

03.10.2007 ore 21 - 6,749,875,148

<http://www.census.gov/ipc/www/popclockworld.html>

http://earthobservatory.nasa.gov/Newsroom/NewImages/images.php3?img_id=17524

The weather

Cambiamenti climatici e popolazioni
Luca Lombroso - www.lombroso.it



NEWSFOCUS

Gli scienziati dicono ai politici: stiamo scaldando il mondo!

L'avevano detto da tempo, ma ora i climatologi lo dicono con passione e sentimento: il mondo si sta scaldando; e non è un fatto naturale, siamo noi; e se non facciamo niente, sarà tutto molto peggio

Science, Vol.315
09.02.2007

**Scientists Tell Policymakers
We're All Warming the World**



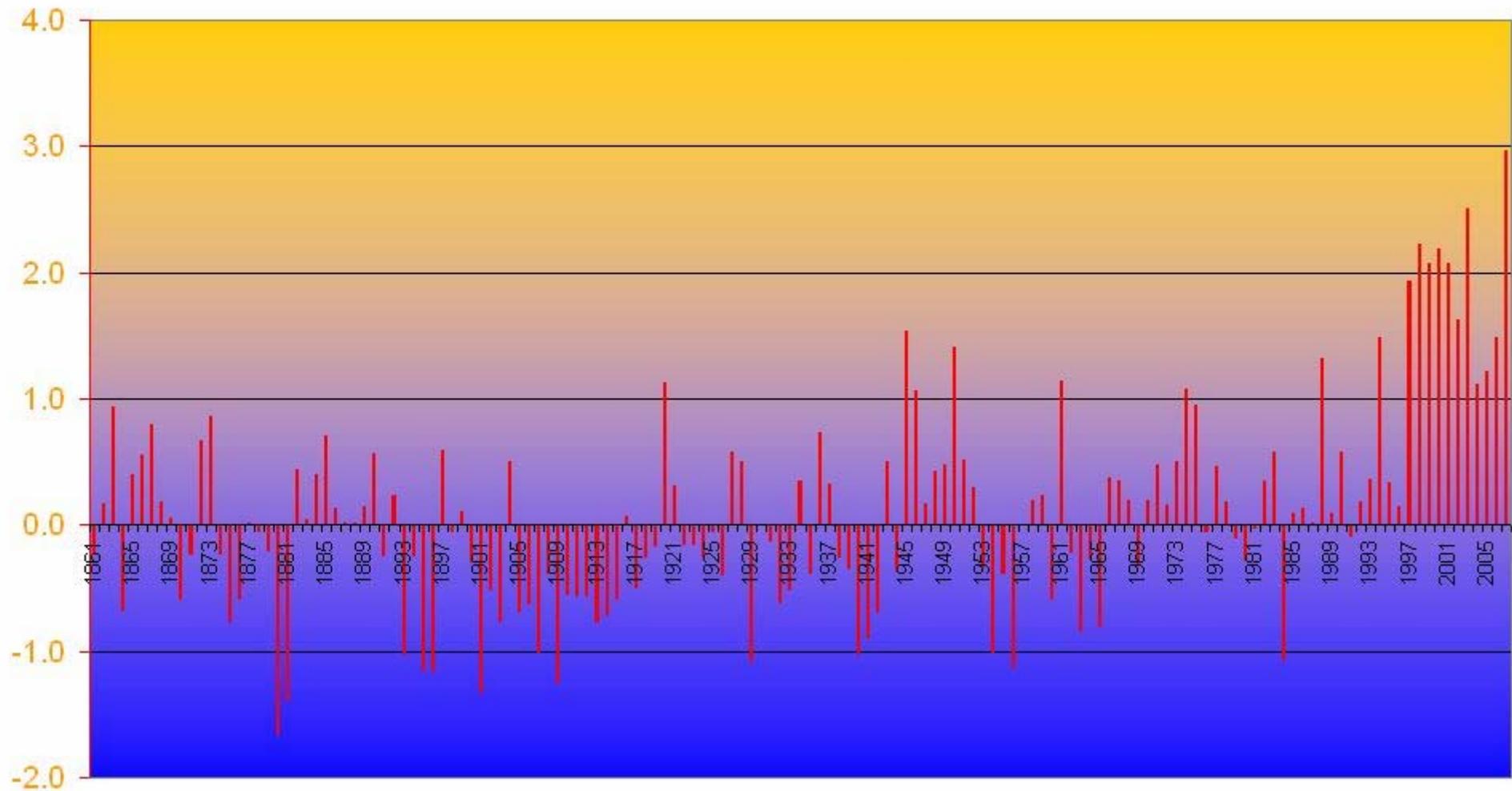
Hot time
This h... world
...stantially.

Luce visibile

Infrarosso

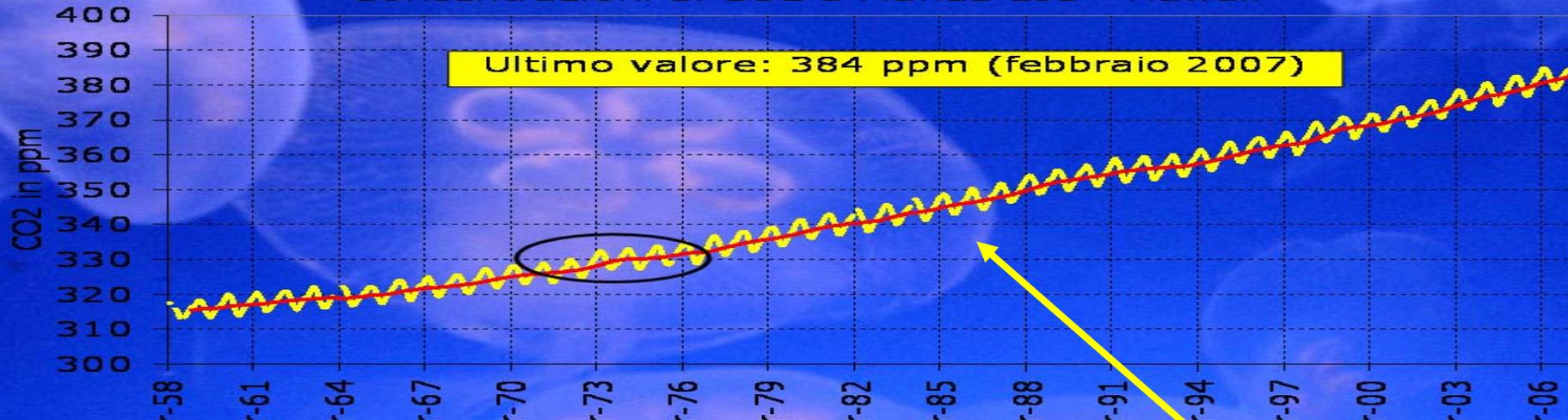
Modena Osservatorio Geofisico

T medie Gen - Set (confronto con media 1861-1996)

