



Preparing New Jersey For Climate Change: Public Health and Climate Change

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Climate change...it's
real, it's happening
now, and it's affecting
New Jersey.



Climate Change in New Jersey

- More warm extremes and fewer cold extremes
- Heavy rains become more intense
- More frequent dry spells
- Rising sea level with increased frequency and intensity of coastal flooding



Preparing New Jersey For Climate Change

“New Jersey Climate Adaptation Alliance”

njadapt.rutgers.edu



The screenshot shows the website for the New Jersey Climate Adaptation Alliance. The header features the Rutgers logo and navigation links: Home, About, Upcoming Events, Past Events, Resources, NJ Climate Impacts, RU Climate Institute, and Stay in Touch. Below the header is a large image of people working in a field of red flowers. To the right of the image is a sidebar with sections: 'FOLLOW US ON TWITTER' with a Twitter icon and 'WHAT'S NEW?' containing three articles: 'Conference Announcement', 'Job Opportunity', and 'Regional Plan Association's New Study'. The main content area has the title 'New Jersey Climate Adaptation Alliance' followed by a paragraph about the alliance's formation and a list of its goals.

New Jersey Climate Adaptation Alliance

The **New Jersey Climate Adaptation Alliance** was formed in response to a diverse group of stakeholders who came together on November 29, 2011 at Rutgers University to participate in the conference “Preparing NJ for Climate Change: A Workshop for Decision-Makers.”

A changing climate and rising sea levels will have a devastating impact on New Jersey’s economy, the health of our residents, the State’s natural resources, and the extensive infrastructure system that delivers transportation services, energy and clean water to millions of New Jerseyans. The Alliance will focus on climate change preparedness in key impacted sectors (public health; watersheds, rivers and coastal communities; built infrastructure; agriculture; and natural resources) through:

- ◆ Conducting outreach and education of the general public and targeted sectoral leaders;
- ◆ Developing recommendations for state and local actions through collaboration with policymakers at the state, federal and local levels;
- ◆ Undertaking demonstration and pilot projects in partnership with the private sector, local

- Policymakers
- Private & Public Sector Practitioners
- Business Leaders
- Nongovernmental Organizations
- Academics
- Work Via Existing Delivery Systems
- Facilitated by Rutgers University
- Pre-dated Sandy
- Follows Strategic Workplan and Advisory Committee Direction

Honorary Co-Chairs: Governors James J. Florio and Thomas Kean

Co-Chairs: Michael Catania, Duke Farms and Kathleen Ellis, New Jersey Natural Gas

Academy of Natural Sciences of Drexel University New Jersey Natural Gas

American Littoral Society

Barnegat Bay Partnership

Bayshore Recycling

Climate Central

Delaware River Basin Commission

Duke Farms

Edgewood Properties

Ferriero Engineering

Ironbound Community Corporation

Isles, Inc.

