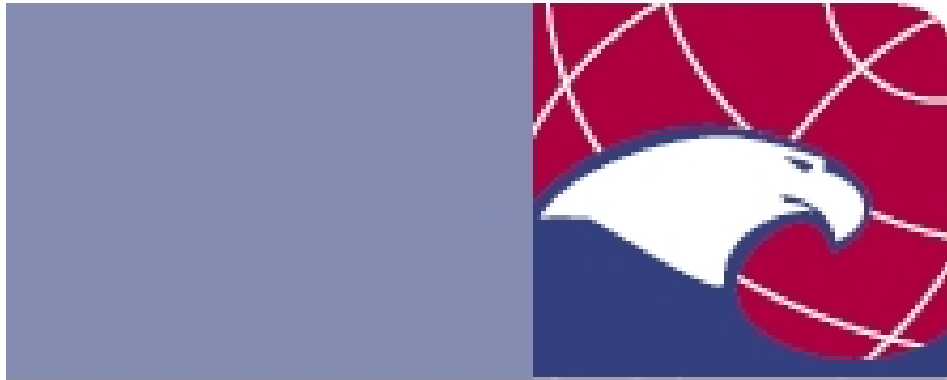


The **CNA** Corporation

Research that works, for work that matters



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

Paul G. Gaffney II
President, Monmouth University
Vice Admiral USN (Ret.)

**50th Anniversary of the
Global Carbon Dioxide Record:
A Symposium and Celebration**

28 November 2007

Purpose of this Study

IF TRENDS CONTINUE...ADVERSE?

CAN TRENDS AFFECT SECURITY?

WHAT CAN WE (NATIONAL SECURITY COMMUNITY) DO?

Study Structure

- **CNA Corporation study**
 - **Director:** **Ms. Sherri Goodman**
Counsel to CNA Corporation
Former Deputy Undersecretary of Defense
(Environmental Security)
 - **Staff:** **CNA Corporation**
 - **Advisory Board:** **11 Retired Flag Officers**
 - **Review Panel**
- **Briefings: Scientists, Government Officials (US, UN & UK), Industry**

Military Advisory Board (II “Formers”)

GEN Gordon R. Sullivan (USA), MAB Chairman

Chief of Staff, Army

ADM Frank “Skip” Bowman (USN)

Director, Navy Nuclear Power

Lt Gen Lawrence P. Farrell Jr. (USAF)

Chief Planner HQ USAF

VADM Paul G. Gaffney II (USN)

ONR and NDU

GEN Paul Kern (USA)

Army Materiel Command

Military Advisory Board

II “Formers”

ADM T. Joseph Lopez (USN)

Commander, U.S. Navy Europe

ADM Donald “Don” L. Pilling (USN)

Vice Chief, U.S. Navy

ADM Joseph W. Prueher (USN)

Pacific Commander; U.S. Ambassador, China

VADM Richard H. Truly (USN)

NASA Administrator; Astronaut

Gen Charles “Chuck” Wald (USAF)

