



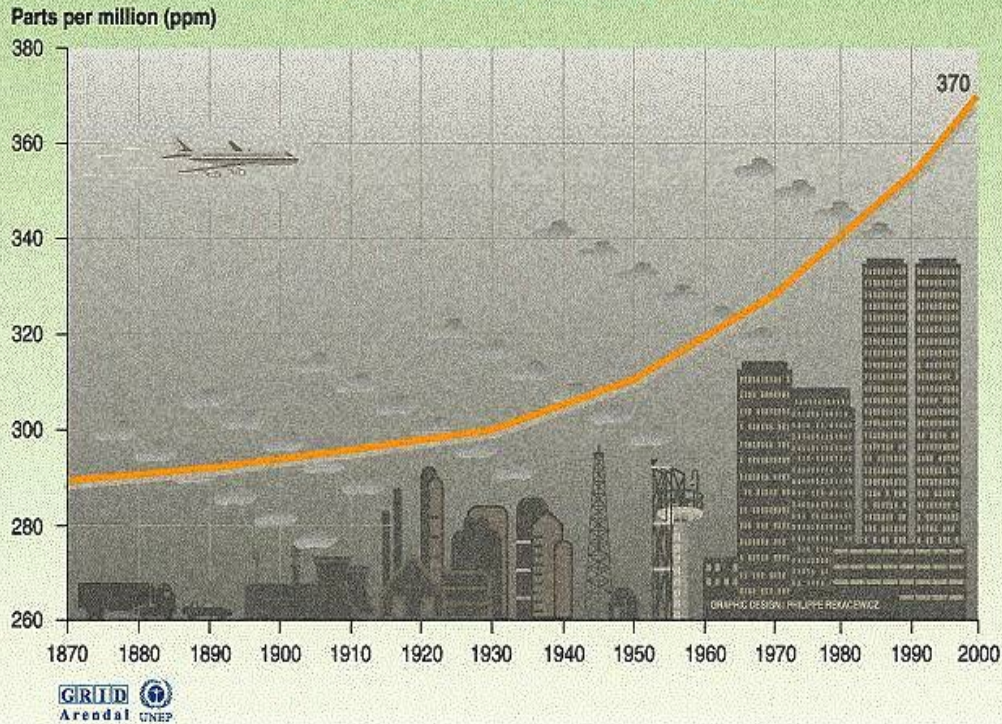
Proteggere il clima conviene

LA SITUAZIONE

Vincenzo Ferrara
ENEA

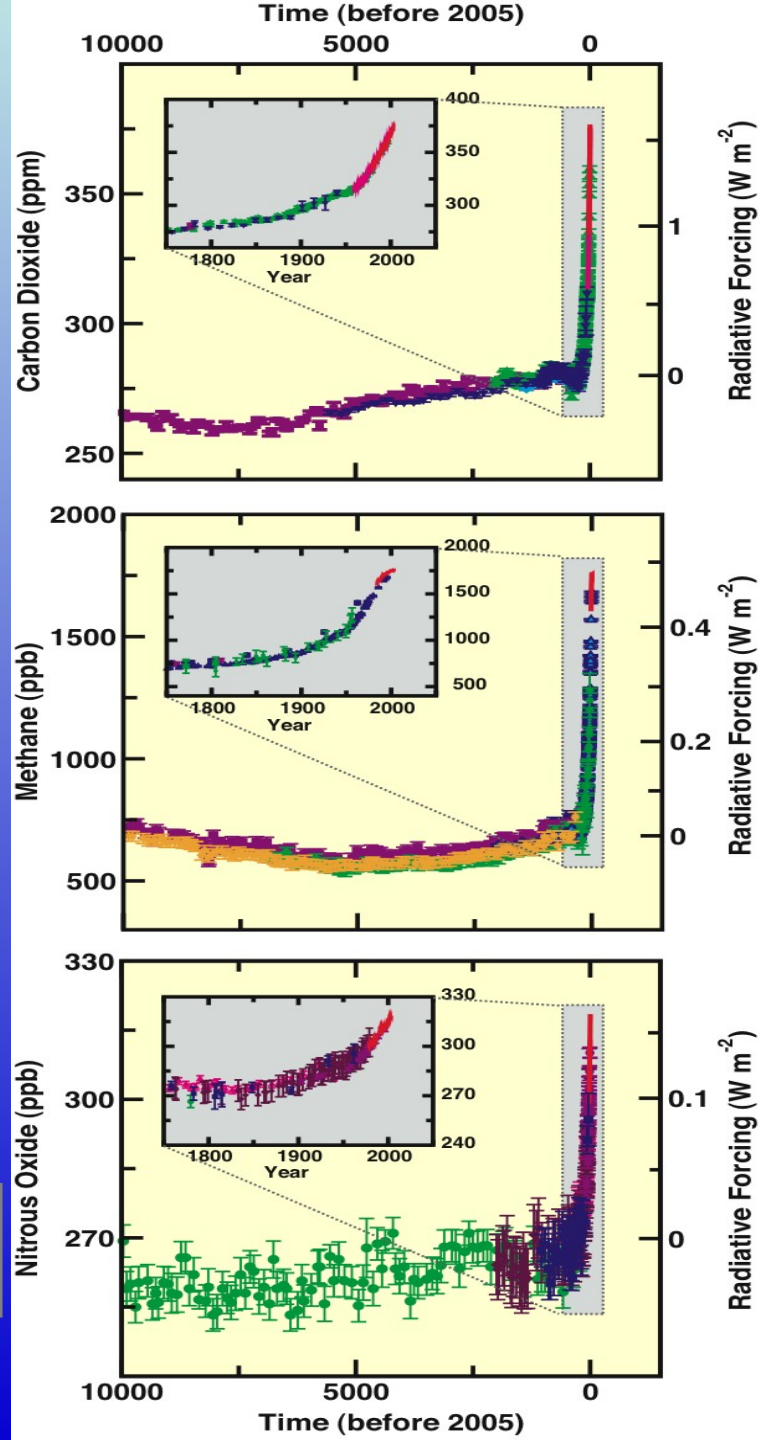
Variazione delle concentrazioni di gas serra in atmosfera