Kinsey & Hand, Planning

Leckner Consulting

Middlesex Water Company

Milano School of International Affairs

Monmouth County Regional Health Department

Monmouth University

Mott MacDonald North America

New Jersey Farm Bureau

New Jersey Future

New Jersey Work Environment Council

NJ Association for Floodplain Management

NJ Audubon

NJM Insurance Group

North Jersey Transportation Planning Authority

Partnership for the Delaware Estuary

PlanSmart NJ

PSEG Services Corporation

Regional Plan Association

Rutgers Robert Wood Johnson Medical School

Rutgers School of Public Health

Sustainability Institute at TCNJ

Swiss Reinsurance America Holding Company

Terhune Orchards

The Louis Berger Group

The Nature Conservancy of New Jersey

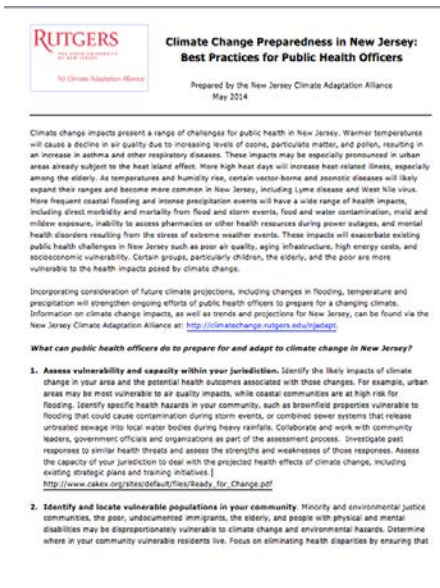
Thomas Edison State College

Work to date

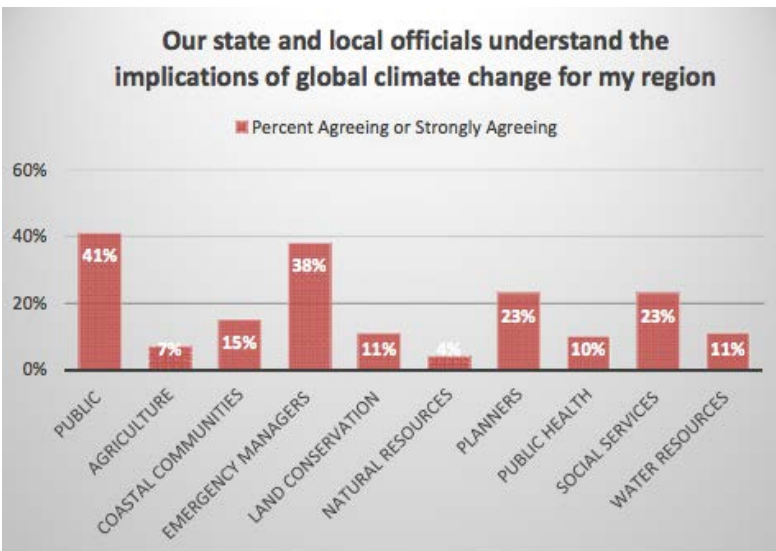
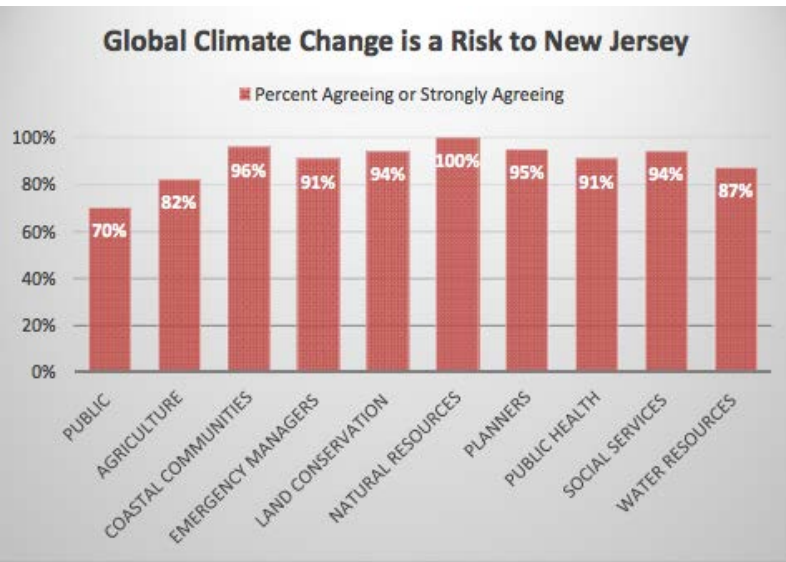
- **Sector specific reports:** impacts, best practices, tentative recommendations.
- **Stakeholder engagement:** two-way communication, identification of policy gaps.
- **Analyses to “make the case”:** evidence-based, wide-ranging.
- **Community-based decision support:** tools, assistance, demonstration projects.
- **Communications:** materials, workshops, conferences,, videos, etc. Available to all!

