



Climate Change Impacts on National Security

Threats to American Military Infrastructure, Readiness, and Lives



American Security Project

Fact Sheet

—
Esther Babson

February 2019

BOARD OF DIRECTORS



The Honorable Gary Hart, Chairman Emeritus

Senator Hart served the State of Colorado in the U.S. Senate and was a member of the Committee on Armed Services during his tenure.



Governor Christine Todd Whitman, Chairperson

Christine Todd Whitman is the President of the Whitman Strategy Group, a consulting firm that specializes in energy and environmental issues.



Nelson W. Cunningham, President of ASP

Nelson Cunningham is President of McLarty Associates, the international strategic advisory firm headed by former White House Chief of Staff and Special Envoy for the Americas Thomas F. "Mack" McLarty, III.



Brigadier General Stephen A. Cheney, USMC (Ret.)

Brigadier General Cheney is the Chief Executive Officer of ASP.



Norman R. Augustine

Mr. Augustine was Chairman and Principal Officer of the American Red Cross for nine years and Chairman of the Council of the National Academy of Engineering.



Matthew Bergman

Matthew Bergman is an attorney, philanthropist and entrepreneur based in Seattle. He serves as a Trustee of Reed College on the Board of Visitors of Lewis & Clark Law School.



Ambassador Jeffrey Bleich

The Hon. Jeffery Bleich heads the Global Practice for Munger, Tolles & Olson. He served as the U.S. Ambassador to Australia from 2009 to 2013. He previously served in the Clinton Administration.



Alejandro Brito

Alejandro Brito is President of Brito Development Group (BDG), LLP. In the last twenty years, Mr. Brito has overseen the design, construction, development and management of over 1,500 luxury housing units in Puerto Rico.



The Honorable Donald Beyer

Congressman Donald Beyer is the former United States Ambassador to Switzerland and Liechtenstein, as well as a former Lieutenant Governor and President of the Senate of Virginia.



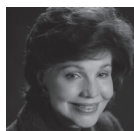
Lieutenant General Daniel Christman, USA (Ret.)

Lieutenant General Christman is Senior Vice President for International Affairs at the United States Chamber of Commerce.



Robert B. Crowe

Robert B. Crowe is a Partner of Nelson Mullins Riley & Scarborough in its Boston and Washington, DC offices. He is co-chair of the firm's Government Relations practice.



Lee Cullum

Lee Cullum, at one time a commentator on the PBS NewsHour and "All Things Considered" on NPR, currently contributes to the Dallas Morning News and hosts "CEO."



Nicholas Clark

Nicholas Clark is the former CEO and Executive Director of Alexium International. He is also co-founder and Managing Partner at Viaticus Capital.



Admiral William Fallon, USN (Ret.)

Admiral Fallon has led U.S. and Allied forces and played a leadership role in military and diplomatic matters at the highest levels of the U.S. government.



Scott Gilbert

Scott Gilbert is a Partner of Gilbert LLP and Managing Director of Reneo LLC.



Vice Admiral Lee Gunn, USN (Ret.)

Vice Admiral Gunn is the President of the Institute of Public Research at the CNA Corporation, a non-profit corporation in Virginia.



The Honorable Chuck Hagel

Chuck Hagel served as the 24th U.S. Secretary of Defense and served two terms in the United States Senate (1997-2009). Hagel was a senior member of the Senate Foreign Relations; Banking, Housing and Urban Affairs; and Intelligence Committees.



Lieutenant General Claudia Kennedy, USA (Ret.)

Lieutenant General Kennedy was the first woman to achieve the rank of three-star general in the United States Army.



The Honorable John F. Kerry

John Kerry is a distinguished fellow for global affairs at Yale University. In 2013, Kerry was sworn in as the 68th secretary of state of the United States. Kerry served for more than twenty-five years as a U.S. senator from Massachusetts.



General Lester L. Lyles, USAF (Ret.)

General Lyles retired from the United States Air Force after a distinguished 35 year career. He is presently Chairman of USAA, a member of the Defense Science Board, and a member of the President's Intelligence Advisory Board.



Dennis Mehiel

Dennis Mehiel is the Principal Shareholder and Chairman of U.S. Corrugated, Inc.



Stuart Piltsch

Stuart Piltsch is the Co-Founder and Managing Director of Cambridge Advisory Group, an actuarial and benefits consulting firm based in Philadelphia.



Ed Reilly

Edward Reilly is Global Chief Executive Officer of the Strategic Communications practice of FTI Consulting.



LtGen Norman Seip, USAF (Ret)

Lieutenant General Norman R. Seip, USAF (Ret) served in the Air Force for 35 years. His last assignment was Commander of 12th Air Force.



David Wade

David Wade is a consultant helping global corporations and organizations with strategic advice, public affairs and thought leadership, crisis communications, political intelligence gathering, and federal and legislative strategy.

