



Earth System Research Laboratory

SCIENCE, SERVICE & STEWARDSHIP

Global Carbon Dioxide Research

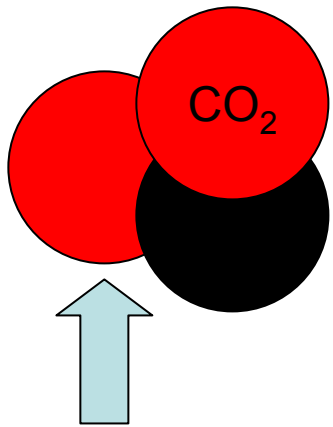
Dave Hofmann - Introduction

NOAA Earth System Research Laboratory

ESRL Dedication and Open House

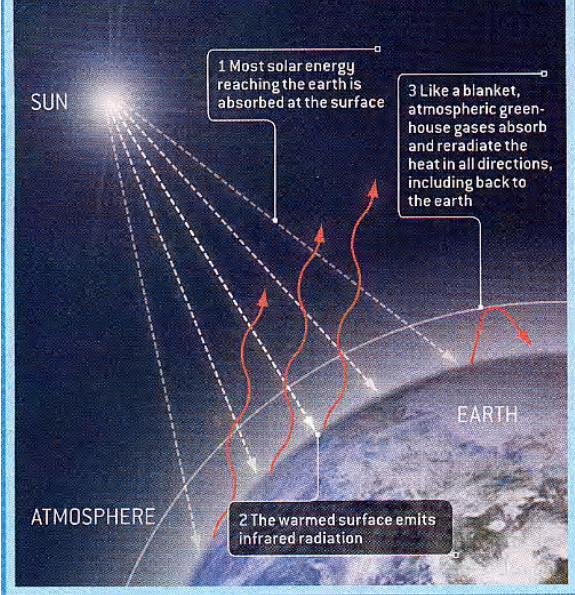
August 23-24, 2006



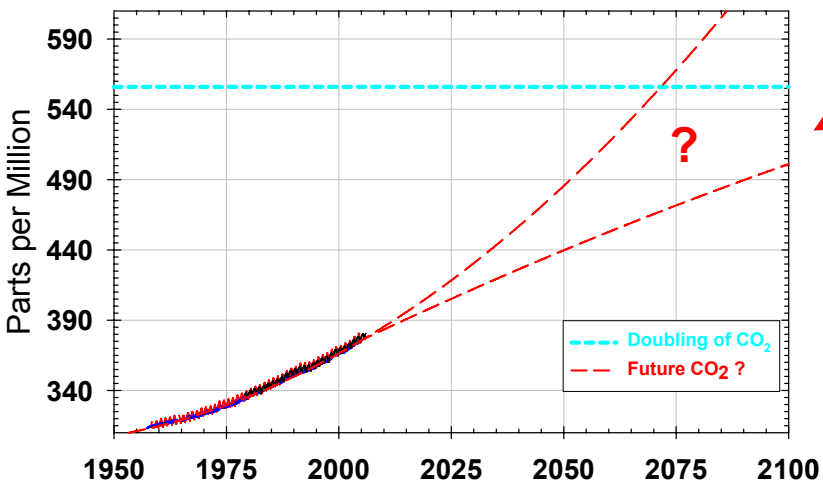
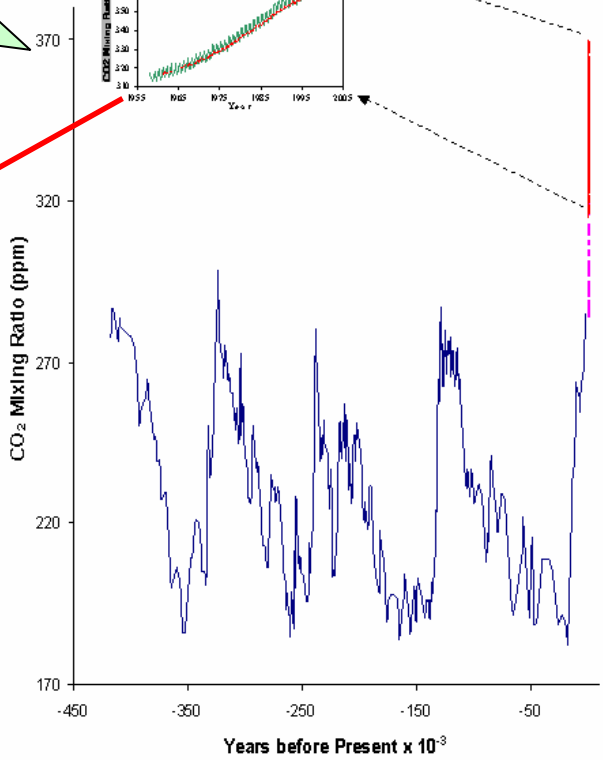
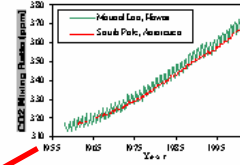


