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Oral Statement by

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on

Science and Policy Perspectives:

The National Security Implications of Climate Change

Submitted to the

**Committee on Science, Space and Technology
United States House of Representatives**

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Thank you Ranking Member Johnson and distinguished members of the Committee on Science, Space and Technology for the opportunity to present today. This is a privilege to come before you today at this roundtable and discuss this very important topic.

I am David Titley and currently serve as the Founding Director of the Center for Solutions to Weather and Climate Risk at the Pennsylvania State University. I had the privilege of serving in the United States Navy for 32 years and retired in 2012 as the Oceanographer and Navigator of the Navy, and Director of U.S. Navy Task Force Climate Change. Subsequent to my time in the Navy, I served as the Chief Operating Officer position of the National Oceanic and Atmospheric Administration. Thank you for holding this roundtable.

In the Navy we have a saying, to just give me the ‘Bottom Line Up Front’ or BLUF. Here’s my BLUF for today:

- **The rapid change in climate will have significant impacts on our national security:** The climate will continue to change, rapidly, for the remainder of the 21st Century and likely beyond. The days of climate stability that we have experienced for much of human civilization are over. Climate change impacts our security by:
 - **Changing the physical environment in which our Soldiers, Sailors, Airmen and Marines will operate.** The Arctic is an example of an operational environment that is changing rapidly today.
 - **Posing increasing risks to the Department of Defense’s bases and training ranges.** In addition to sea level rise threatening our coastal installations, other bases and training ranges are at risk from increased frequency and severity of wildfires, droughts and floods.
 - **Making already unstable situations worse, sometimes catastrophically so.** Climate change can be a powerful link in a chain of events that, if not broken can lead to runaway instability.
- **We know how to succeed even when the future is not perfectly known:** Traditional risk planning takes the chance or probability of an event and multiplies it by the impact. But even when it is difficult to assess the likelihood of a specific event, there are still available methods by which risk planning and mitigation can be accomplished. Our national security teams frequently have to account for these “deep uncertainties” and have a variety of tools to assist them. We can apply these methods and adapt them to the climate change challenge.

The Department of Defense has taken the issue of climate change and national security seriously for over a decade. The security establishment does not view this as a partisan, or a ‘back door’ argument to advocate for specific national policies or programs. **This is fundamentally an issue about the future readiness of our Armed Forces.**

Our forces must be prepared to operate in a rapidly changing Arctic, with decreasing sea ice, increasing human activity, and an ascendant Russia. While the Russians maintain their military buildup in the High North is peaceful and for defensive purposes only, it is impossible to ignore the aggressive operations of Russian forces in that part of the world.

A rapidly changing climate may create, accelerate, and exacerbate already unstable situations throughout the world. These impacts can come in the form of food shortages, extreme drought, and forced and unmanaged migration, making hundreds of thousands of people *de facto* climate refugees. Good governance, early intervention, and proactive diplomacy, led by our Department of State, and USAID, with the Department of Defense in a supporting role, can be effective mechanisms to manage this instability.

Here are two recommendations:

- **Adjust policies today for what we know** – and for what we might reasonably expect in the coming decades. We learned in the military a long time ago that hope by itself is rarely a good strategy. Addressing rapid climate change will be a exercise in risk management for the foreseeable future.
- The Department of Defense, along with many others, has leveraged the investments, authorized by this Committee, in basic and applied climate science to better understand the parameters of the future risks it faces. The research conducted by NOAA, NASA and the NSF is part of the fabric of our overall security structure. **The U.S. science and research agencies require adequate resourcing and support by our Nation.**

In closing I wish to thank the House for the addition of a forward-thinking climate-related amendment in this year’s mark-up language for the National Defense Authorization Act. It is very helpful to have Congressional language and intent that encourages the DoD to think in a proactive manner when managing climate risks.

Thank you very much for your time and attention; I look forward to taking your questions.