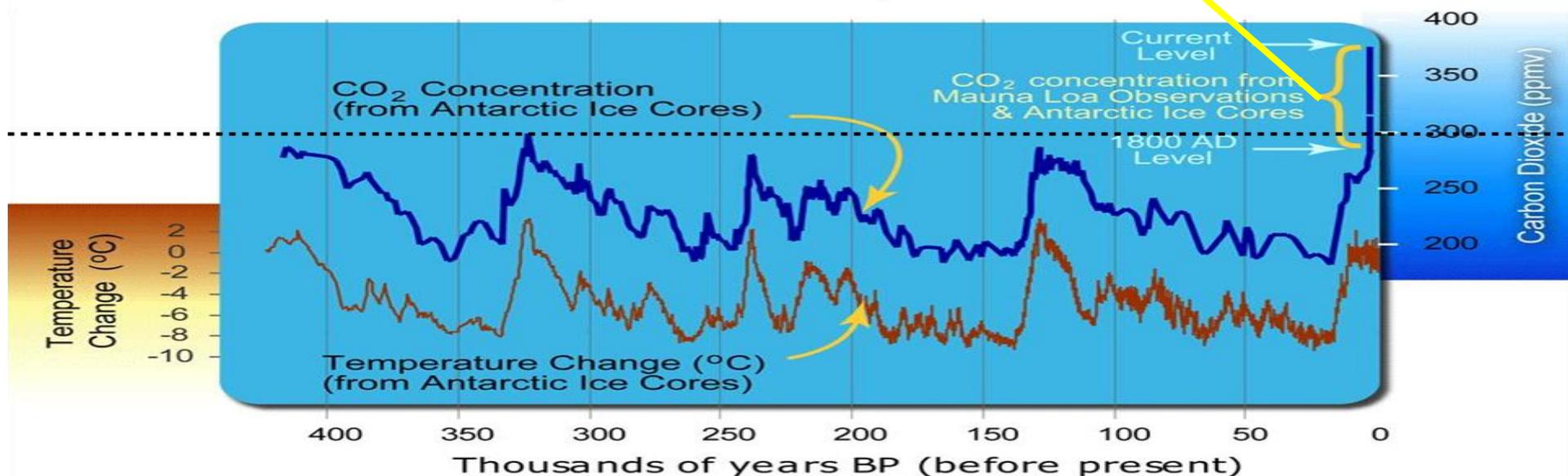


Sì, è vero, nella storia della Terra ci sono stati anche climi ben peggiori, con tanta più anidride carbonica ma non c'erano *homo sapiens* bensì...

Concentrazioni di CO2 a Manua Loa - Hawaii



450000 anni (ora 750000) di storia dell'aria



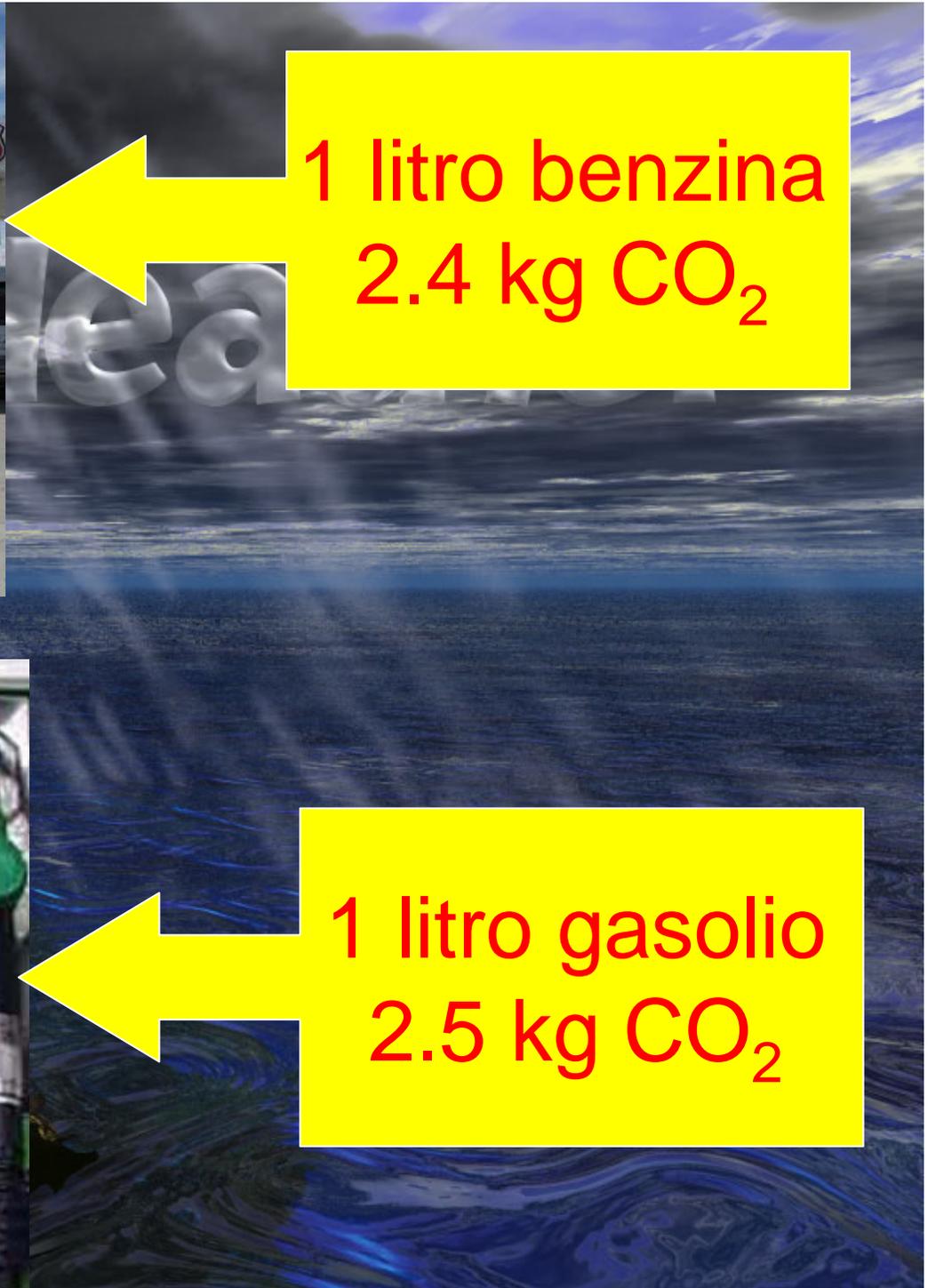
Data Source CO₂: <ftp://cdiac.ornl.gov/pub/trends/co2/vostok.icecore.co2>
 Data Source Temp: <http://cdiac.esd.ornl.gov/ftp/trends/temp/vostok/vostok.1999.temp.dat>

