



GLOBAL CHANGE EDUCATION PROGRAM

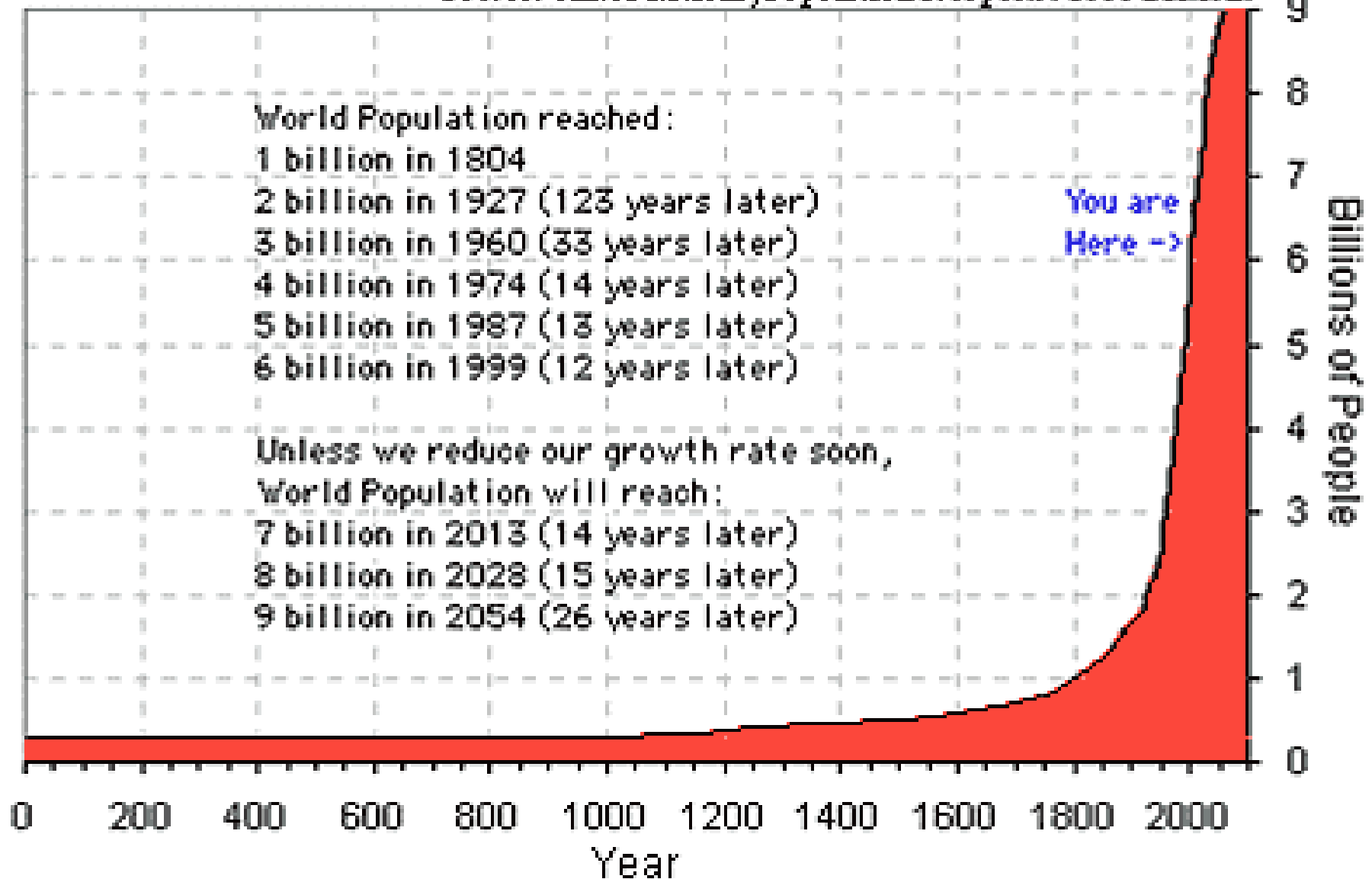
# WHY Climate Change.... And not Global WARMING?

