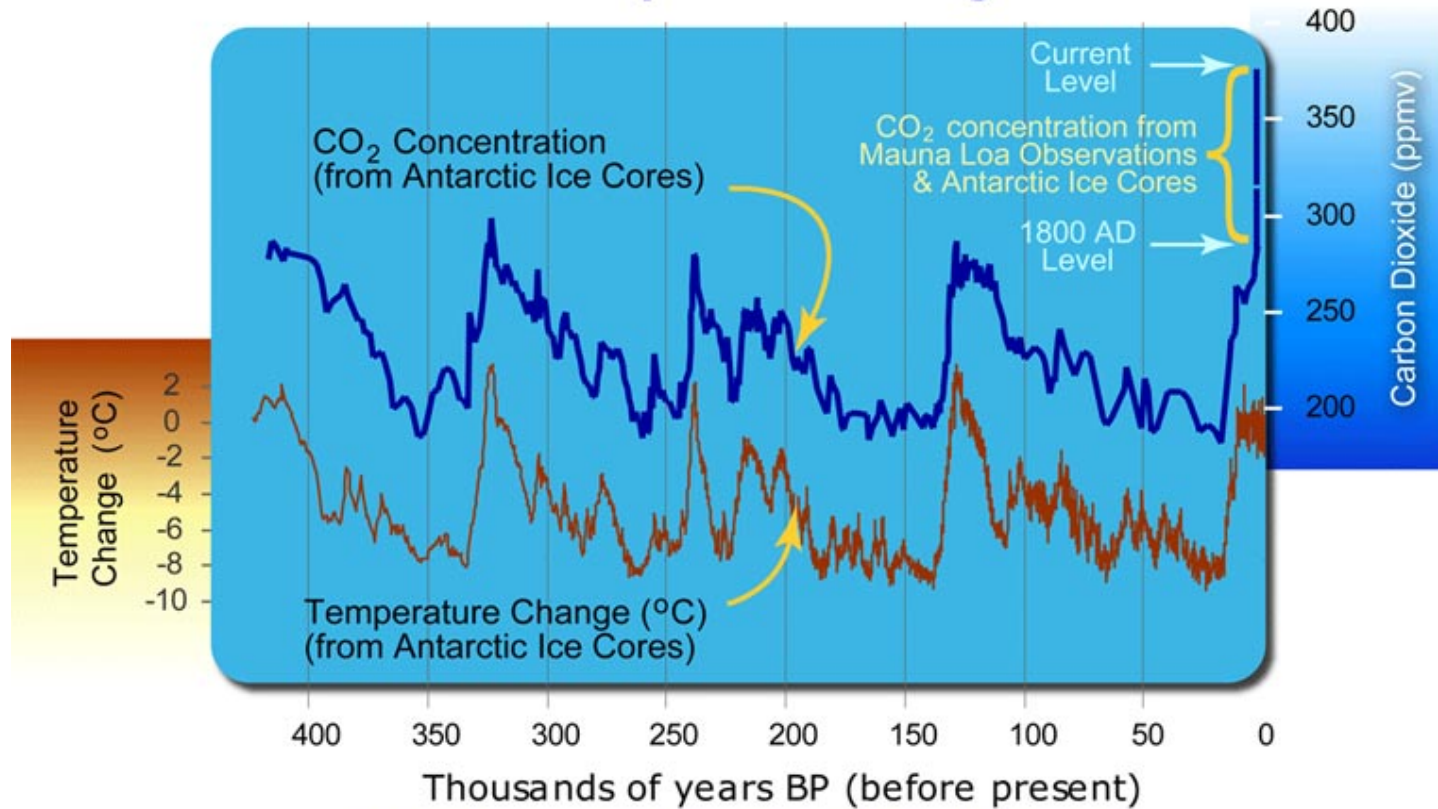


400 Thousand Years of Atmospheric Carbon Dioxide Concentration and Temperature Change

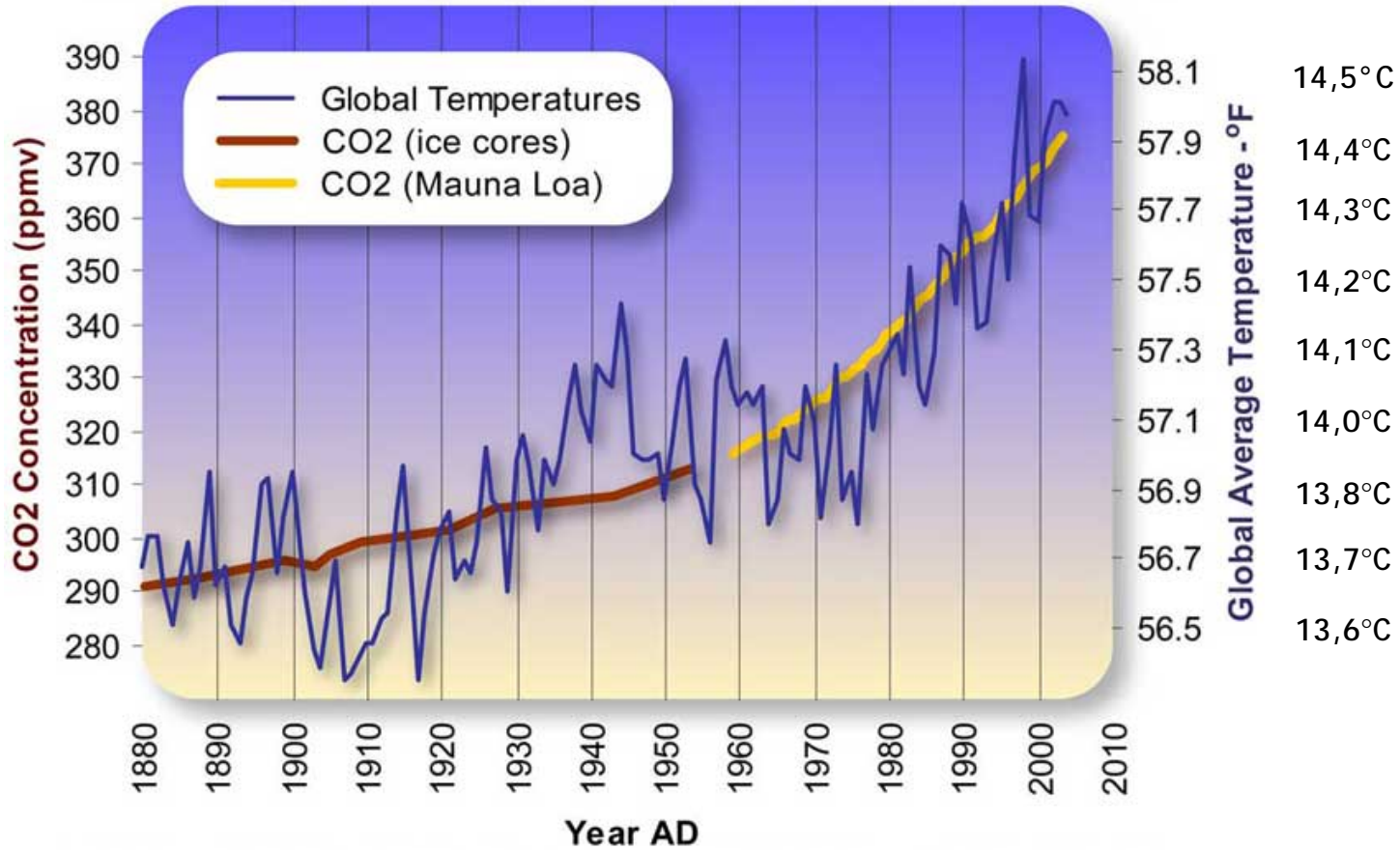


Data Source CO₂: <ftp://cdiac.ornl.gov/pub/trends/co2/vostok.icecore.co2>
Data Source Temp: <http://cdiac.esd.ornl.gov/ftp/trends/temp/vostok/vostok.1999.temp.dat>

Graphic: Michael Ernst, The Woods Hole Research Center



Global Average Temperature and Carbon Dioxide Concentrations, 1880 - 2004



Data Source Temperature: ftp://ftp.ncdc.noaa.gov/pub/data/anomalies/annual_land.and.ocean.ts

