July 15, 2008

Homeland Security Challenges of Global Climate Change

Patrick E. Tolan

Available at: https://works.bepress.com/patrick_tolan/3/
 Homeland Security Challenges of Global Climate Change

By Patrick E. Tolan, Jr. *

The National Defense Authorization Act for Fiscal Year 2008 directs military planners to consider the effects of climate change on national security. ¹ This directive should come as no surprise given the increasing (and now overwhelming) international acceptance of global warming as a byproduct of human activity and prognostications of the myriad ills that such warming will produce. ² While the acknowledgement of mankind’s contribution to global warming is, of itself, not particularly remarkable, the emerging consensus concerning the likely secondary climatic effects of Global Warming does pose cause for concern.

A connection once challenged by many in the academic, political, and industrial communities, such credible stalwarts as the National Aeronautic and Space Administration (NASA) and the Government Accountability Office (GAO) have now agreed that increased frequency and intensity of severe weather events—including hurricanes, tornados, flooding and drought—are likely byproducts of the unabated emissions of greenhouse gases. ³ Even though

¹ Pub. L. 110-181 (HR 4986) (Jan. 28, 2008), Sec. 951, Department of Defense consideration of effects of climate change on department facilities, capabilities, and missions.


differences among scientists, agencies, and scholars persist in predictions of the severity of the consequences of global warming, most now at least agree on the following nature of the likely threats: increasing sea levels and acidity in the Earth’s oceans, reduced access in many areas to fresh water, and increased episodes of severe weather including droughts, flooding, and hurricanes.  

Every forecast of potential future events contains an element of speculation. The purpose of this article is not to attempt to resolve the many potential risks which reasonably could emerge due to global climate change, but rather to acknowledge the importance of Congress’s directive and to raise awareness of potential issues for reasoned debate and planning purposes. Because it is both necessary and appropriate to consider and plan for the worst, this article examines some of the most extreme secondary climatic effects.

Of course, not everyone has been blind to the possibility that such secondary climatic effects could produce a wide range of military mission impacts. An April 2007 report (CNA Report) prepared based upon the input and advice of nearly a dozen distinguished retired three- and four-star generals and admirals concluded, “[i]n the national and international security environment, climate change threatens to add new hostile and stressing factors.” The CNA

Greenhouse gases (GHGs) include methane, carbon dioxide, and nitrous oxide. IPCC 2007 Summary for Policymakers supra note 2, at 9.


5 For example, the IPCC characterizes “Area affected by drought increases” and “Intense tropical cyclone activity increases” as “Likely” indicating a 66% probability of occurrence and “Heavy precipitation events: frequency increases over most areas” (a probably cause of flooding) as “Very Likely” indicating a greater than 90% probability. GAO-07-760T supra note 3 at 7 citing IPCC, Climate Change 2007: Impacts, Adaptation, and Vulnerability, Summary for Policymakers. General Gordon R. Sullivan, USA (Ret.) notes, “We never have 100 percent certainty [but] [i]f you wait until you have 100 percent certainty, something bad is going to happen . . . .” CNA Report supra note 4, at 11.

6 CNA Report supra note 4, at 6.
Report provided a solid foundation, consistent with military strategic planning, for a pragmatic approach to analyzing and preparing to respond to these future threats.\(^7\)

An excellent Winter 2008 article in the ABA Natural Resources and Environment Journal, *Global Climate Change and National Security*, emphasized, “[t]he military can not wait for the science to be perfected to begin planning for the effects of global climate change.”\(^8\) The article adeptly took the discussion one step further in assessing consequences to the Department of Defense in its operations overseas, examining why the climate change risks will likely contribute to a continuing growing need for military forces in non-combat roles (such as humanitarian aid or peacekeeping operations).\(^9\) The article concluded that every military branch and specialty will probably be involved in responding to the fallout of global climate change.\(^10\)

While both the CNA report and *Global Climate Change and National Security* focused primarily on overseas impacts due to global warming, this article instead examines the perhaps even more significant national security threats to the U.S. homeland. It identifies and explains the urgency of appropriate contingency planning, but defers to our National Security leaders, both in and out of uniform, as the experts in this arena for solutions.