Deputy U.S. European Commander

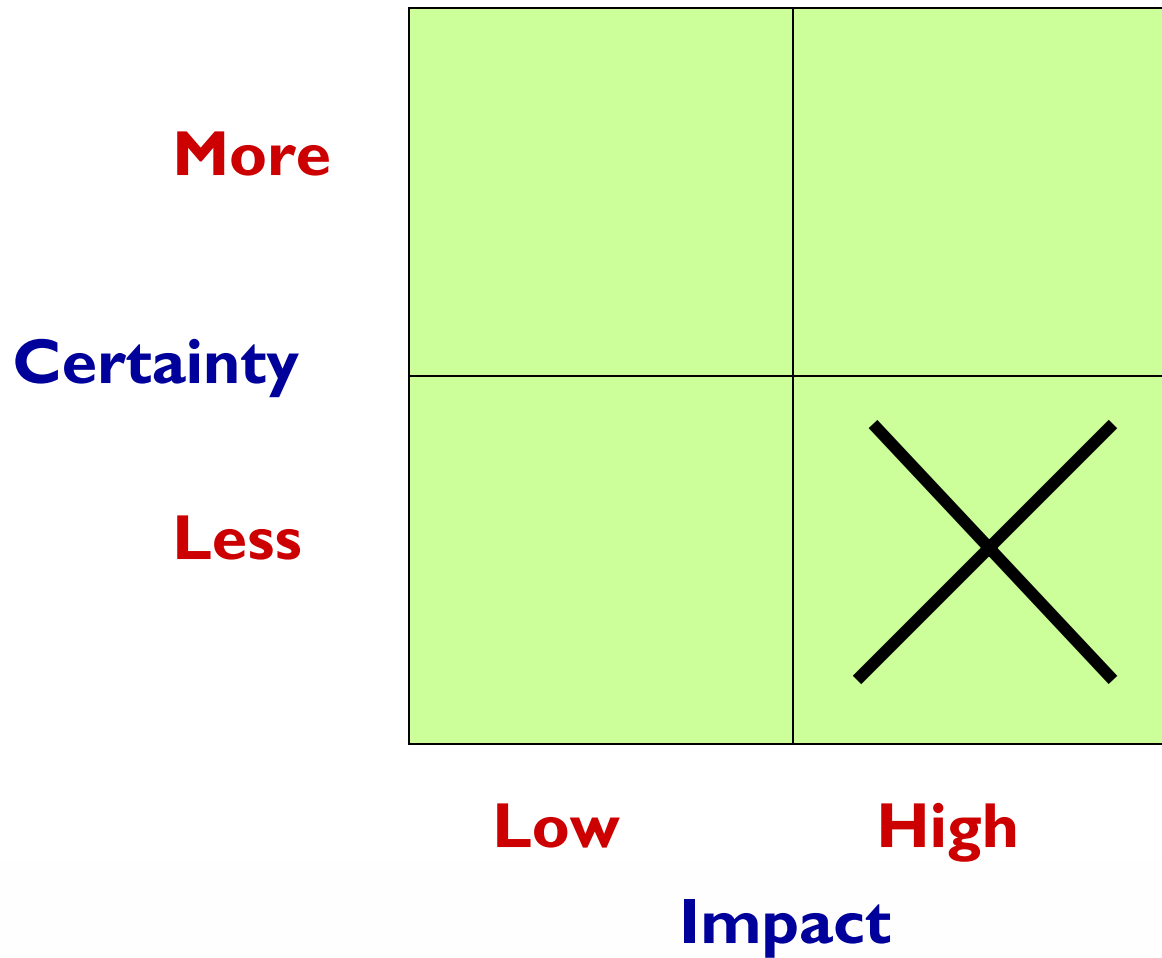
Gen Anthony C. “Tony” Zinni (USMC)

Commander Central Command

“Rules of the Road”

- **Maturing Process**
 - **Skepticism → to → focus**
 - **Listen, internal discussion, agree**
- **Appropriateness**
 - **Do not lay blame**
 - **Avoid political statements**
 - **Do not pretend to be climate scientists**
 - **Stay within our comfort zone**

Realization



Perspective on Scientific Debate

“ **We never have 100% certainty.**

**If you wait until you have 100% certainty,
something bad is going to happen
on the battlefield.**

That’s something we know.”

— GEN Sullivan

Findings Highlights

1. Trend is a serious threat

- Remember 

2. Threat multiplier ... volatile regions!

3. Trend can add to tensions; in stable regions

4. Climate change trends, security, and energy dependence are related

General Concerns

- **“Slow & grinding” nature of change.**
 - Truly
- **Inability of world’s most troubled regions and least capable governments to understand and cope**
- **Migration of people for:**
 - **Water** – **Food**
 - **Health** – **Safety (from natural disaster)**
- **Desperation, hopelessness exacerbated**
 - **Ripe for fanaticism**

Regional Concerns

Europe



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

“Europe will be focused on its own borders. There is potential for fracturing some very strong alliances based on **migrations and the **lack of control over borders.**”**

— Pilling

Regional Concerns

Africa

Climate change :

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

Stability operations and humanitarian missions

could **increase ...** draws U.S. into African political scene

- new **USAFRICOM**



Africa – oil – tranquility

Regional Concerns

Middle East

Water security will be threatened –
2/3 Middle East already depend on water sources external to their borders

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

“Small changes may have a **greater impact** here.”