Graphic: Michael Ernst, The Woods Hole Research Center





© Luca Lombroso www.lombroso.it



1 litro benzina
2.4 kg CO₂



1 litro gasolio
2.5 kg CO₂



1 m³ metano
1.8 kg CO₂



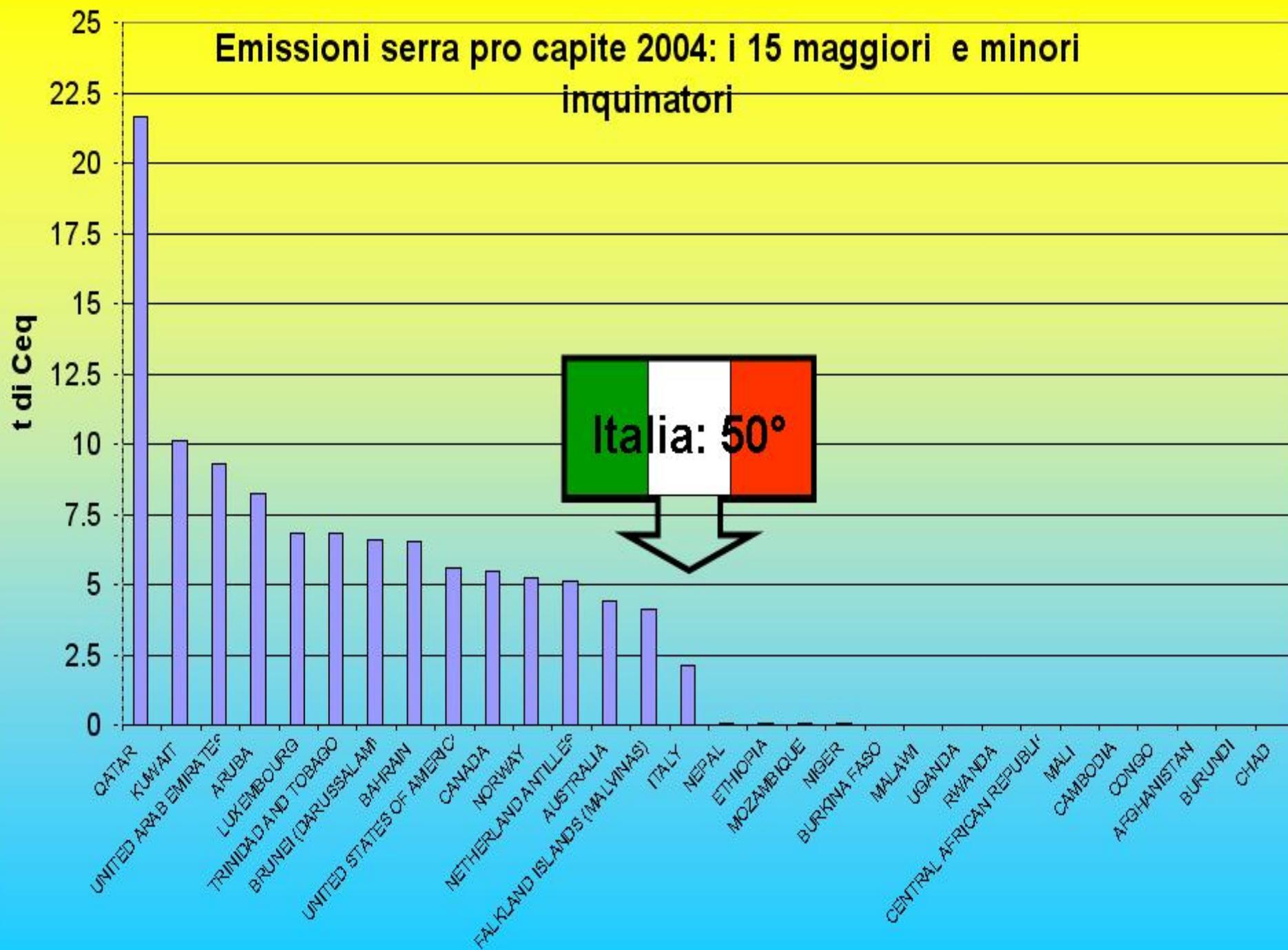
1 kWh termico
0.7 kg CO₂



1 kg carbone
3.7 kg CO₂

10/16/2000 3:38pm

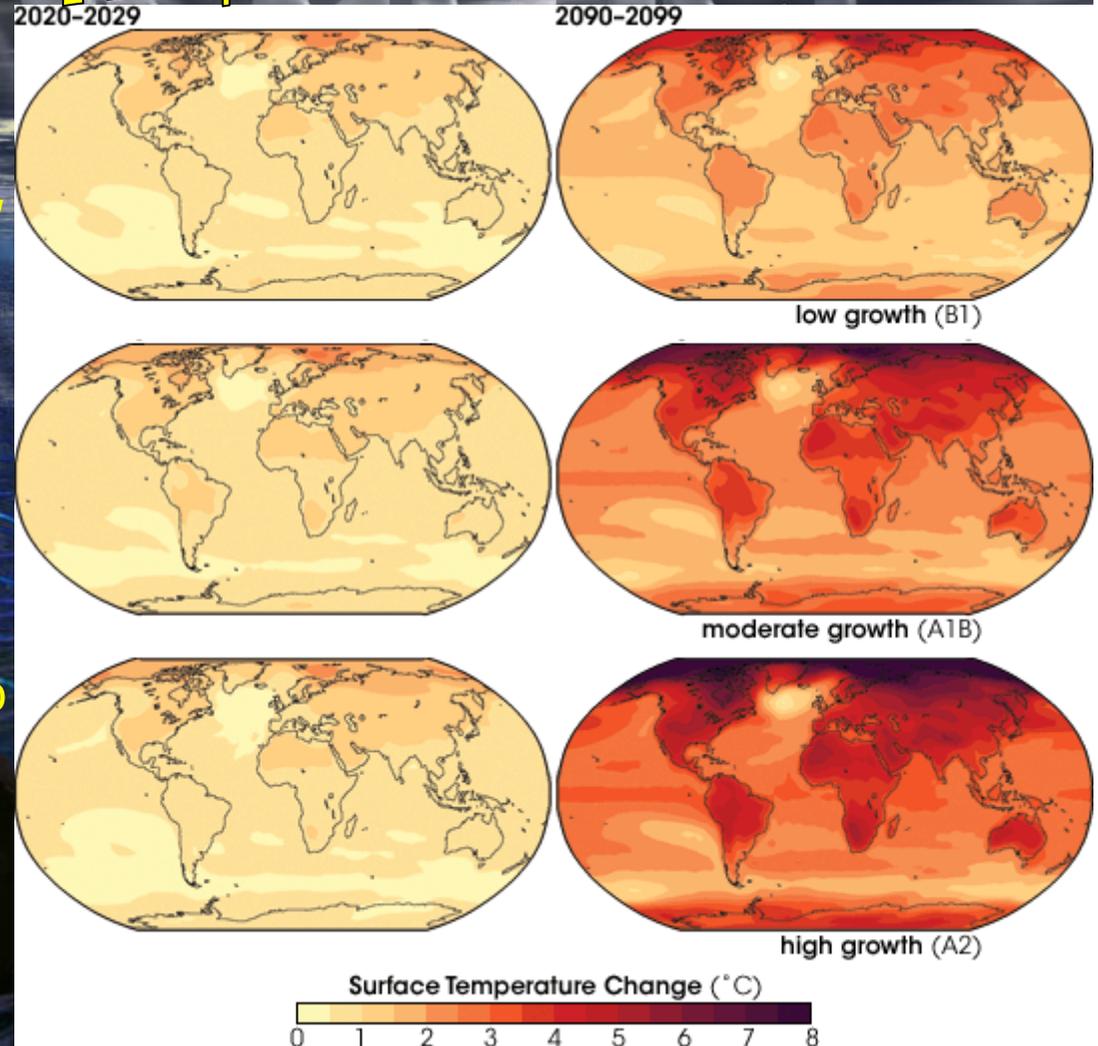
Emissioni serra pro capite 2004: i 15 maggiori e minori inquinatori



Conseguenze sul Mediterraneo:

- Ridotta disponibilità di acqua (aumento di water stress);
- Aumento dei fenomeni di siccità;
- Aumento degli incendi nelle foreste;
- Gravi perdite di biodiversità, specialmente nelle zone umide costiere e nelle Alpi;
- Aumento del processo di salinizzazione ed eutrofizzazione delle acque costiere;
- Ridotta disponibilità di aree per la coltivazione, aumento della domanda di energia in estate, ridotta energia idroelettrica;
