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before the
U.S. Senate Subcommittee on International Development and Foreign Assistance,
Economic Affairs and International Environmental Protection
Hearing on, "Drought, Flooding, and Refugees: Addressing the Impacts of Climate
Change in the World's Most Vulnerable Nations"
Washington, D.C., October 15, 2009
10:00 a.m. 419 Dirksen Senate Office Building

Mr. Chairman, Members of the Committee, Ladies and Gentlemen, it is an honor to appear before you today to discuss the critically important matter of climate change and its implications for U.S. foreign policy. Thank you for the opportunity to share my views, which are based on 35 years of service in the United States Air Force.

In my final assignment, I served as the Deputy Commander of United States European Command. Over the past three years, I have had the privilege of serving with some of our nation's most distinguished and senior retired military leaders on the CNA Military Advisory Board. I would like to take this opportunity to summarize, briefly, the findings of the Board's work as they relate to the committee's deliberations.

CNA's Military Advisory Board has produced two reports: the first, released in April, 2007, examining the national security threats of climate change, and the second, released in May of this year, which analyzed the national security threats of America's current and future energy posture.

Our first report, *National Security and the Threat of Climate Change*, concluded that climate change poses a "serious threat to America's national security", acting as a "threat multiplier for instability" in some of the world's most volatile regions, adding tension to stable regions, worsening terrorism and potentially dragging the United States into conflicts over water and other critical resource shortages.

On the most basic level, climate change has the potential to create sustained natural and humanitarian disasters on a scale and at a frequency far beyond those we see today. The consequences of these disasters will likely foster political instability where societal demands for the essentials of life exceed the capacity of governments to cope.

Other findings of our *National Security and the Threat of Climate Change* report include:

- Reduced Access to Fresh Water. Adequate supplies of fresh water for drinking, irrigation, and sanitation are the most basic prerequisite for human habitation. Changes in rainfall, snowfall, snowmelt, and glacial melt have significant effects on

fresh water supplies, and climate change is likely to affect all of those things. In some areas of the Middle East, tensions over water already exist

- Impaired Food Production. Access to vital resources, primarily food and water, can be an additional causative factor of conflicts, a number of which are playing out today in Africa. Probably the best known is the conflict in Darfur between herders and farmers. Long periods of drought resulted in the loss of both farmland and grazing land to the desert. The failure of their grazing lands compelled the nomads to migrate southward in search of water and herding ground, and that in turn led to conflict with the farming tribes occupying those lands. Coupled with population growth, tribal, ethnic, and religious differences, the competition for land turned violent. I believe this shows how lack of essential resources threatens not only individuals and their communities, but also the region and the international community at large.
- Land Loss and Flooding: Displacement of Major Populations. About two-thirds of the world's population lives near coastlines, where critically important facilities and infrastructure, such as transportation routes, industrial facilities, port facilities, and energy production and distribution facilities are located. A rise in sea level means potential loss of land and displacement of large numbers of people. Rising sea levels will also make coastal areas more vulnerable to flooding and land loss through erosion. Furthermore, most of the economically important major rivers and river deltas in the world—the Niger, the Mekong, the Yangtze, the Ganges, the Nile, the Rhine, and the Mississippi—are densely populated along their banks. As sea levels rise and storm surges increase, saline water can contaminate groundwater, inundate river deltas and valleys, and destroy croplands.
- Mass Migrations Add to Global Tensions. Some migrations cross international borders. Environmental degradation can fuel migrations in less developed countries, and these migrations can lead to international political conflict. For example, the large migration from Bangladesh to India in the second half of the last century was due largely to loss of arable land, among other environmental factors.
- Potential Escalation of Conflicts over Resources: To live in stability, human societies need access to certain fundamental resources, the most important of which are water and food. The lack, or mismanagement, of these resources can undercut the stability of local populations; it can affect regions on a national or international scale.

