
Climate Change and Human Health

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Environmental Health Matters Initiative | October 12, 2021

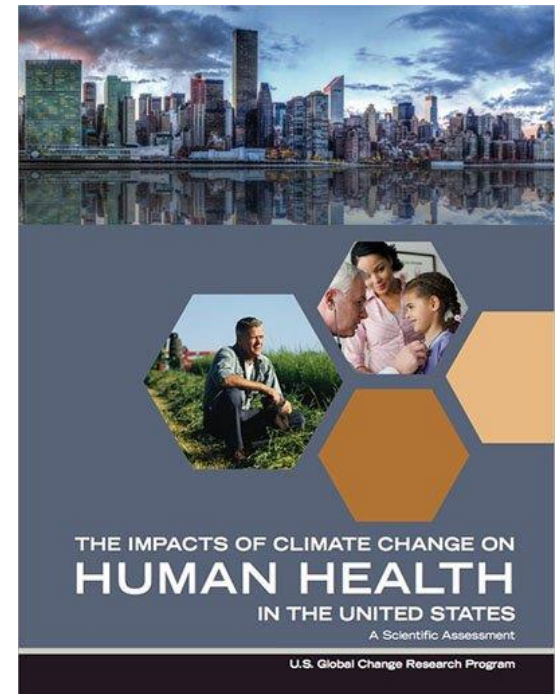
U.S. Global Change Research Program

- The U.S. Global Change Research Program (USGCRP) was mandated by Congress in the Global Change Research Act of 1990 (P.L. 101-606), “to assist the Nation and the world to **understand, assess, predict** and **respond** to human-induced and natural process of global change”
- Through USGCRP, agencies work to:
 - Coordinate global change research across the government
 - Use research results and products to provide information regarding risk management in a changing climate
 - Inform and deliver products mandated by the GCRA, including the quadrennial National Climate Assessment (NCA)



2016 Climate and Health Assessment

- Written by a large team of ~100 experts including from authors from eight U.S. Federal agencies: HHS (NIH, CDC, NIOSH, ASPR, FDA, SAMHSA), NOAA, EPA, USDA, NASA, USGS, DOD (USUHS), VA
- Robust review process: Synthesizes a large body of scientific peer-reviewed research, extensively reviewed by the public and experts, including a review committee of the National Academies of Sciences and approved by the 13 Federal agencies of the USGCRP + White House
- Transparent and accessible: Multiple opportunities for public engagement during development, documentation of process, outreach after publication