Jeff Gaffney

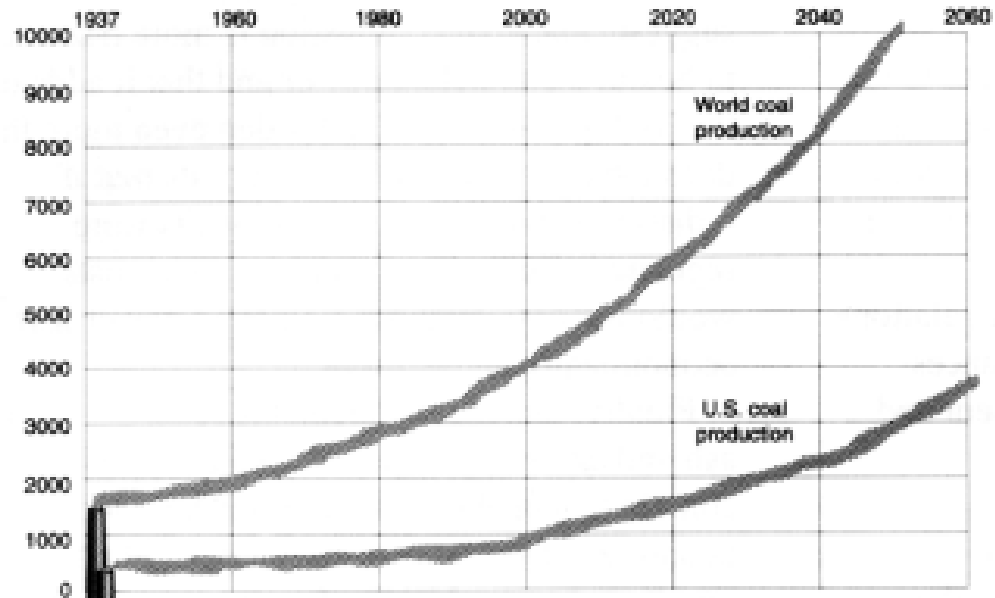
UALR



Source: United Nations, Population Prospects: 1998 Edition.

