

# *National Security and Climate Change: What Do We Need to Know?*

Alice C. Hill

Senior Advisor to the President's  
Assistant for Homeland Security  
and Counterterrorism

Woodrow Wilson Center  
July 29, 2014

Sponsored by  
The Henry M. Jackson Foundation  
&  
Pacific Northwest National Laboratory

# 2010 National Security Strategy

“The danger from climate change is real, urgent, and severe.”

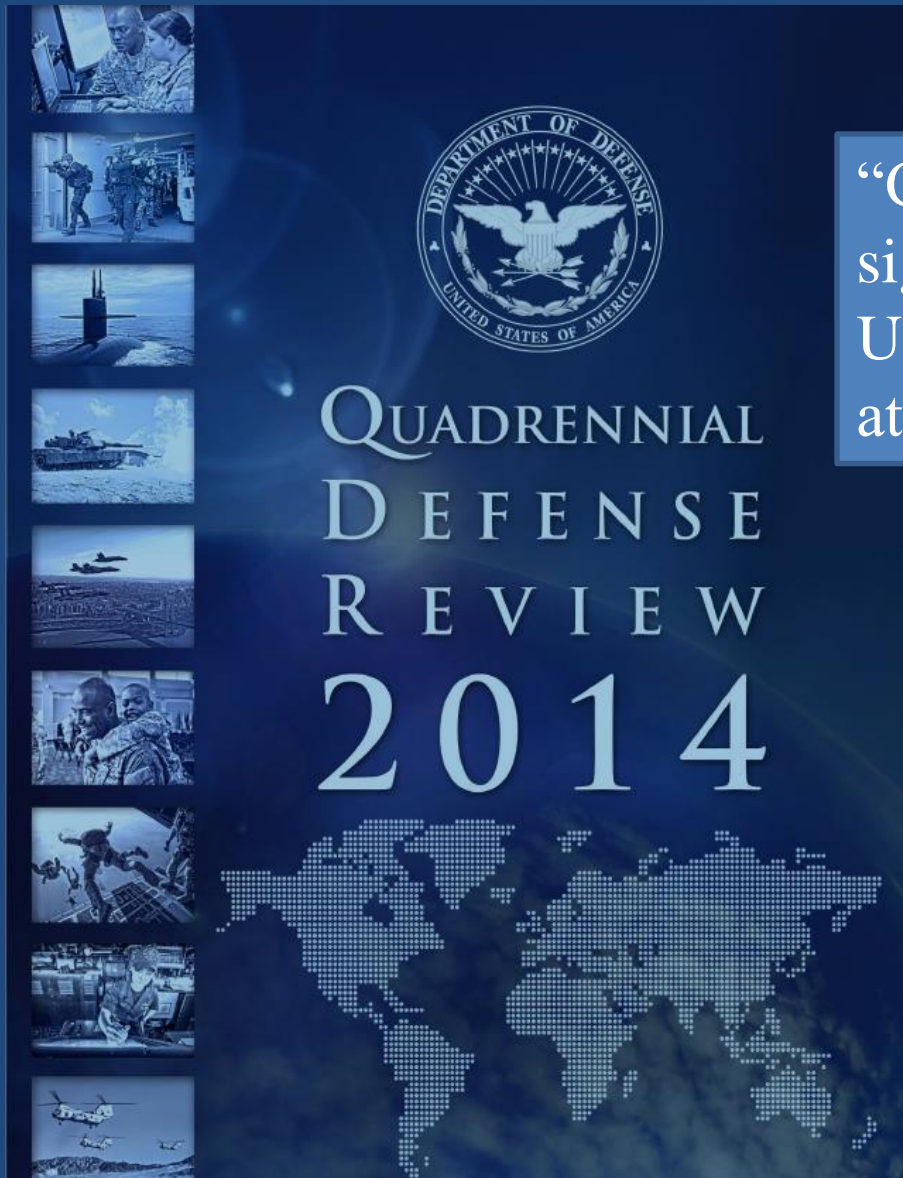
## NATIONAL SECURITY STRATEGY

May 2010



“The change wrought by a warming planet will lead to new conflicts over refugees and resources; new suffering from drought and famine; catastrophic natural disasters; and the degradation of land across the globe.”