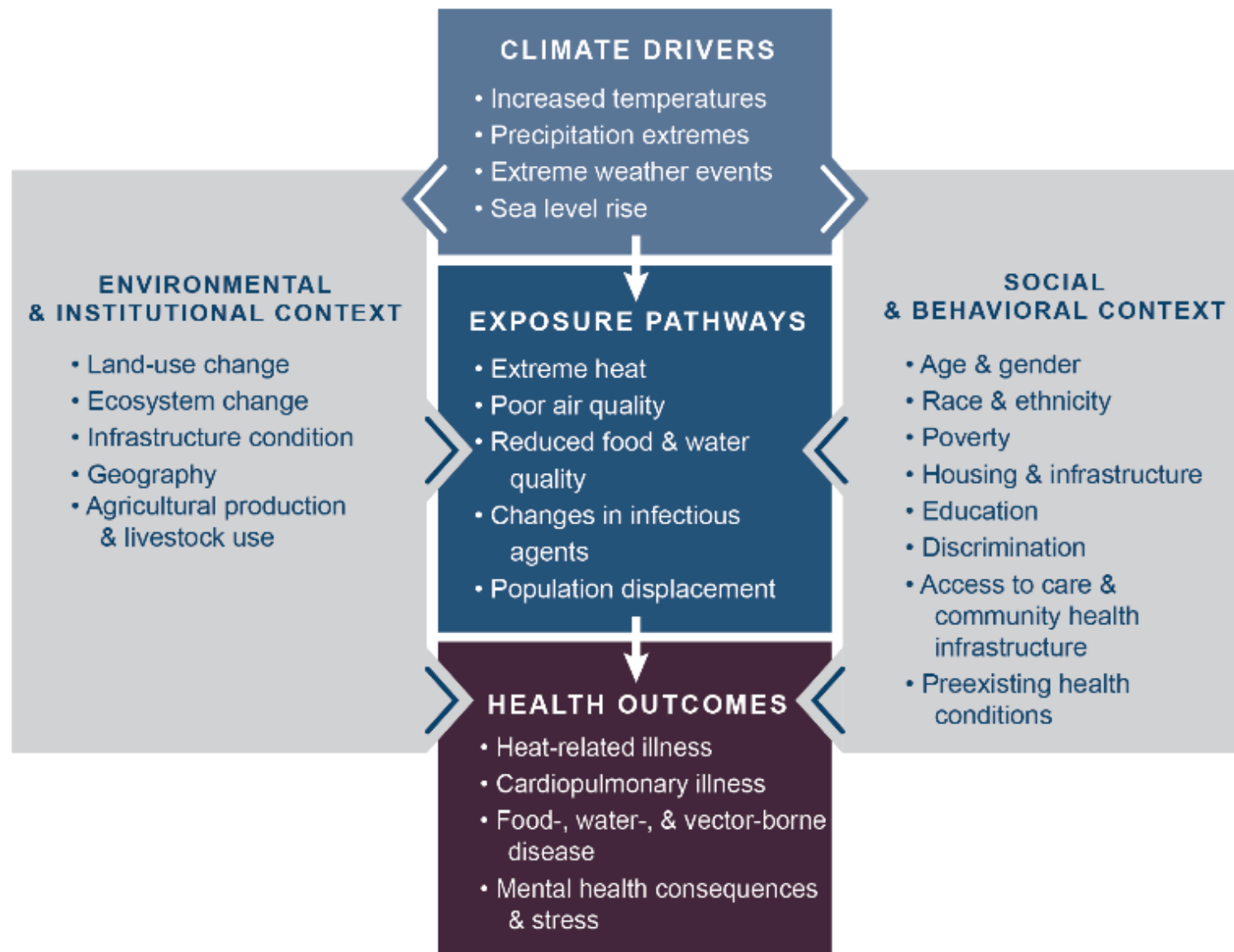


Health2016.globalchange.gov



U.S. Global Change
Research Program

Climate Change and Health





While every American is vulnerable to these health risks, climate impacts are not experienced equally

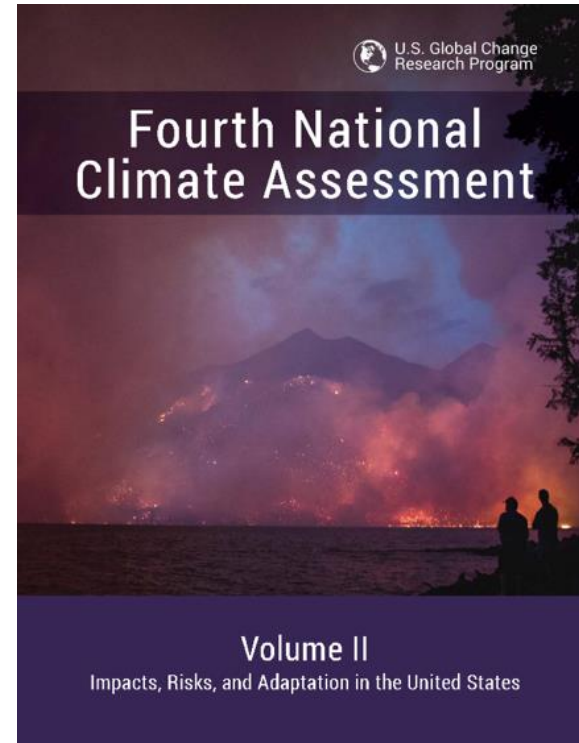
Populations Disproportionately Impacted

- Children
- Pregnant Women
- Older Adults
- Communities of Color and those experiencing Discrimination
- People with Low Income, People who are Homeless or Socially Isolated
- Immigrants, People with Limited English Proficiency or Less Access to Care
- Tribes and Indigenous Peoples
- Certain Occupational Groups
- People with Disabilities
- People with Pre-Existing Medical Conditions