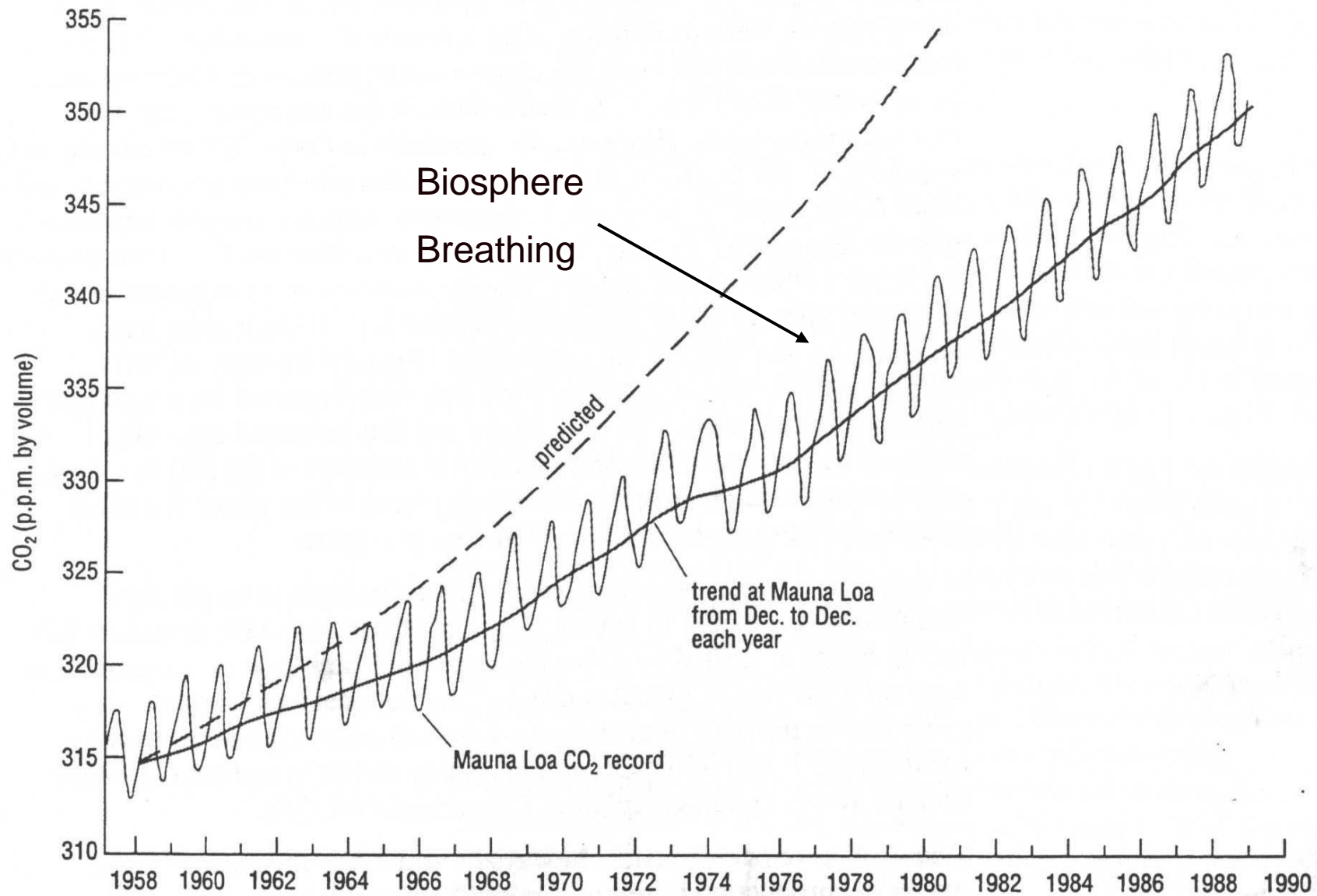


## U.S. AND WORLD COAL COMBUSTION (millions of tons)



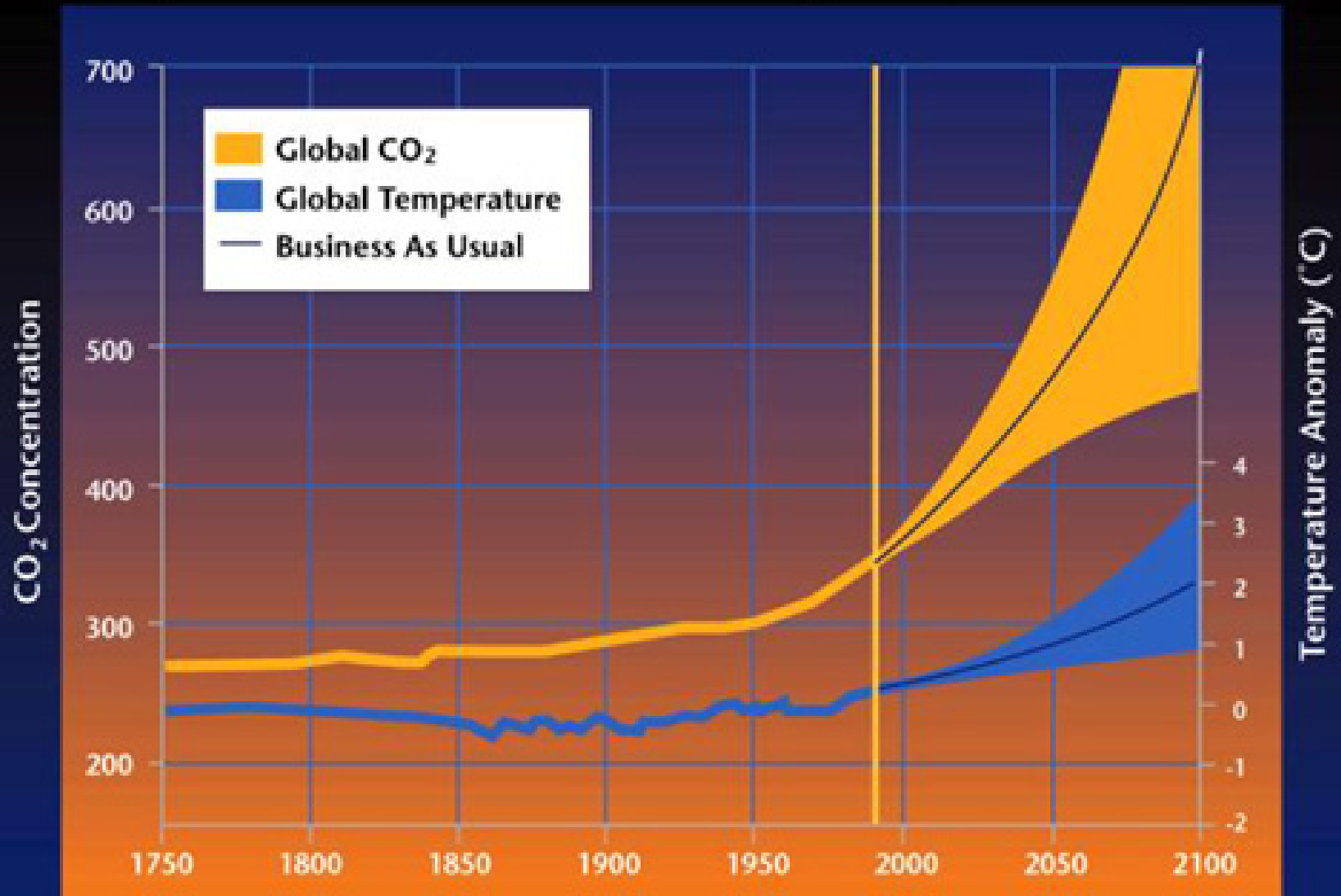
U.S. and world combustion of coal (in millions of metric tons) has increased steadily from 1937 to the present. It is expected to increase even more between now and beyond 2040.