# Quadrennial Defense Review



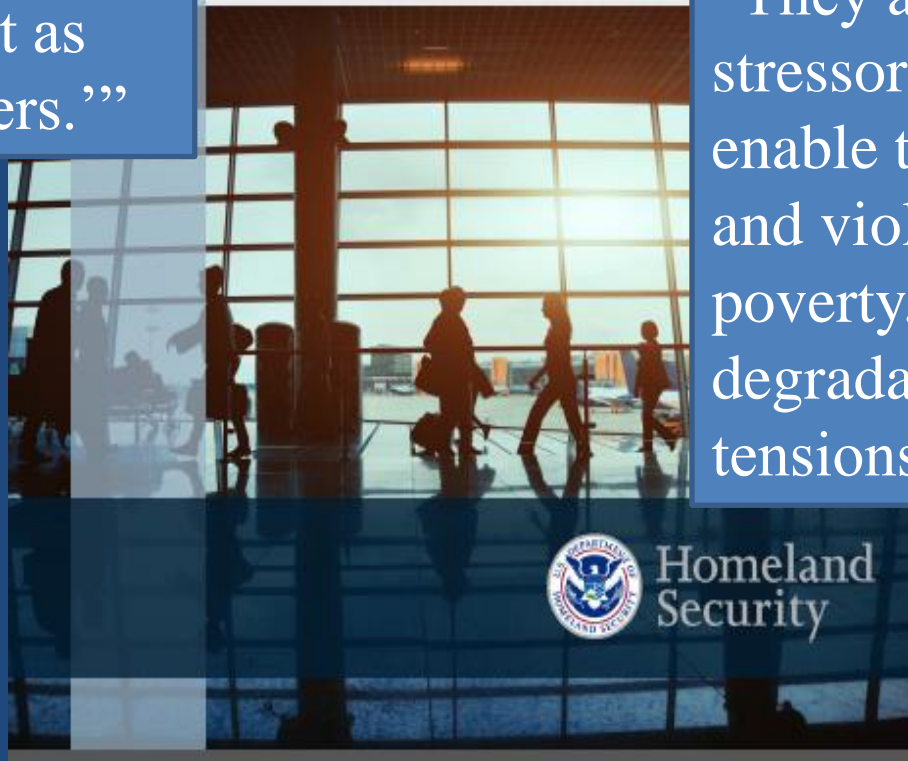
“Climate change poses [a] significant challenge for the United States and the world at large.”

# Quadrennial Homeland Security Review

## The 2014 Quadrennial Homeland Security Review

“Climate change and associated trends may ... indirectly act as ‘threat multipliers.’”

“They aggravate stressors abroad that can enable terrorist activity and violence, such as poverty, environmental degradation, and social tensions.”



# U.S. Energy Sector Report on Vulnerabilities to Climate Change

## U.S. Energy Sector Vulnerabilities to Climate Change and Extreme Weather

July 2013



“[Climate change] trends could restrict the supply of secure, sustainable and affordable energy critical to the nation’s economic growth.”

# GAO High-Risk Report

“Climate change poses risks to many environmental and economic systems . . . and presents a significant financial risk to the federal government.”

GAO

United States Government Accountability Office

Report to Congressional Committees

February 2013

HIGH-RISK SERIES

An Update

To access this report electronically, scan this QR Code.