- Ridotto turismo estivo.

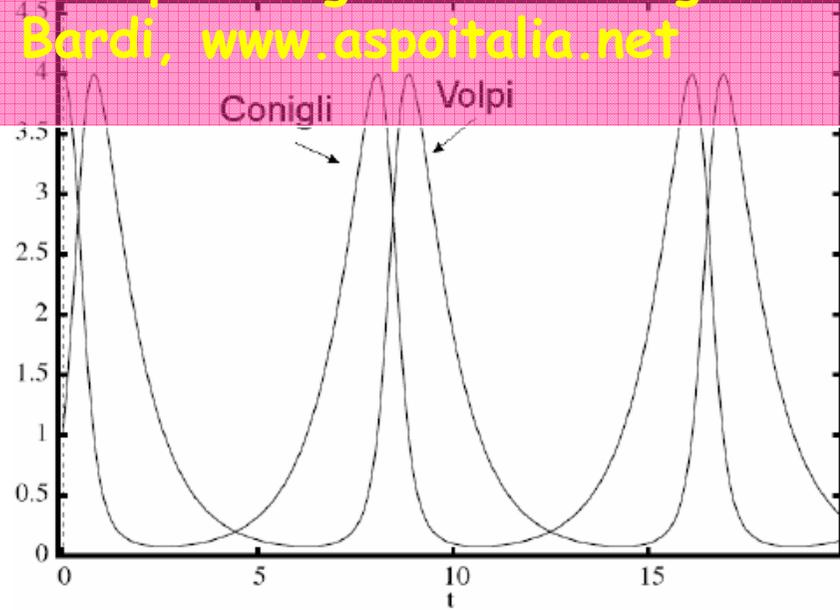
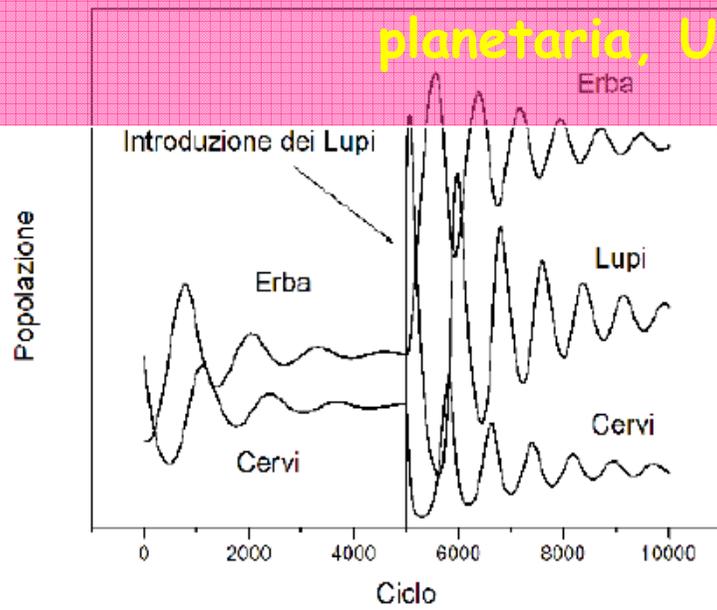
"Il riscaldamento è INEQUIVOCABILE"
"E' molto probabile (90%) che sia a causa dell'uomo"



**Dixie Nat. Forest: Clima e (sovra)popolazione:
lo scarabeo della corteccia**



Il Modello Lotka-Volterra o "Volpi&conigli" Fonte: La grande isola planetaria, Ugo Bardi, www.aspoitalia.net



A cartoon illustration of a mosquito with a green body, brown wings, and a blue proboscis, flying over a field of golden-brown corn. The background is a grey sky filled with many small, dark specks representing a large swarm of mosquitoes. A white thought bubble is positioned above the mosquito, containing the text "zzzz... Come sto bene con questo calduccio!!".

zzzz...
Come sto bene
con questo
calduccio!!