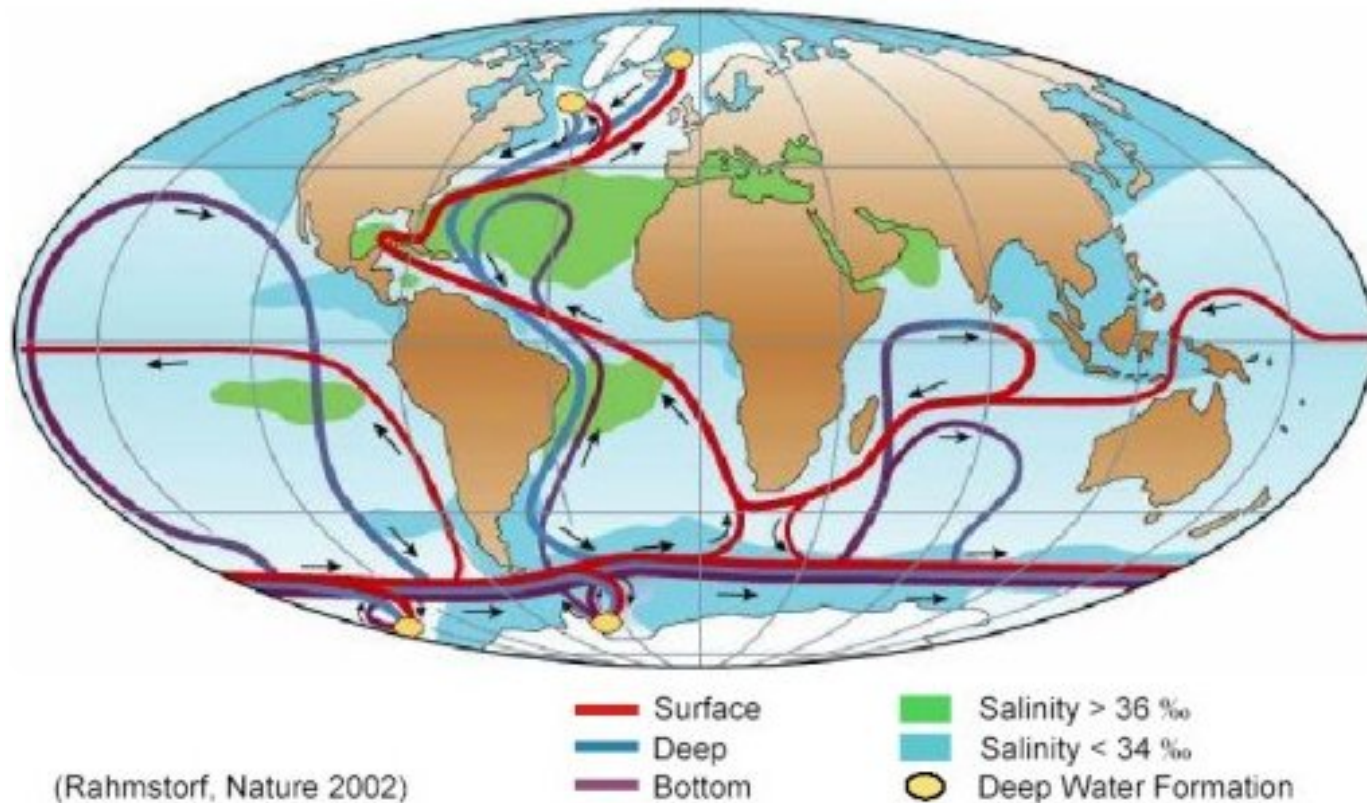
(b)