Sector-Based Approach

- Working Briefs
- Stakeholder Engagement Report
- Gap Analysis
- Policy Considerations
- Other supporting analyses
- Best Practices guides



Comparison Among Sector Stakeholders



Source: NJCAA 2013 Surveys of Stakeholder Groups
Climate Change Preparedness in NJ

Public Health Stakeholders

- **Public Health Focus Group and On-line survey (NJACCHO)**
- **Targeted Interviews Reps**
 - NJ Hospital Association
 - NJ Primary Care Association
 - Health Care Association NJ
 - LeadingAge
 - NJ ACOG
 - NJ AA Pediatrics
 - NJ AA Family Practice
 - NJ AC of Physicians
- **Expert Interviews**
 - Occupational Health MD (Rutgers)
 - Risk Analysis & Public Health (Rutgers)
 - Vector-Borne Disease (Rutgers)
 - Toxic Materials (Rutgers)
 - Epidemiologist (CDC)
 - U.S. EPA Program Manager

See: NJCAA 2014 Stakeholder Engagement Report: Public Health Climate Change Preparedness in NJ

NJADAPT

HOME UNDERSTANDING CLIMATE CHANGE NJ CLIMATE STORIES RESOURCES & CONTACT



WHAT IS NJADAPT?

NJADAPT is an online tool that can be helpful to multiple audiences for varied purposes. It can be used by the general public, government officials, businesses, and non-governmental professionals to understand how a changing climate is affecting and will continue to affect various populations, places and assets in New Jersey. In addition, it is helpful to local officials, concerned citizens and other New Jerseyans who wish to integrate high quality data about conditions of a changing climate into state and community planning and decision-making.

NJADAPT is constantly being improved. It is being built to support planning and decision-making related to all impacts of a changing climate including sea level rise, temperature changes, precipitation changes, inland flooding, and drought. In its current Version 1 form, NJADAPT is focused on coastal flooding, storm surge and sea level rise. Over time, additional data will be added to the site on other climate impacts along with improved functionality to make it easier to use. More reports and videos summarizing climate change impacts in New Jersey will be added regularly as well. Sign up [here](#) to be notified when new content is added to the site.

QUICK LINKS

Coastal Hazard Profiler
Create maps that show people, places, and assets exposed to coastal flooding.

NJ FloodMapper
Visualization tool for local communities who need to make decisions concerning flooding hazards and sea level rise.

Getting to Resilience
Online self-assessment process is a tool to assist communities to reduce vulnerability and increase preparedness.

Coastal Hazard Profiler

Exposure Profiler Select Map Collect Tips for Using These Maps Resources Help

My Saved Maps 1

Choose Community Exposure

Choose a section below to view maps showing different aspects of community exposure to food hazards. Pick and choose the best maps to get the flood exposure conversation started in your community. You can also view our map services.

Environment Map

Natural areas provide important benefits to coastal communities, including hazard protection, flood storage, water quality maintenance, fisheries support, and recreational opportunities. Communities can increase resilience by protecting natural areas along the coast that are exposed to flooding and adjacent inland areas.

Infrastructure Map

Community infrastructure, including roads, bridges, and water and sewer systems, can be damaged by coastal flooding. Communities should first assess infrastructure vulnerabilities and associated environmental and economic issues to determine what steps are needed to protect these assets.

Society Map

Understanding the populations that live in or near coastal flood-prone areas is an important information need, since residents who are elderly, who live in high-density areas, or who are impoverished may merit special considerations.

NJ FLOODMAPPER

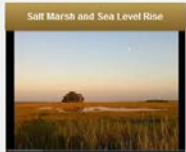
CURRENT MAP STORIES (CLICK TO WATCH)



New Jersey Coastal Flooding Exposure Assessment
Coastal communities in New Jersey face an increasing amount of flood risk due to sea level rise. Using a mapping model developed by a team at Rutgers University, this map story illustrates how coastal flood exposure may increase in the future. For full report click [HERE](#).



