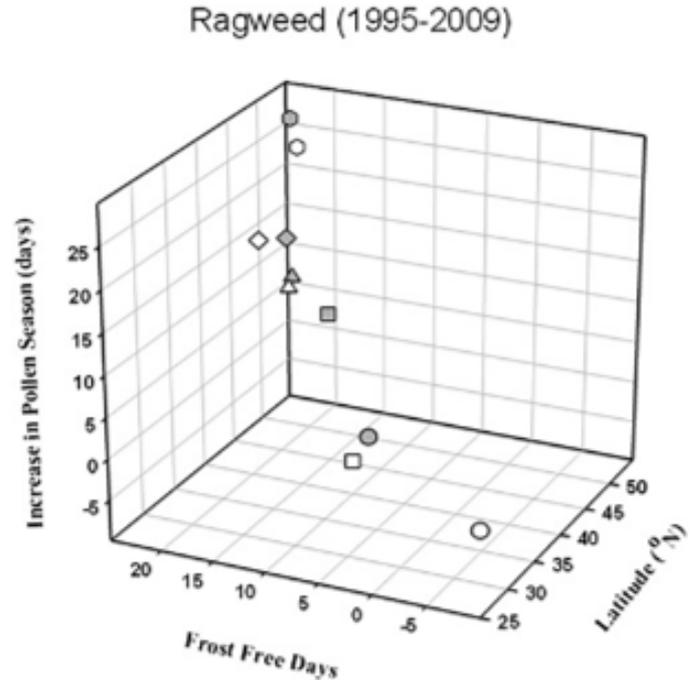


Figure 2 from Ziska et al (2011); PNAS

Climate Change and Mental Health



Image from Anna King, Northwest News Network

Climate Change and Mental Health

Mental health can range from minimal stress to anxiety to depression to suicidality

Natural disasters can present a heavy mental health burden

- Loss of property
- Loss of livelihood
- Increased substance use
- Relocation

Climate Change and Mental Health

Solastalgia:
mental or
existential distress
caused by
environmental
change



Image from Grant Blankenship, NY Times

The National Climate Assessment



FOURTH NATIONAL CLIMATE ASSESSMENT

Volume II: Impacts, Risks, and Adaptation in the United States

The National Climate Assessment (NCA) assesses the science of climate change and variability and its impacts across the United States, now and throughout this century.

SUMMARY FINDINGS

REPORT CHAPTERS

OVERVIEW

DOWNLOADS

Volume I presents an assessment of the physical science underlying this report: science2017.globalchange.gov

