Climate Change and Public Health

Brian Vaughn, MPH
Director
Division Health Policy, Planning & Evaluation
Sonoma County Department of Health Services
“Climate change is the biggest global health threat of the 21st century... The impacts will be felt all around the world – and not just in some distant future but in our lifetimes and those of our children.”

- The Lancet
Climate Change & Health: Impacts

• Largest impact of climate change to humans is on health
• Increased rates of asthma and respiratory disease
• Increased range of disease vectors (i.e. mosquitoes)
• Extreme weather exposure, particularly in vulnerable populations
  – Elderly
  – Infants
  – Poor
  – Disabled
  – Sick
Climate Change & Health: Impacts

• Impacts on health are already being seen
  – Weather-related deaths, floods, droughts, fires, water & food borne diseases/shortages, etc.
  – West Nile Virus, Dengue Fever, Lyme Disease

• Response to acute climate-related events falls on health and emergency preparedness systems
Impact of Climate Change on Human Health

- Injuries, fatalities, mental health impacts
- Asthma, cardiovascular disease
- Heat-related illness and death, cardiovascular failure
- Malaria, dengue, encephalitis, hantavirus, Rift Valley fever, Lyme disease, chikungunya, West Nile virus
- Forced migration, civil conflict, mental health impacts
- Respiratory allergies, asthma
- Extreme heat
- More extreme weather
- Changes in vector ecology
- Increasing allergens
- Rising CO2 levels
- Environmental degradation
- Rising sea levels
- Water and food supply impacts
- Water quality impacts
- Cholera, cryptosporidiosis, campylobacter, leptospirosis, harmful algal blooms
- Severe weather
US Weather Fatalities, 1940-2011

Source: National Weather Service
West Nile virus neuroinvasive disease incidence reported to ArboNET, by state, United States, 1999
West Nile virus neuroinvasive disease incidence reported to ArboNET, by state, United States, 2013

Incidence per 100,000

- 0.0
- 0.01 - 0.24
- 0.25 - 0.49
- 0.50 - 0.99
- 0.50 - 0.99
- >=1.00
How are people doing?

HUMAN DEVELOPMENT Approach
SONOMA COUNTY HUMAN DEVELOPMENT INDEX
BY CENSUS TRACT
A TALE OF TWO NEIGHBORHOODS

EAST BENNETT VALLEY
LIFE EXPECTANCY: 82.0 YEARS

- 1.2% living in poverty
- 5% Latino population
- extensive parks and green space
- 58.6% at least bachelor’s degree
- 61% management occupations
- $68,967 median personal earnings

ROSELAND CREEK
LIFE EXPECTANCY: 77.1 YEARS

- 16.5% living in poverty
- 59% Latino population
- limited parks and green space
- 8.6% at least bachelor’s degree
- 11% management occupations
- $21,699 median personal earnings
ECOSYSTEM OF HEALTH

- Green spaces
- Sidewalks and bike paths
- Affordable housing

- Fresh produce stores
- High-quality schools
- Affordable health care
- Accessible public transportation

- Jobs with decent wages
- Work/life balance
- A diverse economy

- Equality under the law
- Accountable government
- Affordable, safe childcare
- Safety and security
AGENDA FOR ACTION:
Priority Areas

- Southeast Santa Rosa
- Southwest Santa Rosa
- Northwest Santa Rosa
- Cloverdale
- The Springs
- Southeast Santa Rosa

Map showing different areas in Santa Rosa with highlighted regions.
Climate Change & Health: Solutions

• Public health offers keys to mitigating & adapting to the effects of climate change:
  – Opportunities to build on well established systems & partnerships (OES, HSD, EMS, etc.)
  – Healthy community planning
  – Active transportation promotion
  – Clean air initiatives
  – Local and sustainable food systems
  – Health equity and access
  – Building resilient communities
Health Services Current Efforts

- Place-based approaches to advance equity and resilience
- Healthy By Design
- Regional Parks collaboration to promote health and connect vulnerable communities to local park system
- Sonoma County Food Action Plan
  - Farm to School/Market
  - Local farmer support with CalFresh
  - Ag Worker Wellness