

The **CNA** Corporation

Research that works, for work that matters



**NATIONAL SECURITY
AND THE THREAT OF
CLIMATE CHANGE**

**CDR Sean Maybee
Dr. Ron Filadelfo**

10 July 2007

Outline

- **Study Purpose and Approach**
- **Major Findings**
- **Regional Impacts**
- **Recommendations**
- **Impact and Implementation**

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Purpose of this Study

- What adverse **conditions** are climate changes likely to produce around the world?
- What are the ways in which these conditions may **affect** America's **national security** interests?
- What **actions** should the nation take to address the national security consequences of climate change?

Military Advisory Board

GEN Gordon R. Sullivan (Ret.), MAB Chairman

ADM Frank “Skip” Bowman (Ret.)

Lt Gen Lawrence P. Farrell Jr. (Ret.)

VADM Paul G. Gaffney II (Ret.)

GEN Paul Kern (Ret.)

ADM T. Joseph Lopez (Ret.)

ADM Donald “Don” L. Pilling (Ret.)

ADM Joseph W. Prueher (Ret.)

VADM Richard H. Truly (Ret.)

Gen Charles “Chuck” Wald (Ret.)

Gen Anthony C. “Tony” Zinni (Ret.)

Sherri Goodman, Executive Director

Analytic Process

- **Study Team framed questions**
- **Heard from scientists, the intelligence community, business and state leaders**
- **Visited with United Kingdom business and government leaders**
- **Military Advisory Board presented views on regional impacts**
- **Married CNA analysis with advice and experience of the Military Advisory Board**

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Findings

- Projected climate change poses a **serious threat** to America's national security

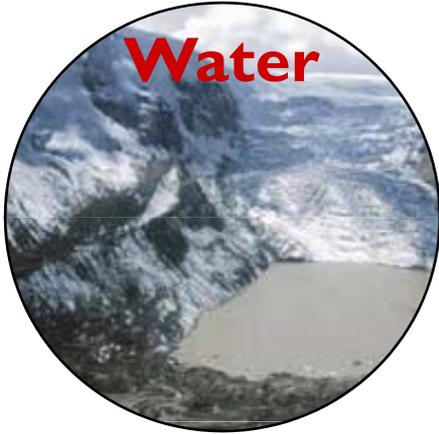
Findings

- Projected climate change poses a **serious threat** to America's national security
- Climate change acts as a **threat multiplier** for instability in some of the most volatile regions of the world