Greenhouse Gas

The Last 400 Thousand Years



Atmospheric Carbon Dioxide (Antarctic Record)



Directions for Climate Change Research

Climate Change Science Program

The Science of Climate Change

Intergovernmental Panel on Climate Change

NOAA 5-yr Research Plan

The Science of Adaptation to Change

Building a Resilient Society



WMO
Greenhouse Gas Bulletin
The State of Greenhouse Gases in the Atmosphere Using Global Observations up to December 2004

Three-dimensional representation of the latitudinal distribution of atmospheric CO₂ mixing ratios for the period 1983-2004. Mixing ratios are given in parts per million (ppm). A mixing ratio of 280 ppm, for example, means that among 1 million air molecules one will find 280 CO₂ molecules.

Executive summary
The latest analysis of data from the WMO/GAW Global Greenhouse Gas Monitoring Network shows that the globally averaged mixing ratios of carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) have all reached new highs in 2004 with CO₂ at 377.1 ppm, CH₄ at 1783 ppb, and N₂O at 318.8 ppb. These values are higher than those in pre-industrial times by 35%, 155%, and 16%, respectively. Atmospheric growth rates in 2004 of these gases are consistent with recent years. Methane growth has slowed during the past decade. The recently introduced NOAA Annual Greenhouse Gas Index (AGGI) shows that from 1993 to 2004 the atmospheric radiative forcing by all long-lived greenhouse gases has increased by 20%.

World Meteorological Organization
Paris, France
No. 1-14 March 2006

Global Atmosphere Watch

Climate Change Technology Program

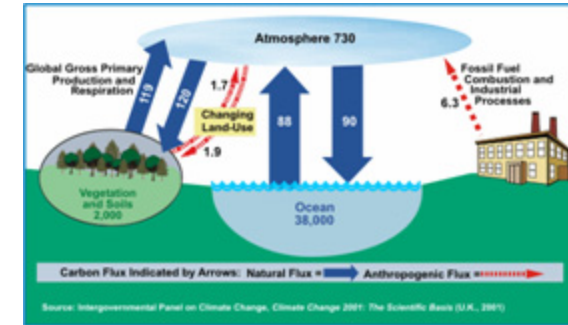
The Science of Mitigation of Change

What to do with CO₂ ? (Sequestration)
Where are the CO₂ Sources and Sinks ?
Carbon Management

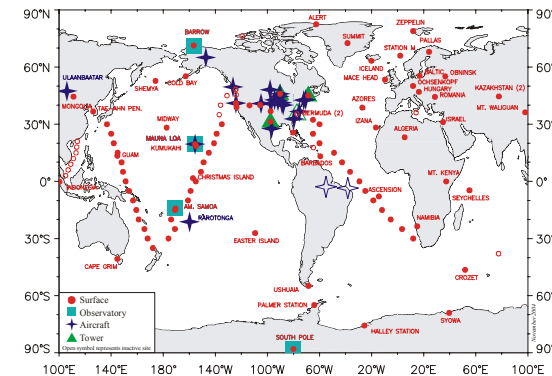


How Does Society Benefit From ESRL's Research?

- If society is to manage or reduce carbon emissions in the future, reliable and accurate information on carbon dioxide levels for verification of emission reductions will be needed on local, regional, and global scales.