---

\(^7\) The author’s first assignment in the Air Force, as a threat integration engineer, in fact involved writing similar prognostications in the form of Threat Environment Descriptions. Although the details, sources, and methods of such projections were and are believed to remain classified, it is no secret that the United States devotes considerable military and intelligence resources to studying, planning, and preparing to successfully defend our country from current and projected threats.

\(^8\) James Stuhltragr, *Global Climate Change and National Security*, 22 NAT’L RESOURCES AND ENV’T (NR&E) 36 (Winter 2008). Mr. Stuhltragr makes several noteworthy observations about likely overseas impacts which may demand commitments of U.S. forces on a global scale, particularly in Africa. *Id.* at 37-40.

\(^9\) For example, drought in water-scarce North Africa has already led to drops in grain production; more severe droughts could produce mass exodus and political instability threatening regional security. *See id.* at 37-38. Military airlift for humanitarian aid or US troops for peacekeeping operations and other Operations Other than War are thus likely outcomes of the climate changes induced by global warming. *See id.* at 37-39.

\(^10\) *Id.* at 39.
1. Weather Issues

The potential for devastation of the US homeland based upon increased incidence of
catastrophic storms (hurricanes, typhoons, tornados, dust storms) is immense. Although the
Department of Homeland Security (DHS) updated its National Security Strategy for Homeland
Security in October, 2007, the DHS did not explicitly acknowledge or link these impacts to the
effects of global climate change.\(^{11}\) Nevertheless, in the post-Katrina environment, DHS has been
sensitive to the significant threats to the U.S. homeland posed by major natural disasters and
considers it prudent to plan for such catastrophic climate change scenarios.\(^{12}\)

Active duty military installations could be the direct victims of a National Disaster,
obviously degrading or destroying the installation’s mission-readiness.\(^{13}\) Mother Nature could
delivering a devastating blow with only a few days or hours warning and the effects could rival
those of an enemy attack on U.S. soil.\(^{14}\) Hurricane Andrew dealt a fatal blow to active duty
operations at Homestead Air Force Base, Florida, and other coastal military facilities could face

\(^{11}\) United States Department of Homeland Security, National Strategy for Homeland Security (October
published in 2002 after the events of September 11th, 2001, was rewritten in the wake of Hurricane Katrina and does
consider future catastrophic weather events a security risk. Id. It notes, “[a]s we face the dual challenges of preventing
terrorist attacks in the Homeland and strengthening our Nation’s preparedness for both natural and man-made disasters,
our most solemn duty is to protect the American people . . . [and] despite our best efforts, future catastrophes – natural
and man-made – will occur, and thus we must always remain a prepared Nation.” Id. at 1, 6. The report details a full
range of natural disasters as posing threats to the U.S. homeland from hurricanes to flooding to wildfires. Id. at 11.

\(^{12}\) “While experts differ on the predicted intensity and frequency of future storms, history suggests the question is
not if, but when . . . .” Id. at 10.

\(^{13}\) “In 1992, Hurricane Andrew ravaged Homestead Air Force Base in Florida so much that it never reopened.”
CNA Report, supra note 4 at 37.

\(^{14}\) Although tropical storms are tracked, they can take unpredicted turns or increase or decrease substantially in
severity with little warning. See e.g. discussions and strike projections for Hurricane Katrina for Aug. 28-29, 2005;
National Weather Service, National Hurricane Center, Hurricane Katrina Advisory Archive,
strength and course).
a similar demise.\textsuperscript{15} Even if an installation hit by a hurricane survives, there will be adverse mission consequences of unknown duration.

With sufficient warning, all but key and essential personnel could be evacuated to reduce risk of loss of life. Certainly non-essential military personnel, military families living on base, and many civilian employees would likely be evacuated,\textsuperscript{16} but, the greater the scope of any such evacuation, the more resources that would necessarily be diverted from routine mission obligations. The specter of rising sea levels and exposure to hurricane risks could also effect long-term basing choices and should be a consideration for future rounds (if any) of Base Realignment and Closure (BRAC) activities.