Threats to Natural & Human Systems

Threats

Water



Food



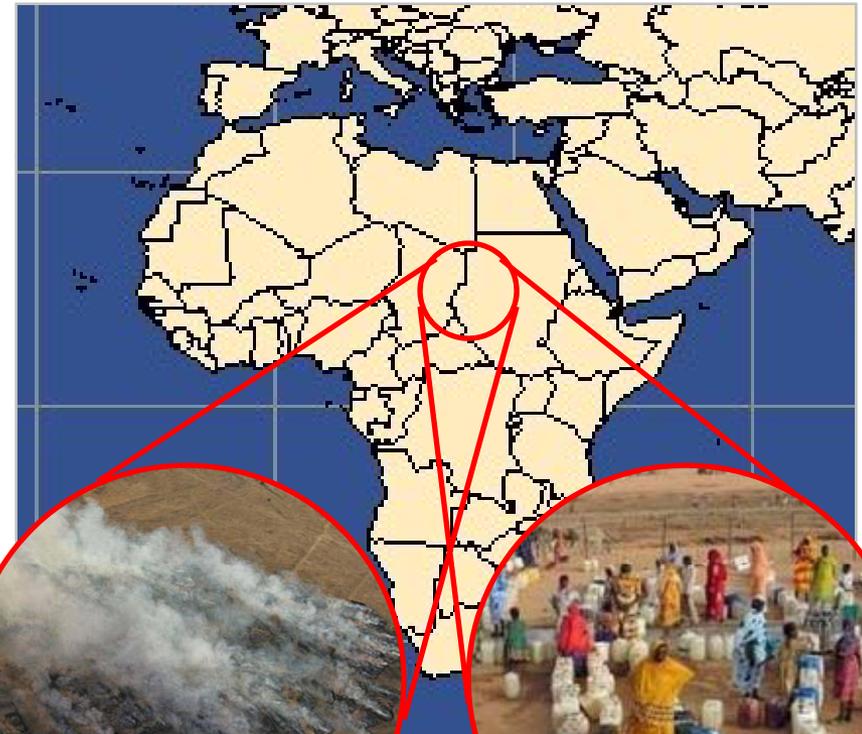
Health



Weather



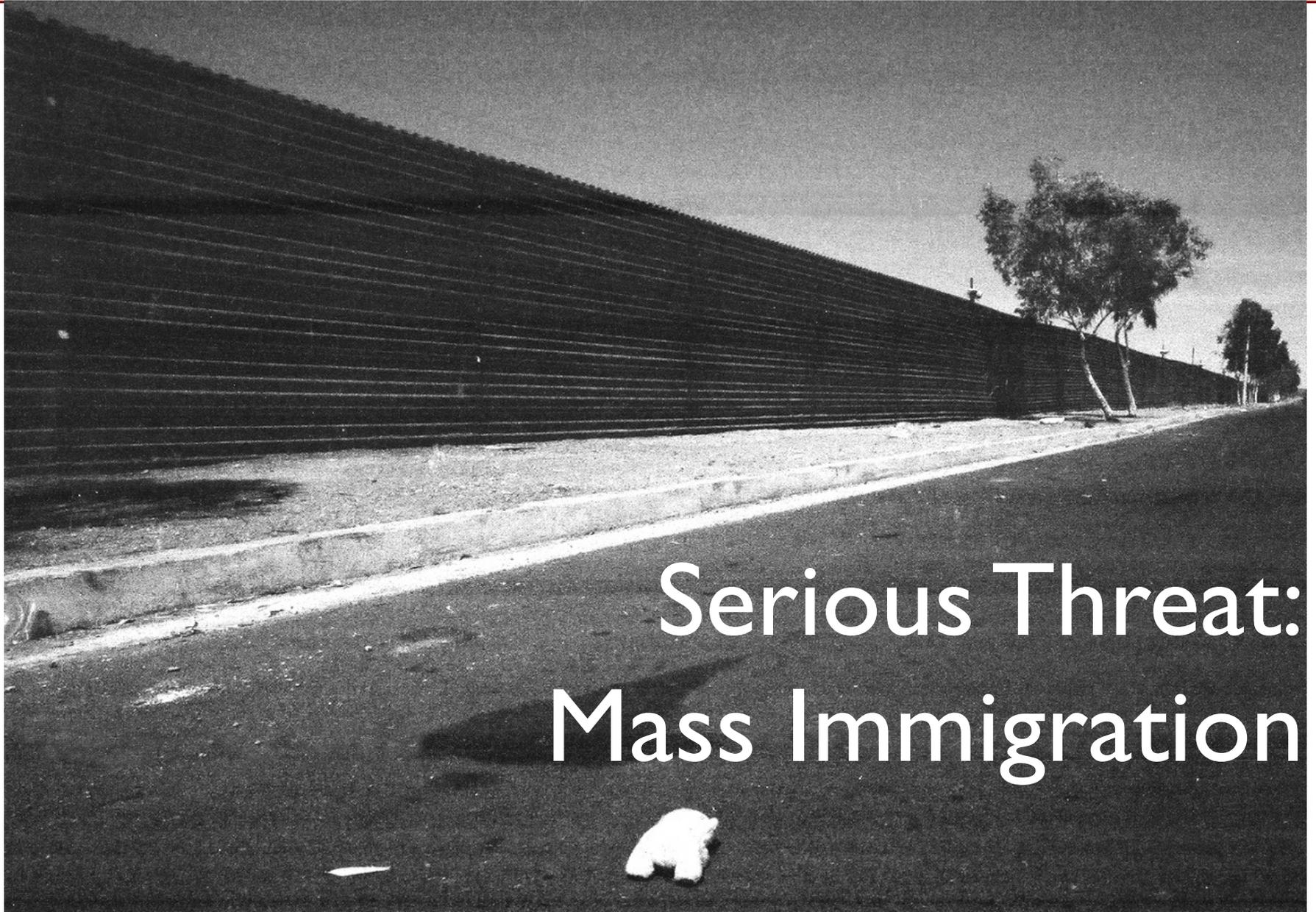
Case in Point: Darfur



Findings

- Projected climate change poses a **serious threat** to America's national security
- Climate change acts as a **threat multiplier** for instability in some of the most volatile regions of the world
- Projected climate change will add to **tensions** even in **stable regions** of the world