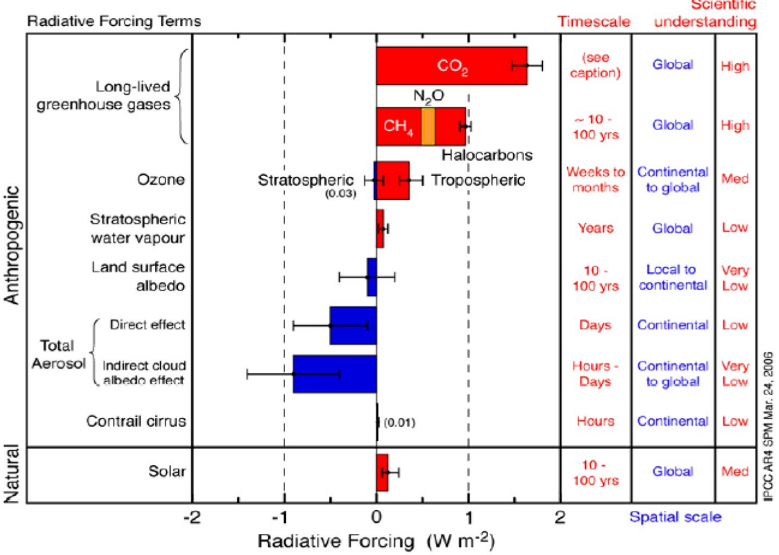
Global atmospheric concentration of CO₂



Source: TP Whorf Scripps, Mauna Loa Observatory, Hawaii, Institution of oceanography (SID), university of California La Jolla, California, United States, 1993

al 2007:
382 ppm





Variazione bilancio	Watt/m2	°C
Emissioni antropogeniche C	+3.79	+1.52
Emissioni GHG-LV	+1,35	+0.54
Attività solare	+0.12	+0.05
Effetto riscaldante totale	+5.26	+2.11
Aerosol	-1,60	-0.64
Assorbimento C oceani-geosfera	-2.16	-0.86
Effetto raffreddante totale	-3.76	-1.50
Bilancio complessivo	+1.50	+0.61
Latente (rischio reazione a catena)	+3.76	+1.50

Effetto serra aggiuntivo

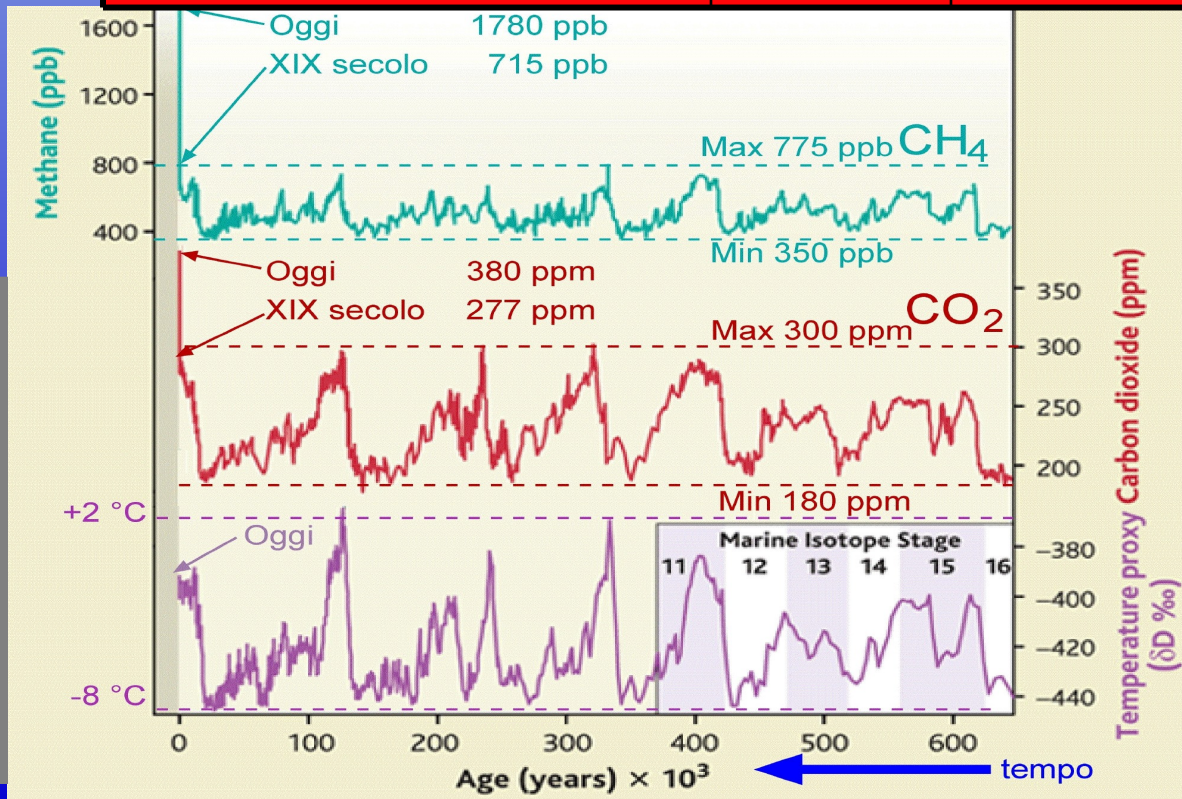
Consuntivo:

Gas serra = + 2.98 watt/m2
 Variazione temperatura = + 1.19 °C

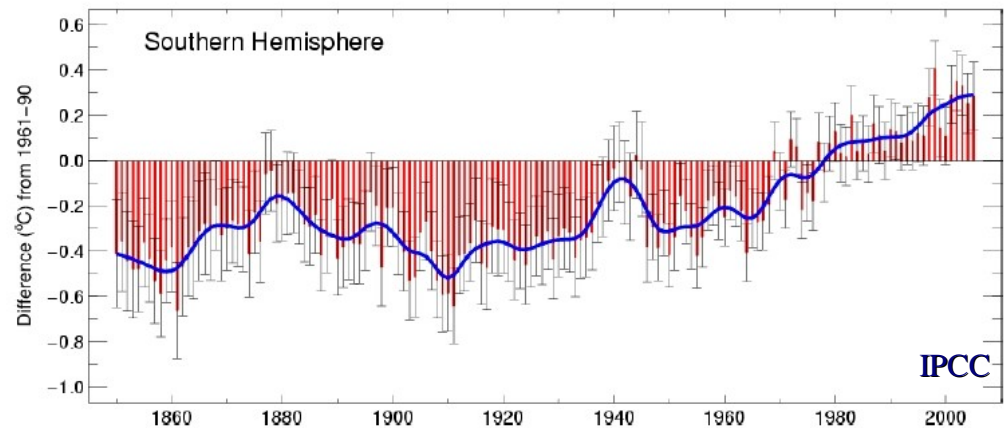
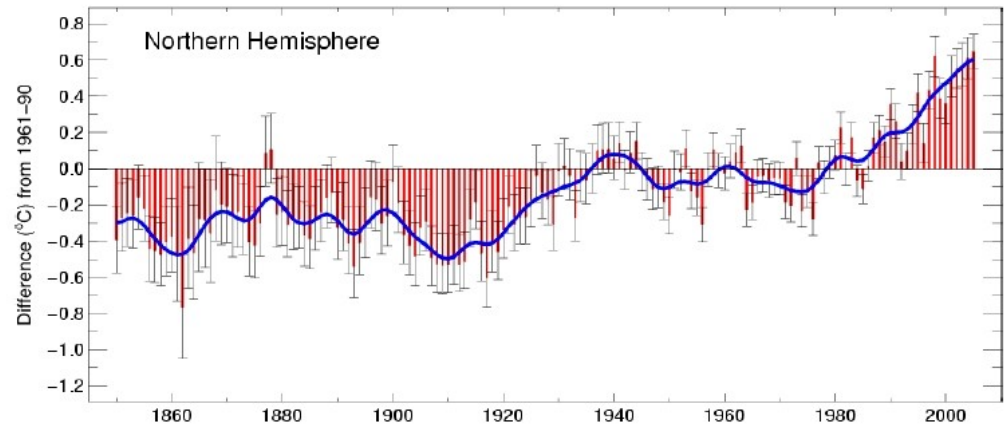
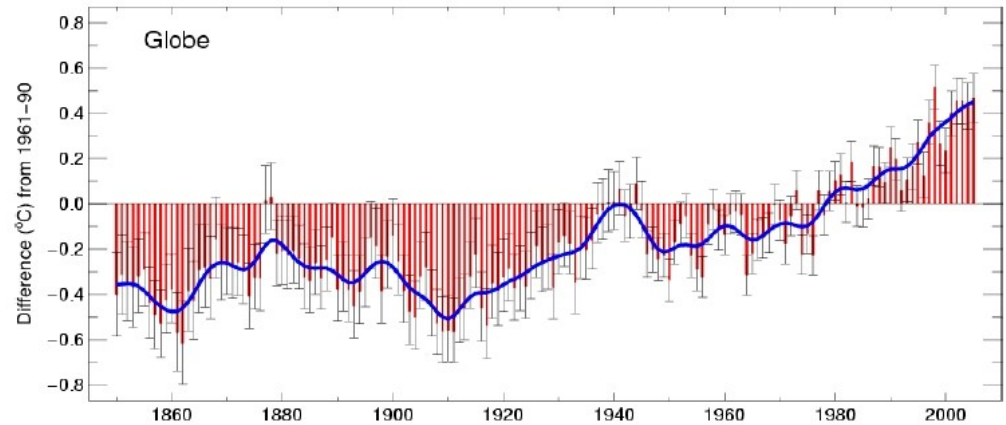
Aerosol = - 1.60 watt/m2
 Variazione temperatura = - 0.63 °C

Attività solare = + 0.12 watt/m2
 Variazione temperatura = + 0.05 °C

Totale = + 1.50 watt/m2
Variazione temperatura = + 0.61 °C

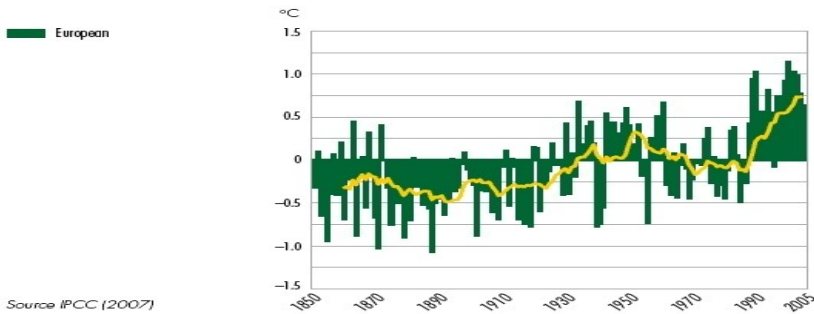


ATMOSFERA

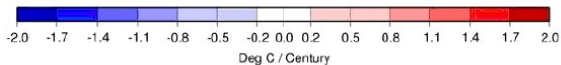
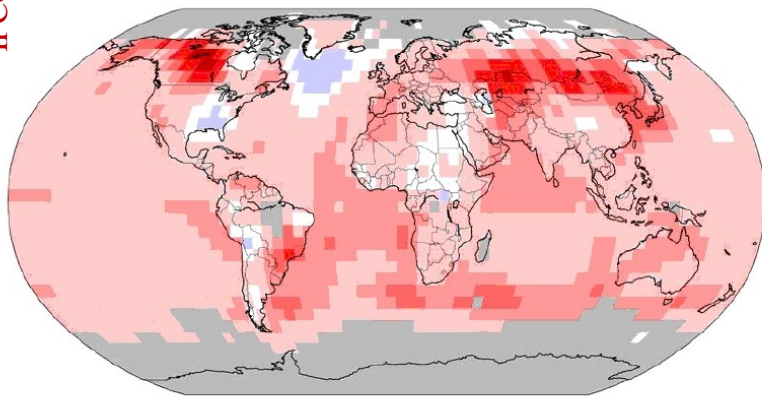


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Annual mean temperature deviations in Europe



