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CLIMATE CHANGE, MIGRATION AND NATIONAL SECURITY

An NPG Forum Paper

by Edwin S. Rubenstein

As climate change accelerates, as much as one-third of world population could live in places that most humans consider too hot for habitation. Currently fewer than 25 million people, predominantly in Africa, live in these hot zones, defined as places where mean annual temperature (MAT) is above 84 degrees Fahrenheit.[1] By comparison, Miami's MAT is a comparatively "frigid" 74 F.[2]

Research released in May finds that by 2070 hot zones could encompass a much larger part of Africa, as well as parts of India, the Middle East, South America, Southeast Asia, and Australia. As many as 3.5 billion people could live in these areas, according to Timothy A. Kohler, an archeologist at Washington State University, and lead author of the study which was published in *Proceedings of the National Academy of Sciences*.[3] The parts of the world that could become unsuitably hot "**…are precisely the same parts that are growing the fastest,**" Kohler says.[4]

The 3.5 billion figure is far higher than most estimates of the world population that will face the most dire aspects of climate change. A 2018 World Bank study, for example, estimates that about 140 million people may become climate migrants by 2050.[5]

As an archeologist, Kohler's time horizon extends over the totality of man's existence: "**We mine the massive sets of demographic, land use, and climate information that have become available in recent years to ask what the climatic conditions for human life have been across the past millennia, and then examine where those conditions are projected to occur in the future**."[6]

Two of Kohler's findings are particularly interesting. First, humans living today reside in pretty much the same **"narrow subset"** of Earth's temperatures - about 50 to 60 degrees Fahrenheit - that human settlements did 6,000 years ago. **"We didn't think that would be the case,"** another of the study's authors, Martin Scheffer, a professor of complex systems sciences at Wageningen University in the Netherlands, says, because advances in clothing and technologies like air conditioning and crop irrigation have enabled people to populate areas with much broader temperature ranges.[7]

(Memo to Professor Scheffer: The hottest region on Earth – Sub-Saharan Africa – is also home to some of the poorest and most rapidly growing populations on the planet. More impoverished people fighting for less water and arable land leaves modern technology and conveniences out of reach for all but the privileged few.)

Second, and more troubling, is Kohler's prognosis for the future: **"We show that in a business as usual climate change scenario"** the geographical area in which humans will find temperatures to their liking (i.e., the 50 to 60 degree Fahrenheit range, dubbed **"the human climate niche"** by Kohler's group) "**… is projected to shift more over the coming 50y than it has over the past 6,000… [I]n the absence of migration, one third of the global population is projected to experience a MAT** [above 84 degrees F.] **currently found in only 0.8% of the Earth's land surface."**[8]

Needless to say, the mere thought of 3+ billion humans moving from global hot spots to the U.S. and other advanced countries is terrifying. It is also unrealistic. Whether it's warmer temperatures or rising sea levels, the negative impacts of global warming will take place at a snail's pace. **"People have accommodated to much more serious and acute incidents without resorting to non-returning, long-distance migration,"** writes Amo Tanner, author of *The Future of International Migration Governance*. "**Typically the victim** [of climate change] **desires to stay as close to her homeland as possible rather than set out on a long-distance journey into the unknown."**[9]

"**Even if the crisis was a sudden, powerful and all-pervasive one, such as Hurricane Katrina in New Orleans or the tsunami in Asia, people would only have a minimum incentive to migrate permanently to a distant destination. They would rather stay as close to their homes and return as soon as possible,"** Tanner writes, adding: "**How could slow and long-term climate change be expected to cause rapid mass global migration when acute full-scale crises have not resulted in that?**"