- The current world-wide network operated by NOAA/ESRL provides a global foundation for monitoring and understanding carbon dioxide but expansion is needed to provide regional carbon management information.





European Climate Exchange

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Wed, 16 Aug 2006 > 11:31 pm GMT

Quick Links



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European Climate Exchange

Welcome to Europe's premier marketplace for trading carbon dioxide emissions. ECX offers advanced, low-cost and financially guaranteed tools for the EU ETS.

[Click here to view ECX Indices](#)

Latest News

Kyoto CO2 market on track after software deal -UN

15 August 2006

(Reuters) - The United Nations climate change body has awarded a key software contract that will allow trading of pollution cuts between rich and poor countries to kick off on time in April 2007, it said on Tuesday.

"Awarding this contract is a significant milestone in finalising the systems to make carbon trading under the Kyoto Protocol a reality," said Richard Kinley, acti...

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Previous Days Trading Data

	Sett	Vol	EFP	Open Int
SEP06	15.40	20	0	30
DEC06	15.60	486	280	26552
DEC07	16.25	170	120	12684
DEC08	17.55	560	440	12287
DEC09	18.15	25	25	1481
		1261	865	58621

Market Snapshot

[Read more...](#)



Powernext

European Climate Exchange Carbon Financial Instruments cleared | quoted | liquid | transparent | regulated



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Investors Forum August 14, 2006

Der Spiegel: How August 9, 2006

CCX: featured in Magazine July 30, 2006

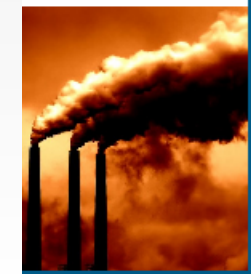
Tiger 21: Dr. Richard Sandor, Father of the Interest Rate Futures Market Addresses



ECX Carbon Financial Instrument Futures

Contact Us

an industry to commercial, legal risks associated with use gas



European Climate Exchange (ECX) Carbon Futures Emissions Index:

15 August 2006 Price Quotation:

Sep 2006: €15.40 (Euros per tonne CO₂)