Trend in Annual TMEAN, 1901 to 2004

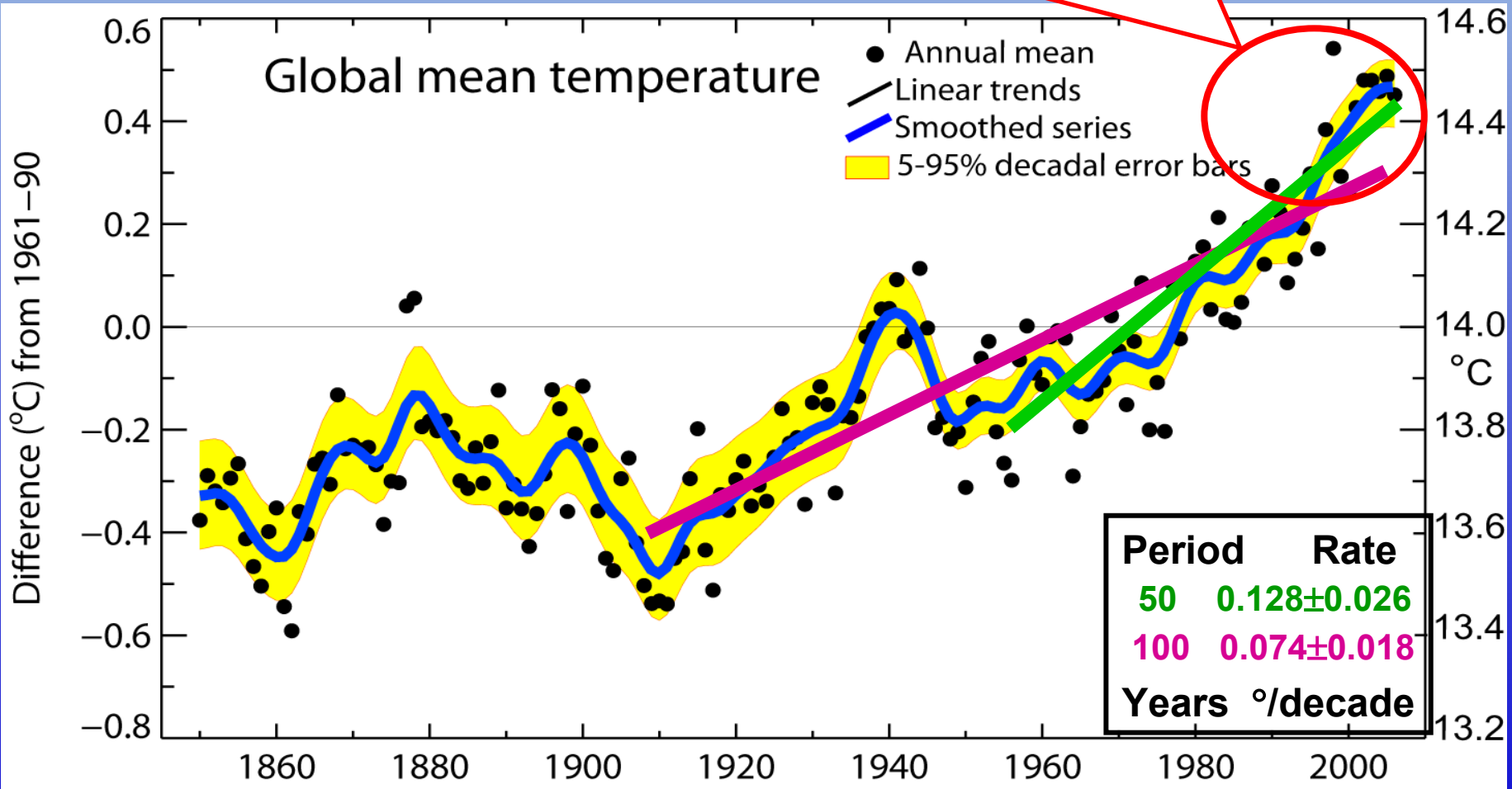


Deg C / Century

IPCC

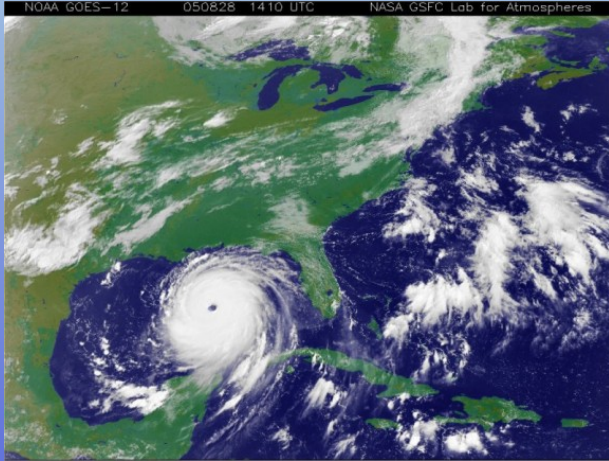
Andamento temperature

Warmest 12 years:
1998, 2005, 2003, 2002, 2004, 2006,
2001, 1997, 1995, 1999, 1990, 2000