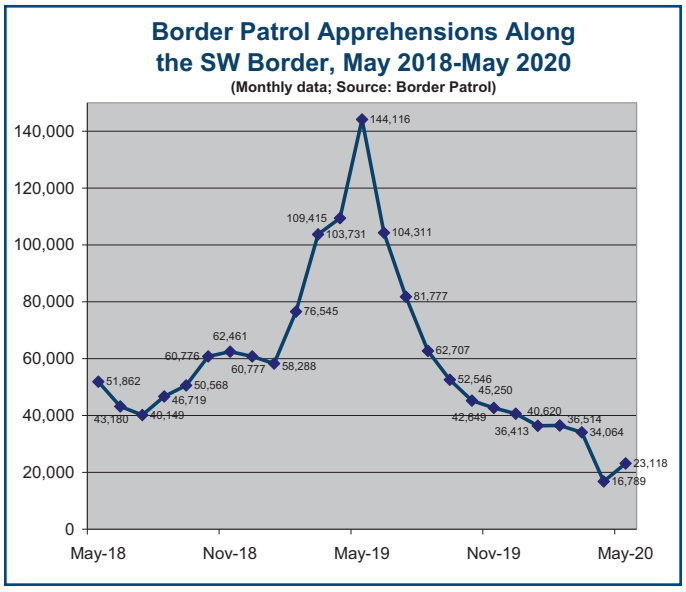
Then there is the question of who pays the moving bill: **"People whose livelihoods are most sensitive to environmental changes also tend to be those who do not have the means to move very far…They lack the information and the financial capacity to set out on long journeys, and even if they had access to information, they often cannot travel."**[10]

CLIMATE CHANGE PUSHES CENTRAL AMERICANS TO MIGRATE INTERNALLY…AND TO THE U.S.

Unbroken climate change could force as many as 140 million people to move within their countries' borders by 2050, creating a humanitarian crisis that could undo decades of development, a recent World Bank report finds. *Groundswell – Preparing for Internal Climate Migration*, is the first and most comprehensive study to focus on the nexus between slow-onset climate change (water shortages, crop failures, sea level rise), population growth, and the migration of people out of increasingly non-viable agricultural areas.[11]

The World Bank study focuses on three regions – Sub-Saharan Africa, Asia, and Latin America – representing 55% of the world's developing population. We focus on material pertaining to Central America – specifically its northern triangle, (a region comprising Guatemala, El Salvador, and Honduras,) which was, until recently, the largest source of asylum seekers crossing our southern border.

In May 2019 more than 140,000 migrants were apprehended along the U.S.-Mexico border, an 11-year high. Eighty percent of them were from the northern triangle.[12] By April 2020 the number dwindled to less than 17,000:



The reason for the abrupt decline? Politics. In October 2019 the Trump Administration banned the granting of asylum at the southern border. The asylum process had become corrupt, allowing virtually anyone to enter the country without proper vetting.[12] It represented a threat to U.S. security. Shortly thereafter Mexico deployed troops along its southern border to keep Central Americans on their side of the border. President Trump demanded this move as a condition for signing a trade deal with the government of Mexico.

While the Central American caravans received enormous press coverage last spring, the issues that gave rise to that crisis have been festering – under the radar - for years:

Climate Change: The average temperature in Central America has increased by 0.5C since 1950, and is expected to rise another 1 to 2 degrees before 2050.[13] In coming years, according to the US Agency for International Development, Honduras will see less rainfall in areas where it is needed, yet in other areas, floods will increase by 60%. In Guatemala, water scarcity will creep further and further into current agricultural areas, leaving farmers out to dry.[14] The economic damage is long-standing: since 1981 wheat, maize, and barley production in Central America has fallen.[15] Meanwhile, the onset of the rainy season starts later and later, a trend which climate models predict is likely to continue.[16]

Population Growth: Approximately 47% of Salvadorans, 56% of Guatemalans, and 52% of Hondurans are under 25.[17] Because of their relatively young populations, all three countries (collectively known as the Northern Triangle region of Central America) are expected to see a continued rise in their prime working-age populations. With agricultural output in decline, governments have encouraged farm workers to look for jobs in big cities. Initially this policy was seen as an opportunity for economic growth.

