What Makes Good Climates Go Bad? … and … “Why Care?”

Michael Glantz, NCAR, CCB

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www.ccb.ucar.edu

www.fragileecologies.com
Where I stand on climate

- I am not a climate reductionist
- Climate information has value
- Societies influence climate
- Demographic changes influence climate impacts
Where I stand on global warming

- Hawks
- Doves
- Owls
- Ostriches
21st Century

TIME

Could the 21st Century Become "The Climate Century"

?
What affects climate?

- **Natural Factors**
  - Solar activity, earth’s orbit, volcanoes, topography, geography, El Nino, etc.

- **Societal Factors**
  - Economic development
    - GHG emissions, tropical deforestation, land-use
  - Increased pressure on marginal lands
Perceived climate types

- Good
- Bad
- Tolerable
- Changing

Perceptions rule the day
Perceptions of Climate Processes

- Climate as a hazard
- Climate as a constraint
- Climate as a resource

Every society exhibits is a mix of all three, but proportions vary.
How scientists see climate (as data)

- Climate variability
- Climate change
  - Deep climate change
- Extreme meteorological events
- Seasonality
How scientists see the climate system
Climate Science

- Understand the climate system
- Understand its components
- Society is now a component
Society sees climate through extremes & impacts

- Droughts, Floods, Fires, Famines
- Infectious disease outbreaks
- Severe storms (tornadoes & winter)
- Hurricanes, typhoons, cyclones
Climate has a ‘bright’ side

- Most people have access to food and water
- Climate is “tolerable” in most places
- Societies have developed ways to cope
$1 BILLION RAINS'

Another soaking for El Nino

By ALAN DICK

GOOD rains this week have given a $1 billion boost to farmers in NSW, but in some cases have caused grain prices to soften.

The $1 billion figure is a "guessimate" from the office of NSW Agriculture Minister, Richard Amery, and is based on the overall impact on winter cereal yields, pasture growth and summer crop planting prospects.

Mr Amery said rainfall between 30 and 50 millimetres over the grain belt...
Climate also has a ‘dark’ side

- Climate and weather reports are often negative
  - Doom and gloom
  - Death, destruction, misery
- Climate reports focus on uncertainties
- Forecasts are imperfect
- And … Global warming is on the horizon
Hurricane Mitch refugees
(Oct.-Nov. 1998)

Flooded out of her Honduran home in October 1998 by fearsome Hurricane Mitch, Marita Fonseca and her six children have been living ever since in a bulldozed hilltop in Tegucigalpa between two highway off-ramps. Garbage fires smolder in

ENIRONMENTAL REFUGEES

Millions of Latin Americans are being displaced, not by poverty or civil strife, but by the devastating effects of nature. The numbers will keep growing.
Refugees crowd the Ernest Morial Convention Center. August 31, 2005

Staff photo by Ted Jackson
Growing Concern About ... Global Warming and the Weather
Where CO2 emissions come from
(total emissions since 1950 billions of tons)
“Is Global Warming Fueling Katrina?” (TIME)
Aug. 29, ‘05

- “Warm ocean currents are a key ingredient for monster hurricanes”
- “Some scientists believe that global warming is exacerbating our storm troubles”
- “As mean temperatures rise worldwide, it’s hard not to make a connection between the two”
How society copes with climate

- Science & Education
- Heat & Cooling
- Irrigation & Reservoirs
- Trade
- Medicine
- Folk wisdom
- Clever use of the natural environment

- Concepts (as social inventions)
  - Comparative advantage
  - Global change
The Challenge: Riding Variability Curves

- The benefits or losses are determined by how well we ‘ride’ the variability curve.
- A perfect forecast would allow attentive people to… prepare
Peruvian anchovy fish landings

To many boats exploiting a stressed standing fish stock

With better fisheries management would the curve have been different?
News about El Nino from NASA's JPL

Satellite image shows La Niña weakening
January 27, 1999

La Niña hangs on
March 10, 1999

La Niña begins to fade
April 22, 1999

Entire Pacific is out of whack
May 27, 1999

La Niña barely has a pulse
June 29, 1999

La Niña conditions likely to prevail
October 20, 1999

Mild La Niña conditions developing
November 29, 1999

La Niña's persistence may be part of larger climate pattern
January 18, 2000

La Niña -- still a "cool" problem child
March 23, 2000

Strong, Long-lasting La Niña just fading away
June 19, 2000

Los Ninos may be gone, but Pacific pattern remains
August 29, 2000

¿What in the heck is going on??
Attributing responsibility in disasters

A new role for climate as a scapegoat for societal problems

Nobody wants to take the blame!
Late Lessons, Early Warnings

- It’s not enough to identify lessons.
- We need to apply the lessons we’ve identified.
- We need to remove obstacles to using lessons ("if it ain’t broke, don’t fix it").
- Study lessons learned elsewhere.

- Render unto society ...
Climate Knowledge is power. Sharing climate knowledge is empowering!!