NCA4 Vol.II (2018)

- Policy relevant, but not policy prescriptive
- Strong emphasis on regional information
- Quantified impacts in economic terms
- Integrated international considerations
- Assessed a range of potential impacts, helping decision makers better identify risks that could be avoided or reduced
- Case studies provided additional context and showcased community success stories

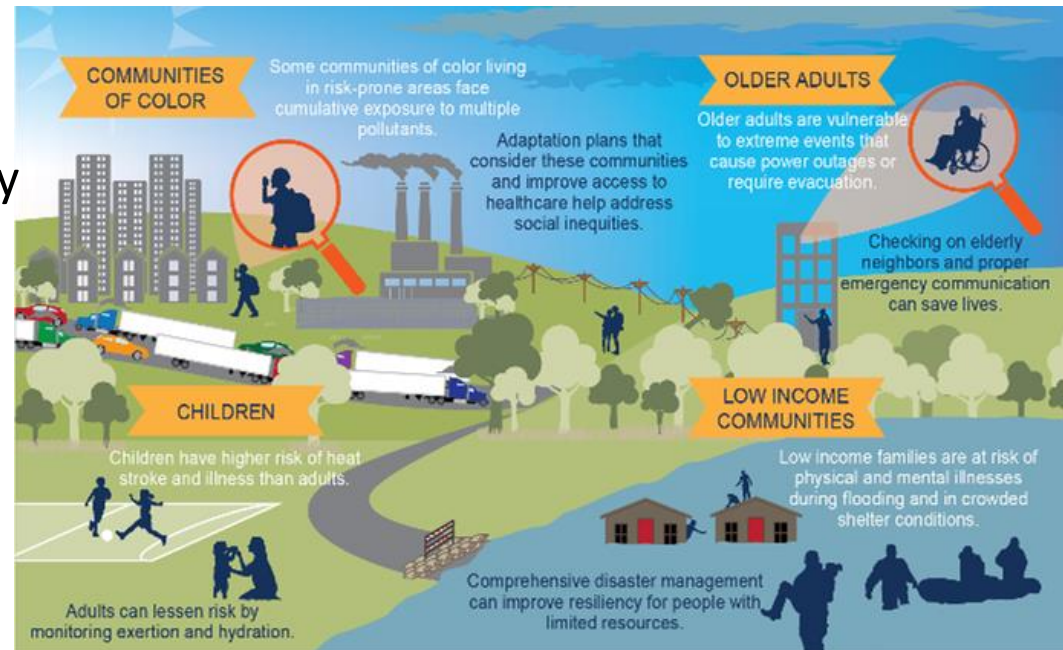


Read and download the report
at nca2018.globalchange.gov

14 Key Message #2

Exposure and Resilience Vary Across Populations and Communities

People and communities are differentially exposed to hazards and disproportionately affected by climate-related health risks. Populations experiencing greater health risks include children, older adults, low-income communities, and some communities of color.