Since the CNA Military Advisory Board's April 2007 report was published, a National Intelligence Assessment on global climate change confirmed our findings. And the most recent scientific evidence reveals that climate change is occurring at a much faster pace than originally believed. The Arctic is a case in point. New evidence and analysis suggests that the Arctic could be substantially ice-free in the summer within in as few as 30 years, not at the end of the century as previously expected.

Some may look at this changing analysis as a reason, or an excuse, for delay. We believe that would be the wrong path.

As military professionals, we were trained to make decisions in situations defined by ambiguous information and little concrete knowledge of the enemy intent. We based our decisions on trends, experience, and judgment, because waiting for 100% certainty during a crisis can be disastrous, especially one with the huge national security consequences of climate change. And in the case of climate change, the trends are clear: the global environment is changing.

In thinking about the best ways to deal with this growing threat, we need to keep clearly in mind the close relationship among the major challenges we're facing.

Energy, security, economics, and climate change – these are all connected. It is a system of systems that is very complex. And we need to think of it in that way and not simply address small, narrow issues, in the hope that they will create the kind of change needed to fundamentally improve our future national security. Interconnected challenges require comprehensive solutions.

These are interconnected challenges that require comprehensive solutions, and it will take the industrialized nations of the world to band together to demonstrate leadership – and a willingness to change – not only to solve our current economic problems, but to address the daunting issues related to global climate change.

And here, let me add my firm belief that it is the responsibility of the United States to be first among leaders. If we don't make changes, then others won't. We need to look for solutions to one problem that can be helpful in solving other problems. That's one of the things we uncovered in our work – that there are steps that can help us economically, militarily, diplomatically. And those steps fit with the direction the world is heading in its pursuit of climate solutions.

As retired Marine Corps General Anthony Zinni, former commander of U.S. Central Command, and Military Advisory Board Member has said “We will pay now to reduce greenhouse gas emissions today...or we will pay the price later.”

Building on a key finding in the 2007 report – that climate change, national security and energy dependence are inextricably intertwined – the CNA Military Advisory Board devoted over one year to examining our national energy posture, and, this past May, released its second report entitled: *Powering America's Defense: Energy and the Risks to National Security*.

While most of the findings of our second report are beyond the scope of this hearing, the Military Advisory Board's primary conclusion was that America's energy posture constitutes a serious and urgent threat to national security -- militarily, diplomatically and economically.

Our second report also concludes that we cannot pursue energy independence by taking steps that would contradict our emerging climate policy. Energy security and a sound

response to climate change cannot be achieved by increased use of fossil fuels. Our nation requires diversification of energy sources and a serious commitment to renewable energy. Not simply for environmental reasons – but for national security reasons.

Some may be surprised to hear former generals and admirals talk about climate change and clean energy, but they shouldn't be. In the military, you learn that force protection isn't just about protecting weak spots; it's about reducing vulnerabilities well before you get into harm's way. That's what this work is about.

Unless we take dramatic steps to prevent, mitigate, and adapt, climate change will lead to an increase in conflicts, and in conflict intensity, all across the globe. It's in this context – a world shaped by climate change and competition for fossil fuels– that we must make new energy choices.

But achieving the end state that America needs requires a national approach and strong leadership at the highest levels of our government.

I conclude by quoting from the foreword to our May, 2009 CNA Military Advisory Board report:

The challenges inherent in this suite of issues may be daunting, particularly at a time of economic crisis. Still, our experience informs us there is good reason for viewing this moment in history as an opportunity. We can say, with certainty, that we need not exchange benefits in one dimension for harm in another; in fact, we have found that the best approaches to energy, climate change, and national security may be one in the same.

If we act with boldness and vision now, future generations of Americans will look back on this as a time when we came together as a Nation and transformed a daunting challenge into an opportunity for a better quality of life and a more secure future for our world.

Thank you again for the opportunity to address the Committee and contribute to this important national discussion.