Dec 2006: €15.60

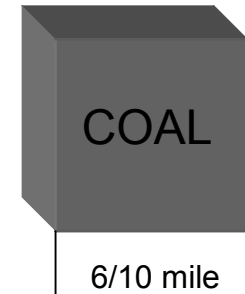
Dec 2007: €16.25

Dec 2008: €17.55

Dec 2009: €18.15

Approximately \$20 per tonne CO₂

One Billion Tonnes of Carbon



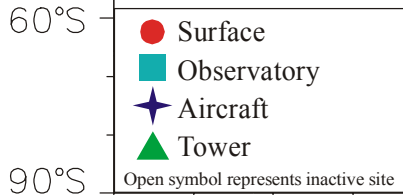
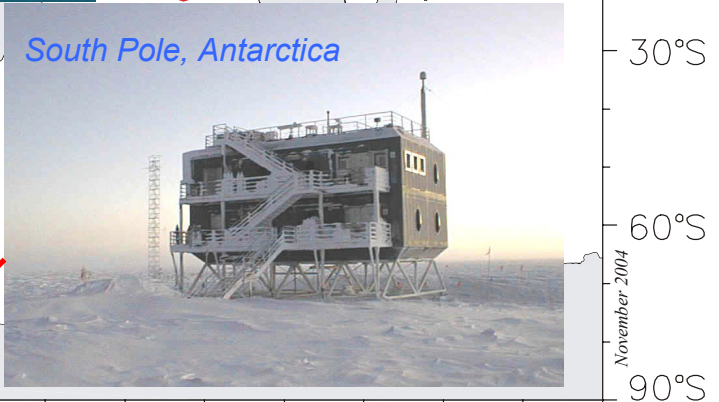
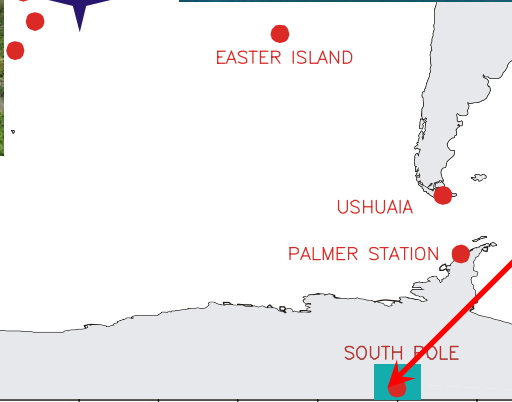
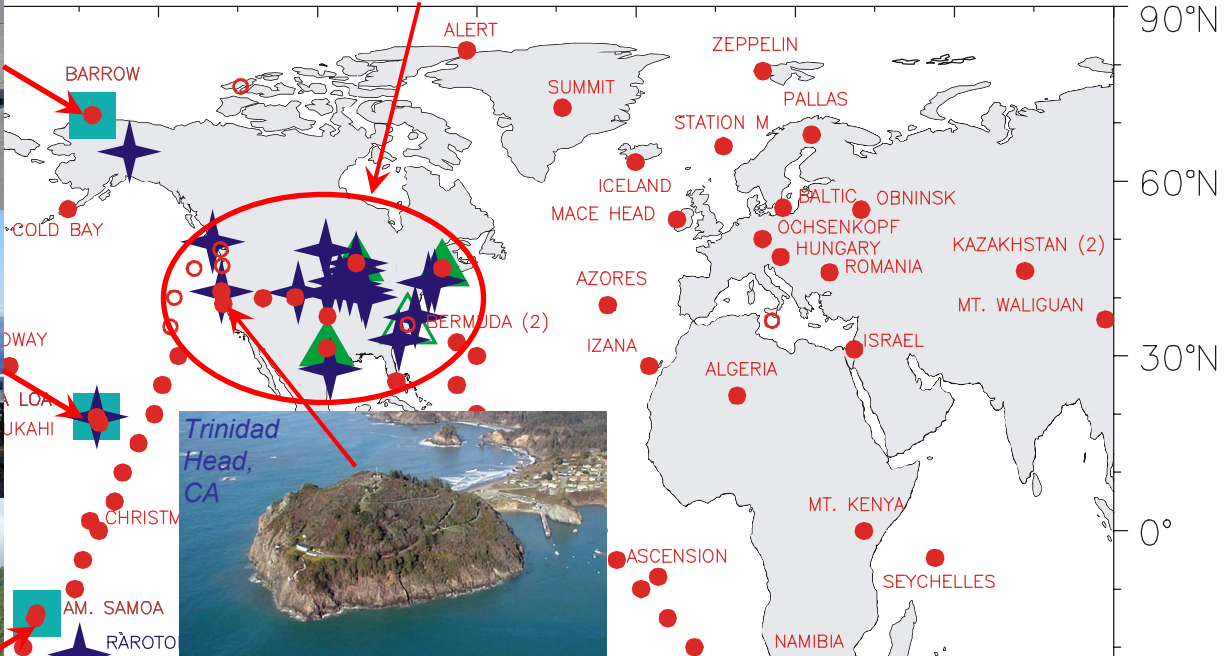
The U.S. terrestrial biosphere is estimated to take up about 1.8 Billion tonnes of CO₂ each year....

**1.8 Billion tonnes X \$20 per tonne
= \$36 Billion**

But we don't clearly understand how this happens and thus how long it will last!!

ESRL GLOBAL COOPERATIVE CO₂ NETWORK

North American Carbon Cycle Observing System
Small Aircraft / Tall Towers....Under Construction



What you will hear....

- Pieter Tans, NOAA Senior Scientist and leader of the ESRL carbon dioxide group, on what we have learned about carbon dioxide
- Wouter Peters, a young University of Colorado Joint Institute Research Scientist, on where we are headed and need to go in the future

What you will see...

Video Clip from the Pt. Barrow, Alaska Observatory

Dan Endres, Station Chief, will give a brief demonstration of carbon dioxide measurements being made at the Barrow Observatory on the north slope of Alaska recorded yesterday

Followed by a panel discussion with ESRL scientists and Barrow Observatory personnel live by VTC