Finding: Tensions Even in Stable Regions

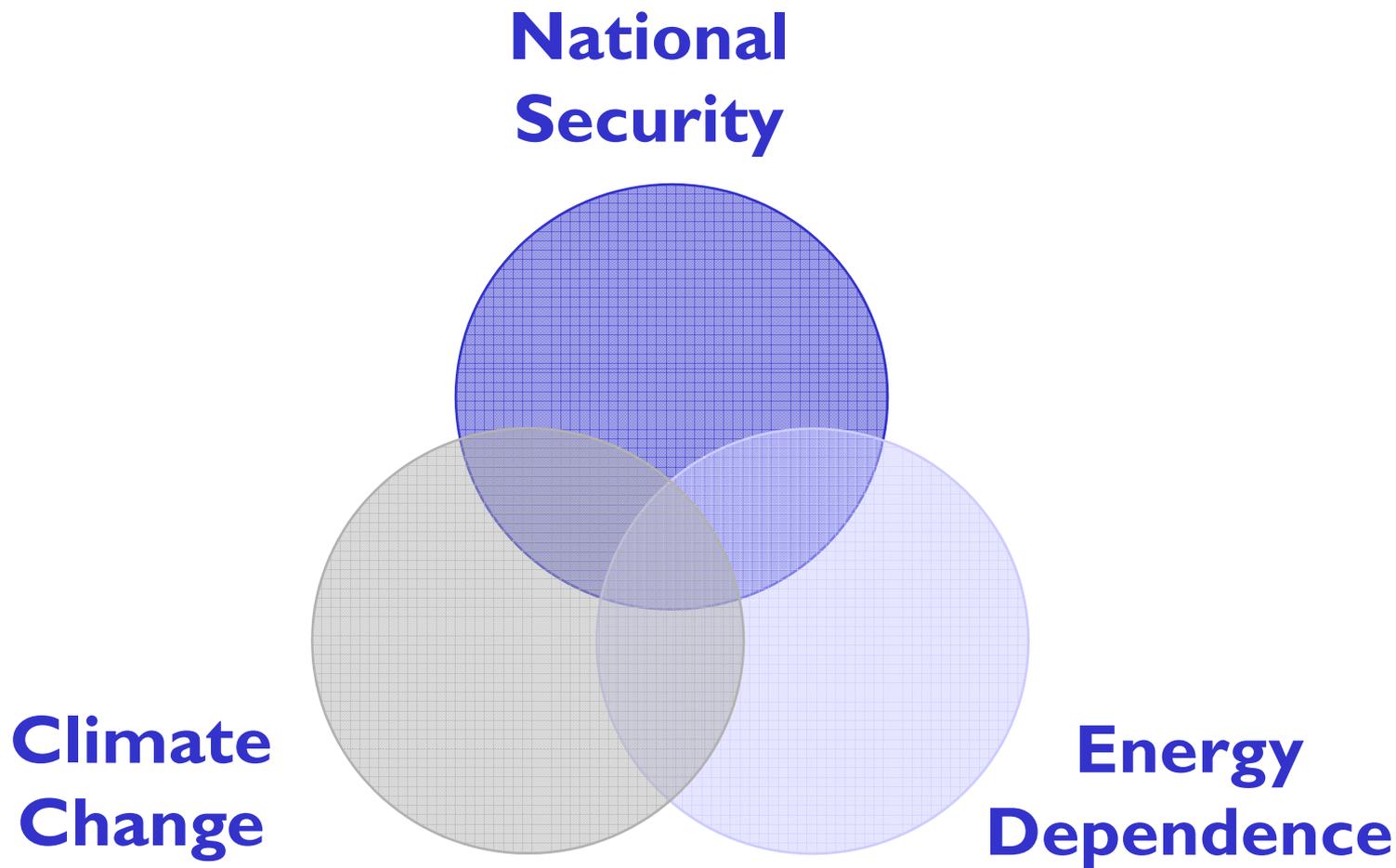


Serious Threat:
Mass Immigration

Findings

- Projected climate change poses a **serious threat** to America's national security
- Climate change acts as a **threat multiplier** for instability in some of the most volatile regions of the world
- Projected climate change will add to **tensions** even in **stable regions** of the world
- **Climate change, national security,** and **energy dependence** are a related set of global challenges