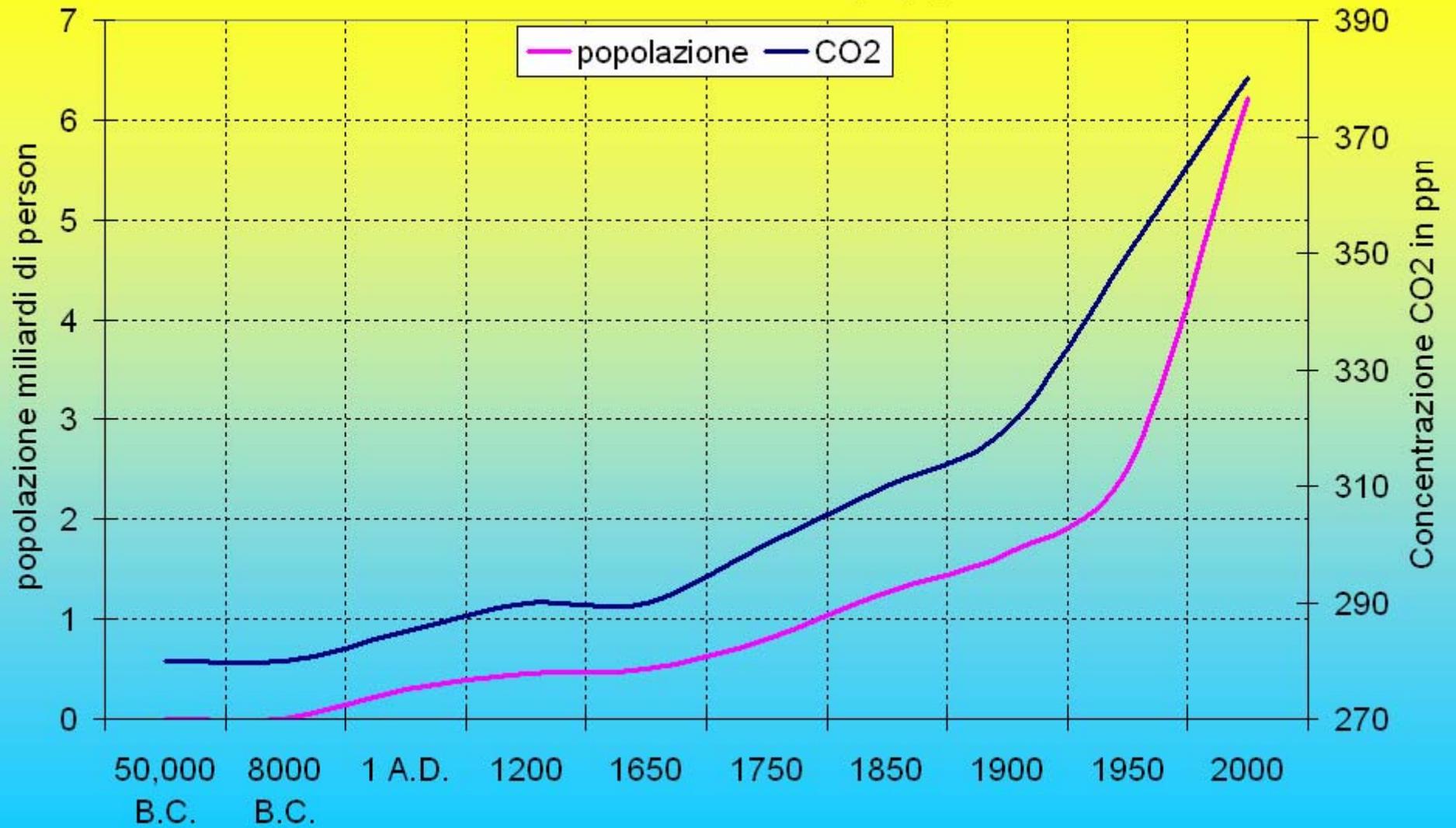
Conoscere per prevenire: le prime "sorprese"

Summer raids of *Arocatus melanocephalus* (Heteroptera, Lygaeidae) in urban buildings in Northern Italy: is climate change to blame?, LARA MAISTRELLO, LUCA LOMBROSO, ELENA PEDRONI, ALBERTO REGGIANI AND STEFANO VANIN, *Journal of Thermal Biology*, in press

Arocatus melanocephalus
(CIMICE DELL'OLMO)



Pianeta Terra: andamendo di CO₂ e popolazione





A polar bear is shown sitting on a large, white ice floe in the middle of a sea of broken ice. The bear is looking towards the camera with its mouth slightly open. The surrounding ice is fragmented into many smaller pieces, creating a textured, blue-tinted environment. The text is overlaid on the upper part of the image.

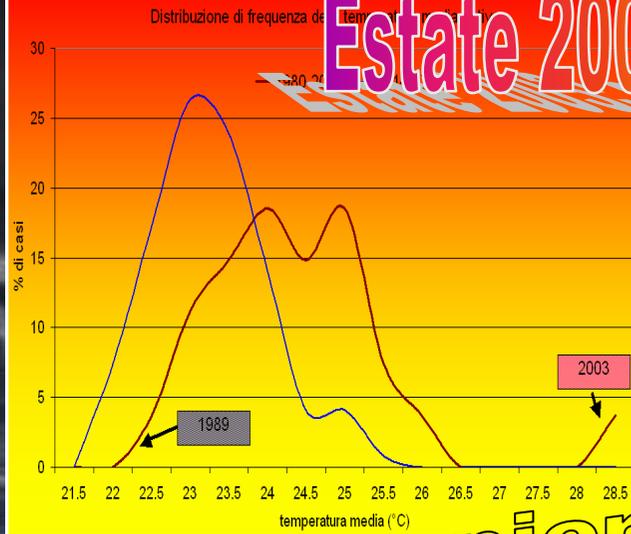
**Clima e orsi bianchi: migrazioni di massa
e aumento mortalità per caldo estivo**

Photo Credit/Crédit photographique: Dan Crosbie



**Clima e pinguini: migrazioni di massa
e aumento mortalità per caldo estivo**

Estate 2003: evento "impossibile"