Monetary Damages for Coastal Flooding: Toms River Case Study
Toms River was severely impacted by Hurricane Sandy. This map story examines how Sandy's storm surge affected property values, as well as how those values may be affected by future flooding due to sea level rise. For full report click [HERE](#).



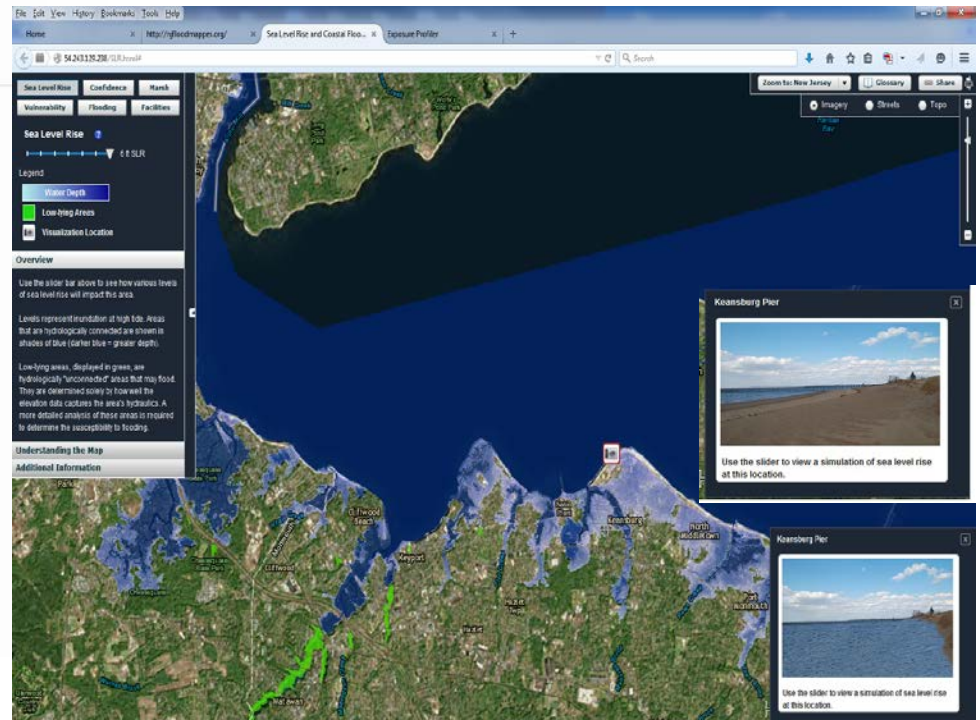
Modeling the Fate of New Jersey's Salt Marshes Under Future Sea Level Rise
Sea level rise in New Jersey and elsewhere could substantially affect coastal wetlands. This map story, developed through a partnership of several programs at Rutgers University, explores how sea level rise may affect the salt marshes along the New Jersey coast. For full report click [HERE](#).