Other (off-installation) hurricane or flooding impacts within the United States could have similar mission-hampering effects. Imagine a hurricane making landfall in Boston Harbor or New York City. Weather Forecasters have projected increased dangers to the East Coast from more active storm activity in the Atlantic, and project more extreme damages due to increasing economic activity and population growth in coastal areas.\textsuperscript{17} In 2003, the GAO estimated major hurricane losses in such a scenario could be as high as $110 billion. Such widespread devastation would likely drain National Guard resources throughout the Northeast.\textsuperscript{18}

\textsuperscript{15}“U.S. coastal communities, environments, and economies are especially vulnerable to sea-level rise and other climate change impacts. At the same time, they face continuing challenges from population growth, coastal erosion and storms, and habitat loss.” United States Geological Survey (USGS) Media Advisory: USGS to Host Congressional Briefing on Climate Change Impacts on Coastal Communities, Mar. 19, 2008, http://www.usgs.gov/newsroom/article.asp?ID=1897&from=rss_home.

\textsuperscript{16}10,000 military, dependents, and DOD civilian employees were evacuated during Hurricanes Katrina and Rita. GAO, DISASTER ASSISTANCE: BETTER PLANNING NEEDED FOR HOUSING VICTIMS OF CATASTROPHIC DISASTERS, GAO-07-88, Feb. 2007, at 64. Those who were displaced were authorized to choose safe havens within the continental U.S. and received travel and dislocation allowances in accordance with Joint Federal Travel Regulations. Id.


\textsuperscript{18}See GAO, CATASTROPHE INSURANCE RISKS: STATUS OF EFFORTS TO SECURITIZE
Significant numbers of National Guard troops would likely be activated and employed in disaster response, to combat suffering, to assist in rescue and recovery, and to enhance border security. Depending on the geographic site of the emergency and the severity of the need, large numbers of active duty and reserve forces would also likely be devoted to in response to such a grave national emergency.\textsuperscript{19}

In the aftermath of Hurricanes Katrina and Rita, by way of comparison, more than 52,000 Active Duty and National Guard personnel were involved either in relief operations on the ground or aboard ships.\textsuperscript{20} The military “evacuated more than 3,200 people, including 1,300 medical patients and 1,300 ambulatory/elderly evacuees [and] DOD’s aviation support in the affected area include[d] 169 helicopters and 38 fixed wing aircraft.”\textsuperscript{21} It goes without saying that assets and resources dedicated to such relief efforts become unavailable in the global war on terror.

Of course a major hurricane striking the U.S. coast directly could also cause significant problems in housing and accommodating refugees at home. After the Gulf Coast hurricanes of 2005, there were 1,099 shelters established to house 154,252 evacuees.\textsuperscript{22} For those who returned to their homes, many benefited by Operation Blue Roof, the Army Corp of Engineers mission assignment from FEMA, which provided free plastic sheeting as temporary roofing for residential structures, daycare facilities, schools and all public buildings.\textsuperscript{23} However, despite these successes for many who could “shelter-in-place,” FEMA continues to be criticized for its

\textsuperscript{19} Id. at 33 (primary threat to U.S in Western Hemisphere arises from humanitarian aid and increased immigration).
\textsuperscript{21} Id.
\textsuperscript{22} DHS Press Release, supra note 20.
\textsuperscript{23} GAO-07-88 supra note 16, at 64.
efforts to house the tens of thousands of displaced people who could not return home. Future disasters may also trigger significant logistical problems in housing displaced persons.

The article next considers two additional distinct but interrelated concerns—disasters abroad could likely create refugee and border security issues in the United States (compounding an already significant and complex immigration scenario) and overarching economic side-effects of national disasters could prompt a shift in the world order.

2. Refugee Issues

There is a necessary tension between our humanitarian desires (to feed the hungry and harbor the homeless) and our inability to allow widespread immigration without detailed and deliberate security vetting. The U.S. must balance humanity toward refugees with national security—a phenomenon already taking place as our nations strives to accommodate hoards of displaced persons from the war in Iraq who would like to relocate to the United States. In his September 11, 2007, commemorative address to Barry Law School, Emilio Gonzalez, Department of Homeland Security, Director for Citizenship and Immigration Services (CIS), commented about the substantial difficulties in authenticating the identity of displaced individuals considering these people often have no credible documentation of their identity. Just because individuals purport to be part of particular family or from a particular province does not mean their assertions are true.