# Projection of CO<sub>2</sub> and Temperature to 2100



# **POLLUTANT IMPACTS DEPENDS ON POSITION IN THE ATMOSPHERE AND THEIR LIFETIMES**





Thermo-haline Circulation... If this Breaks Down

Higher Latitude Areas not as WARM.. So Warming can lead to Cooling in many places!

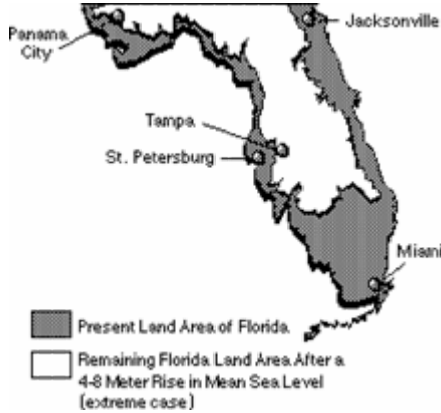
Warmer can also mean more or less precipitation...



Our Planet is not **HOMOGENEOUS**

# GLOBAL CHANGE – Global Climate Models (GCMs)

**Wetter!**



**DRIER!!**



**Hotter!**



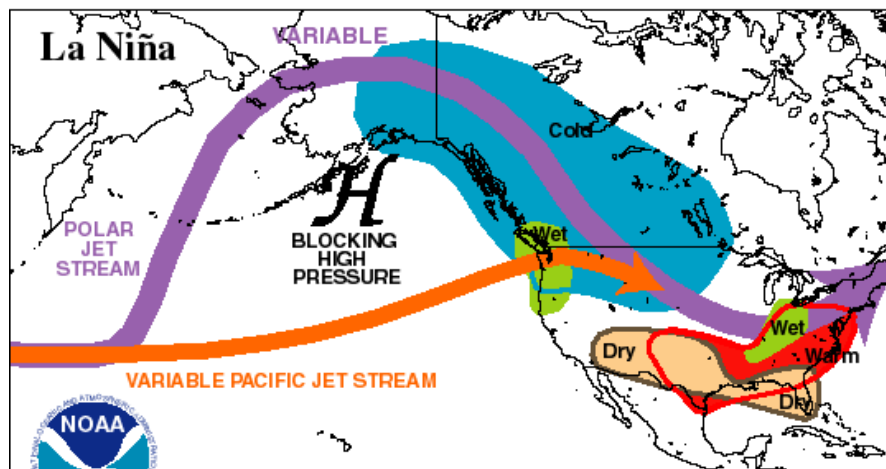
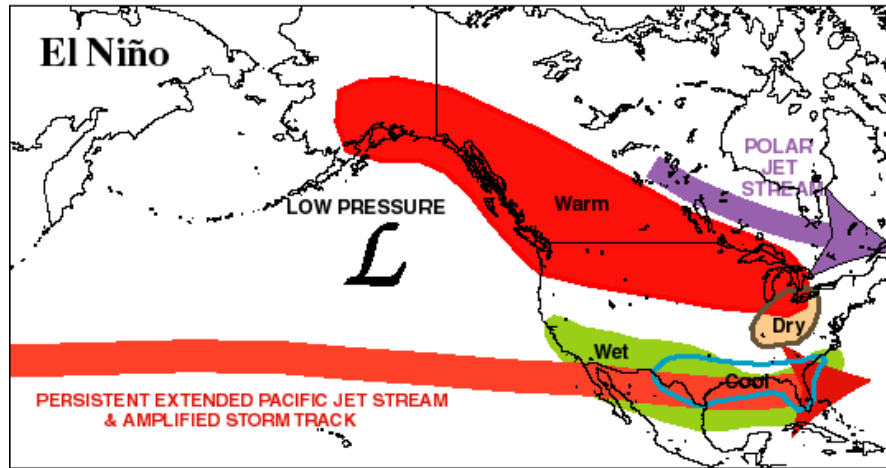
**Colder!**