CITY OF LAKE CHARLES, CALCASIEU PARISH

lancetcountdownus.org/wp-content/uploads/2020/12/cs-compounding.pdf

THE REGION IS
AFFECTED BY
HIGH LEVELS OF
RACIAL
RESIDENTIAL
SEGREGATION,
POVERTY, AND
UNEMPLOYMENT

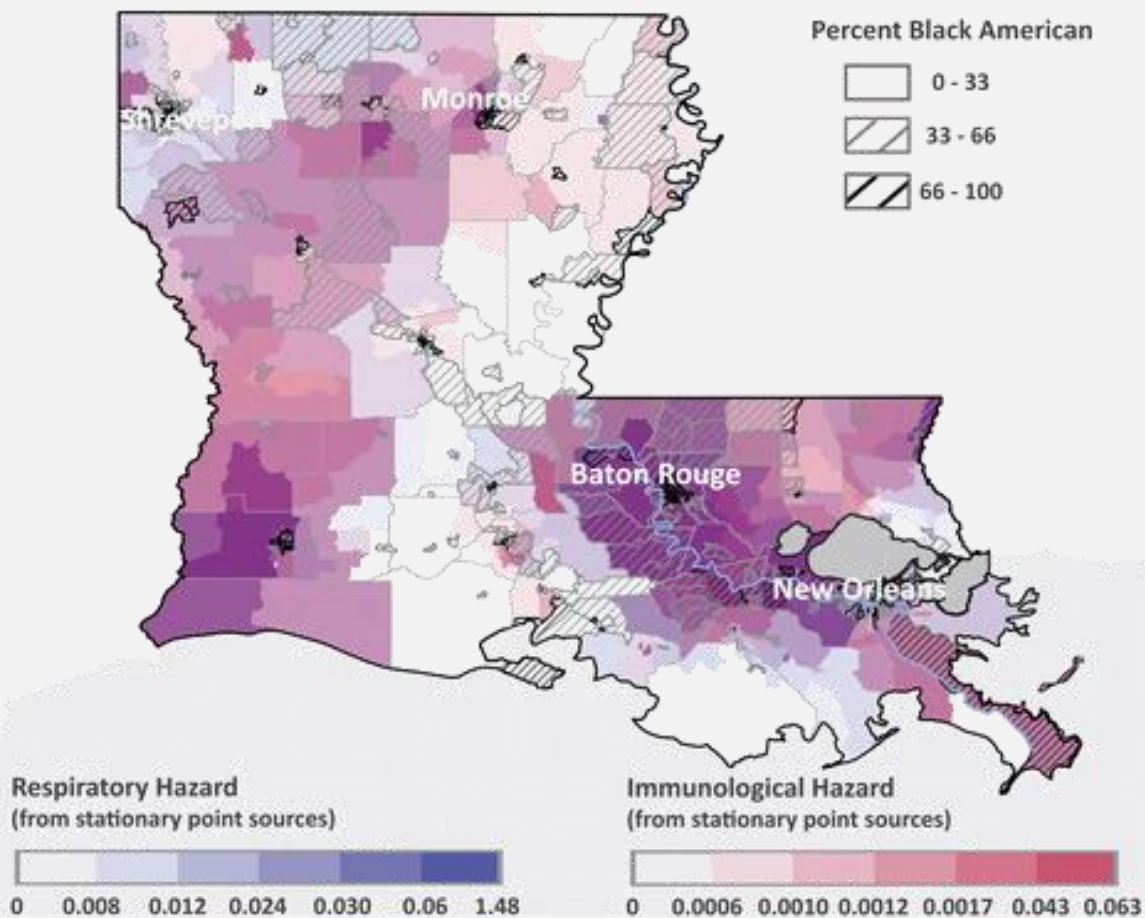
Selected socio-demographic characteristics of Calcasieu Parish.