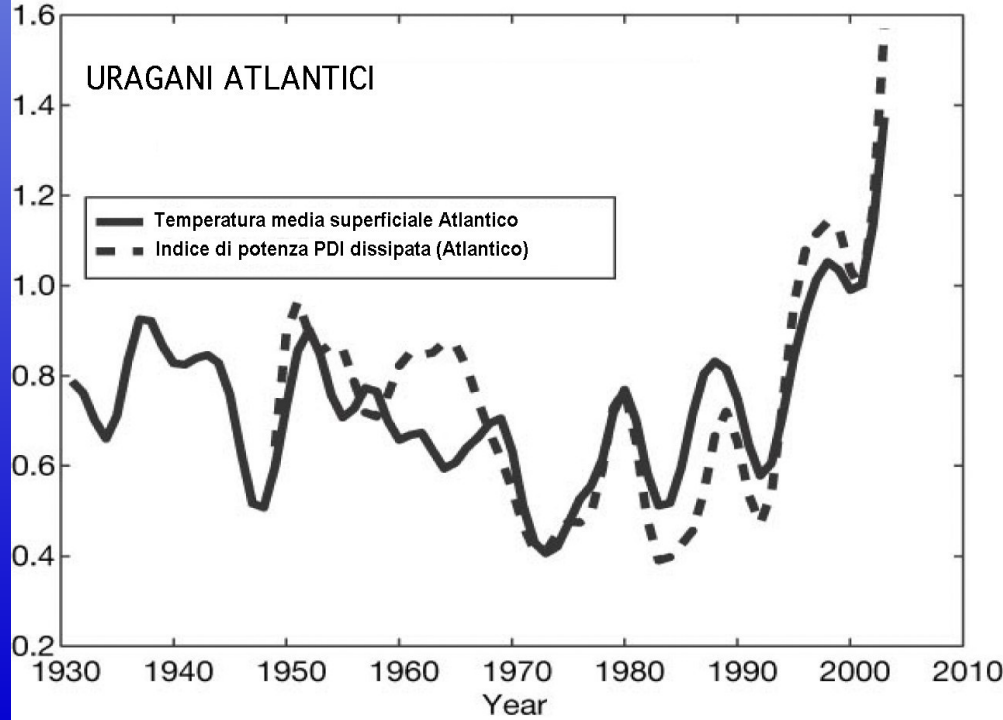
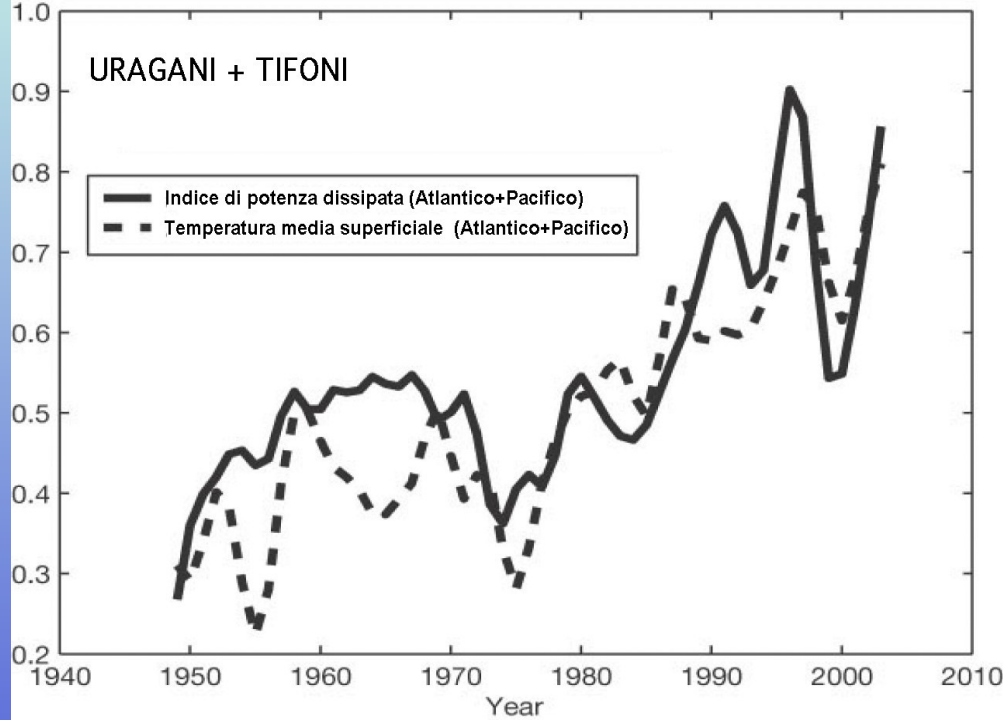
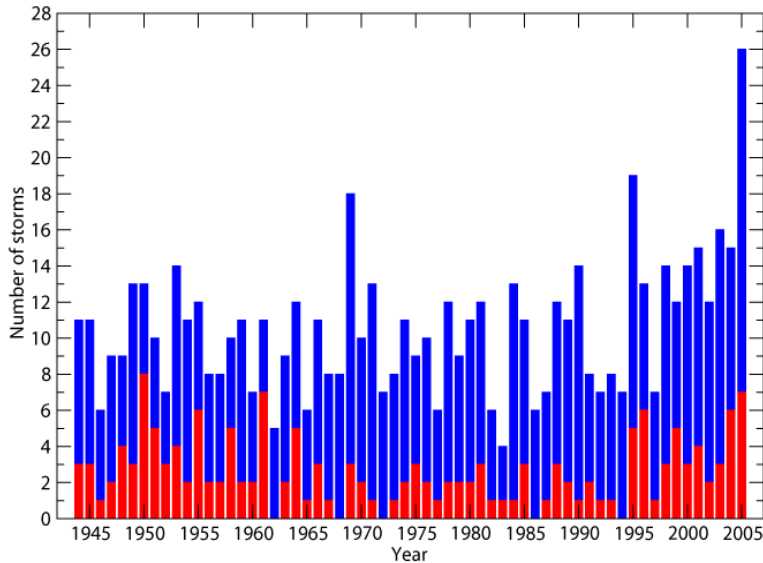


ATMOSFERA

Aumenta la potenza distruttiva degli uragani



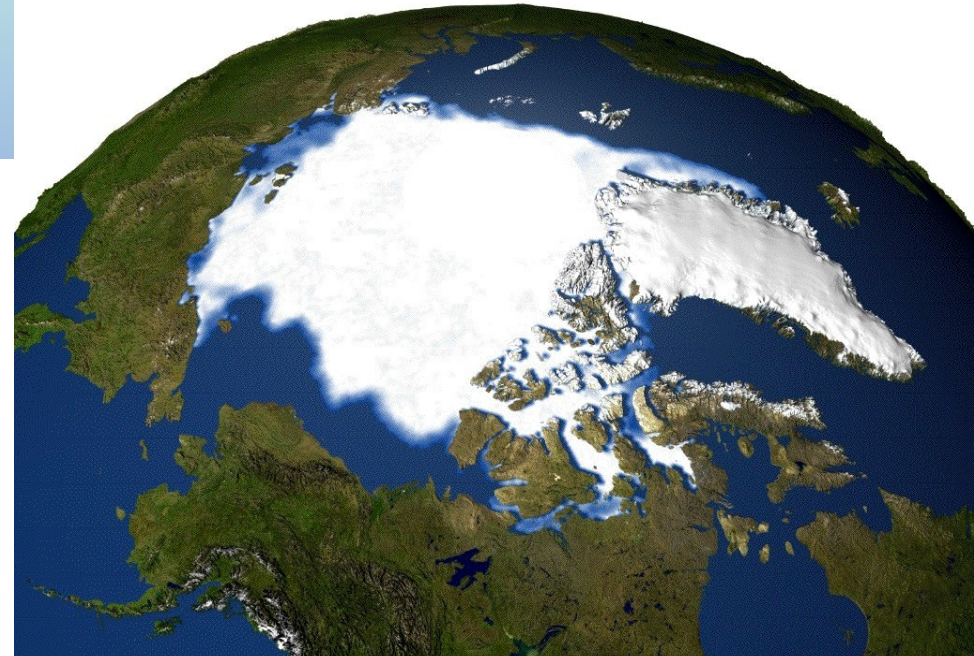
Annual Number of Named Storms and Major Hurricanes
Atlantic, 1944-2005 (preliminary number for 2005)