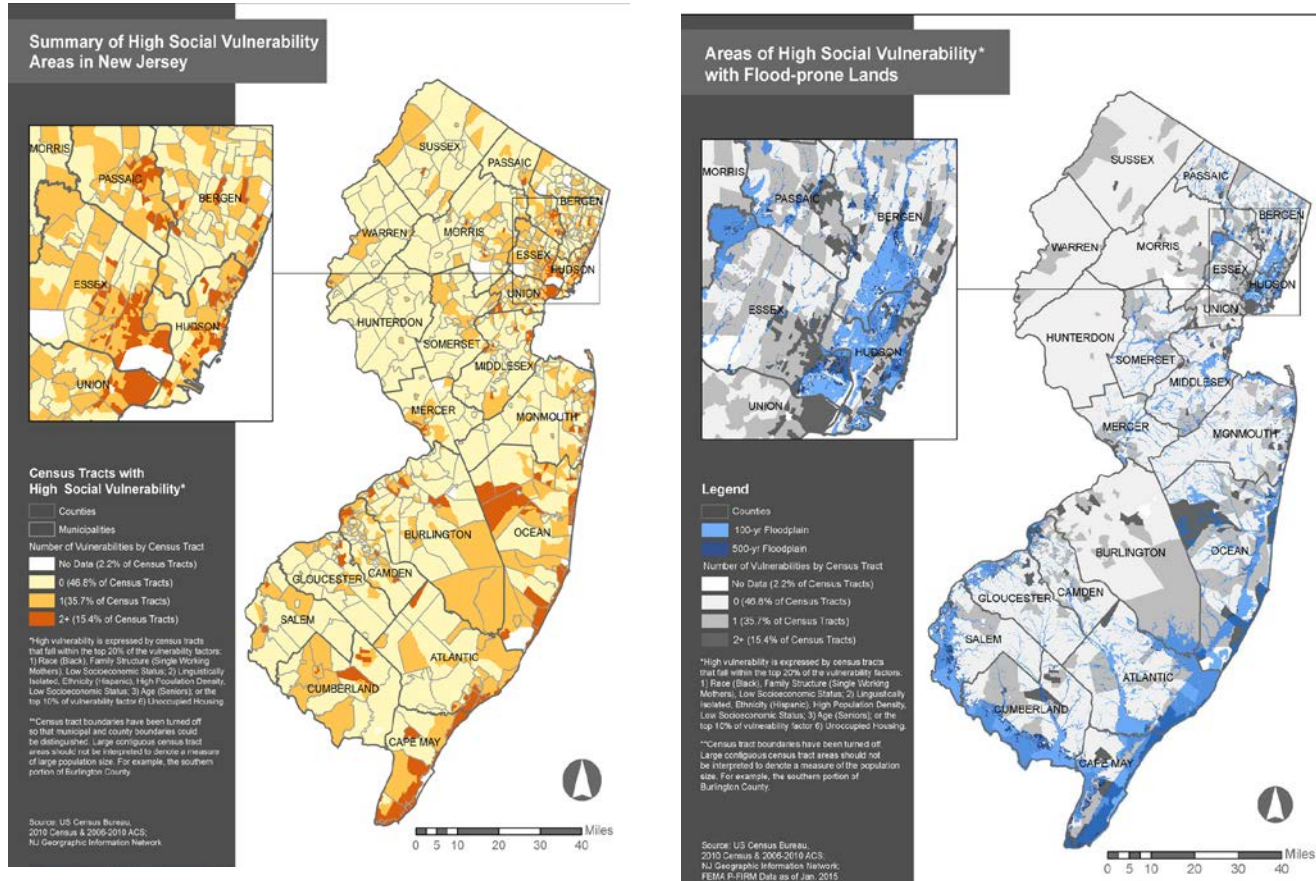
Newark - East Ferry

FUTURE MAP STORIES

- FEMA Q3 to PFIRM Changes and SLR
- Historic Shoreline Delineation
- Pollution Sources and Flood Hazards
- Populations Vulnerable to Climate Change in New Jersey: Update of a Statistical Analysis
- Transportation and Climate
- Understanding Climate Change and Flood Risk for New Jersey's Senior Citizens

