

The New Jersey Climate Adaptation Alliance

Preparing for the Impacts of Climate Change in New Jersey

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The New Jersey Climate Adaptation Alliance is a network of policymakers, public and private sector practitioners, academics, and NGO and business leaders designed to build climate change preparedness capacity in New Jersey. The Alliance is facilitated by Rutgers University which provides science and technical support, steers the Alliance's operations and advances its recommendations.

As a densely populated coastal state with aging infrastructure and housing stock, New Jersey is highly vulnerable to the impacts of climate change. Data for New Jersey show a statistically significant rise in average statewide temperature over the last 113 years with the total number of days over 90°F increasing more in New Jersey than the Northeast region as a whole. Over the coming century, temperatures across the Northeast, including New Jersey, are projected to continue to rise with a likelihood of the number of days above 90°F and the duration of such events increasing. Global and local temperature increases are expected to fundamentally alter many aspects of our environment, leading to phenomena such as heat waves, rising seas, more frequent flooding and greater coastal impacts from storm events. Precipitation is more likely to fall as heavy precipitation events and the intensity of the heaviest rainfalls is projected to increase, while more frequent warm season short-term droughts are expected. 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 8.7 million New Jerseyans.

The Alliance is focusing on climate change preparedness in key impacted sectors: agriculture, built infrastructure (energy and telecommunications); built infrastructure (transportation); coastal communities; natural resources; public health; and water resources through:

- Conducting outreach and education of the general public, decision makers, practitioners and stakeholders in relevant sectors;

- Developing recommendations for state and local actions through collaboration with stakeholders in relevant sectors and policymakers at the state, federal and local levels;
- Undertaking demonstration and pilot projects in partnership with the private sector, local governments, non-governmental organizations and others;
- Identifying science, research and data needs to support state and local actions; and
- Developing capacity for implementation of preparedness measures and documentation of best practices in the public and private sector.

The ultimate goal of this initiative is to assess climate vulnerability and preparedness needs for critical sectors in New Jersey and, through a fully engaged stakeholder process, to develop capacity for response implementation in New Jersey. Rutgers and the NJCAA has and will continue to communicate outcomes through direct involvement of stakeholders and practitioners, development of accessible materials and briefings for the public, policymakers, government, and private and nonprofit sector leaders, and via public symposia.

Climate Impacts to the Garden State

Agriculture

New Jersey is an important supplier of several key crops, including cranberries, blueberries, peaches, tomatoes and ornamentals, as well as home to a thriving seafood industry. Impacts on the state's agricultural sector include:

- Increased irrigation costs due to frequent short-term droughts;
- Changes in temperature affecting growing seasons, crop yield, suitability of crop species, and market competition;
- Increases and changes in pests and noxious weeds;
- Changes in fish and shellfish populations, growth and reproduction.

Built Infrastructure

Incorporating climate impacts into long term planning, design, maintenance, and protection of the state's built infrastructure is critical to protect public health and the state's economy. Impacts may include damage to:

- Transportation infrastructure, affecting passenger and commercial travel;
- The functionality of water-borne shipping facilities and ports operations;
- Energy infrastructure, such as transmission lines, substations and power plants;
- Housing in coastal areas and urban and suburban waterfront communities; and
- Drinking water and wastewater infrastructure.

Coastal Communities

Hurricane Sandy demonstrated the devastating impact storms and flooding can have on New Jersey's coastal communities. The effects of climate change are anticipated to affect communities along the Atlantic coast, the Delaware Bayshore, and tidal waterways with impacts that include:

- Increased flooding and erosion in coastal areas damaging coastal homes, businesses, infrastructure, beaches and tidal wetlands;
- Risks to human life and public health from increased precipitation and flooding events coupled with rising sea level;
- Diminution of the overall vitality of the state's critical shore tourism industry.



Natural Resources

New Jersey's ecological resources include habitat for rare plant and animal species, coastal and freshwater wetlands, prime nesting habitats for migratory birds, 127 miles of Atlantic coastline and over a thousand miles of tidal waterways, and undisturbed diverse forests. Anticipated impacts include:

- Increases in sea level that will affect fish and wildlife habitats, including tidal nurseries and nesting habitats for shorebirds, marine life and migratory species;

- Increased ambient temperatures and water chemistry changes that will affect ecosystem function and biodiversity;
- Reduced ability of natural systems to provide societal services, including flood control, clean and plentiful water, fisheries and ecotourism.

Public Health

Anticipated impacts include:

- Increased incidence of cardiovascular and respiratory diseases due to worsening air quality;
- Increases in heat exhaustion, heat stroke and exacerbation of chronic health conditions (respiratory and cardiovascular disease) from extreme heat events;
- Increases in vector-borne and zoonotic diseases and diseases historically confined to warmer climates;
- Strain on public health infrastructure at all levels in response to chronic and acute health impacts.

Water Resources

Increased frequency of droughts and more precipitation occurring earlier in the year with less water available during the summer months, have implications for both water supply and water quality.

Sea level rise and its ability to influence saltwater intrusion in groundwater systems is also a clear risk. Water resources concerns include:

- Changes in drinking water supply and quality as a result of drought, salt water intrusion and changes in rainfall intensity;
- Water shortages with severe consequences for agriculture, businesses, utilities, hospitals, nursing homes and the public;
- Increased flooding in communities affecting residents, infrastructure, businesses, and commerce.

Learn more about the New Jersey Climate Adaptation Alliance

climatechange.rutgers.edu/njadapt.html

Learn more about Climate Impacts to NJ

climatechange.rutgers.edu/climateimpacts.html

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