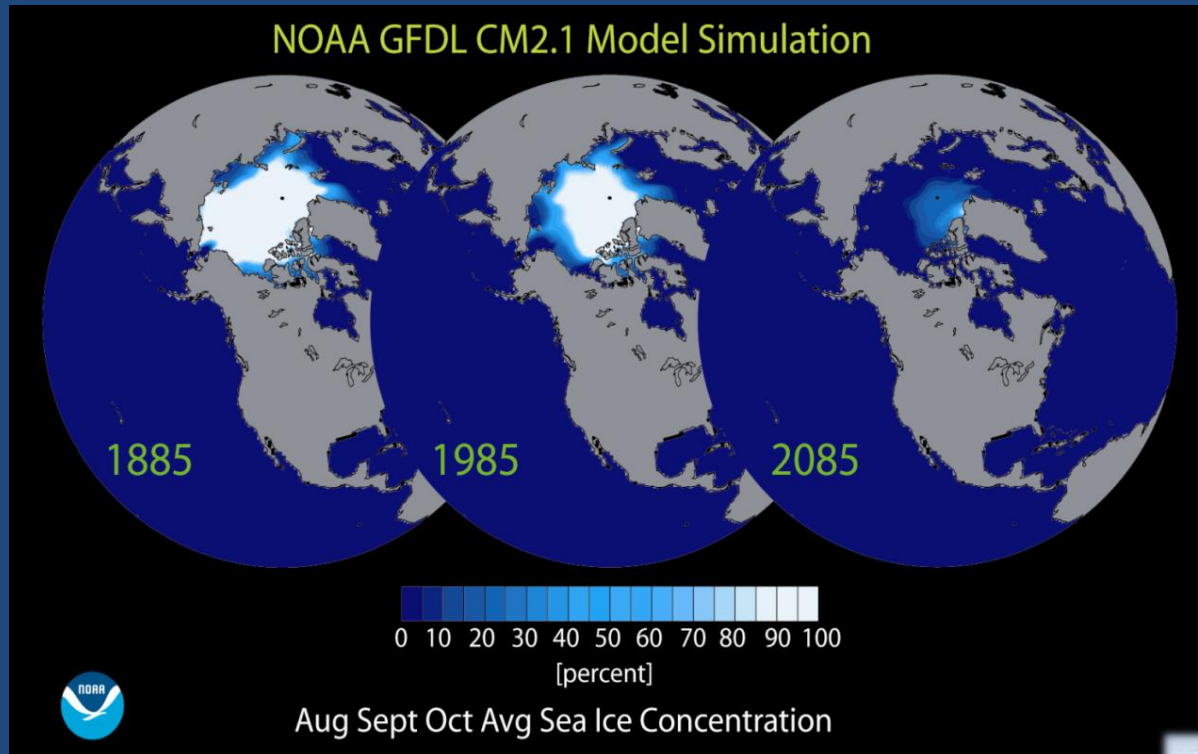
Don't have a QR code reader? Several are available for free online.



GAO-13-283



# Implications for the Arctic Region



“Even as we work domestically and internationally to minimize the effects of climate change, the effects are already apparent in the Arctic.”

-National Strategy for the Arctic Region,  
May 2013

# 2014 Report by the Intergovernmental Panel on Climate Change

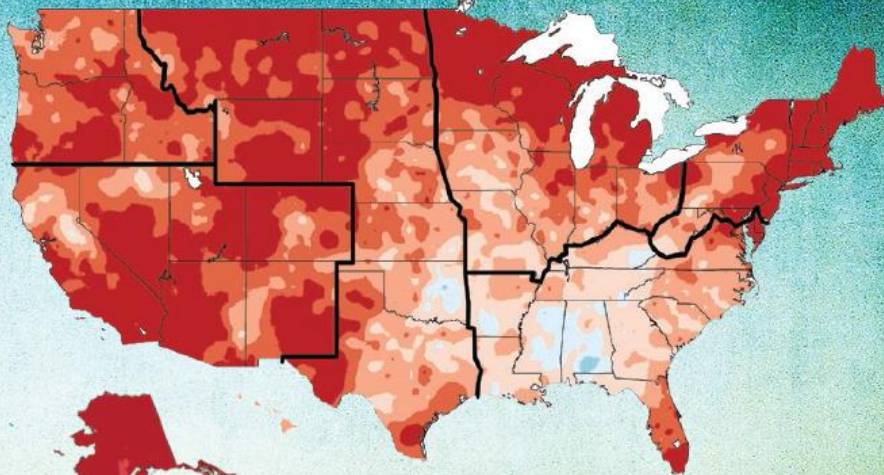


“Throughout the 21st century, climate-change impacts are projected to slow down economic growth, make poverty reduction more difficult, further erode food security, and prolong existing and create new poverty traps, the latter particularly in urban areas and emerging hotspots of hunger.”