Internal Migration: Unfortunately, farm-to-city migration has exceeded the number of new urban jobs by a factor of more than 10-to-1.[18] As climate change continues to decimate agriculture, the ratio of migrants to jobs will grow still larger. Families fleeing poverty, malnutrition, and gang violence in the Northern Triangle could trigger a renewed surge of illegal entrants along the U.S.-Mexico border.

Bottom line: One way or another, climate change influences each of the factors driving migration within and from Central America.

THE U.S. IS NO STRANGER TO INTERNAL CLIMATE MIGRATION

During the 1930s the Great Plains suffered four of its seven driest years since 1895. The topsoil was reduced to a powdery consistency that gave rise to massive dust storms when the wind is high - as it often is in that part of the country.

The Dust Bowl exodus was the largest migration in American history within a short period of time. Between 1930 and 1940, approximately 3.5 million people moved out of the plains states, most of them to California. Not all migrants traveled long distances; some simply went to the next town or county. So many families left their farms and were on the move that the ratio of migrants to residents in the plains states was nearly equal.[19]

It took a war – World War II – to finally boost migrant

incomes. Many families left farm fields to work in defense plants in LA or the San Francisco Bay area. After the war some moved back to their original states. Many others remained where they had resettled. Today about one-eighth of California's population is of Dust Bowl migrant heritage.[20]

Climate change has already produced droughts equal to or worse than those of the 1930s – but mass migration is nowhere to be seen. Intensive irrigation, fertilizers, pesticides, and genetically modified crops enable immense crops year-after-year whether it rains or not. Machines and science have replaced much of the role of labor in U.S. agriculture.

Central American farmers operate on such a small scale they cannot afford the technological advancements available to their American counterparts.

CLIMATE CHANGE AND NATIONAL SECURITY

In March 2017 U.S. Secretary of Defense James Mathis, when grilled by members of the Senate Armed Services Committee, said: "**I agree that the threats of a changing climate – such as increased maritime access to the Arctic, rising sea levels, desertification, among others – impact our security situation. I will ensure that the department continues to be prepared to conduct operations today and in the future, and that we are prepared to address the effects of a changing climate on our threat assessments, resources, and readiness."**[22]

Why would the Secretary of Defense, with so many urgent national security issues on his plate, be concerned with something that had traditionally been viewed as a manageable environmental issue? Two words: data and analysis.

Using global datasets on armed conflicts and climate-related natural disasters between 1980 and 2010, a study published by National Academy of Sciences found that **"… about 23% of conflict outbreaks in ethnically divided countries robustly coincide with climatic calamities such as heat waves or droughts."**[23] The NAS report is but one of many such studies.[24] One of the largest, by Stanford University scientist Marshall Burke and his colleagues, reviewed 55 studies looking at all sorts of conflicts, from assaults to riots to civil war. They concluded **"…that large variations in climate can have large impacts on the incidence of conflict and violence across a variety of contexts."**[25]

Climate is not the only factor at work. Some researchers say long-standing racial and ethnic tensions, corruption, economics, and governmental incompetence, are even more important. At most, they say, climate change is a **"threat multiplier"** for countries that were fragile long before global warming was evident.

Still other scholars find that drought can push long-simmering tensions to a breaking point, leading to violent conflict. This, they say, was a trigger for the Syrian civil war, which was preceded by a long dry spell that - as in Central America - forced farmers to leave the countryside for cities.[26] Conflicts in Sudan, Somalia, and Yemen are also believed to have their roots in unusual and exceptionally long droughts.[27]

Many of the **"conflicts"** linked directly to climate are fairly small-scale events, e.g., rival clans fighting over ever shrinking areas of viable pastureland. No big deal, you think? Think again: terrorist movements thrive amidst the chaos and internal migration engendered by such domestic conflicts.

Secretary Mathis was right to be concerned.

