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Fighting Climate Change to Secure a Sustainable Future for Maryland

"Maryland must take action now to prepare for the consequences of climate change. We do not have time to wait as we are already experiencing damaging impacts of sea level rise and intensified storms along Maryland's coast. Harnessing nature's ability to adapt and heal itself, we will plant more trees to help capture excessive carbon pollution, restore more wetlands and living shorelines to help shield us from flooding and coastal storms, and plan ahead to reduce the vulnerability of Maryland's people, homes, investments and wildlife."

- John R. Griffin, Department of Natural Resources Secretary



How does climate change affect Maryland's environment?

Maryland's people, wildlife, land and public investments are at risk due to expected consequences of climate change including sea level rise, increased storm intensity, extreme drought and heat waves, and intensified wind and rainfall events. Due to its geography and geology, the Chesapeake Bay region is ranked the third most vulnerable to sea level rise, behind Louisiana and Southern Florida. Historic tide records show that sea level increased approximately one foot in the Chesapeake Bay over the last one hundred years. As a consequence of climate change, sea level is likely to rise at least twice as fast as it did during the 20th century, resulting in potentially 1-foot rise by 2050 and between 2-3 feet of rise by 2100.

What is the Department of Natural Resources doing about climate change?

DNR has the lead role among State agencies in advancing the scientific understanding of Maryland's vulnerability to climate change, and in advocating for sound planning to avoid or minimize the anticipated impacts.

DNR's Policy: Building Resilience to Climate Change

issued in October 2010, guides the Department's investments in and management of land, resources and assets so as to better understand, mitigate and adapt to climate change. The policy establishes practices and procedures related to new land investments, facility siting and design, habitat restoration, government operations, research and monitoring, resource planning and advocacy. Through implementation of the policy, the agency is leading by example, encouraging others to plan for and to mitigate the effects of climate change.



At the State-level, under the leadership of Governor Martin O'Malley, DNR is currently coordinating development and implementation of the Comprehensive Strategy for Reducing Maryland's Vulnerability to Climate Change.

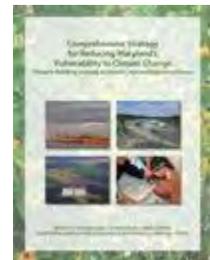
Adaptation Phase I: Sea Level Rise and Coastal Storms

The Phase I Adaptation Strategy for Sea Level Rise and Coastal Storms was released in August 2008. The Phase I Strategy is a key component of the Maryland Climate Action Plan, detailing the actions necessary to protect Maryland's future economic well-being, environmental heritage and public safety in the face of climate change and sea level rise. Implementation of the Strategy is currently underway. Progress to date and implementation plans for 2010 are available at http://www.dnr.state.md.us/coastsmart/pdfs/comprehensive_strategy.pdf

Adaptation Phase II: Building Societal, Economic and Ecological Resilience

The Maryland Commission on Climate Change released its [Phase II Strategy for Reducing Maryland's Vulnerability to Climate Change](#) on January 24, 2011. The report outlines strategies to reduce the impacts of climate change, including sea level rise, increased temperature and changes in precipitation within the following sectors: Human Health; Agriculture; Forest and Terrestrial Ecosystems; Bay and Aquatic Environments; Water Resources; and Population Growth and Infrastructure.

Developed in accordance with Governor O'Malley's Executive Order, more than 80 experts collaborated and held several larger stakeholder meetings to create the Phase II Strategy. Along with its companion, the Phase I Strategy for Sea Level Rise and Coastal Storms (2008), the Phase II Strategy is a key component of Maryland's Climate Action Plan. State agencies will use both strategies to guide and prioritize state-level activities with respect to both climate science and adaptation policy.

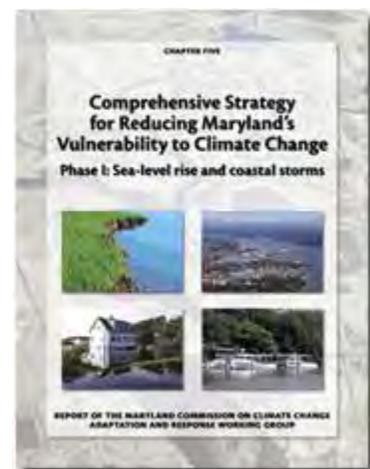


Technical Tools & Services

The Department of Natural Resources is focused on providing state and local partners with the tools and technical services they need in order to plan for climate change.