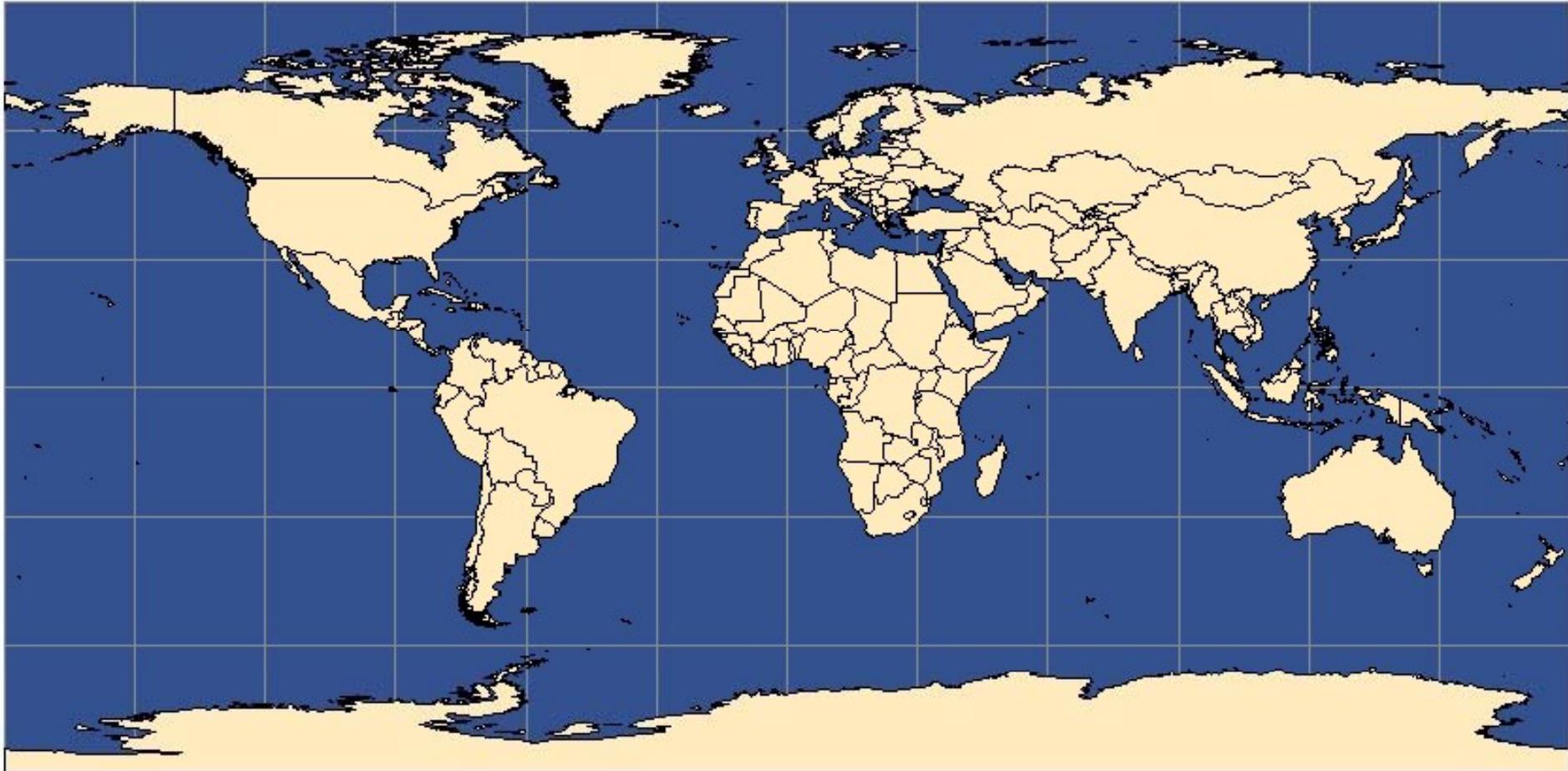
Finding: Climate, Security, and Energy



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Globalization



Regional Impacts

Europe



Tensions may rise as climate change exacerbates immigration from Africa and the Middle East

Europe will be focused inward, affecting coalitions and military exercises

Regional Impacts

Africa

Climate change will facilitate:

- weakened governance
- economic collapse
- human migrations
- potential conflicts

Stability operations and humanitarian missions could **increase** for U.S.



