National Security Implications of Climate Change

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Good morning. Senator Bray, thank you for your kind invitation to provide your committee information on the national security implications of climate change. I am no expert on climate change, but I do have a perspective on it as a result of my experiences and research that I am glad to share with you this morning.

The opinions and conclusions I express are my own, and they do not represent the views of my former employer, the U.S. Army, or my current employer, U.S. Immigration and Customs Enforcement.

After 25 years of active duty, I retired as a colonel from the Judge Advocate General's Corps in 2011, and returned home to Vermont. While I was on active duty, I had two tours in Alaska, and two operational tours, one in Bosnia and the other in Afghanistan. Each of these tours was important to me in developing my understanding of climate change. I was an assistant professor at the U.S. Army Command & General Staff College, and at West Point. As an adjunct at UVM now, I teach *Cyber Policy & Conflict*, *Environmental Politics*, and *Environmental Law*.

I have reviewed the resolution before you regarding climate change, and from my perspective on national security I agree with it on all counts. Now, I do believe climate change in some form has probably always been happening somewhere on this planet. However, on the basis of the different studies and reports I have read over time, and my own experiences, I believe that human activities are contributing substantially to the changes we are seeing in our environment related to climate and weather.

I say "believe," because I don't know this for sure. But my time in the military taught me that you can't wait for a perfect operational picture of a situation before making a decision. The world is too complex a place to ever fully understand what is going on; it's non-linear and always changing in ways difficult to predict with certainty. So, you consider the facts that appear objectively reliable, identify those areas where your factual knowledge might be weak, analyze what you think you know in a consistent manner, and then prepare for contingencies and emergent situations that threat trends suggest. Climate change is a threat trend that concerns me.

The security agencies of the United States that are focused on external threats recognize climate change, whatever its causes, as an aspect of current and future security operations. Based on public domain information, including the 2014 QUADRENNIAL DEFENSE REVIEW, the U.S. military is taking a three-pronged approach to reduce the risk of potential climate change impacts upon military operations.

First (and very appropriate given the enormous amount of fossil fuels DOD consumes each year), from a mitigation standpoint, DOD is investing in developing green energy sources. These efforts span a spectrum of research and operations – from developing algae-based biofuel for ships, to testing solar panels for remote ground force locations to power their computers.

The development of alternative fuels is consistent with the green policy guidance given to the military by the administration, and the effect that such sources would have on reducing DOD's carbon footprint is often positively highlighted. Practically speaking, I doubt whether DOD would be engaging in these efforts unless there were also sound operational reasons for doing so, in addition to any mitigation benefits. For example, biofuels could reduce our dependence on countries that produce petroleum products, but whose politics may be unpredictable or antagonistic. Tactical solar could reduce the number of casualties and equipment losses we sustain as we try to protect the fuel convoys necessary to power our generators.

The second and third prongs are probably best seen from a resilience perspective. The second prong of DOD's efforts is to harden its installations to make to them less susceptible to the effects of climate change, particularly extreme weather events. These changes could be fairly subtle, such as ensuring that roads in flood-prone exercise areas have larger diameter culvert pipes installed than might have been called for using traditional engineering risk assessment factors. The third prong appears to be an increased recognition that both state and local authorities here at home and certain foreign allies will likely need better training and equipment to allow them to be able to cope with the effects of extreme weather events – effects likely exacerbated by climate change.

Frankly, it is this assistance to foreign allies to help them prepare for disaster relief that concerns me the most from a national security perspective. Not because such training and equipment is bad – unfortunately, it is likely to be used more often as climate change develops, and it would hopefully reduce the number of times that the U.S. military is called upon as the international first-responder. Perhaps this reflects a considered judgment that climate change is inevitable – therefore choosing a course of action that deals with its results is the practical way forward. I don't know. Regardless, my concern is that treating extreme weather events occurring overseas as an operational fact, rather than developing doctrine and devoting resources to address climate change as an operational process that needs to be mitigated, reduces our chances for military success.

To be blunt, it is probably not in the best interests of America today that people anywhere in the world decide to engage in armed conflict. The world's population has become increasingly interconnected through globalization and the Internet, and the growth of the megacity in the developing world. Today's wars amongst the people, as General Sir Rupert Smith has described them, are therefore different in many important respects from the rural-centered insurgencies conducted by Mao and Giap in developing countries back in the 20th Century.