Local Resources

State Resources



- [Maryland's Chesapeake & Coastal Program: CoastSmart Communities Initiative](#)
- [A Sea Level Rise Response Strategy for Dorchester County \(2008\)](#)
- [Worcester County Sea Level Rise Inundation Model \(2006\)](#)
- [Sea Level Rise Response Strategy: Worcester County, Maryland \(2008\)](#)
- [Rising Sea Level Rise Guidance: Somerset County, Maryland \(2008\)](#)
- [Comprehensive Strategy for Reducing Maryland's Vulnerability to Climate Change \(2008\)](#)
- [A Sea Level Rise Response Strategy for the State of Maryland \(2000\)](#)
- Technical Tools: [Coastal Atlas' Shorelines mapping tool](#)
- Fact Sheet: [Maryland at Risk](#)

News & Events

- **Commission Releases Report To Prepare Maryland For Climate Change**
The Maryland Commission on Climate Change released its [Phase II Strategy for Reducing Maryland's Vulnerability to Climate Change: Building Societal, Economic and Ecological Resilience](#) on January 24, 2011. The report outlines specific strategies to reduce the impacts of climate change on Maryland, including sea level rise, increased temperature and changes in precipitation. Along with its companion, the Phase I Strategy for Sea Level Rise and Coastal Storms (2008), the Phase II Strategy is a key component of Maryland's Climate Action Plan. State agencies will use both strategies to guide and prioritize state-level activities with respect to both climate science and adaptation policy.
- **Financial & Technical Assistance Available Through CoastSmart Communities Grants**
Through Maryland's [CoastSmart Communities Initiative](#), DNR's Chesapeake & Coastal Program is helping local communities identify and implement strategies to protect life and property vulnerable to coastal hazards and climate change. In partnership with the National Ocean and Atmospheric Administration (NOAA), the Chesapeake & Coastal Program is offering competitive grants to local communities for coastal hazards and sea-level rise response planning. Funding has been used to assist local communities, invest in computer models, implement land use plans and establish development codes and ordinances. *CoastSmart* Communities projects are currently underway in the City of Annapolis, the Town of Queenstown, and Anne Arundel, Caroline and Talbot Counties. The State will accept proposals through March 24, 2011 at 5:00 p.m. View the full [Request for Proposals](#).
- DNR's climate change efforts profiled in new book, "A Sustainable Chesapeake: Better Models for Conservation"
[A Sustainable Chesapeake: Better Models for Conservation](#), published by The Conservation Fund, serves as an important conservation resource for individuals, organizations, governments and businesses across the Chesapeake Bay watershed. This new book, edited by David Burke and Joel Dunn, profiles promising conservation practices and technologies and describes the protection of critical land and water resources. The book includes two case-studies featuring DNR's cutting-edge climate change activities:
[Sea Level Rise: Maryland's Model for Adapting to Change](#) by Zoe Johnson
[A Carbon Footprint Analysis and Forest Carbon Sequestration Pilot Program: Climate Leadership by the Maryland Department of Natural Resources](#) by Zoe Johnson, Rich Norling and David A. Palange
- [Planning for Climate Change Using a Green Infrastructure Approach: A Pilot Course](#)
The Department of Natural Resources partnered with the Conservation Fund, the National Oceanic and Atmospheric Administration and the Northern Virginia Regional Commission to offer this pilot-course in April 2010. The hands-on course offered participants the opportunity to examine potential climate change impacts (storm surge/sea level rise, changes in precipitation and temperature) and to learn methods for using a green infrastructure approach to guide development of effective adaptation and mitigation strategies. For information on future course offerings, please visit:
http://www.conservationfund.org/training_education/upcoming_training_courses

What is Maryland doing?

The O'Malley/Brown Administration has taken several proactive steps to combat climate change, establishing Maryland as a national leader for this cause. Highlights include:

- [Maryland Climate Action Plan](#) In August 2008, Maryland's Commission on Climate Change issued its Climate Action Plan that details what effects global warming will have on the State, recommends actions to protect Maryland's property and people from rising sea levels and changing weather patterns, and outlines forty-two actions to help the state greatly reduce its global warming pollution.
- EmPower Maryland is an initiative that requires Maryland to reduce energy use by 15 percent by 2015 through requiring energy efficient buildings, promoting purchase of energy star and environmentally friendly products, and expanding the community energy loan program.
- Regional Greenhouse Initiative In April 2007 Maryland became the 10th state to join the northeast regional climate change and energy efficiency initiative, the first cap-and-trade effort to control carbon dioxide emissions in the United States. Maryland's participation in RGGI will reduce carbon dioxide emissions from the states electrical generators by roughly 10 percent from current levels by 2019.
- Clean Cars Act Implemented stricter emissions regulations for cars purchased and registered in Maryland, joining 16 other states in requiring stronger emission standards.



DNR Employees on bike to work day

What can you do?

Small lifestyle changes we each can take accumulate significantly to reducing air pollution that causes climate change and preparing for its impact. Simple things like conserving energy at home and work; carpooling, walking or bicycling to work; and planting a tree make a real difference in our neighborhoods for both people and wildlife. Individuals living in the coastal zone should utilize living shoreline practices that combine marsh plantings with sills, groin fields or breakwaters to remedy shore erosion problems. If you are building or rebuilding in the coastal floodplain, elevate your home or business to 3 feet or more above the 100-year base flood elevation. Families should also develop a personal emergency response plan in preparation of hurricanes, heat waves and vector-borne illness. [Click here for more helpful tips on what you can do to prevent climate change.](#)

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