Race/Ethnicity	Percent of Parish Population	Percent Living Below Poverty Level	Percent Unemployed
Non-Hispanic White	70.2%	12.1%	4.2%
Black	24.9%	29.2%	9.9%
Two or more races	2.3%	24%	9%
Hispanic or Latino	3.4%	20.5%	6.9%

Source: 2018 American Community Survey 5-year Estimates (Tables S1701, S2301, DP05)

THE REGION
EXPERIENCES
DISPROPORTIONATELY
HIGH RATES OF:

- Cancer
- Asthma
- Chronic obstructive lung disease (COPD)
- Premature death
- Low birthweight infants
- Depression



Terrell and James, 2020

<https://www.liebertpub.com/doi/full/10.1089/env.2020.0021>

A satellite image of Hurricane Laura, showing a well-defined eye and a dense, swirling cloud structure over the Gulf of Mexico. The coastline of the United States is visible, with the Gulf of Mexico to the south and the Atlantic Ocean to the east. The hurricane is positioned in the central part of the Gulf, moving towards the coast.

HURRICANE LAURA

HEATWAVE

A heatwave immediately followed the hurricane

The heat index rose to 110°F (43°C) in some areas.

This heatwave worsened health risks for many, particularly those who lost electricity and outdoor workers removing debris and repairing power lines.



CHEMICAL FIRE

BioLab chemical plant just outside of Lake Charles caught fire, releasing chlorine gas and other hazardous pollutants

Residents were told to shelter-in-place, close their doors and windows, and turn off their air conditioning units to protect themselves from exposure, despite the heatwave

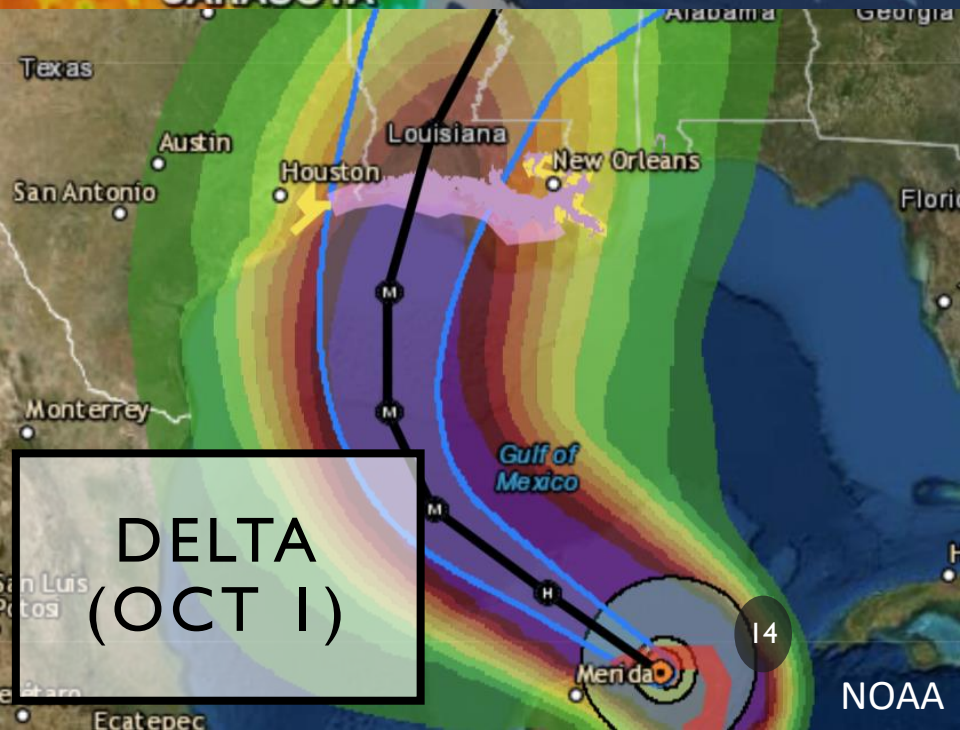
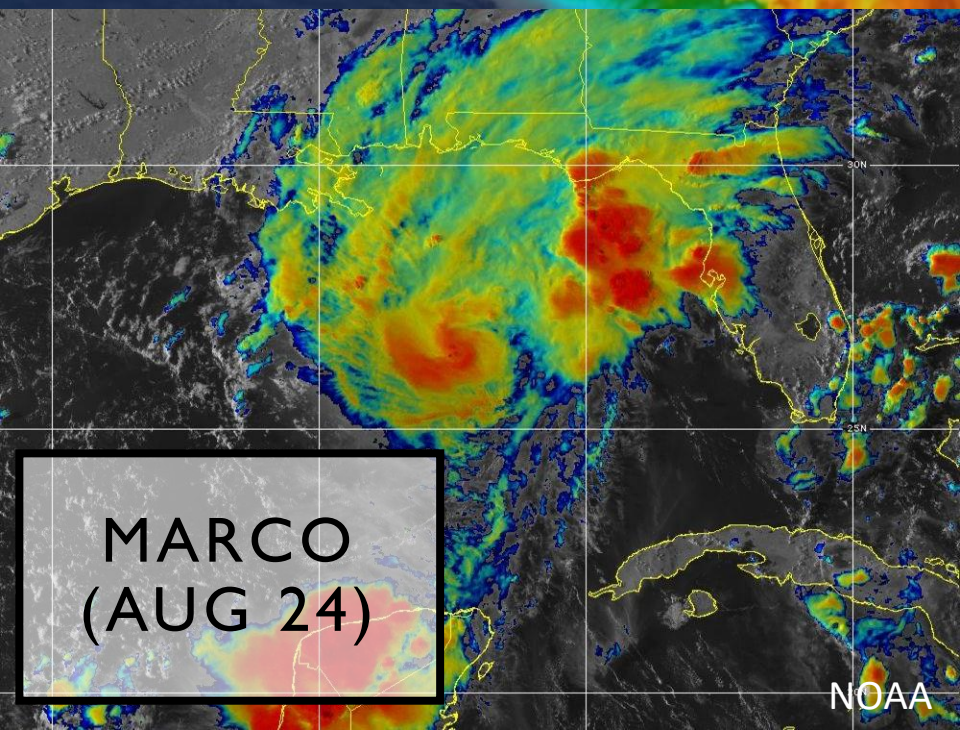