Clima e sapiens: migrazioni di massa e aumento mortalità per caldo estivo



sovrapopolazione
sovrappolveri
sovraCO2

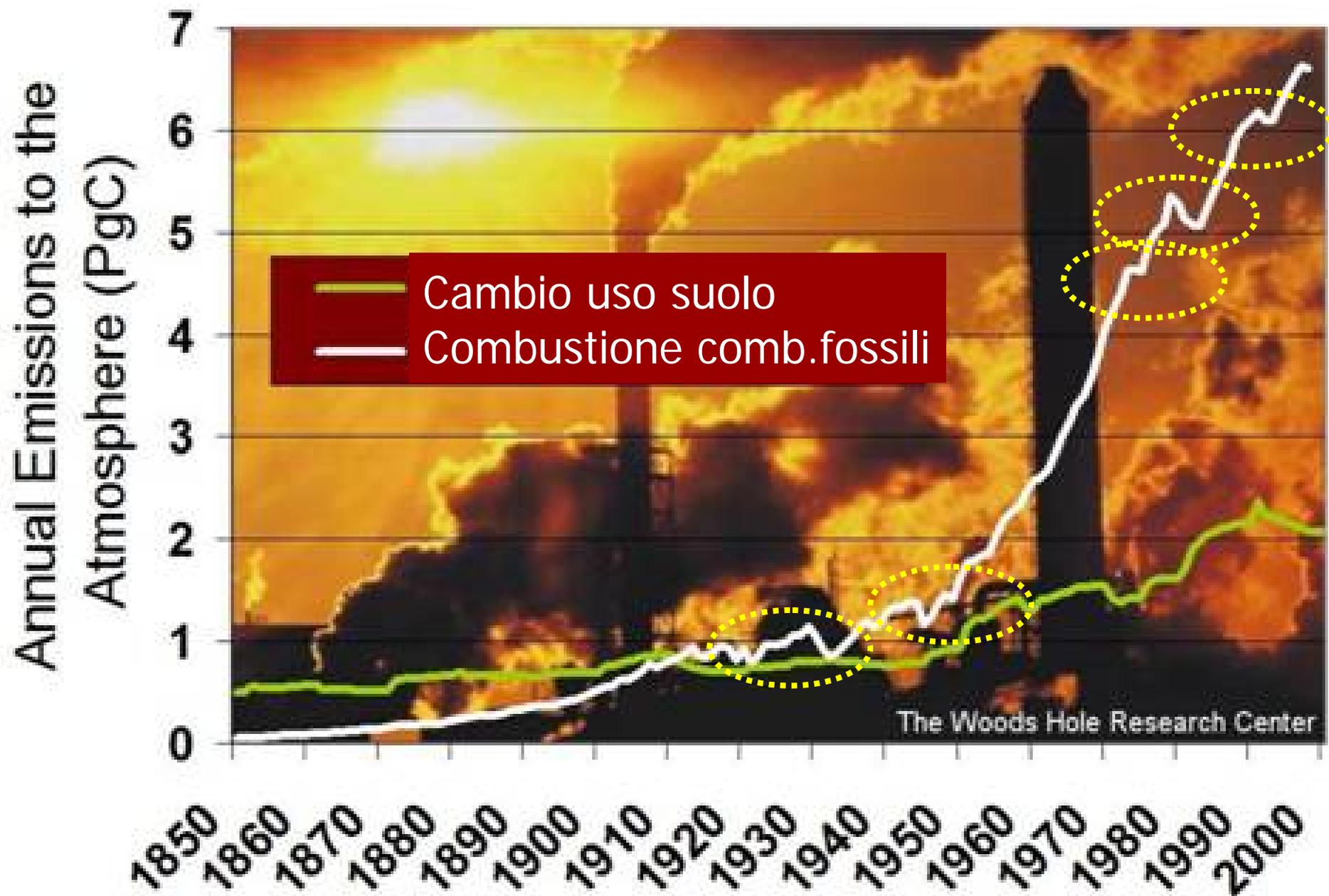


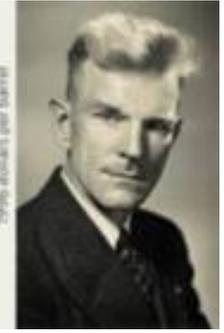
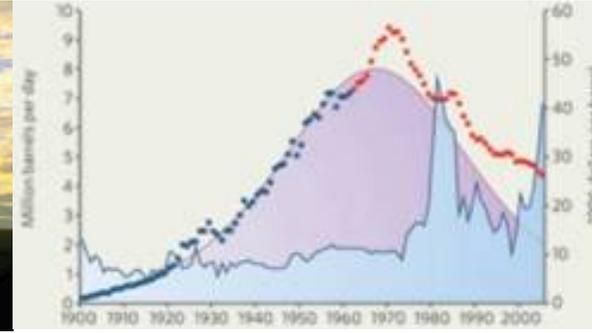
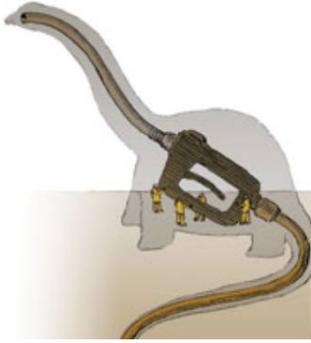
sovrapopolazione
sovrapolveri
sovraCO2



Cyclists passing through thick pollution from a factory in Yutian, east of Beijing
http://www.usatoday.com/weather/climate/globalwarming/2007-02-06-china-climate-change_x.htm

