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FACT SHEET: What Climate Change Means for Louisiana and the Southeast and Caribbean

Today, the Obama Administration released the third U.S. National Climate Assessment—the most comprehensive scientific assessment ever generated of climate change and its impacts across every region of America and major sectors of the U.S. economy. The findings in this National Climate Assessment underscore the need for urgent action to combat the threats from climate change, protect American citizens and communities today, and build a sustainable future for our kids and grandkids.

The National Climate Assessment is a key deliverable of President Obama's Climate Action Plan to cut carbon pollution, prepare America's communities for climate-change impacts, and lead international efforts to address this global challenge. Importantly, the plan acknowledges that even as we act to reduce the greenhouse-gas pollution that is driving climate change, we must also empower the Nation's states, communities, businesses, and decision makers with the information they need prepare for climate impacts already underway.

The Obama Administration has already taken a number of steps to deliver on that commitment to states, regions, and communities across America. In the past year alone, these efforts have included: establishing a Task Force of State, Local, and Tribal Leaders on Climate Preparedness and Resilience to advise the Administration on how the Federal Government can respond to the needs of communities nationwide that are dealing with the impacts of climate change; launching a Climate Data Initiative to bring together extensive open government data with strong commitments from the private and philanthropic sectors to develop planning and resilience tools for communities; and establishing seven new "climate hubs" across the country to help farmers and ranchers adapt their operations to a changing climate.

LOUISIANA is part of the National Climate Assessment's U.S. Southeast and Caribbean Region. The regional phenomena identified by the Assessment may not occur in every state that is part of a particular region. According to the third U.S. National Climate Assessment Highlights report:

"The Southeast and Caribbean region is exceptionally vulnerable to sea level rise, extreme heat events, hurricanes, and decreased water availability. The geographic distribution of these impacts and vulnerabilities is uneven, since the region encompasses a wide range of environments, from the Appalachian Mountains to the coastal plains. The region is home to more than 80 million people and some of the fastest-growing metropolitan areas, three of which are along the coast and vulnerable to sea level rise and storm surge. The Gulf and Atlantic coasts are major producers of seafood and home to seven major ports that are also vulnerable.

The Southeast is a major energy producer of coal, crude oil, and natural gas, and is the highest energy user of any of the National Climate Assessment regions.

The Southeast warmed during the early part of last century, cooled for a few decades, and is now warming again. Temperatures across the region are expected to increase in the future. Major consequences include significant increases in the number of hot days (95°F or above) and decreases in freezing events. Higher temperatures contribute to the formation of harmful air pollutants and allergens. Higher temperatures are also projected to reduce livestock and crop productivity. Climate change is expected to increase harmful blooms of algae and several disease-causing agents in inland and coastal waters. The number of Category 4 and 5 hurricanes in the North Atlantic and the amount of rain falling in very heavy precipitation events have increased over recent decades, and further increases are projected." (NCA Highlights, p. 72)

Regional Findings of the Third U.S. National Climate Assessment: SOUTHEAST

- "Sea level rise poses widespread and continuing threats to both natural and built environments and to the regional economy.

- Increasing temperatures and the associated increase in frequency, intensity, and duration of extreme heat events will affect public health, natural and built environments, energy, agriculture, and forestry.

- Decreased water availability, exacerbated by population growth and land-use change, will continue to increase competition for water and affect the region's economy and unique ecosystems." (NCA, Ch. 17: Southeast)

Selected Findings and Information from the Third U.S. National Climate Assessment Relevant to LOUISIANA

- **Ecosystems: "**The pace of sea level rise will increasingly lead to inundation of coastal wetlands in the region. Such a crisis in land loss has occurred in coastal Louisiana for several decades, with 1,880 square miles having been lost since the 1930s as a result of natural and man-made factors. With tidal wetland loss, protection of coastal lands and people against storm surge will be compromised." (NCA, Ch. 17: Southeast)

- **Agriculture:** "The impacts of sea level rise on agriculture derive from decreased freshwater availability, land loss, and saltwater intrusion. Saltwater intrusion is projected to reduce the availability of fresh surface and groundwater for irrigation, thereby limiting crop production in some areas. Agricultural areas around Miami-Dade County and southern Louisiana with shallow groundwater tables are at risk of increased inundation and future loss of cropland with a projected loss of 37,500 acres in Florida with a 27-inch sea level rise, which is well within the 1- to 4-foot range of sea level rise projected by 2100." (NCA, Ch. 17: Southeast)

- **Infrastructure: "**Large numbers of cities, roads, railways, ports, airports, oil and gas facilities, and water supplies are at low elevations and potentially vulnerable to the impacts of sea level rise. For instance, New Orleans, with roughly half of its population living below sea level, is especially at risk. Louisiana State Highway 1, heavily used for delivering critical

oil and gas resources from Port Fourchon, is literally sinking, resulting in more frequent and more severe flooding during high tides and storms. The Department of Homeland Security estimated that a 90-day shutdown of this road would cost the nation $7.8 billion." (NCA, Ch. 17: Southeast)