# 2014 National Climate Assessment

## Climate Change Impacts in the United States



U.S. National Climate Assessment  
U.S. Global Change Research Program

### CONTENTS

Climate Change and the American People	1
1. OVERVIEW	3
2. OUR CHANGING CLIMATE	19

#### SECTORS

3. Water	69
4. Energy	113
5. Transportation	130
6. Agriculture	150
7. Forests	175
8. Ecosystems	195
9. Human Health	220
10. Energy, Water, and Land	257
11. Urban	282
12. Indigenous Peoples	297
13. Land Use and Land Cover Change	318
14. Rural Communities	333
15. Biogeochemical Cycles	350

#### REGIONS

16. Northeast	369
17. Southeast	371
18. Midwest	396
19. Great Plains	441
20. Southwest	462
21. Northwest	487
22. Alaska	514
23. Hawaii and Pacific Islands	537
24. Coasts	557
25. Coasts	579



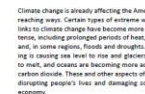
#### RESPONSE STRATEGIES

26. Decision Support	619
27. Migration	648
28. Adaptation	670
29. Research Needs	707
30. Sustained Assessment	719

#### APPENDICES

Appendix 1: Process	727
Appendix 2: Information Quality	733
Appendix 3: Climate Science	735
Appendix 4: FAQs	790
Appendix 5: Scenarios and Models	821
Appendix 6: Future Assessment	821
Topics	826
Abbreviations and Acronyms	828

### OVERVIEW AND REPORT FINDINGS



#### Climate Change: Present and Future

Climate change is already affecting the American people in far-reaching ways. Certain types of extreme weather events with links to climate change have become more frequent and/or intense, including prolonged periods of heat, heavy downpours, and, in some regions, floods and droughts. In addition, warming is melting ice levels in the ice and glaciers and Arctic sea ice to melt, and oceans are becoming more acidic as they absorb carbon dioxide. These and other aspects of climate change are disrupting people's lives and damaging some sectors of our economy.



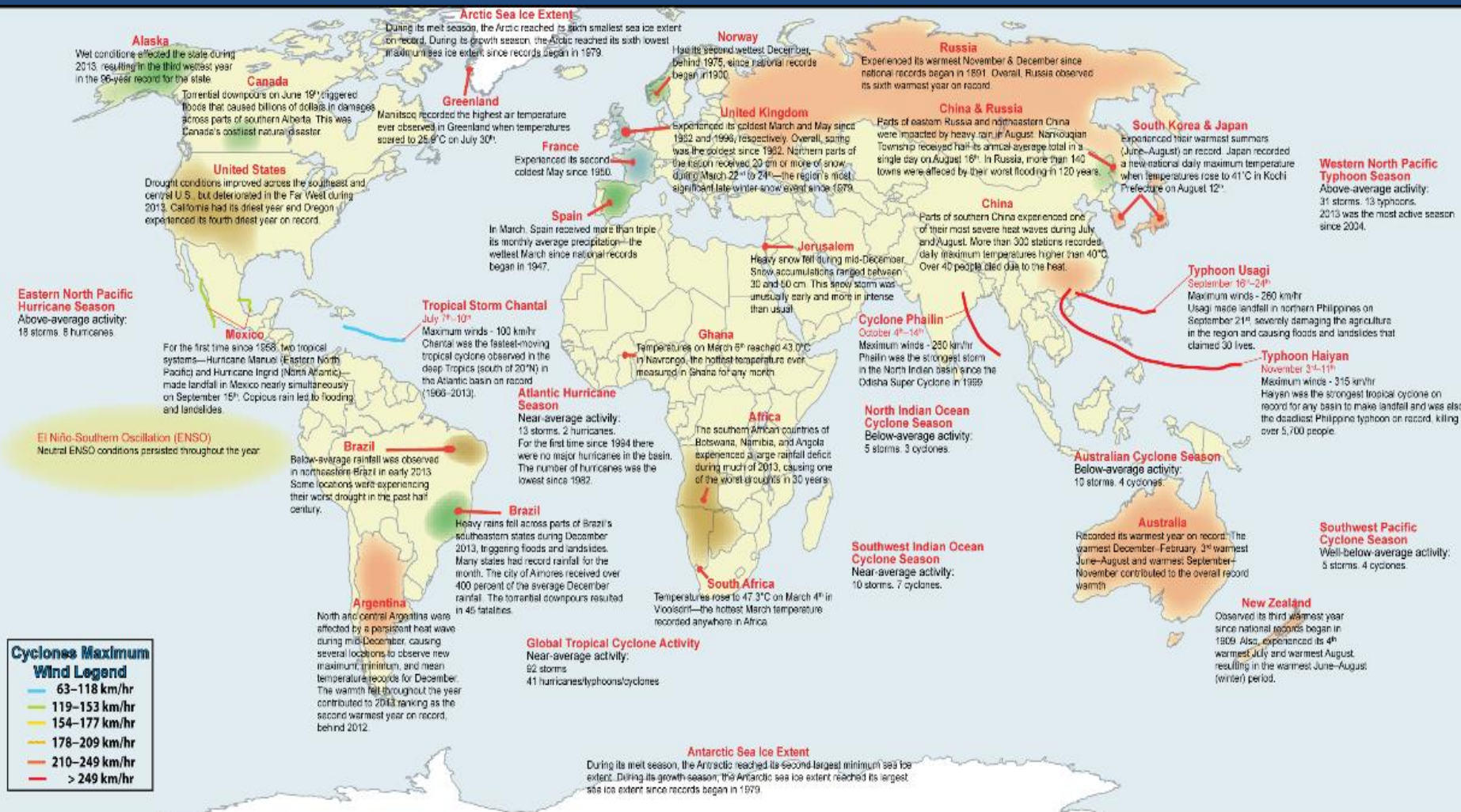
Multiple lines of independent evidence confirm that human activities are the primary cause of the global warming of the past 50 years. The burning of coal, oil, and gas, and clearing of forests have increased the concentration of carbon dioxide in the atmosphere by more than 40% since the Industrial Revolution, and it has been known for almost two centuries that this carbon dioxide traps heat. Methane and various oxide emissions from agriculture and other human activities, add to the atmospheric burden of heat-trapping gases. Data show that natural factors like the sun and volcanoes cannot have caused the warming observed over the past 50 years. Sensors on satellites have measured the sun's output with great accuracy and found no overall increase during the past half century. Large volcanic eruptions during this period, such as Mount Pinatubo in 1991, have exerted a short-term cooling influence. In fact, if not for human activities, global climate would actually have cooled slightly over the past 50 years. The pattern of tempera-



