





What Lies Ahead – How Climate Change May Impact Your Health

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HAPPY BIRTHDAY



- 10th anniversary of the summit
- Started at NK High School
- About 300 people have attended every year since then

Atlantic Avenue – Westerly Misquamicut – October 30, 2012





Natick W. Warwick, March 2010 (D. Vallee, NOAA/NWS)



Today's Goals



Review information and recruit your help:

- What are the climate change impacts we can see today?
- How do these changes affect our health?
 - Who is most vulnerable?
- How can we adapt?
- Which are priorities?

Introductions



- Name
- Your interest
- What concerns you most?

What's happening at DOH?



- RI Climate Change Commission
 - Created in 2010 – RIGL 23-84
 - *Adapting to Climate Change in the Ocean State; a Starting Point (November 2012)*
- RI Human Health & Welfare Workgroup
 - One of 3 Working Groups
- RI Health and Climate Change Project

National Climate Assessment



Soliciting comments – due April 30, 2013

<http://ncadac.globalchange.gov/>

Four Key Messages on Human Health

1. Multiple physical/mental health impacts, multiple causes
2. Climate change amplifies pre-existing conditions in vulnerable populations.
3. Public health preparedness/prevention will protect people from some climate change impacts
4. Improvements to energy, agriculture and transportation infrastructure has positive impacts on health and society.

Global Climate Change



Smoke from Wildfires has Widespread Health Effects



Public health in the U.S. can be affected by disruptions of physical, biological and ecological systems elsewhere.