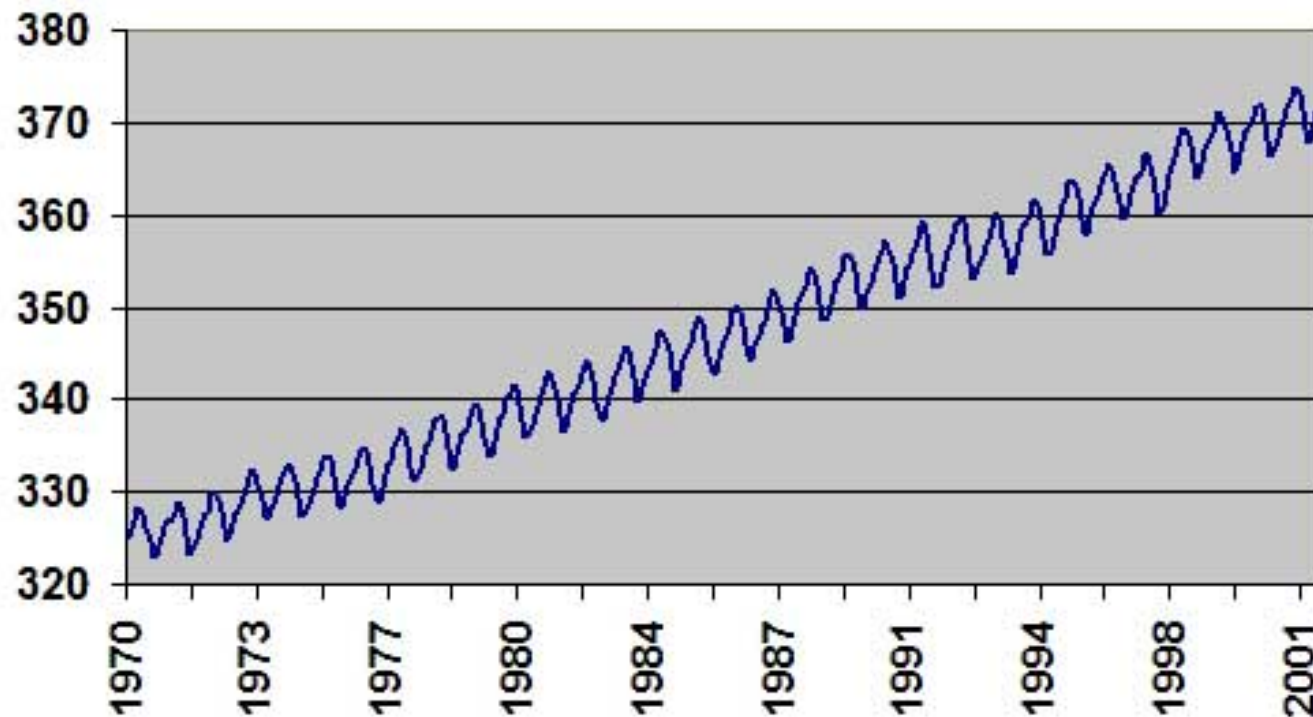
Data Source CO2 (Siple Ice Cores): <http://cdiac.esd.ornl.gov/ftp/trends/co2/siple2.013>

Data Source CO2 (Mauna Loa): <http://cdiac.esd.ornl.gov/ftp/trends/co2/maunaloa.co2>

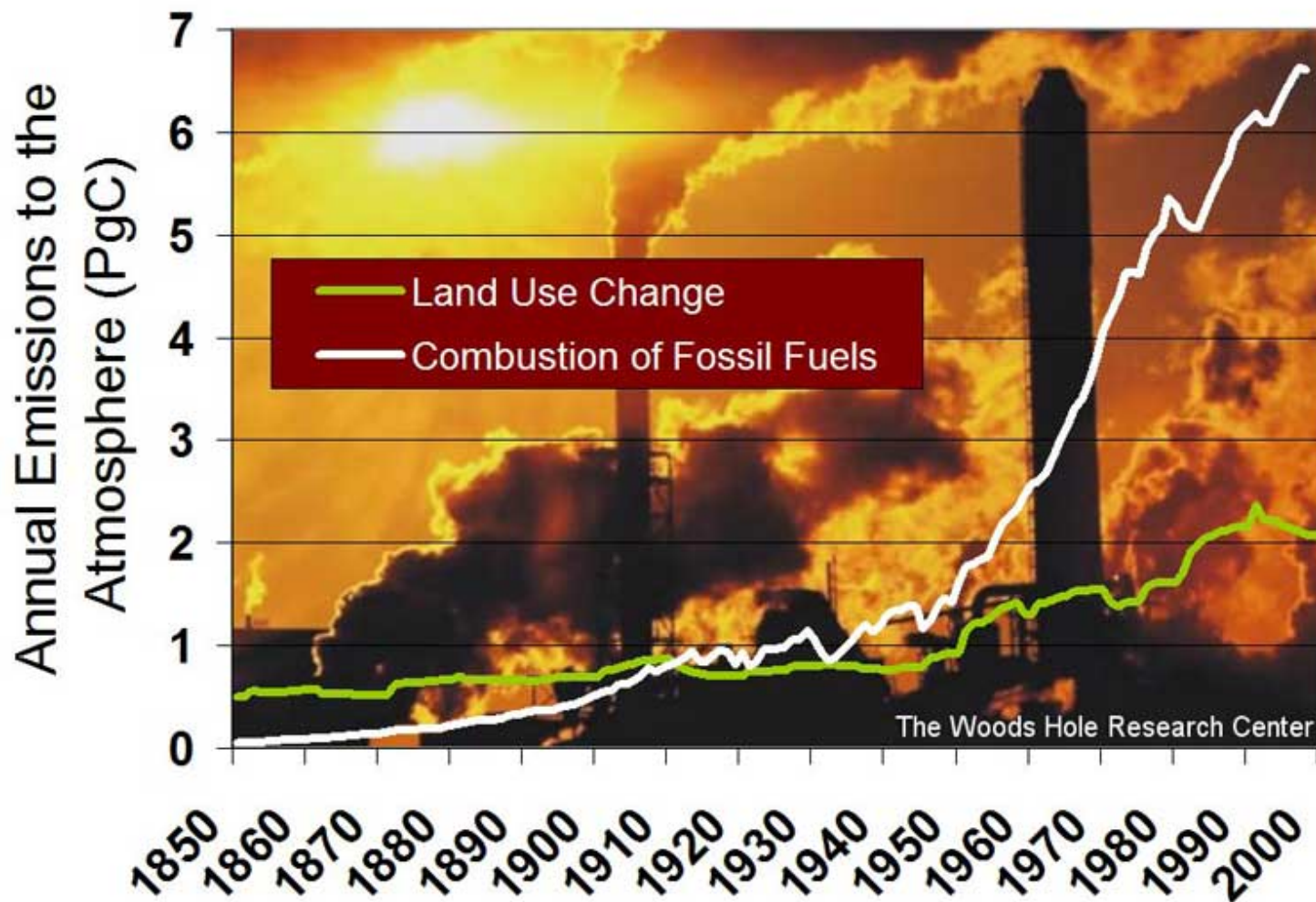
Graphic Design: Michael Ernst, The Woods Hole Research Center