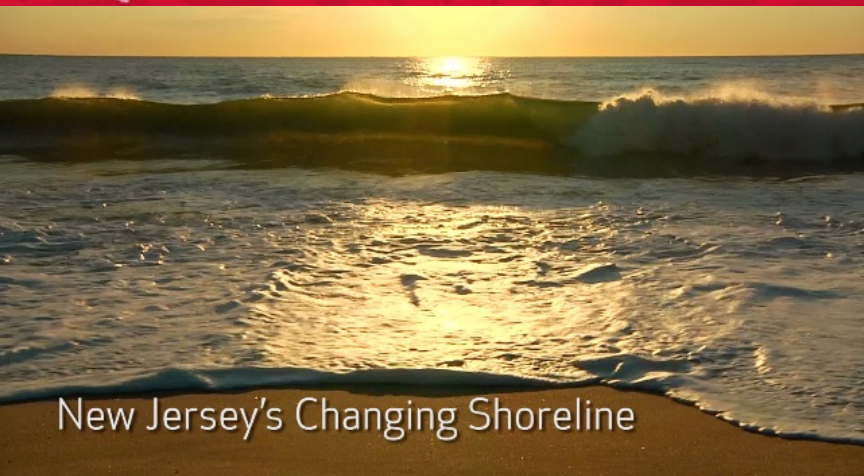


High Social Vulnerability and Flood Risk

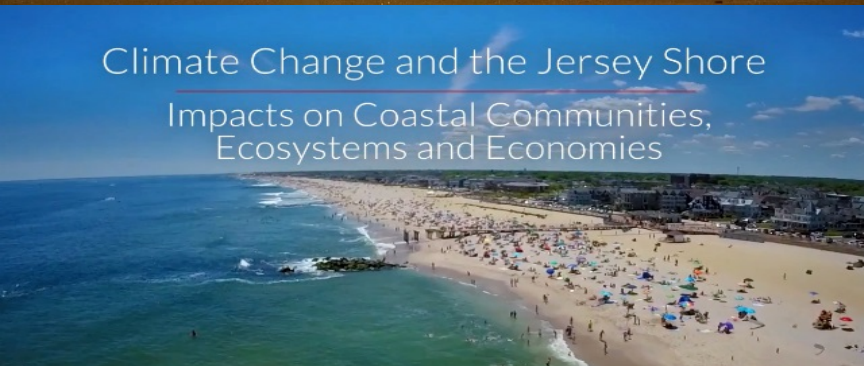


Factors Related to High Social Vulnerability

- race (black), family structure (single parent, female-headed), and low socioeconomic status
- linguistic isolation, ethnicity (Hispanic), high population density, and low socioeconomic status
- age (seniors)
- high percentages of unoccupied housing (Source: Pflicke et al. 2015)



New Jersey's Changing Shoreline



Climate Change and the Jersey Shore
Impacts on Coastal Communities,
Ecosystems and Economies