HURRICANE SALLY

TRACKING
THE **TROPICS**

11:00 AM ADVISORY

LOCATION		MOVEMENT	MAX WINDS	PRESSURE
29.1 N	88.2 W	NW 2 mph	85 mph	983 mb



Priorities for NCA5 (expected 2023)

- 1. Advance the Conversation**
- 2. Make it Accessible to a Broad Audience**
- 3. Be Creative in Communication**
- 4. Make it About People**
- 5. Ensure it is Useful and Usable**

NCA5 Chapters

- Overview/Summary Findings
- Earth System Processes
- Climate Trends
- Water
- Energy
- Land Cover and Land Use
- Forests
- Ecosystems and Biodiversity
- Coastal Effects
- Oceans and Marine Resources
- Agriculture
- Built Environment
- Transportation
- Air Quality
- Human Health
- Tribal and Indigenous Peoples
- International
- Complex Systems
- Economics*
- Human Social Systems*

*new chapters



NCA5 Chapters

- Northeast
- Southeast
- U.S. Caribbean
- Midwest
- Northern Great Plains
- Southern Great Plains
- Northwest
- Southwest
- Alaska
- Hawai'i and U.S.-Affiliated Pacific Islands
- Adaptation
- Mitigation



Opportunities to Engage

Ongoing:

- Call for technical inputs: <https://www.globalchange.gov/nca5> and click “NCA5 Engagement”

Coming soon:

- Review the Zero Order Draft (annotated outline) – early 2022
- Participate in public engagement workshops – early 2022
- Public call for Review Editors – early 2022
- Review the Third Order Draft – Fall 2022

For regular updates, please subscribe to the USGCRP newsletter (<https://www.globalchange.gov/newsletter-signup>) and follow @usgcrp on Twitter



Thank you!

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<https://www.globalchange.gov/nca5>



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