Regional Impacts

Middle East

A world map with a grid overlay. The Middle East region, including the Arabian Peninsula, Iraq, and Syria, is highlighted in yellow. The rest of the world is shown in light blue and white.

Water security will be threatened – two-thirds of the Arab world already depends on water sources external to their borders

Loss of food and water security will increase **pressure to emigrate** across borders

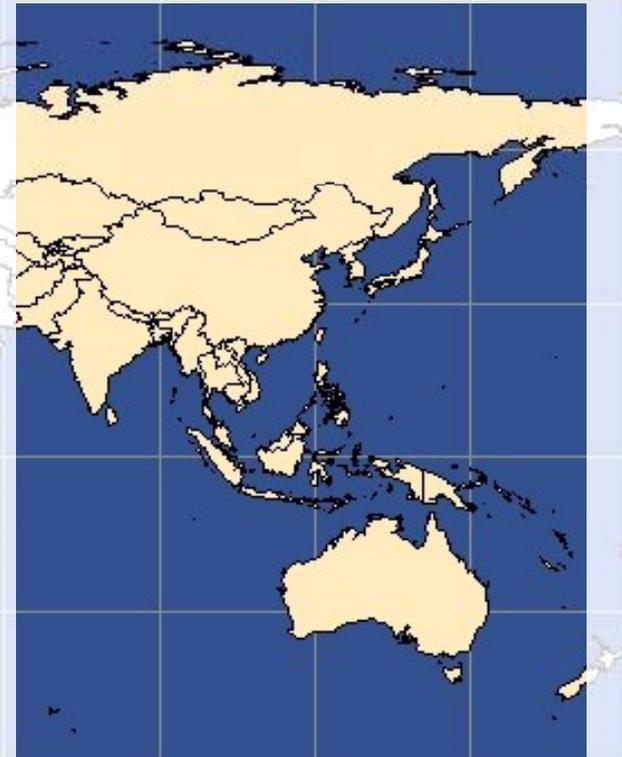
Regional Impacts

Asia

Almost **40 percent** of Asia's
4 billion people live within
45 miles of the coast