- Air Pollution (ex. Wildfires)
- Food Security

Climate change categories



HEAT: ↑ Avg temp; ↑ extreme events

STORMS: ↑ extreme events

↑ severe precipitation

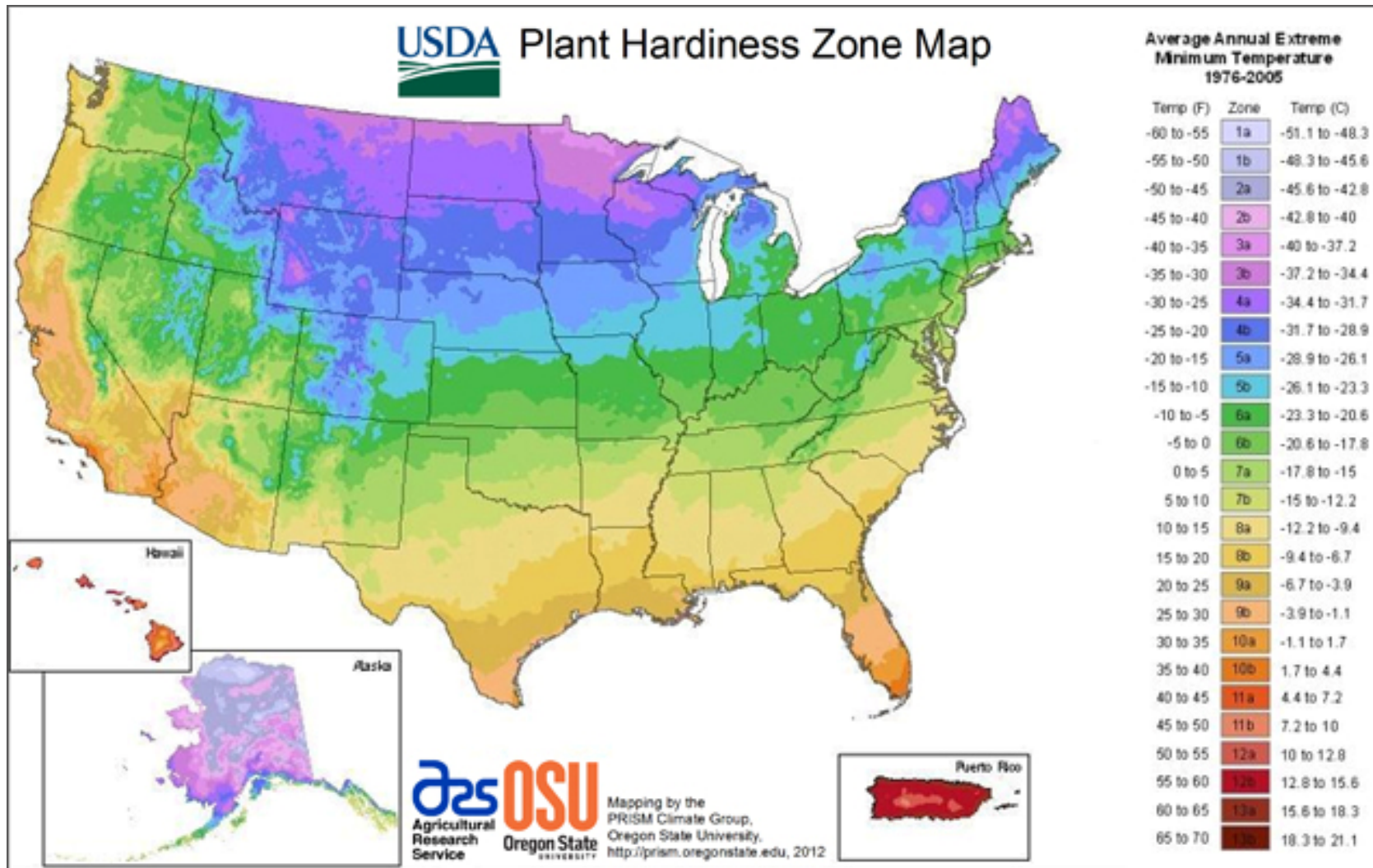
↑ frequency/severity of droughts

SEA LEVEL: ↑ Increased flooding

INFRASTRUCTURE: Loss of utilities, etc.

GLOBAL CHANGES: Food supply,
security, etc.

Average Temperature



Extended growing season



Increased Avg Temperature



Extended growing season

Mosquito and tick-borne disease

“The natural history of mosquito-borne disease [and tick-borne disease] is complex and the interplay of climate, ecology and vector biology defies simplistic analysis.” Reiter (Env. Health Perspectives, 2001)