Given the heightened state of concern for terrorist infiltration after 9/11/2001, the DHS is justifiably concerned not to simply allow unconfirmed and unidentified individuals to have carte

25 Emilio T. Gonzalez, Director, U.S. Citizenship and Immigration Services, address to Barry University, Dwayne O. Andreas School of Law, Orlando, Florida, Sept. 11, 2007 (author was in attendance).
26 Id.
blanche access to the United States. To say “the world has changed after 9/11,” is an
understatement, especially regarding the importance of making the proper access decisions. Indeed, national awakening to this threat after 9/11 is what prompted the placement of CIS within the Department of Homeland Security in the first place.

Director Gonzalez is especially sensitive to the competing demands of welcoming immigrants, but not doing so carelessly, because he is himself an immigrant and he also served in the U.S. military.27 However, even with the most sincere efforts, the immigration process involves substantial U.S. resources and considerable delay for those who would like to move to the United States. Efforts to accommodate growing masses of world-wide refugees expected as a byproduct of global climate change28 could sink a system that is currently barely surviving.

By way of example, the 17,000 employees in the immigration service are working long hours under a “streamlined” procedure to process applications from Iraqi refugees displaced from their homes due to military conflict in Iraq.29 Although the State Department handles the intake of refugee referrals from the United Nations High Commissioner for Refugees (UNHCR) and U.S. embassies, CIS has responsibility for interviewing refugee applicants and adjudicating applications for refugee status, “while at the same time ensuring the highest level of security.”30 Yet, even with the best efforts of the service only about fifteen percent of the 20,000+ Iraqi

---


28 See CNA REPORT supra note 4, at 6: “The U.S. and Europe may experience mounting pressure to accept large numbers of immigrant and refugee populations as drought increases and food production declines.”


30 Factsheet supra note 21.
refugee applications have been processed over the past year. These results prove two important points: 1) difficulty in processing people who have no records establishing their identity [a problem that would also be expected in many climate change situations where, for example, refugees lose records due to floods, hurricanes, wildfires or other emergency circumstances]; and 2) the U.S. immigration system is already at or over capacity. As further evidence supporting the second point, consider that the “USCIS received more than 600,000 applications for citizenship in June and July of 2007 - a 350 percent increase from the same time the year before.” This spike in applications adds to the already immense CIS workload in addressing the many immigration issues concerning people (legal and illegal immigrants) already within our borders.

Next, consider for a moment the refugee pressures for access to the United States from major evacuations under worst-case climate change scenarios. If Japan or Singapore or other island nations begin to disappear beneath the Ocean, millions of people will have to be relocated and assimilated into the populations of other countries of the earth. Europe and the United States are expected to be the primary receiving grounds for displaced populations. Stauch U.S. allies, nations which have allowed forward basing of U.S. forces would make a compelling (or at least a sympathetic) case for relaxing immigration quotas and streamlining refugee processing. However, at the same time, the U.S. could ill afford to turn a blind eye to the potential for terrorist infiltration. As in the case with Iraqi refugees, we would be “committed to conducting

---

31 CNA REPORT supra note 4, at 6:
the most rigorous screening that will ensure that the [applicable] refugee population is not infiltrated by individuals seeking to harm the [U.S.] homeland.”

Under circumstances where whole Nation-States are literally sinking, the Government’s of those countries might be sufficiently distracted to allow penetration of subversive terrorist elements who have no intention of striking the sinking nations, but travel there merely to obtain identities or credentials to set the stage to later infiltrate the U.S. or a European nation. Other terrorists may seek to embed themselves in island Nations or coastal areas to later camouflage their identities in the event of a natural disaster to assert their status as a displaced person whose documents were destroyed by flooding or typhoon. While these scenarios obviously involve speculation, they nevertheless showcases a potentially vulnerability. When one considers the thousands of deaths and widespread global panic in the aftermath of the bombings of the pentagon and the World Trade Center, it is unconscionable to ignore the risk even a dozen or so suicidal martyrs could pose to the U.S.