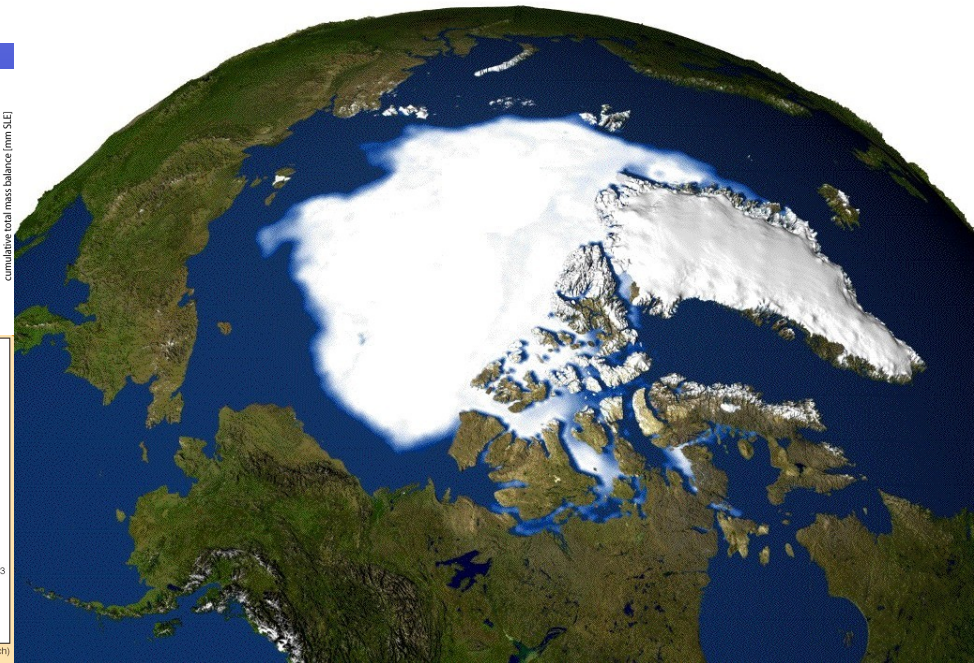
CLIMA e CRIOSFERA

I ghiacci si contraggono

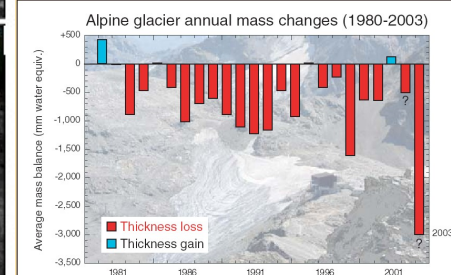
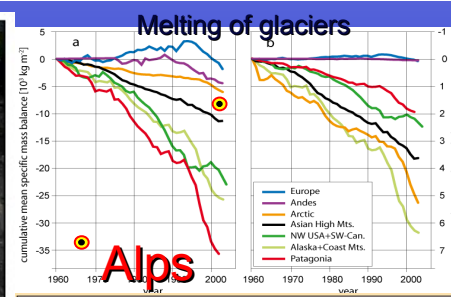
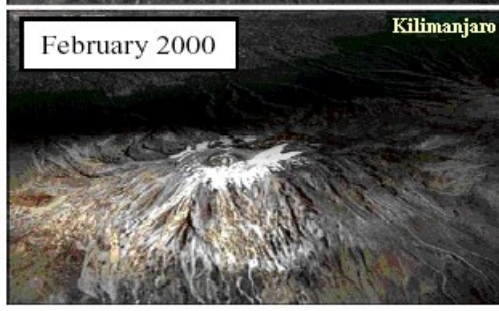
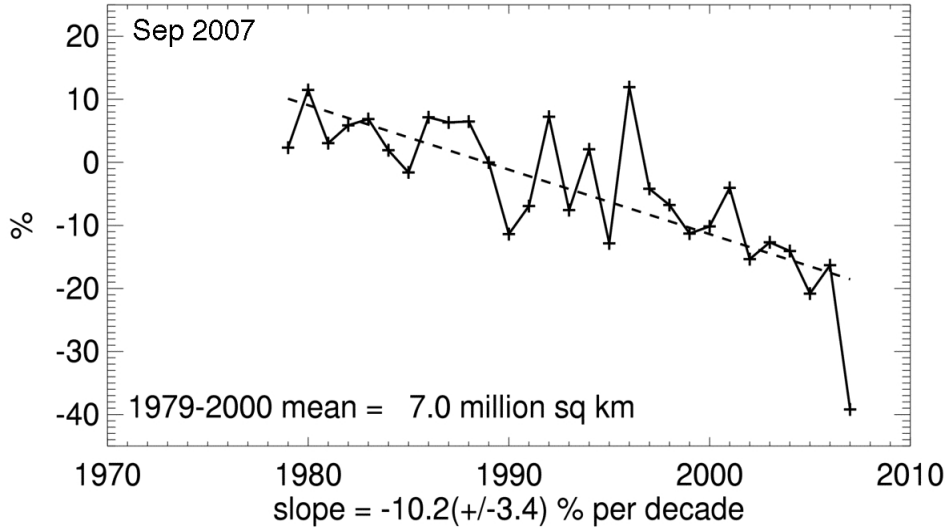
1979



