WRITTEN STATEMENT OF
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Chairman Boxer, Ranking Member Inhofe, Members of the Committee, Ladies and Gentlemen, I am honored to appear here today with this distinguished panel to discuss the incredibly important issue of climate change and national security. I am currently a dual-degree graduate student at Harvard Business School and the Harvard Kennedy School of Government. More importantly for these hearings, however, I am also a former Captain in the US Army with tours in both Iraq and Afghanistan. Additionally, I have worked with Amory Lovins at Rocky Mountain Institute as well as spent time at the National Renewable Energy Laboratory. It is through this combination that I feel qualified to speak to the challenges that our nation's national security apparatus will face as the impacts of climate change become more pronounced.

I give the following testimony under the assumption that the world's climate is changing and that the burning of fossils fuels and increased deforestation since the beginning of the Industrial Revolution has artificially accelerated this change. Reports produced by the Intergovernmental Panel on Climate Change reveal that global atmospheric concentrations have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values.[1] In fact, the IPCC states that CO_2 levels have increased from 280 ppm to 379 ppm over that time with the fastest acceleration coming in the last 10 years. Additionally, continuous measurements taken from the observatory atop Mauna Loa, Hawaii depict a steady rise in atmospheric CO_2 levels since the measurements began in the 1950s.[2]

Again according to the IPCC, a steady rise in CO2 levels will likely to almost certainly result in severe changes to the world's climate. The effects of this change are deemed very likely to result in a rise of average world temperatures and increased precipitation events in terms of severity and frequency. The IPCC further stipulates that climate change will likely result in more areas being affected by drought conditions, increases in intense tropical cyclone activity, and a greater incidence of extreme high sea levels.[3] These are environmental changes, but they will have human impacts- both here and abroad.

I am not and never have been a scientist. But I have been a soldier in combat and like all soldiers in combat, I've had to make decisions with less than perfect information and various levels of uncertainty. As former Army Chief of Staff, General Gordon Sullivan wrote in a study on national security and climate change, "if you wait until you have 100% certainty,

something bad is going to happen to you on the battlefield." The reality in combat is that absolute certainty is a very rare commodity. However, if 99 out of 100 different sources came to me and said that if I kept leading my soldiers down a certain path then we'd almost certainly get sniped at, very likely to be targeted by a roadside bomb, and likely to get ambushed from all sides, then I'd change my plan. I'd rather find another way to accomplish my mission than listen to a lone outlier simply because his advice allows me to continue down the road I'm already on.

That is what I would have done in Afghanistan and it's what America must do now. Though experts and scientists have been warning us for years that we are walking into an ambush, we have ignored this advice and chosen instead to listen to the relative few who tell us that there really is no ambush or that if there is one, it won't be that bad. I've been ambushed- my face will always bear the scars from that day— and I can tell you that from the receiving end, all ambushes are bad. The time has come for America to stop hiding from the danger of climate change and instead lead the world in the fight against it.

Our nation's military, as great as it is, cannot take a hill that will stop temperatures from rising or wage a counterinsurgency against a storm surge. An exquisitely coordinated bombing campaign cannot stop glaciers from melting nor can all the ships in our Navy prevent sea levels from rising. If the world is to stop these things from happening then the fight must start here. It must start here in the halls of Congress and emanate throughout the government and private sector in the form of the creation of a vibrant, clean economy that revitalizes, not suppresses this great nation and those who live within it.

If Congress and America fail to lead on this issue then there will be a role for the military to play. More violent storms will wreck havoc both on our cities and our many military bases that are located along the coasts and will require a response from our military. We saw this during the aftermath of Katrina when, amidst two wars, a brigade from the 82nd Airborne Division was sent from North Carolina to New Orleans to assist in the stabilization effort. Melting in the Arctic has opened sea-lanes that have never been open before requiring a naval response as well as increasing tensions over the potential resources located in what was a previously inaccessible area. These are military realities caused by climate change.

In regards to America's internal coastal protection or defending of the new Arctic sea passages, I am not and never claimed to have been a reconstruction engineer or a naval officer. I was an Infantry officer. I lead soldiers on the ground in hostile situations and my experiences there have given me an appreciation for what our fighting men and women will face in the future if we do not act decisively against climate change.

Who among us would stand by and watch our loved ones slowly wither away and die from starvation? Who would not look to relocate if the area where you lived contained less and less drinking water, year after year? Or if the land you lived on was flooded so often that you and your family were almost permanently living in water, unable to find food and increasingly susceptible to diseases such as malaria, dengue fever, or cholera?