**Increases in Severe Weather – EXTREMES!**

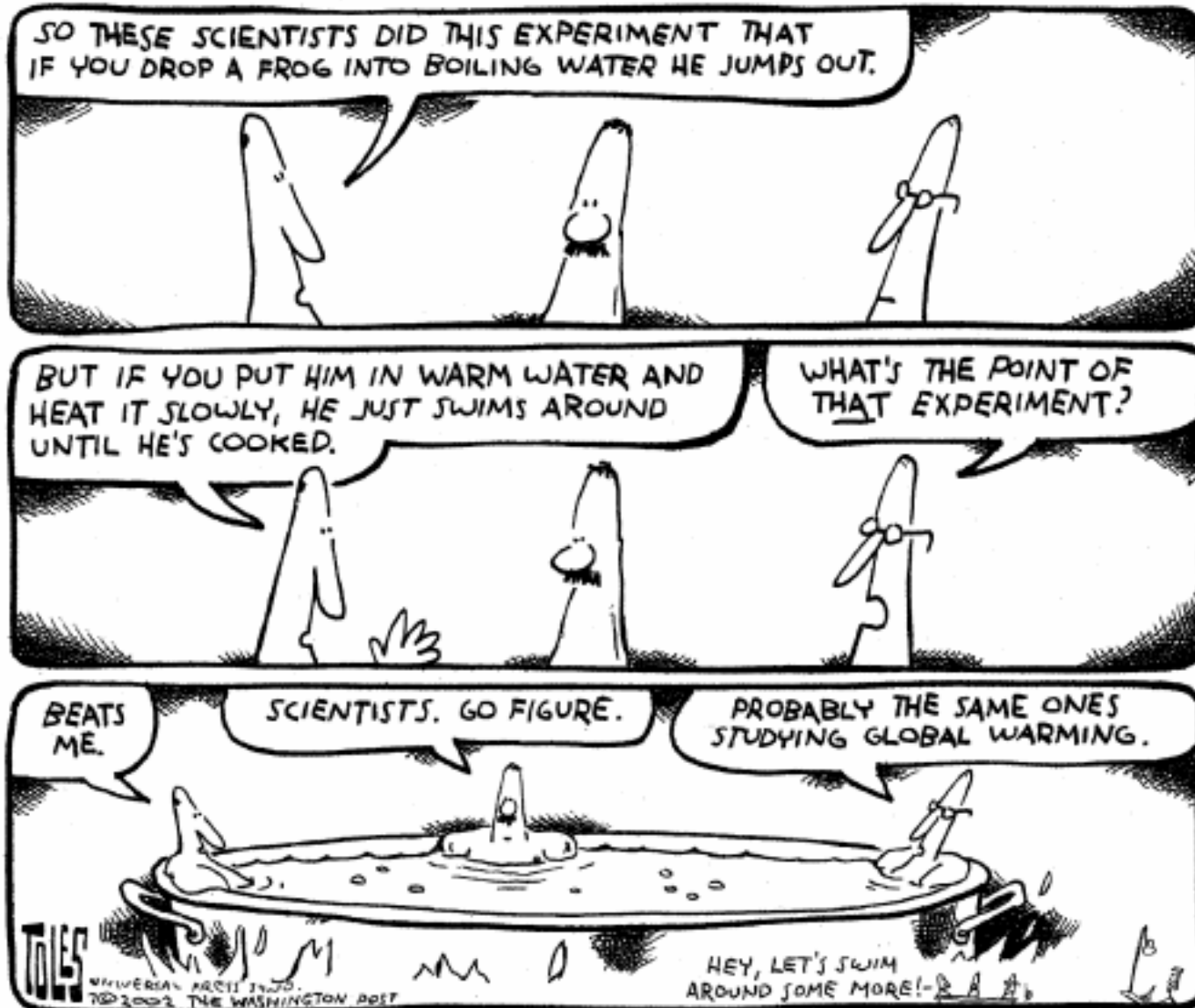


**TYPICAL JANUARY-MARCH WEATHER ANOMALIES  
AND ATMOSPHERIC CIRCULATION  
DURING MODERATE TO STRONG  
EL NIÑO & LA NIÑA**