- Zinni

Regional Impacts

Asia

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

Possible:

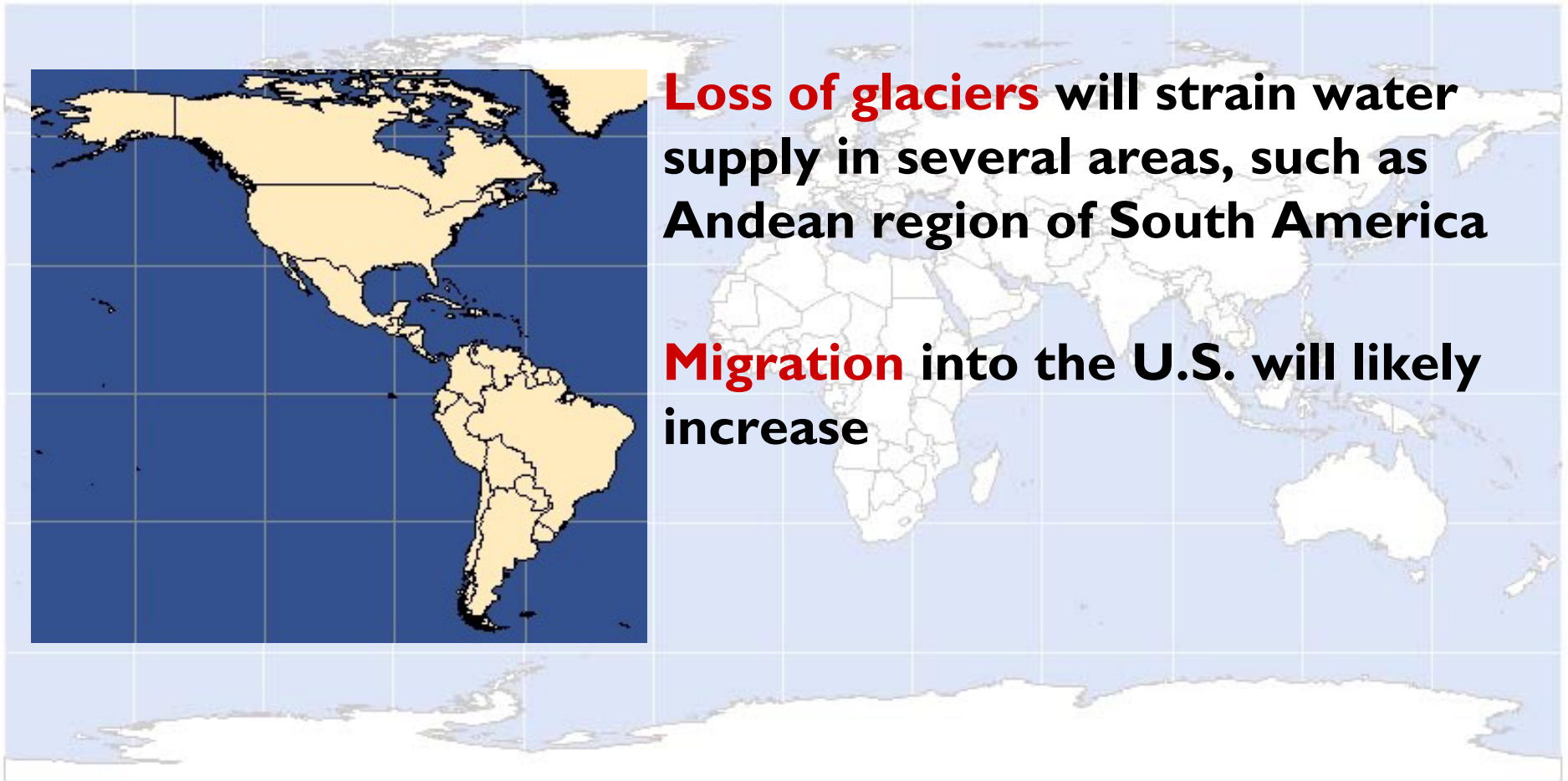
Inundation of coastal areas, loss of
settled areas and agricultural land