Climate Change and Flood Risk
for New Jersey's Senior Citizens

Videos and Story Maps



New Jersey Populations
Vulnerable to Climate Change

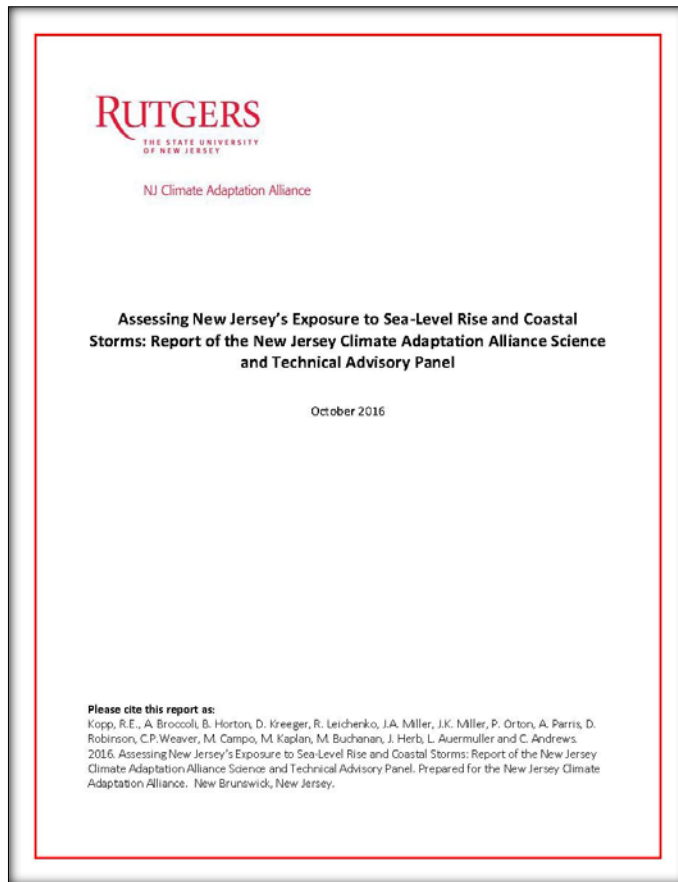
See njadapt.rutgers.edu and njadapt.org



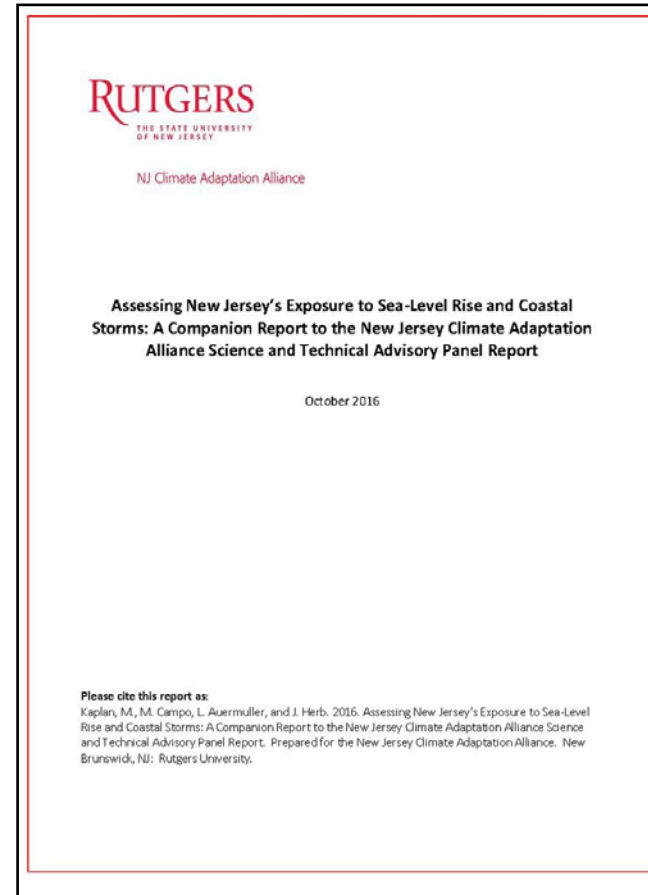
New Jersey and Climate Change
Impacts and Responses

Two Key Reports

Sea-Level Rise and Coastal Storms for NJ



Science and Technical Advisory Panel Report

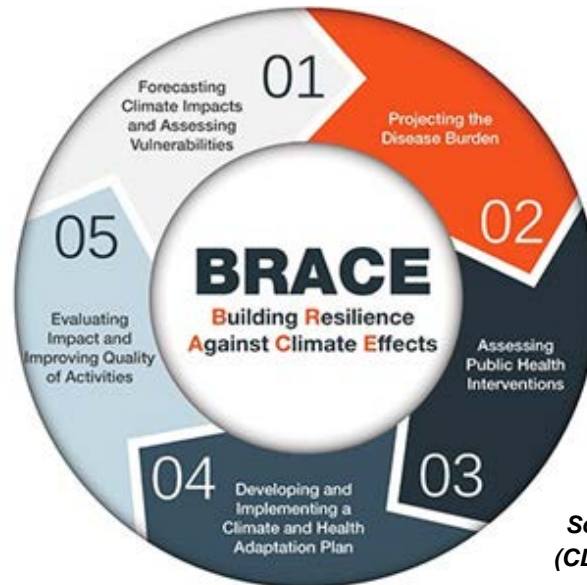


Companion Report

Climate Change and Public Health Working Group

Mission: to work in partnership with New Jersey's public health community to help enhance the public health community's climate preparedness.