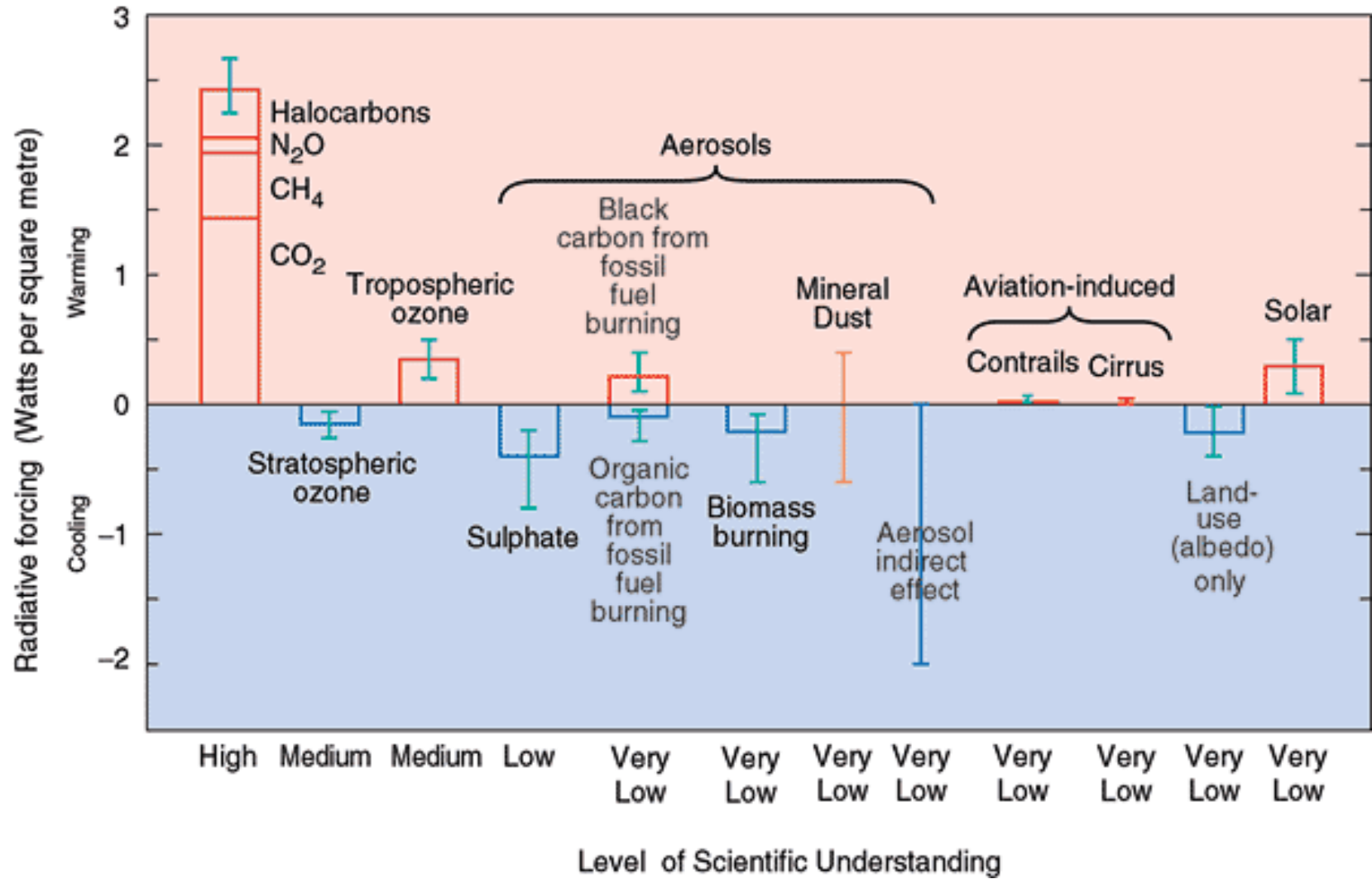
Climate Prediction Center/NCEP/NWS

# RATE OF CHANGE IMPORTANT – Timing!



# AEROSOLS & CLOUDS – ARE NOW THE BIG UNCERTAINTY

## The global mean radiative forcing of the climate system for the year 2000, relative to 1750



# SO... CHANGE

As Planet Warms it will lead to Change

But Actual Temperatures – Weather and Climate will VARY and BE DEPENDENT ON WHERE YOU LIVE..

FRIDAY JETSTREAM