Pollen/mold allergies & asthma

Algae blooms – toxin exposure

Food supply

Burden of Disease in RI

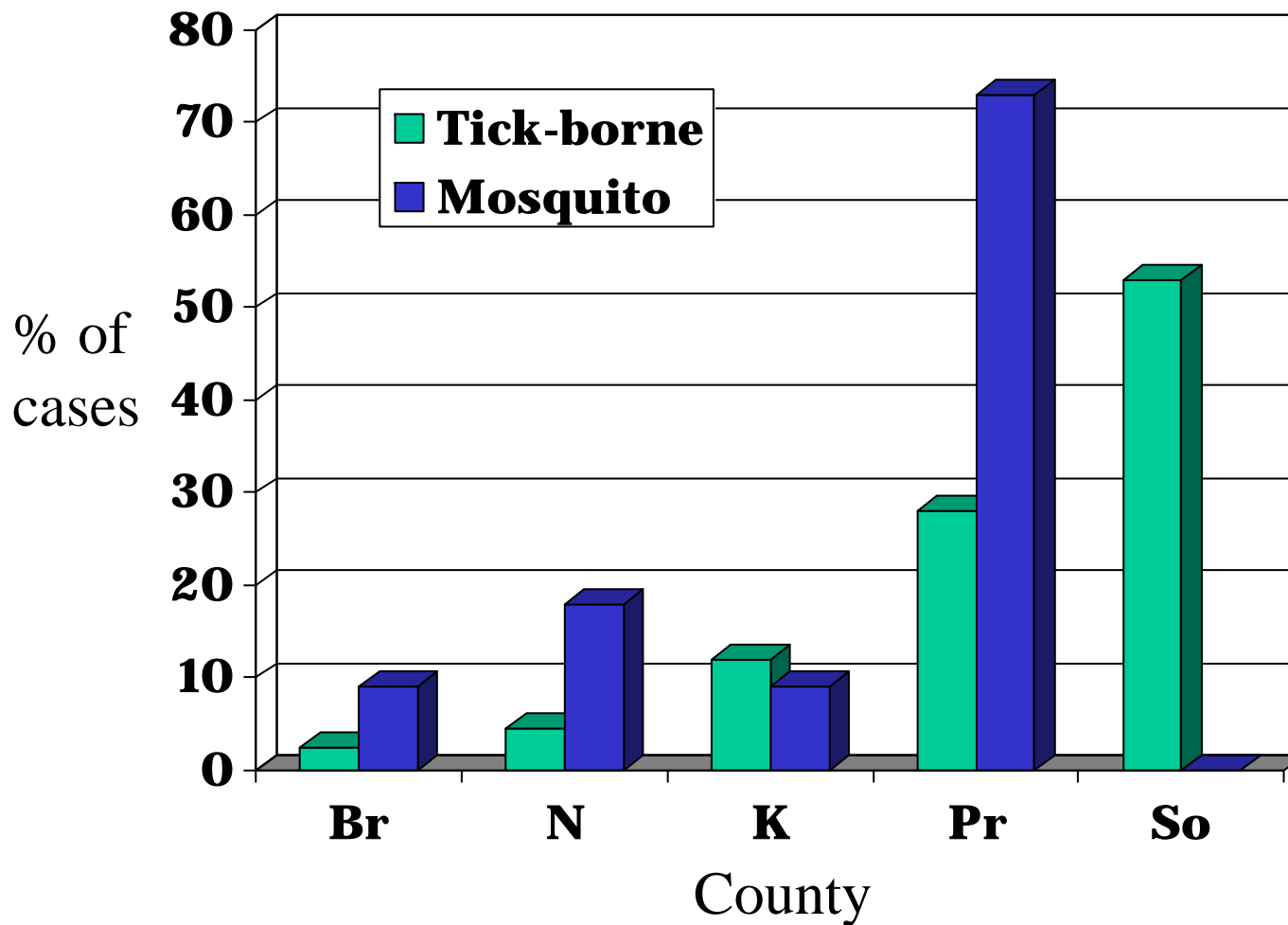


<u>Disease</u>	<u># cases/yr</u>
Lyme Disease	193
Babesiosis	77
Ehrlichiosis/Anaplasmosis	46
West Nile Virus	1
EEE	0.1