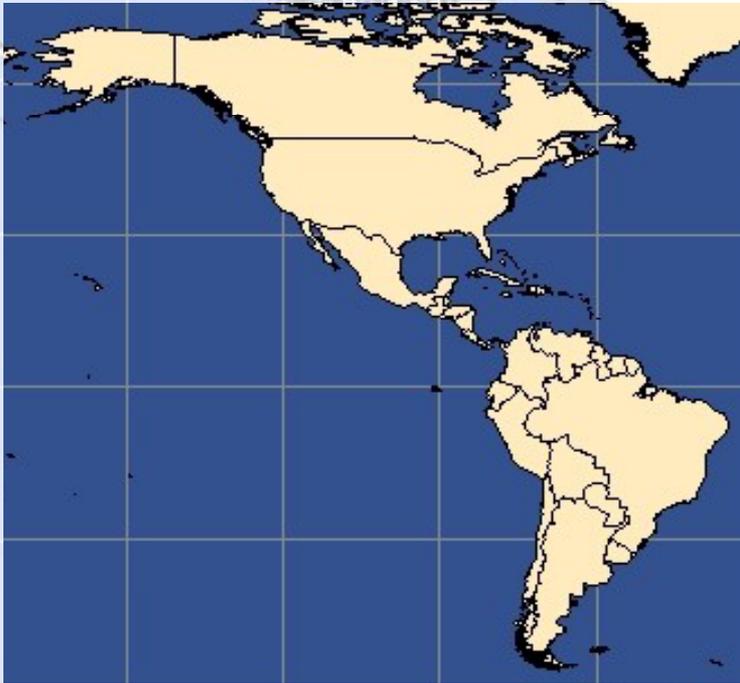
Inundation of coastal areas, with loss
of settled areas and agricultural land