- **Sea Level Rise:** Nationally, "more than 5,790 square miles and more than $1 trillion of property and structures are at risk of inundation from sea level rise of two feet above current sea level – an elevation which could be reached by 2050 under a high rate of sea level rise of approximately 6.6 feet by 2100, 20 years later assuming a lower rate of rise (4 feet by 2100), and sooner in areas of rapid land subsidence. Roughly half of the vulnerable property value is located in Florida, and the most vulnerable port cities are Miami, Greater New York, New Orleans, Tampa-St. Petersburg, and Virginia Beach." (NCA, Ch. 25: Coastal)

- **Coasts: "**According to a recent study co-sponsored by a regional utility, coastal counties and parishes in Alabama, Mississippi, Louisiana, and Texas already face significant losses that annually average $14 billion from hurricane winds, land subsidence, and sea level rise. Future losses for the 2030 timeframe could reach $18 billion (with no sea level rise or change in hurricane wind speed) to $23 billion (with a nearly 3% increase in hurricane wind speed and just under 6 inches of sea level rise). Approximately 50% of the increase in the estimated losses is related to climate change. The study identified $7 billion in cost-effective adaptation investments that could reduce estimated annual losses by about 30% in the 2030 timeframe." (NCA, Ch. 17: Southeast)

- **Transportation: "**Relative sea level rise will be greater along some coasts (such as Louisiana, Texas, and parts of the Chesapeake Bay), and this will have significant effects on transportation infrastructure, even without the coupling with storms, due to regional land subsidence (land sinking or settling). Ports and harbors will need to be reconfigured to accommodate higher seas. Many of the nation's largest ports are along the Gulf Coast, which is especially vulnerable due to a combination of sea level rise, storm surges, erosion, and land subsidence." (NCA, Ch. 5: Transportation)

- **Tribes: "**Tribal communities in coastal Louisiana are experiencing climate change induced rising sea levels, along with saltwater intrusion, subsidence, and intense erosion and land loss due to oil and gas extraction, levees, dams, and other river management techniques, forcing them to either relocate or try to find ways to save their land." (NCA, Ch. 12: Indigenous Peoples)

- **Forests:** Forest disturbances caused by insects and pathogens are altered by climate changes due to factors such as increased tree stress, shifting phenology, and altered insect and pathogen lifecycles. Current knowledge provides limited insights into specific impacts on epidemics, associated tree growth and mortality, and economic loss in the Southeast, though the overall extent and virulence of some insects and pathogens have been on the rise (for example, Hemlock Woolly Adelgid in the Southern Appalachians), while recent declines in southern pine beetle (*Dendroctonus frontalis* Zimmerman) epidemics in Louisiana and East Texas have been attributed to rising temperatures. Due to southern forests' vast size and the high cost of management options, adaptation strategies are limited, except through post-epidemic management responses – for example, sanitation

cuts and species replacement.

- **Adaptation:** Louisiana's "*Comprehensive Master Plan for a Sustainable Coast 2012* includes both protection and restoration activities addressing land loss from sea level rise, subsidence, and other factors over the next 50 years." (NCA, Ch. 28: Adaptation)

Examples of Efforts Underway in LOUISIANA to Address Climate Change

In **LOUISIANA**, many efforts are already underway to mitigate and respond to the impacts of climate change, including:

Preparing Communities for the Consequences of Climate Change:

Many important preparedness, resilience, and adaptation efforts are already being led by local, state, and regional entities across the country. Mechanisms being used by local governments to prepare for climate change include: land-use planning; provisions to protect infrastructure and ecosystems; regulations related to the design and construction of buildings, road, and bridges; and preparation for emergency response and recovery. These local adaptation planning and actions are unfolding in municipalities of different sizes, and regional agencies and regional aggregations of governments are also taking actions. And States have also become important actors in efforts related to climate change.

Cutting Carbon Pollution in Louisiana:

In 2012, power plants and major industrial facilities in Louisiana emitted more than 140 million metric tons of carbon pollution—that's equal to the yearly pollution from more than 29 million cars. Through the Climate Action Plan and state initiatives, there are many efforts already underway to mitigate and respond to the impacts of climate change in Louisiana, including:

- ***Investing in Clean Energy***: Since President Obama took office, the U.S. increased solar-electricity generation by more than ten-fold and tripled electricity production from wind power. Since 2009, the Administration has supported tens of thousands of renewable energy projects throughout the country, including more than 2,390 in Louisiana, generating enough energy to power more than 6,000 homes.

- ***Improving Efficiency:*** Using less energy to power our homes, businesses and vehicles is critical to building a clean and secure energy future. President Obama has made essential investments in research and development for energy efficiency advances, and set new standards to make the things we use every day – from cars to microwaves – more efficient.

    - President Obama established the toughest fuel economy standards for passenger vehicles in U.S. history. These standards will double the fuel efficiency of our cars and trucks by 2025, saving the average driver more than $8,000 over the lifetime of a 2025 vehicle and cutting carbon pollution.

    - Since October 2009, the Department of Energy and the Department of Housing and Urban Development have jointly completed energy upgrades nearly two million

homes across the country, saving many families more than $400 on their heating and cooling bills in the first year alone.

- Nationally, the President's Better Buildings Challenge partners and Better Buildings, Better Plants partners have committed to reduce energy intensity at least 20 percent in over 3 billion square feet of building space.

For more information about the third U.S. National Climate Assessment, please visit www.globalchange.gov or contact engagement@usgcrp.gov.

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