“Climate change, once considered an issue for a distant future, has moved firmly to the present.”



# 2013 Significant Climate Anomalies and Events



# 2011 & 2012 – Extreme Flooding and Drought on the Mississippi River





# Impacts on Infrastructure





# Infrastructure Interdependencies



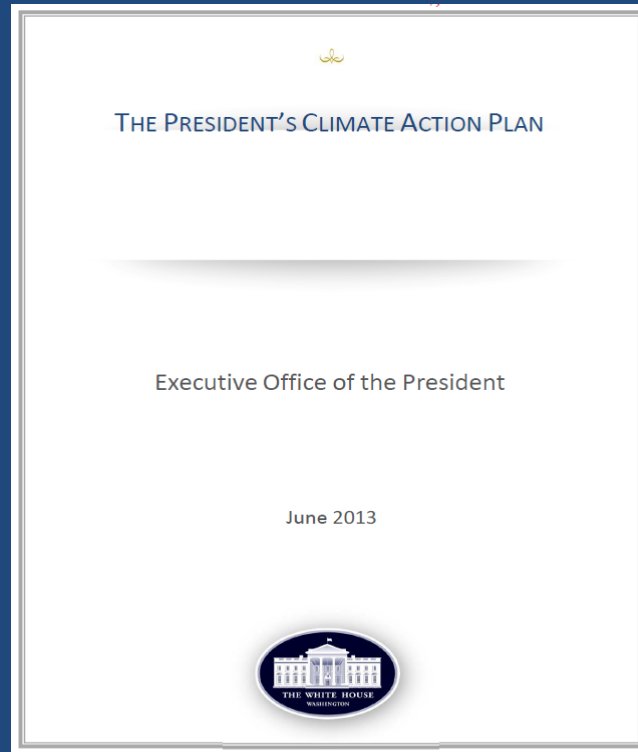


# Typhoon Haiyan



“[I]n a sense, climate change can now be considered another weapon of mass destruction, perhaps the world’s most fearsome weapon of mass destruction.”  
—Senator John Kerry on the destruction caused by Typhoon Haiyan

# Three Pillars of the President's Climate Action Plan



Cut Carbon  
Pollution in  
America



Prepare the  
United States  
for the  
Impacts of  
Climate  
Change



Lead  
International  
Efforts to  
Address  
Climate  
Change