Threats to water, and spread of
infectious disease will stress the
region



Regional Impacts

Western Hemisphere



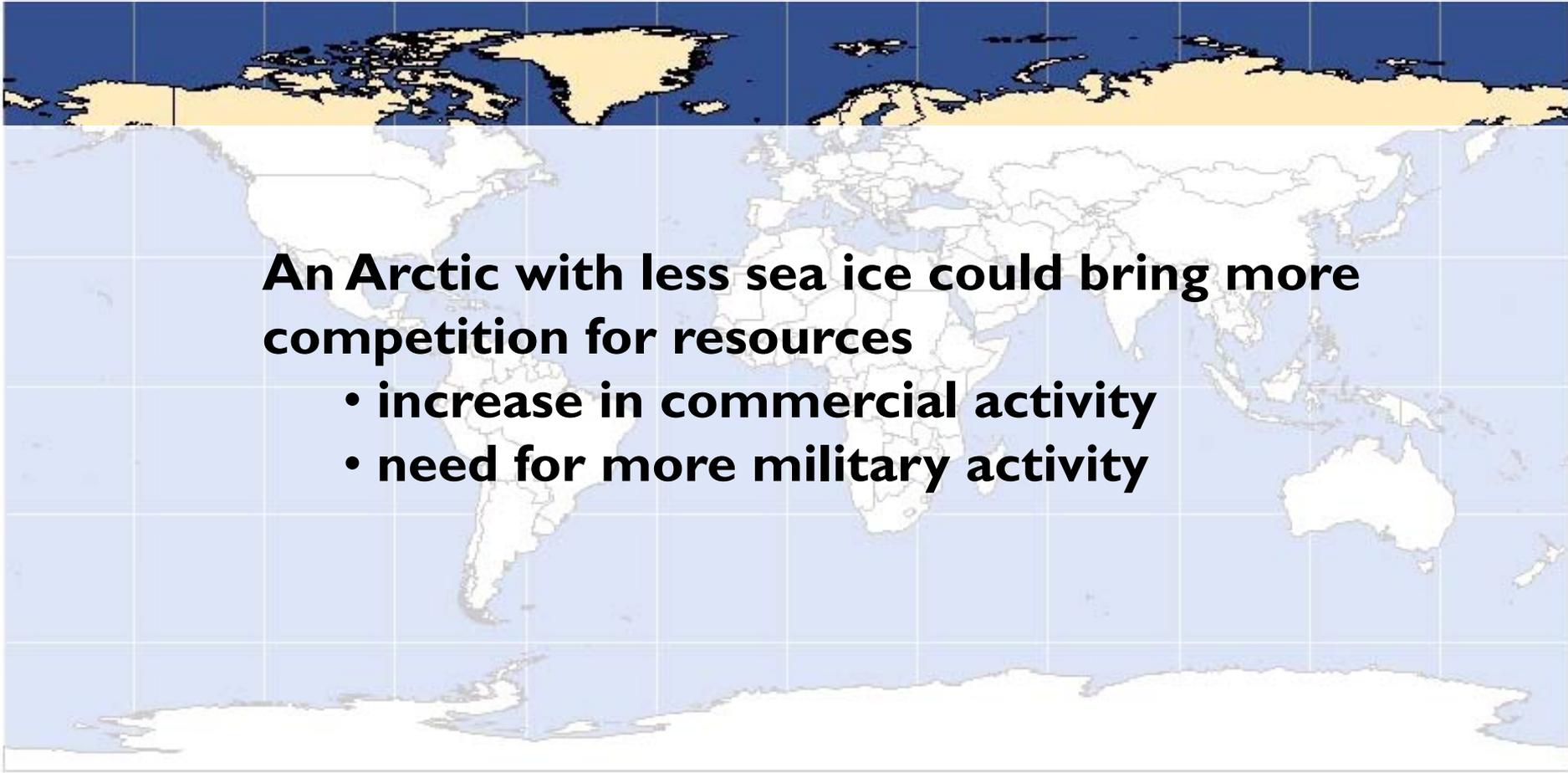
Coastal areas vulnerable to sea level rise coupled with more intense hurricanes

Loss of glaciers will strain water supply in several areas, such as Peru and Venezuela

Migration into the U.S. will likely increase

Regional Impacts

Arctic



An Arctic with less sea ice could bring more competition for resources

- **increase in commercial activity**
- **need for more military activity**

Arctic Implications

“Open seas at the Arctic means you have another side of this continent exposed. Between the Canadians and us, there are a handful of ships oriented for the northernmost latitudes. There is not much flexibility or depth there.”

ADMIRAL DONALD PILLING, USN (Ret.)
Former Vice Chief of Naval Operations

Arctic Implications

Ice-Free Arctic:
Increased scope of
Naval Operations



1979 SSMI Composite Data

**US Navy has little
capacity to operate in
this environment**



2003 SSMI Composite Data

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Recommendations

- **National security consequences of climate change should be fully integrated** into national security and national defense strategies
- **U.S. should commit to stronger national and international roles** to help stabilize climate change at levels that will avoid significant disruption to global security and stability
- **U.S. should commit to global partnerships** that help less developed nations build the capacity and resiliency to better manage climate impacts

- **The Department of Defense should enhance **operational capability** by accelerating the adoption of **improved business processes and innovative technologies** that result in improved U.S. combat power through energy efficiency**
- **The Department of Defense should conduct an **assessment of the impact on U.S. military installations worldwide** of rising sea levels, extreme weather events, and other projected climate change impacts**

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Impact

- Report widely covered in media, including print, television, radio and online coverage – and has received significant attention in Congress.
-



Conclusion

We will pay for this one way or another.

We will pay to reduce greenhouse gas emissions today, and we'll have to take an economic hit of some kind.

Or, we will pay the price later in military terms.

And that will involve human lives.

There will be a human toll.

— Gen Zinni

Conclusion

Questions?



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