Spread of infectious disease



Regional Concerns

Western Hemisphere



Military Concerns

- Missions
- Operating Areas
- Climate adjustments
- National Security Community Contributions?



Military Concerns

Missions

- **More regional crises ... military contingency responses**
- **Stable nations become “fortress nations”**
 - **Repel immigrants; Allies role?**

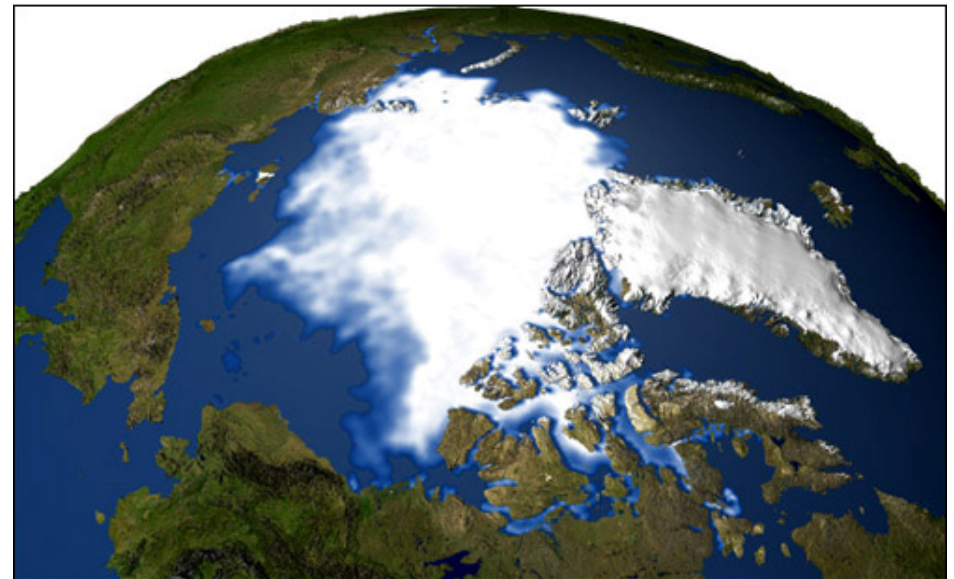
- **More disaster relief and humanitarian tasks ... more engagement opportunities**
 - **Training, equipping, deploying consequences**

Military Concerns



Operating Area Examples:

- **Watch sea level ... base locations**
- **Arctic as a theater of operations**
 - Transportation security
 - Protect sovereignty
- **Far from home**