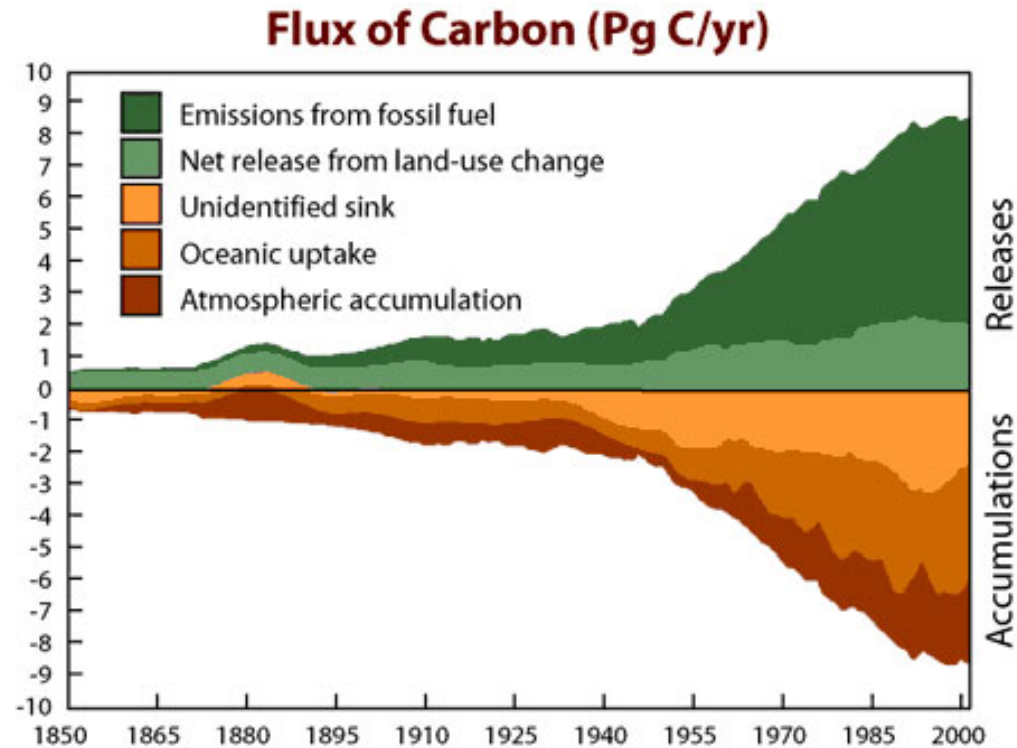
Atmospheric CO2 Concentration at Mauna Loa (ppm)



Most of the increase in atmospheric CO2 concentrations came from and will continue to come from the use of fossil fuels (coal, oil, and natural gas) for energy, but about 25% of the increase over the last 150 years came from changes in land use, for example, the clearing of forests and the cultivation of soils for food production



The global carbon cycle can be summarized as follows
 (units are PgC. - One Pg [petagram]=one billion metric tonnes=1000 x one billion kg)



In the last few years several independent analyses based on geochemical data (data from the atmosphere and oceans) and a series of carbon budgets based on data from forest inventories have shown that carbon is accumulating in northern mid-latitude terrestrial ecosystems, although estimates of the magnitude and location of the accumulation vary among the analyses.

In the tropics (where forest inventories are rare), the total net flux of carbon from changes in land use (2.2 PgC/yr) is consistent with recent estimates of flux based on atmospheric data. Globally, terrestrial ecosystems are calculated to have been a net sink of 0.7 (± 0.8) PgC/yr to the atmosphere during the 1990s.

More information: <http://www.whrc.org/carbon/index.htm>