2005



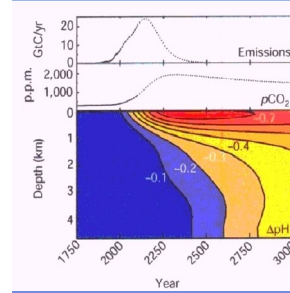
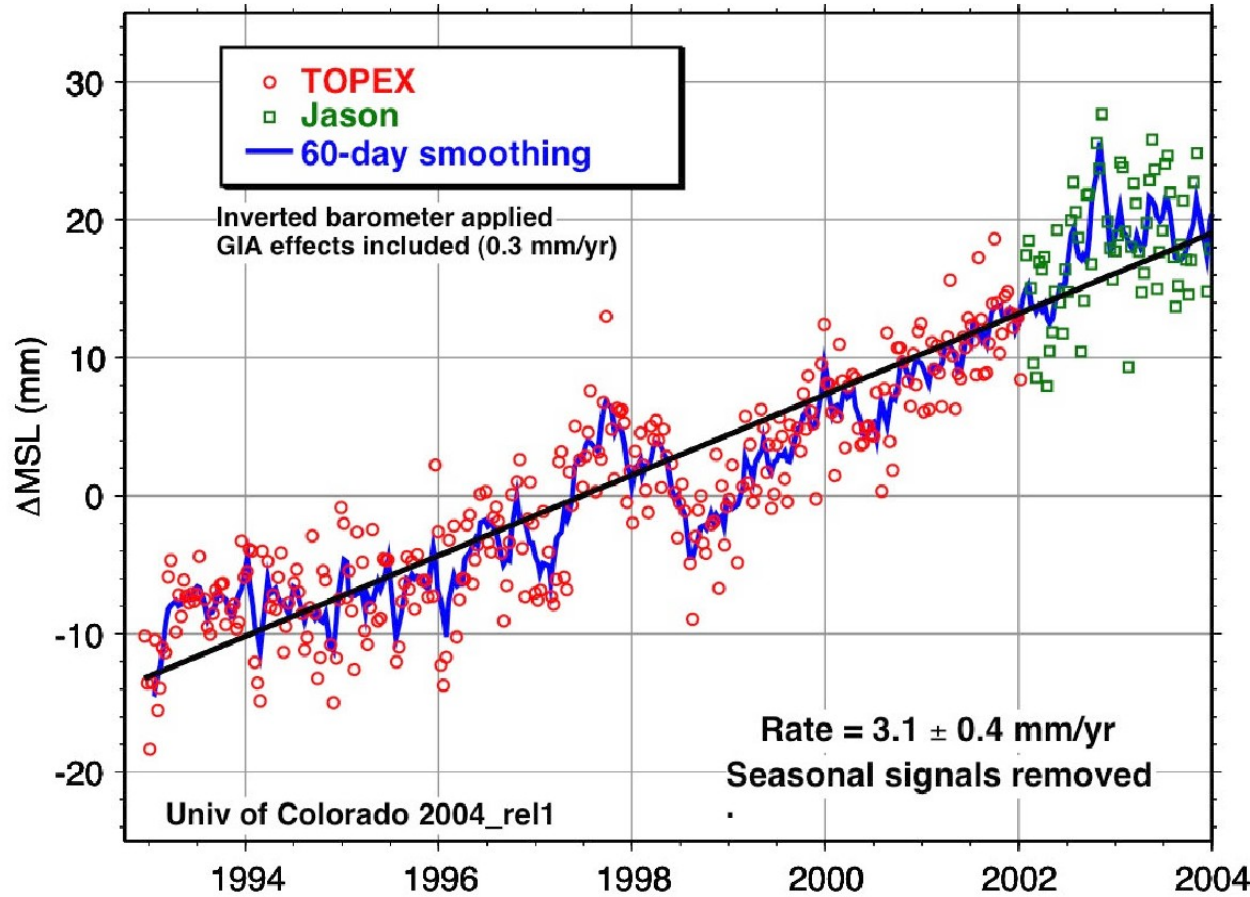
Arctic Ice Extent Anomalies



Mass balance based on 10 alpine glaciers: St. Sorlin, Sarennes, Silvretta, Gries, Sonnblickkees, Vernagtferner, Kesselwandferner, Hintereis-ferner, Careser.

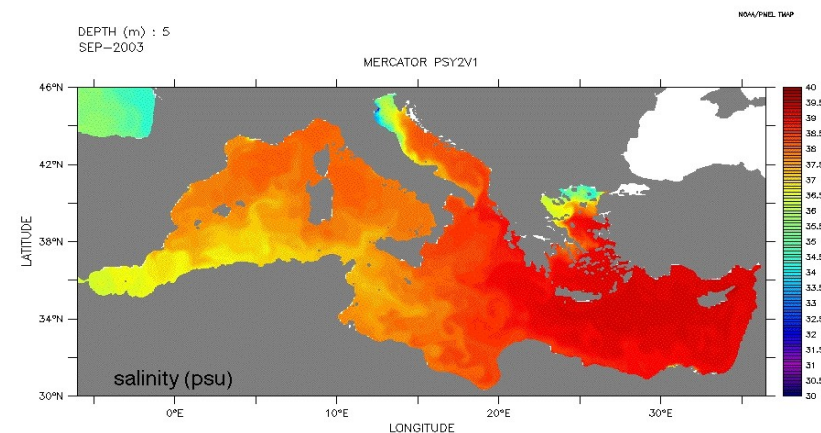
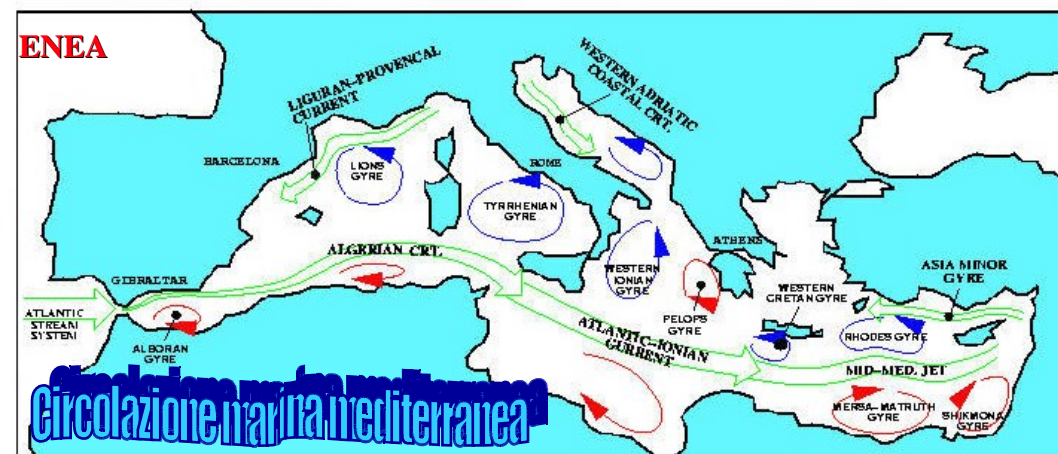
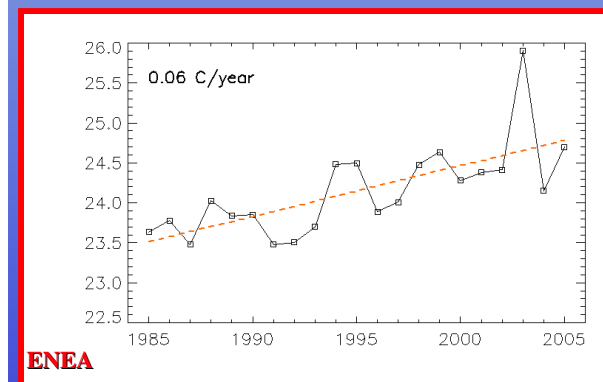
Courtesy: Regula Frauenfelder (World Glacier Monitoring Service, Zürich)