The latest study of this type, published in February 2020, was orchestrated by a group of senior retired U.S. military and national security leaders, many of whom served under Bush I and II, and the Reagan Administrations. As ex-military, their target audience is the current crop of military policy makers and practitioners. Their study profiles climate-related threats facing each of the U.S. military's six designated Geographic Areas of Responsibility – Africa; Middle East and Central Asia; Europe and Russia; Indo-Asia-Pacific; North America and Polar Regions; South and Central America and the Caribbean.

The long-term threats facing each region are remarkably similar:

Long-term Climate-Related Threats to National Security
(At 3.6-7.2 degrees F. of average global warming, 2050 to 2100)

Region	Threat Assessment	Threat Profile
AFRICOM Africa	Very High - Catastrophic	The AFRICOM area of responsibility will likely experience new and renewed interstate conflict over water resources, and severe humanitarian crises resulting from migrating populations, weather disasters, and economic shocks. Security institutions may not be able to preserve stability in the region, but will increasingly attempt to do so to prevent further spread of violent chaos.
CENTCOM Middle-East and Central Asia	Very High - Catastrophic	The Middle-East and Central Asia area will experience warming levels that render many areas of the region uninhabitable. Competition over water resources will likely be heightened, and with large populations displaced across this region, existing cultural divisions and social unrest could lead to enduring state failures.
EUCOM Europe and Russia	Very High - Catastrophic	Europe and Russia will likely experience prolonged drought and rising seas, leading to significant internal displacement, as well as an influx of migrants from neighboring areas. In this scenario, a breakdown in regional political, institutional, and security cohesion becomes likely.
INDOPACOM Indo-Asia-Pacific	Very High - Catastrophic	The INDOPACOM region of responsibility will experience devastating sea level rise threatening its megacities, infrastructure, and populations. Countries will likely securitize borders to prevent migration following severe disasters, and could undermine military alliances on which regional peace depends.
NORTHCOM North America and Polar Regions	Very High - Catastrophic	The NORTHCOM area will experience extreme heat, sea level rise, and disasters that severely impact infrastructure critical for protecting the homeland. Increasing divisions within society – including rising ethno-nationalist, anti-democratic, and isolationist views – could fracture historic security agreements, and great power competition in the melting Arctic may become acute.
SOUTHCOM South and Central America and the Caribbean	Very High - Catastrophic	The SOUTHCOM area will likely experience even more acute weather instability, crop collapse, and spreading disease. Food and water shortages will increase the likelihood of violent conflict, driving significant internal and cross-border migration.

Source: Center for Climate and Security, *A Security Threat Assessment of Global Climate Change*, February 2020, pp. 12 and 13.

"Based on our research we have determined that even at scenarios of low warming, each region of the world will face severe risks to national and global security in the next three decades. Higher levels of warming will pose catastrophic, and likely irreversible, global security risks over the course of the 21st century."[28]

Coronavirus was not on the horizon when this study was done, but the two crises are closely linked. By mitigating coronavirus we benefit the climate. We're buying less, traveling less, building less, working less, and commuting less. In fact, what is good for one, is also good for the other.

By flattening the coronavirus curve, we are also flattening the global warming curve.

SUMMARY

Food. Water. Climate comfort. From time immemorial humans have migrated from areas where these items are scarce to areas where they are abundant. Research shows that 21st century man inhabits about the same "climate niche" as our Stone Age counterparts – places where Mean Average Temperature is in the 50- to 60-degree F. range.

Over the next 50 years the geographical area where temperatures are expected to be in this range is projected to shift by more than it has in the past 6,000 years. Some populations may adapt to excessive heat "in situ," embracing new agricultural technologies or population controls. But for many poor nations, migration may be the only feasible option.

With global population expected to rise to about 10 billion by 2070, this implies that as many as 3.5 billion people could migrate to cooler climates. Migration of this magnitude, even if contained within national borders, presents a threat to U.S. national security.

NOTES

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