The answer is that we would all go elsewhere and that they—those living in areas that will be particularly hard hit by climate change such as sub-Saharan Africa or Southern and Southeast Asia—all will as well. The question that we must be asking is not just where will people go, but how are the people already living there going to react? This scenario could play out in a

number of areas, but let me quickly describe how one such situation could develop and how it would impact our national security.

If sea levels continue to rise, low-lying communities become increasingly vulnerable to storm surges not to mention tsunamis like the one that devastated large swaths of Southeast Asia in 2004. This is a particularly salient fact for Bangladesh given that 46% of its population, or 71 million people, lives in low-lying areas.[4] 15 million of those live just 2-3 feet above sea level.[5] Unimpeded climate change looks like the following for the people of Bangladesh.

Storm surges magnified by rising sea levels create a quasi-permanent state of flooding. This flooding of seawater makes a vast majority of the water supply undrinkable and unusable for agriculture. Millions then find themselves existing in flooded land without adequate sources of clean, potable water or sufficient means to produce or procure food. Sanitation levels diminish and, combined with a lack of clean water, diseases such as cholera and malaria begin to wreck havoc. People—potentially millions of people—will be forced to relocate, but have no good options as to wear to go. India by this time will have completed the wall that they are already building to keep the Bangladeshis out, so they won't be able to go there. The central government in Dhaka will potentially be overwhelmed by these events.

With nowhere for people to go refugee camps will be created and a case for a humanitarian mission, likely involving the U.S. in some capacity, will be made. As is often the case, anger, bitterness, and hopelessness will spread through these camps and, like the mosquitoes born in the stagnant water left after the floods, extremism will be borne and spread as well. In a relatively short span, a change in the climate has turned the already relatively poor nation of Bangladesh into a failed state, potentially destabilized an entire region, sparked a humanitarian crisis, and created a breeding ground for extremists. All of these conditions will necessitate a response from our national security apparatus. This conceivable situation is what I think of when I picture what GEN Anthony Zinni, former CENTCOM Commander, was referring to when he acknowledged that failing to reduce our greenhouse gas emissions will force us to pay a price in military terms that will involve human lives and exact a human toll.[6] This is the human face of climate change. This is the national security threat.

While the potential situation I described above is hypothetical, the threat and demands it would place on the US military are not that abstract. In 2004, when a tsunami devastated large portions of Indonesia, it was the American military that responded. A military response was required largely because the military was, and remains, the only institution in the world capable of combining the security and logistical capabilities necessary for such an operation. In 1992, America sent its military into Somalia to feed those forced into starvation by prolonged periods of drought.

While these actions of benevolence and generosity arguably depicted America at its best, they were not without cost. Operations in Indonesia cost an average of $5 million dollars a day.[7] When relief turned into peacekeeping in Somalia, 16 US Army Rangers lost their lives. As a changing climate increases the severity of droughts in Africa and the intensity of storms in Asia, the demand for an American response will increase as well. Not only will this be costly in dollar and human terms, but it will also likely impede the military's ability to adequately address the more conventional threats that are sure to arise. As climate change wrecks havoc across the world so too will it wreck havoc on the military's ability to properly handle the nation's national security interests.

I stand before you today as a former Infantryman, as a graduate of West Point, and as an educated citizen to unequivocally urge this body to chart a new path away from the climate change ambush that our current course is leading us towards. To pass legislation that meets the threat of climate change head on by taking the appropriate and responsible measures to stimulate our economy and our people through the creation of a clean, new energy system for America. America can and must do better— the security of the nation depends on it.

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[1] IPCC Interim Working Group Report 1, April 2007, ; IPCC Synthesis Report, November 2007. (http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm)

[2] NOAA Climate Monitoring and Diagnostic Laboratory

[3] IPPC.

[4] Busby, Joshua "Climate Change and National Security: An Agenda for Action," Council on Foreign Relations (http://www.cfr.org/publication/14862/climate_change_and_national_security.html)

[5] CNA Report on "National Security and the Threat of Climate Change" (April 2007) (http://www.cna.org/nationalsecurity/climate/)

[6] Ibid.

[7] US State Department report on "Going the Distance: The U.S. Tsunami Relief Effort 2005" http://www.ciaonet.org/wps/dod147/dod147.pdf