Although dealing with displaced citizens may be costly and inconvenient, and may also distract the military from its readiness or war-fighting roles, a more severe threat could come if a hurricane opened our southern border. In 2008, lawmakers noted that attacks on US border guards are at record levels and improvised booby traps designed to decapitate border patrols have been discovered. A climatic disaster killing or displacing border security personnel could leave the Southern border even more unprotected. As DHS Secretary Chertoff has noted, “in the end,

33 Factsheet supra note 21.
34 DHS and Congress are already in tune to opportunistic terrorists trying to sneak into Canada or Caribbean countries to later stage a penetration of the U.S. and recent passport requirements for travel to Canada and the Caribbean are designed to thwart such efforts. See Remarks by Homeland Security Secretary Michael Chertoff at the Eighth Annual U.S. Customs and Border Protection 2007 Trade Symposium, Washington D.C., Nov. 15, 2007, [hereinafter Chertoff Remarks] http://www.dhs.gov/xnews/speeches/sp_1195225858995.shtm.
whether it's a natural hazard or an innocent hazard or a deliberate hazard, in many cases, the consequences may be the same.”

“A critical element of [our national security] strategy is monitoring who and what comes into the United States of America.”

The threats that could arise from failure to secure the proposed Trans-Texas Corridor (TTC) are even more alarming. The TTC, also called the NAFTA corridor, envisions a “superhighway, four football fields wide, from the Mexican Border at Laredo, Texas, to the Canadian border north of Duluth, Minnesota.” The SmartPort in Kansas City marks the midway point and will also be the first customs stop in the United States. This customs office, Known as the Kansas City Customs Port, is being built for Mexico and will be run by the Mexican government. Three, soon to be four, U.S. Interstate highways intersect in Kansas City, which also boasts, “the largest rail hub in the nation in terms of volume.”

Suppose now that a major Hurricane struck Brownsville or caused flooding in Laredo, Texas, or points in between—a catastrophe incapacitating our border patrol. The new TTC would provide a direct pipeline to America’s Heartland in Kansas City where refugees could disperse in any direction and quickly disappear in virtually any area of the country.

Some opponents of the TTC contend that even under ordinary circumstances the sort of movement between countries that will result from the TTC could potentially open the floodgates to illegal immigration, posing a homeland security risk of terrorist penetration heretofore unseen in the  

36 Chertoff Remarks, supra note 31.
37 Id.
39 Id. at 92.
40 Id. By a vote of 12-0, Resolution 060343 to this effect was adopted by the Kansas City Council on May 18, 2006, http://cityclerk.kcmo.org/LiveWeb/Documents/Document.aspx?q=%2BSOiLiH6CV0JIMnyTK6Jav6tMSRgrBqP1uJ3dIjFWX3kFIAN%2Bx9mJ7AQvJb3w%2BBs (last visited Mar. 24, 2008).
42 Id. See also CORSI supra note 38, at 92.
United States. As seen from 9/11 and the subsequent investigations, even a cell of only a handful of suicidal terrorists could cause thousands of deaths and untold destruction once safely hidden within the United States. The optimal time to deter or detect such terrorists is at their point of entry into the U.S., when they are most vulnerable to law enforcement because they are traveling alone or in a very small group. If we lose this encounter with law enforcement, we are much less safe.

3. Economics of Disaster

Ironically, while the 2005 disaster-related oil shortages highlighted our “addiction to oil” and our lingering dependence on foreign oil, future disasters as a secondary consequence of global warming may be precipitated by this same detrimental reliance on fossil fuels.

While everyone felt the gas price hikes immediately following the hurricanes of 2005, most are probably unaware of the billions of dollars spent exclusively on short term disaster response and the daunting economic outlook for long term reconstruction. A record $110 billion has been spent on recovery efforts to date for the Gulf Coast. Financial relief efforts in the form of grants, loan subsidies, and tax relief and incentives were directed first toward emergency response, then toward rebuilding. The GAO notes that most was spent on short-term activities leaving only a relatively small amount for longer-term rebuilding.