2003 SSMI Composite Data

Military Concerns

Climate Adjustments

**Drier, wetter, stormier
shallower, ice (more and/or less), etc.**



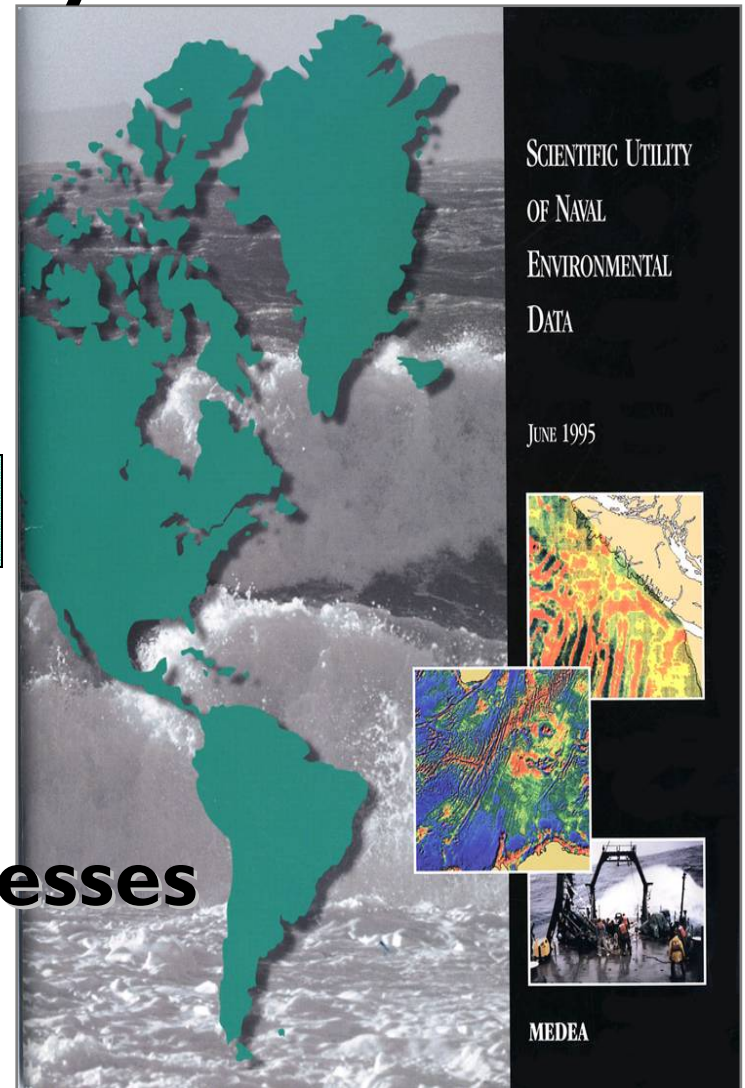
- **Wear and tear**
- **New equipment**
- **Revised tactics**

Military Concerns

National Security Community Contributions

- Military, Diplomatic, Intelligence
- Global reach
- Equipment...sensors, computation
- Talent ... military and civilian
- **DATA ... raw, derived, fiducial sites**
- Capacity to:
 - Cooperate & Educate

MEDEA & ETF ... quiet successes

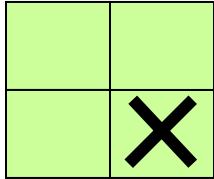


Evidence

- **Declassified GEOSTAT altimetry**
- **Long time series satellite imagery analyses (Corona)**
- **OCEANO data:**
 - **Submarine environmental data in Arctic (Gore box)**
 - **Oceanographic (“hydro stations”)**
... thousands
- **Exchanges with Russia**
 - **Arctic digital database**
- **Insight by “cleared” scientists into National Security Communities data and processes**
- **Strange bedfellows**
 - **Gore & Gates**
 - **U.S. & Russia**

**MEDEA Program
1990 – 2000**

CNA Corp Study Recommendations



= Integrate climate change trends into national security planning and strategies
- Congress new progress

**Tend to
others**

= Stronger U.S. role to help stem climate trend
= Partnerships with less developed nations ... adaptation & resiliency

**Tend to
self**

= Adopt business processes and technologies to reduce energy dependency
= Assess military installations

Concluding Opinions (Mine)

- **National Security Community should be fully involved**

- **“Average” does not mean “even”**

- Security Planning
 - Regional cooperation
- } **Regional specificity!**

- **Set an example in more efficient energy use**
 - **Good thing ... even if man has not caused or cannot reverse current trends**
- **Understand more, analyze better ... 1st principle of USCOP**

Conclusion

Congratulations

on

50 Years!

The **CNA** Corporation

Research that works, for work that matters



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

Paul G. Gaffney II
President, Monmouth University
Vice Admiral USN (Ret.)

**50th Anniversary of the
Global Carbon Dioxide Record:
A Symposium and Celebration**

28 November 2007