IN BRIEF

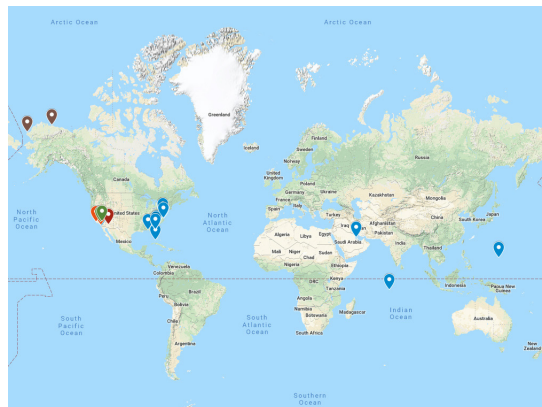
- The effects of climate change are harming U.S. military installations, costing billions of dollars and threatening national security.
- Extreme weather events, made more likely by a warming climate, are increasing the amount of resources devoted to missions like Defense Support of Civil Authorities (DSCA) and Humanitarian Assistance and Disaster Response (HA/DR).
- The military has been preparing for the national security impacts of climate change for over a decade. It has been empowered to act on this emerging threat by bipartisan measures in Congress requiring military action.

Climate change poses a direct threat to U.S. national security today. U.S. scientists tell us that a melting Arctic, more frequent droughts and floods, and superstorms are all examples of the changing climate in the United States. These present a greater challenge than just new and different weather patterns: they threaten the resiliency and readiness of the U.S. military through their impact on military infrastructure, disaster response, and the economy.

Vulnerability of U.S. Military Installations

Climate change already affects U.S. domestic and international military bases. Physical changes to the environment such as flooding, drought, and extreme storms disrupt U.S. military capabilities and facilities, including training ranges, bases, and housing.

In 2018 and 2019, the Department of Defense released two assessments on the vulnerability of U.S. military installations to the impacts of climate change. The two assessments found that **currently, over 50% of military installations face increased vulnerability from climate-related events**. Given that warming is expected to intensify over the next few decades, the impacts will be much worse if nothing is done to increase resilience. Key takeaways from the report include:



Vulnerable U.S. military bases around the world

- [Effects of a Changing Climate to the Department of Defense](#)¹
 - Based on this assessment of 79 mission assurance priority installations, **67% of the installations assessed currently face threats from flooding, 54% currently face threats from drought, and 46% currently face threats from wildfires.**
 - The above percentages increase when future vulnerabilities, not just current, are taken into consideration.

- [DoD Climate-Related Risk to DoD Infrastructure Initial Vulnerability Assessment Survey \(SLVAS\) Report](#)²
 - The initial self-administered survey found that over 50% of installations self-reported impacts on operations due to flooding, extreme temperature, wind, drought, and wildfire.

Increased Response to Extreme Weather

The military has, and will be, called on to respond to increasingly common natural disasters. These missions take away from training and strains our troops as they are deployed for longer periods of time.

- Defense Support to Civil Authorities (DSCA): In response to Hurricane Florence in 2018, the Department of Defense deployed a total of [13,470](#) personnel, 5,400 active-duty service members and 7,857 National Guard personnel to support hurricane relief efforts. USNORTHCOM made available multiple amphibious ships and elements of the 22nd Marine Expeditionary Unit to provide DSCA from the sea as needed.³
- Simultaneously, Super Typhoon Mangkhut swept through Guam, the Philippines, and Hong Kong, causing widespread damage and killing hundreds. As part of a Humanitarian Aid/Disaster Response (HA/DR) mission, the [USS Wasp Expeditionary Strike Group](#) with the 31st Marine Expeditionary Unit deployed to provide assistance in response to Typhoon Mangkhut.⁴

Economic Impact of Extreme Weather on Bases and Communities

Increasingly extreme weather also creates additional economic strain on both the surrounding community and the country at large. Military installations are a critical segment of the local economy. The installations provide jobs for civilians and bolster business within the surrounding communities. Damage to critical military infrastructure costs the military and taxpayers billions of dollars.

- In 1992, Hurricane Andrew leveled **Homestead Air Force Base**.
 - It's taken over two decades to recover but today the downgraded reserve base is a major contributor to the economic growth of South Florida, generating over [\\$331 million](#) into the local economy in fiscal year 2018—a 50 percent increase since 2008.⁵
- More recently in October 2018, **Tyndall Air Force Base** was hammered by Hurricane Michael.
 - Previously home to many of the Air Force's F-22s, the aircraft have now been relocated across the country.
 - Rebuilding will take years and may cost upwards of [\\$4.5 billion](#). The base has yet to return to full operations.⁶
 - Prior to the storm, the base was assessed to provide over [\\$595,000](#) in economic impact in Fiscal Year 2017.⁷



Cleanup after Hurricane Michael at Tyndall AFB.
USAF Photo

- Similarly, in 2018 **Marine Corps' Camp Lejeune** was severely damaged by Hurricane Florence and the subsequent flooding of the state.
 - Recent estimates suggest that recovery will cost around [\\$3.6 billion](#).⁸
 - The impact of losing both base readiness and economic viability has yet to be determined. Prior to the storm, the base was assessed to provide over [\\$3 billion](#) in economic benefits.⁹
- **Norfolk Naval Station**, the poster child of rising sea levels, has begun to build new, double decker piers to counter the sinking ground and rising seas. Unfortunately, there have been delays in construction as each new pier costs over [\\$100 million](#).¹⁰

The Department of Defense acknowledges climate change as a threat to U.S. national security and is making strides to combat this threat. In addition to assessing vulnerabilities at military installations, the DoD is investing in long-term solutions, building resilient and renewable-powered microgrids and developing electric vehicles.