OCEANI E CLIMA

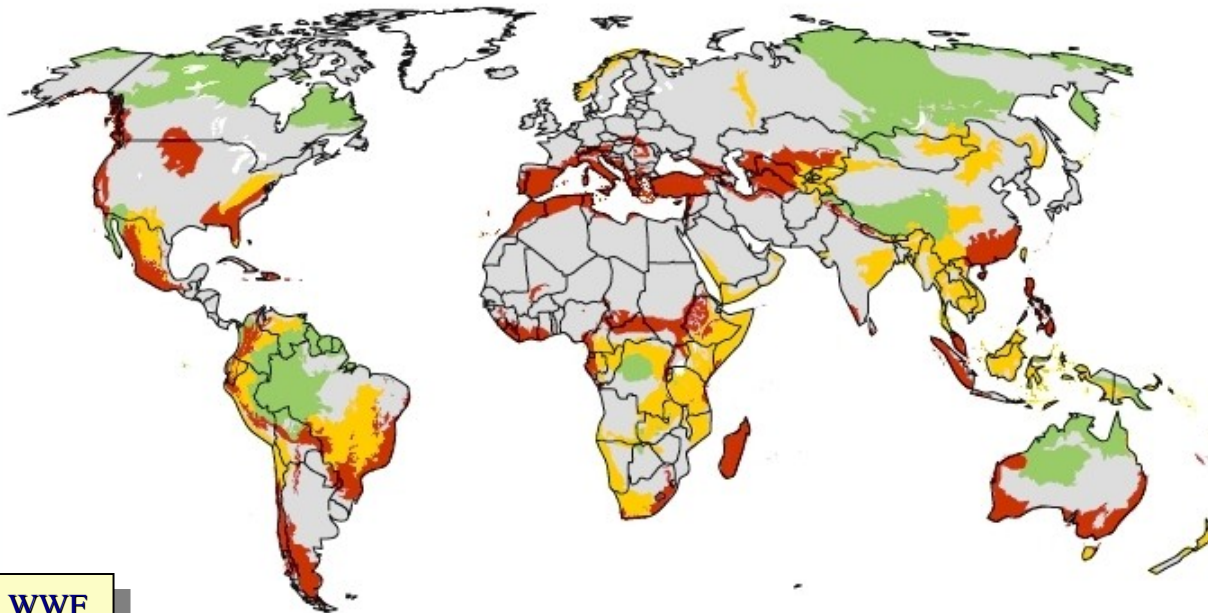


Il Mediterraneo diventa più caldo e più salato

Ma, per ora, non si solleva come gli altri mari e oceani



Status of terrestrial ecoregions

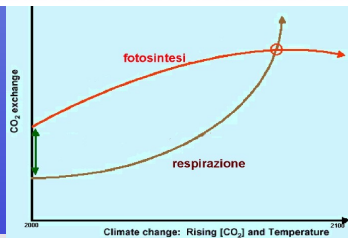


- Critical or endangered
- Relatively stable or intact
- Vulnerable
- Ecoregions with no ongoing threat

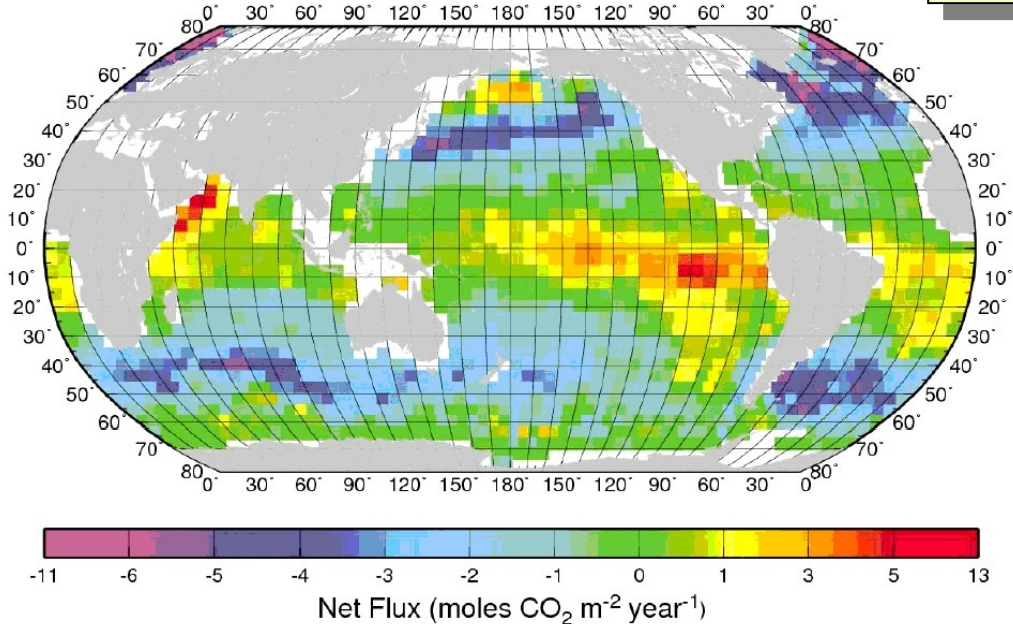
Note: An ecoregion is a large unit of land containing a geographically distinct assemblage of species, natural communities, and environmental conditions.

Source: WWF 2006

WWF

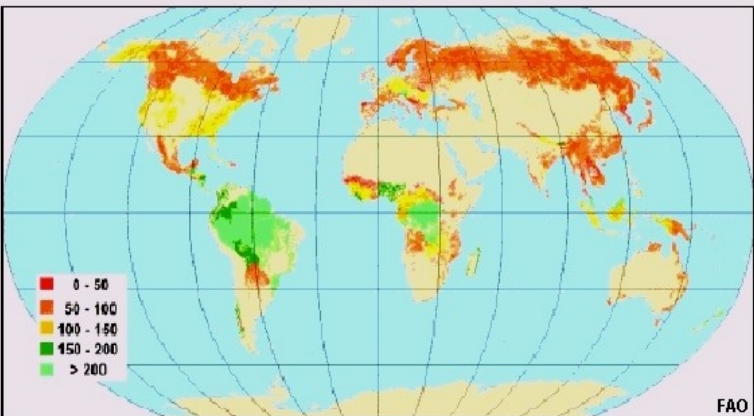


Mean Annual Ocean Flux



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Net Flux (moles CO₂ m⁻² year⁻¹)



FAO

BIOMASSA FORESTALE

tonnellate per ettaro