Developed countries will not be immune to the effects of climate change, but they are better resourced to be able to respond to its challenges. In the developing countries, however, those human and material resources often do not exist. Further, these countries generally have expanding populations despite little growth in arable land, and in many cases are experiencing rapid urbanization as rural populations move away from the countryside, and seek greater opportunities in the cities.

These new city dwellers often occupy marginal real estate, such as swampy coastal areas, that is prone to flooding. Climate change could lead to food and water shortages because of drought and deforestation, and conflict over farmland and water resources. Disease could spread beyond its normal geographic or temporal ranges as the climate changes. All of these factors would likely lend themselves to reduced political and economic stability in these more vulnerable countries. I don't know that there is any empirical evidence that climate change itself results in armed conflict, but I strongly suspect it is or at least will be an important aggravating factor.

There is another level of understanding climate change that we must confront in order to promote stability in developing countries. Different organizations and nations have begun to recognize that there is a gender component to stability issues. Generally speaking, women and girls are impacted differently and more severely than men and even boys as a result of armed conflict. They tend to be more likely to suffer sexual violence, and less able to adapt to life as refugees and displaced persons because they are ordinarily the primary family caregivers. Further, they are less likely to be educated or to have marketable skills that can allow them to make a living and generate hard cash.

Not surprisingly, women in these countries tend to experience the effects of climate change differently and more severely than men for similar reasons. They have fewer economic opportunities to earn money that could be used for climate change mitigation and resilience investments; they fail to receive educations because their time is consumed with locating ever more scarce biofuel and water for their families' domestic use; they possess fewer economic assets such as bank accounts, land and water rights; and they tend to be politically and socially marginalized.

If resource scarcity amplifies the negative effects of armed conflict, then women and girls in these societies will likely endure a perfect storm of gender-differentiated suffering when war and climate change collide. This is more than just discriminatory – it is a direct threat to our interests. America works to promote international stability, because that leads to the rule of law, and hopefully greater democracy and freer markets, which all benefit our well-being in the long run. The gender-differentiated aspects of climate change that I described undercut these efforts.

Effectively dealing with climate change from a national security perspective is therefore much more than a question of green fuel for warships or wide culverts under roadbeds. It must also include recognizing climate change as a process that is likely to challenge our values and bedrock beliefs, and our ability to foster greater security and equity among the different nations' populations with whom we are increasingly engaged.

Thank you for the opportunity to speak to you today, and to highlight some aspects of the national security implications of climate change that might be useful to the Senate in its consideration of the proposed resolution.

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As an active duty attorney for nearly 25 years, he served as an appellate attorney; senior defense counsel in Stuttgart, Germany; Chief of International & Operational Claims in Mannheim, Germany; Claims Chief in Sarajevo, Bosnia-Herzegovina, with the NATO Implementation Force Headquarters; deputy general counsel and then later as the general counsel for U.S. Army Alaska in Anchorage; and as a staff attorney and legal observer/trainer at Allied Command Transformation in Norfolk, Virginia, and the Joint Warfare Centre in Stavanger, Norway. His final operational assignment was as Chief Legal Advisor, NATO International Security Assistance Force, in Kabul, Afghanistan, 2008-2009. He was an assistant professor at the U.S. Army Command & General Staff College, 2000-2003, and at West Point, 2009-2011.

Prescott's current research and writing focuses on four major evolving international security topics: leadership & ethics, the environment, gender, and cyber. His recent work includes:

♦ *Ordinary Soldiers: A Study in Law, Ethics and Leadership*, U.S. HOLOCAUST MEMORIAL MUSEUM (2014)
♦ *Climate Change, Gender and Rethinking Military Operations*, VERMONT JOURNAL OF ENVIRONMENTAL LAW (2014)
♦ *Building the Ethical Cyber Commander and the Law of Armed Conflict*, RUTGERS COMPUTER & TECHNOLOGY LAW JOURNAL (2014)
♦ *NATO Gender Mainstreaming and the Feminist Critique of the Law of Armed Conflict*, GEORGETOWN JOURNAL ON GENDER AND THE LAW (2013)
♦ *Ridgelines and the National Security Implications of Commercial Wind Energy Development in Vermont*, VERMONT JOURNAL OF ENVIRONMENTAL LAW (2012)