Tick borne disease averaged over 5 years 2007-2011

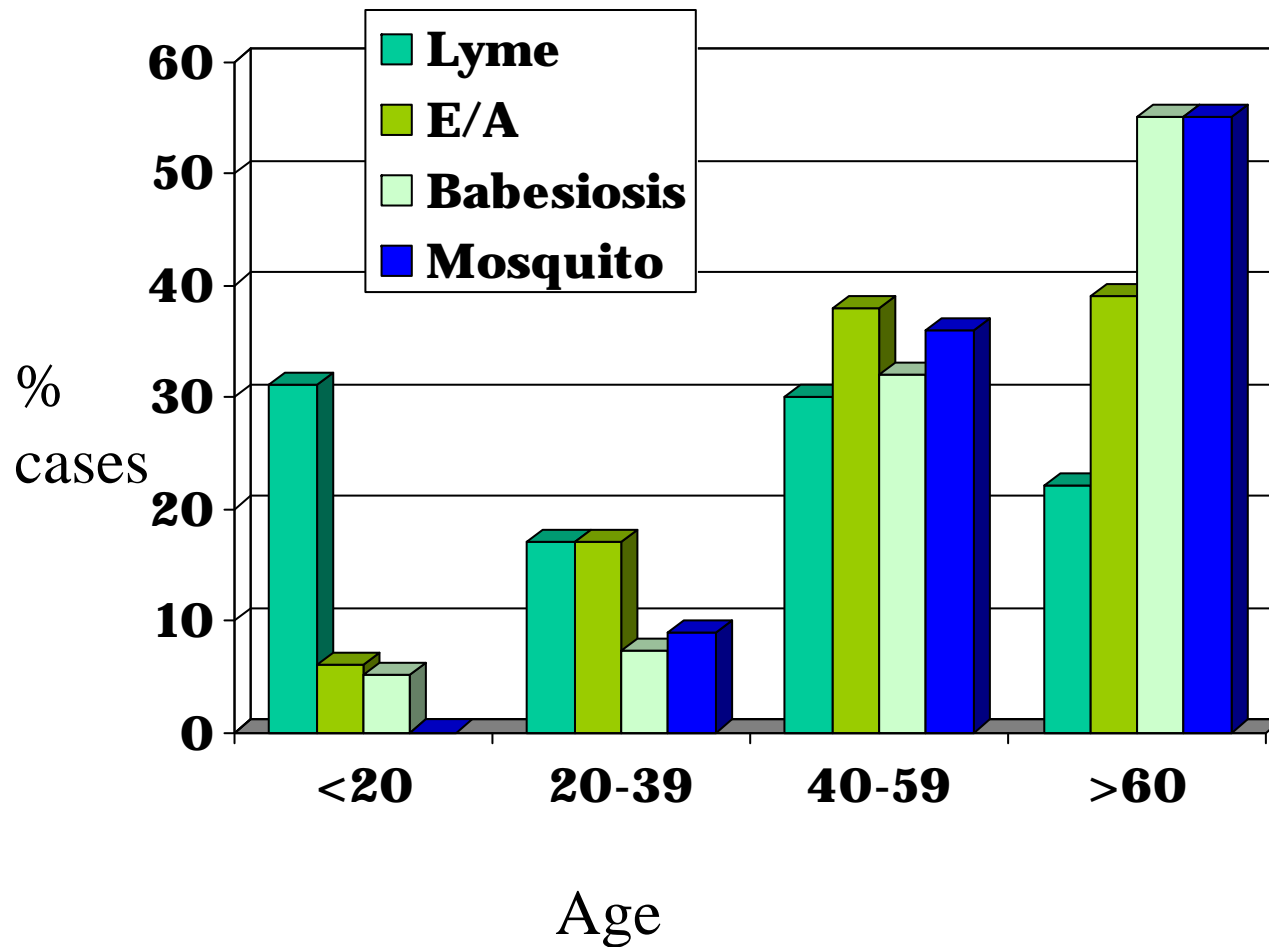
Mosquito-borne disease averaged over 10 years 2001-2010

Where is the problem?



Burden of Disease

Who is getting sick?



Increased Extreme Heat



Acute health impacts of heat

- Heat illness/death

- Pre-existing heart and lung disease

- Relative change may be more important than absolute temperature

Acute health impacts of air quality alerts

Adapting to heat



Adapting to extreme events

- Cooling shelters
- Ban on utility shut-offs
- Air conditioner programs
- Social connectivity

Adapting to unseasonably warm days

- Street trees
- Green roof

Increased Precipitation



Impacts growing season

Vectors, mold, pests [pesticides]

lyme/WMV, asthma,

More pollen/allergens

More runoff/flooding

Algae blooms

One Health – Pet sentinels

CSO problems – sewage exposure

ear/respiratory infections

Sea Level Rise



Homes destroyed

Infrastructure lost – roads, utilities

Drowning

Hazards to responders

Infrastructure failures



- Loss of utilities
 - How hot is too hot, how cold is too cold?
 - Food, water transport for elderly hi-rise
- Emergency responders in harm's way
- Mental health response

Getting involved



- RI Climate Change Commission
- RI Health and Climate Change Project
 - Profile
 - Workshop series
 - Vector-borne disease
 - Emergency responders and vulnerable pop'ns
 - Heat & air quality (address-specific asthma data)
 - Health and flooding

WHAT'S MISSING?



- ONE HEALTH – impacts on pets/animals
 - Sentinel veterinarians
- Natural disasters and emergencies
 - What resources are available?

Expanding Stakeholders



Experts

Meteorologists

Climatologists

Others

General public

Diversity in income, race, ethnicity

Non-English speakers



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