Individuals and small businesses are particularly vulnerable to natural disasters. Individuals tend to be underinsured and many fail to obtain the appropriate mix of insurance

43 See CORSI supra note 38, at 105.
44 Chertoff Remarks, supra note 31.
46 Id.
47 Id.
coverage; notably, many vulnerable individuals fail to secure flood insurance.\textsuperscript{48} Small businesses lack the financial reserves more typical of their larger counterparts. For this reason, small businesses are eligible to apply to the Small Business Administration (SBA) “for economic injury disaster loans to obtain working capital funds until normal operations resume after a disaster declaration.”\textsuperscript{49} Sadly, despite a host of SBA low-interest, long-term loan programs,\textsuperscript{50} an estimated twenty-five percent of small businesses never reopen following a major disaster.\textsuperscript{51} In addition, the volume of requests for assistance after the 2005 hurricanes demonstrated that the SBA was ill-equipped to handle a disaster of this magnitude and it remains to be seen whether SBA initiatives to better prepare for future disasters will be effective.\textsuperscript{52} In the meantime, small businesses, a vital cog in the economic wheel which provide a wealth of new employment opportunities, remain extremely vulnerable.\textsuperscript{53}

Any future major disaster could also compound or undermine ongoing economic recovery efforts from the still-lingering effects of the hurricanes of 2005. Another disaster in the Gulf Coast, for example, could further frustrate recovering refineries and off-shore drilling operations and again necessitate resort to strategic petroleum reserves. Although the strategic reserve afforded some immediate relief to oil shortages, such reserves are by no means inexhaustible.

\textsuperscript{48} For a detailed examination of insurance gaps and difficulties confronting individuals and small businesses in the wake of a disaster, see Patrick E. Tolan, Jr., \textit{Tax and Insurance Consequences of Major Disasters: Weathering the Storm}, 31 NOVA L. REV. 487 (Summer 2007).
\textsuperscript{50} It is notable that SBA’s disaster loan program is also available to individuals and large businesses. \textit{Id.}
\textsuperscript{52} GAO-07-574T \textit{supra} note 45, at 8.
Even if a disaster reversed the political opposition to drilling in the Artic National Wildlife Reserve (ANWR), such efforts would likely produce too little petroleum, too late to be of any practical relief.

Should strategic national petroleum reserves be depleted due to a major catastrophe or series of major catastrophes, the United States would need to obtain oil from foreign sources. Without imports, petroleum based transportation and industrial production could grind to a virtual standstill.

Energy reliance on coal and oil present an obvious conundrum in the face of global warming. Although carbon emission policy is a political question, until sufficient alternative low-cost, renewable, and environmentally-friendly energy supplies are secured, the fate of the United States economy and its people will be anchored to a sufficient supply of fossil fuels. In a simple sense, our Nation must come full circle to the same conclusion environmentalists have advocated for years. Burning fossil fuels in general and overdependence on petroleum in particular are the same root causes that expose the United States to the consequences of global warming in the long-term and to lingering entrenchment in the Middle East in the short term.

More significant and long-term economic impacts could also logically follow future mega-disasters. At the time of Hurricane Katrina, for example, there were “growing concerns that the combination of higher energy prices and some transportation disruptions, coupled with lower economic activity in the Gulf region itself, could be enough to plunge the economy into an actual recession.”54 “Every other recent recession has been preceded by an energy shock.”55

Although the author is not an economist, it seems logical that anything that could seriously undermine the United States economic power could also ultimately lead to erosion or

55 Id., quoting economist Doug Porter.
demise of our present status as a superpower. At some point in the future, if imports to the United States continue to exceed exports, the international balance of power will shift to nations better able to satisfy the world’s needs. How rapidly this shift would occur and whether or not it could be forestalled or reversed are of course beyond the scope of this paper, but the more the U.S. must restore and recover its infrastructure due to the consequences of climatic events spawned by global warming, the fewer resources that will remain for improving national productivity essential to competing favorably in the global marketplace.