Climate change will have significant consequences for U.S. national security. The effects of climate change will undermine military installations around the world, impacting readiness. Addressing this threat is vital for maintaining U.S. military lethality and readiness at home and around the world.

Endnotes

1. Office of the Under Secretary of Defense for Acquisition and Sustainment. "Report on Effects of a Changing Climate to the Department of Defense." January 2019. <https://www.americansecurityproject.org/wp-content/uploads/2019/01/DoD-Effects-of-a-Changing-Climate-to-the-Department-of-Defense.pdf>.
2. Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics. Department of Defense Climate-Related Risk to DoD Infrastructure Initial Vulnerability Assessment Survey (SLVAS) Report. January 2018. <https://climateandsecurity.files.wordpress.com/2018/01/tab-b-slv-as-report-1-24-2018.pdf>.
3. Ryan Pickrell. "More than 10,000 US service members sprang into action after Florence hit — these military photos show them right in the thick of it." Business Insider. September 17, 2018. <https://www.businessinsider.com/us-military-service-members-rescue-relief-hurricane-florence-pictures-2018-9>.
4. Navy Petty Officer 1st Class Alexandra Seeley. "Navy Assists Typhoon Mangkhut Recovery Efforts in Marianas, Guam." U.S. Department of Defense. September 14, 2018. <https://dod.defense.gov/News/Article/Article/1633362/navy-assists-typhoon-mangkhut-recovery-efforts-in-marianas-guam/source/GovDelivery/>.
5. Homestead Air Reserve Base. "Homestead Air Reserve Base Economic Impact." January 3, 2019. <https://www.homestead.afrc.af.mil/About-Us/Fact-Sheets/Display/Article/700488/homestead-air-reserve-base-economic-impact/>.
6. Howard Altman. "Tyndall Air Force base finds new mission with the billions to be spent repairing hurricane damage." Tampa Bay Times. January 18, 2019. <https://www.tampabay.com/florida/2019/01/18/tyndall-air-force-base-finds-new-mission-with-the-billions-to-be-spent-repairing-hurricane-damage/>.
7. Tyndall Air Force Base. "2017 Economic Impact Analysis." <https://www.tyndall.af.mil/Portals/107/documents/AFD-180604-018.PDF?ver=2018-06-04-154005-160>.
8. WUNC. "Hurricane Florence Repairs At Camp Lejeune Will Cost Billions, And More Big Storms Are Likely." January 16, 2019. <http://www.wunc.org/post/hurricane-florence-repairs-camp-lejeune-will-cost-billions-and-more-big-storms-are-likely>.
9. U.S. Marine Corps Installations East. "Marine Corps Installations East: Economic Impact 2017." 2017. <https://www.mcieast.marines.mil/Portals/33/Documents/COMREL/2017-MCIEAST-Economic-Impact.PDF>.
10. Evan Lehmann. "Inside one naval base's battle with sea-level rise." E&E News. October 27, 2016. <https://www.eenews.net/stories/1060044863>.

The American Security Project (ASP) is a nonpartisan organization created to educate the American public and the world about the changing nature of national security in the 21st Century.

Gone are the days when a nation's security could be measured by bombers and battleships. Security in this new era requires harnessing all of America's strengths: the force of our diplomacy; the might of our military; the vigor and competitiveness of our economy; and the power of our ideals.

We believe that America must lead in the pursuit of our common goals and shared security. We must confront international challenges with our partners and with all the tools at our disposal and address emerging problems before they become security crises. And to do this we must forge a bipartisan consensus here at home.

ASP brings together prominent American business leaders, former members of Congress, retired military flag officers, and prominent former government officials. ASP conducts research on a broad range of issues and engages and empowers the American public by taking its findings directly to them via events, traditional & new media, meetings, and publications.

We live in a time when the threats to our security are as complex and diverse as terrorism, nuclear proliferation, climate change, energy challenges, and our economic wellbeing. Partisan bickering and age old solutions simply won't solve our problems. America – and the world - needs an honest dialogue about security that is as robust as it is realistic.

ASP exists to promote that dialogue, to forge that consensus, and to spur constructive action so that America meets the challenges to its security while seizing the opportunities that abound.



American Security Project

www.americansecurityproject.org