- Builds Upon NJCAA work (2011 – present)
- Rutgers participates in CDC Community of Practice (2015 – present)
- Workgroup Convened Fall 2015
- Public Health and Climate Change Workshop for Public Health Practitioners June 2016
(<http://njadapt.rutgers.edu/past-events/june-3-2016-public-health-workshop>)
- Follows CDC Building Resilience Against Climate Effects (BRACE) Framework to address climate change effects on public health in NJ



Source: Centers for Disease Control and Prevention (CDC) <http://www.cdc.gov/climateandhealth/brace.htm>

Climate Change And Public Health Working Group

NJ Public Health Association
NJ Association of County and City Health Officials
Rutgers School of Public Health
NJ Society for Public Health Education
NJ Department of Health
NJ Mental Health Association
NJ Local Boards of Health Association
NJ Visiting Nurse Association
NJ Association of Public Health Nurse Administrators
NJ Hospital Association
County Health Rankings and Roadmaps
NJ Chapter American Academy of

Pediatrics
NJ Environmental Justice Alliance
NJ Health Initiatives
Drexel University School of Public Health
NJ Environmental Health Association
NJ Medical School
Rutgers Robert Wood Johnson Medical School

NJ Climate Change and Health Profile Report



NJ Climate Adaptation Alliance

New Jersey Climate and Health Profile Report

DRAFT FOR
COMMENTS

February
2017

NJ Climate Adaptation
Alliance
<http://njadapt.rutgers.edu/>

This draft report was prepared by Rutgers University in consultation with the New Jersey Climate Change and Public Health Working Group of the New Jersey Climate Adaptation Alliance. The report is issued as draft to provide an opportunity for stakeholders to provide insights and comments on its content. Comments may be sent to njchp@ejb.rutgers.edu by February 28, 2017.

Primary Sections

Baseline Climate Assessment

Climate Projections

Causal Pathways

Vulnerable Populations

Next Steps

Topics Covered

-Temperature

-Precipitation

-Sea-Level Rise

-Air Quality

-Extreme Precipitation and Storms

-Ecosystem Changes and Threats

Table 1. Overview of Projected Climate Change and Health Impacts in New Jersey

Hazard	Climate Impact	Health Impacts
Air Quality Changes	<ul style="list-style-type: none"> • Increased ground-level ozone • Fine particulate matter changes • Pollen and allergen production 	<ul style="list-style-type: none"> • Respiratory illness • Cardiovascular disease • Mortality
Extreme Heat	<ul style="list-style-type: none"> • Increased frequency and intensity of heat waves 	<ul style="list-style-type: none"> • Heat-related illness and mortality • Exacerbation of existing medical conditions • Greater stress on electricity systems potentially leading to health outcomes associated with power outages
Precipitation Changes and Storms	<ul style="list-style-type: none"> • Flooding • Storms • Drought • Wildfire 	<ul style="list-style-type: none"> • Injuries and fatalities • CO2 poisoning • Food and water contamination • Stress and mental health impacts • Respiratory illnesses • Mold exposure • Food insecurity
Ecosystem Changes and Threats	<ul style="list-style-type: none"> • Changes in Disease Vector Reproduction and migration patterns 	<ul style="list-style-type: none"> • Vector borne illnesses • Food and water borne illnesses • Harmful Algae Blooms (HABs)

DRAFT RECOMMENDATIONS

<i>Act</i>	<ul style="list-style-type: none"> •Implement specific initiatives identified in consultation with public health community
<i>Plan</i>	<ul style="list-style-type: none"> •Integrate climate science and consideration of climate change impacts into existing public health planning, programs and decision making processes
<i>Assess</i>	<ul style="list-style-type: none"> •Assess disease burden as a result of a changing climate and identify vulnerable populations and appropriate interventions
<i>Support</i>	<ul style="list-style-type: none"> •Develop and assist in the deployment of tools and other resources to support local public health practitioners
<i>Build Capacity</i>	<ul style="list-style-type: none"> •Expand the ability of NJ's public health practitioners to undertake interventions to address public health-related climate change impacts

PUBLIC COMMENTS THRU END OF FEBRUARY

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For more information

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