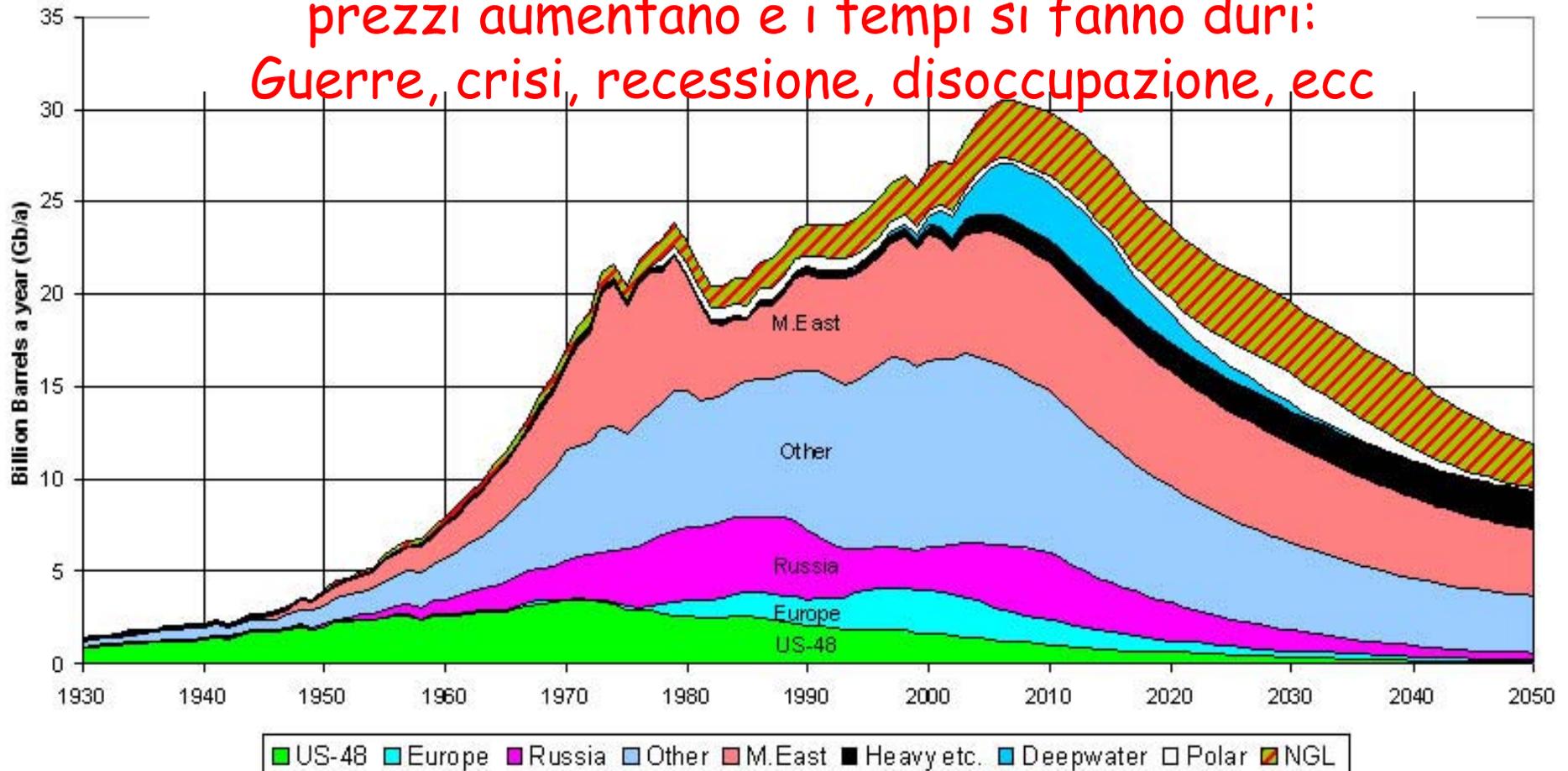
Ma anche l'uomo fuma veramente troppo...

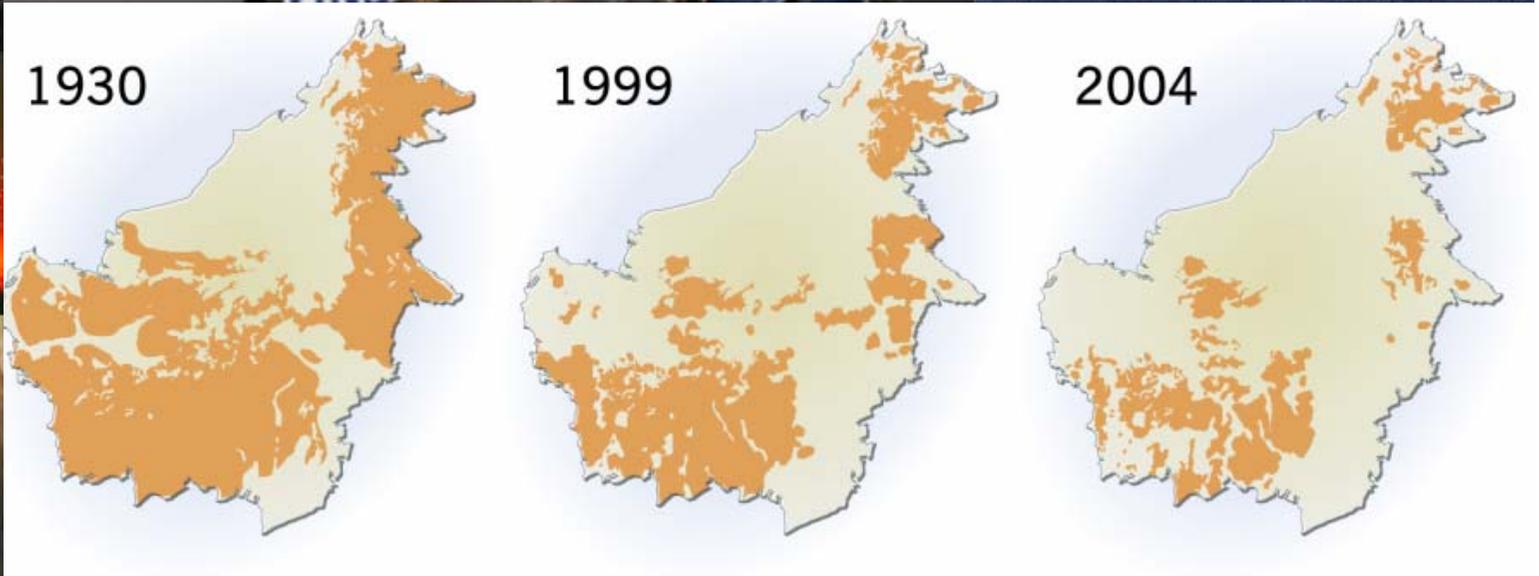
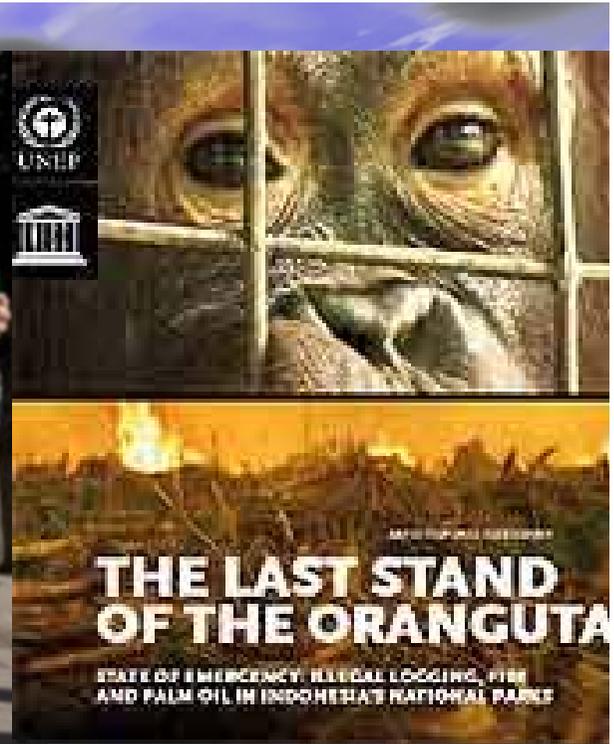




www.aspoitalia.net - Il Petrolio:

Dopo il picco: la domanda prevale sull'offerta: I prezzi aumentano e i tempi si fanno duri: Guerre, crisi, recessione, disoccupazione, ecc





http://maps.grida.no/go/graphic/orangutan_distribution
Orangutan – Angeli della foresta, Nicola Tignonsini, www.angelidellaforesta.it



**Perché è dannoso dar da mangiare agli animali?
“mangiare il cibo umano è dannoso per la salute della selvaggina perché il loro corpo non è abituato al sale, ai grassi, ai conservanti che spesso si trovano nel cibo umano. Essi ingrassano, perdono i peli, e diventano dipendenti dal cibo umano. Inoltre i predatori, come i puma, sono attratti dalle aree con concentrazione di ben cibati scoiattoli e procioni.**

E contengono anche tanto petrolio virtuale...

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© Luca Lombroso www.lombroso.it

provided by a donation from the

The Coca-Cola Company



**deforestazione ed erosione dei suoli
cambiamenti climatici e siccità**

**Lotte intestine, guerre, costruzioni monumentali
per distrarre popolo**

Sovrapopolazione->carenza cibo

I Re promettevano la pioggia ma...

Dopo lunga prosperità la salute peggiorò

Periodo classico: da 3 a 14 milioni di persone

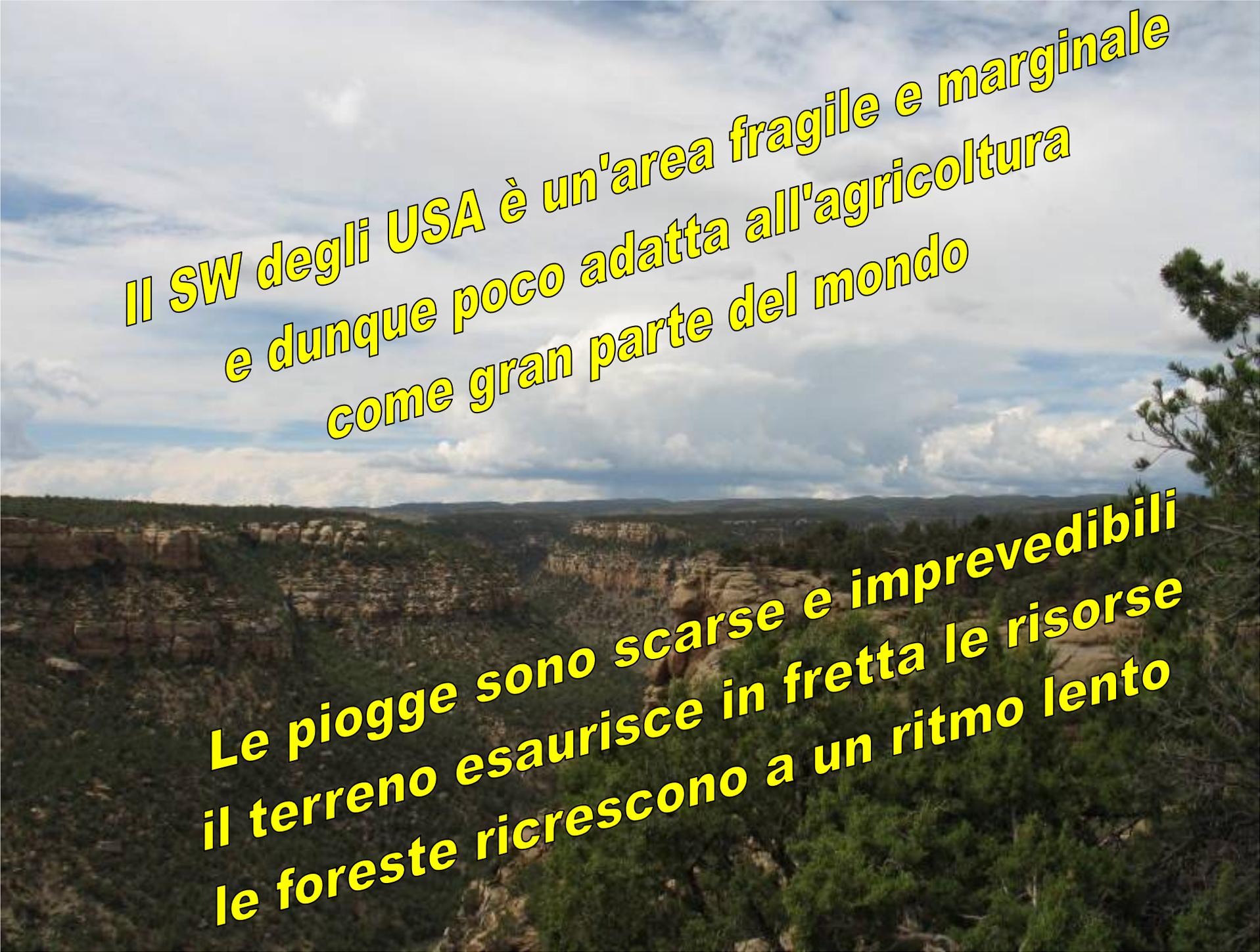
Arrivo Spagnoli: 30000... 1714: meno di 3000

LA POPOLAZIONE ERA CRESCIUTA

TANTO DA SUPERARE DI GRAN LUNGA LA QUANTITA' DI RISORSE DISPONIBILE



18:25:33

A landscape photograph showing a wide canyon with green vegetation and a cloudy sky. The text is overlaid on the image in a yellow, bold, italicized font.

**Il SW degli USA è un'area fragile e marginale
e dunque poco adatta all'agricoltura
come gran parte del mondo**

**Le piogge sono scarse e imprevedibili
il terreno esaurisce in fretta le risorse
le foreste ricrescono a un ritmo lento**

A photograph of ancient cliff dwellings built by the Anasazi people. The structures are made of light-colored stone and are situated under a large, natural rock overhang. The surrounding area is covered in dense green vegetation. The text is overlaid on the image in a yellow, bold, italicized font.

*gli anasazi riuscirono a costruire
edifici in pietra che
rimasero i più alti fino a fine XIX secolo*

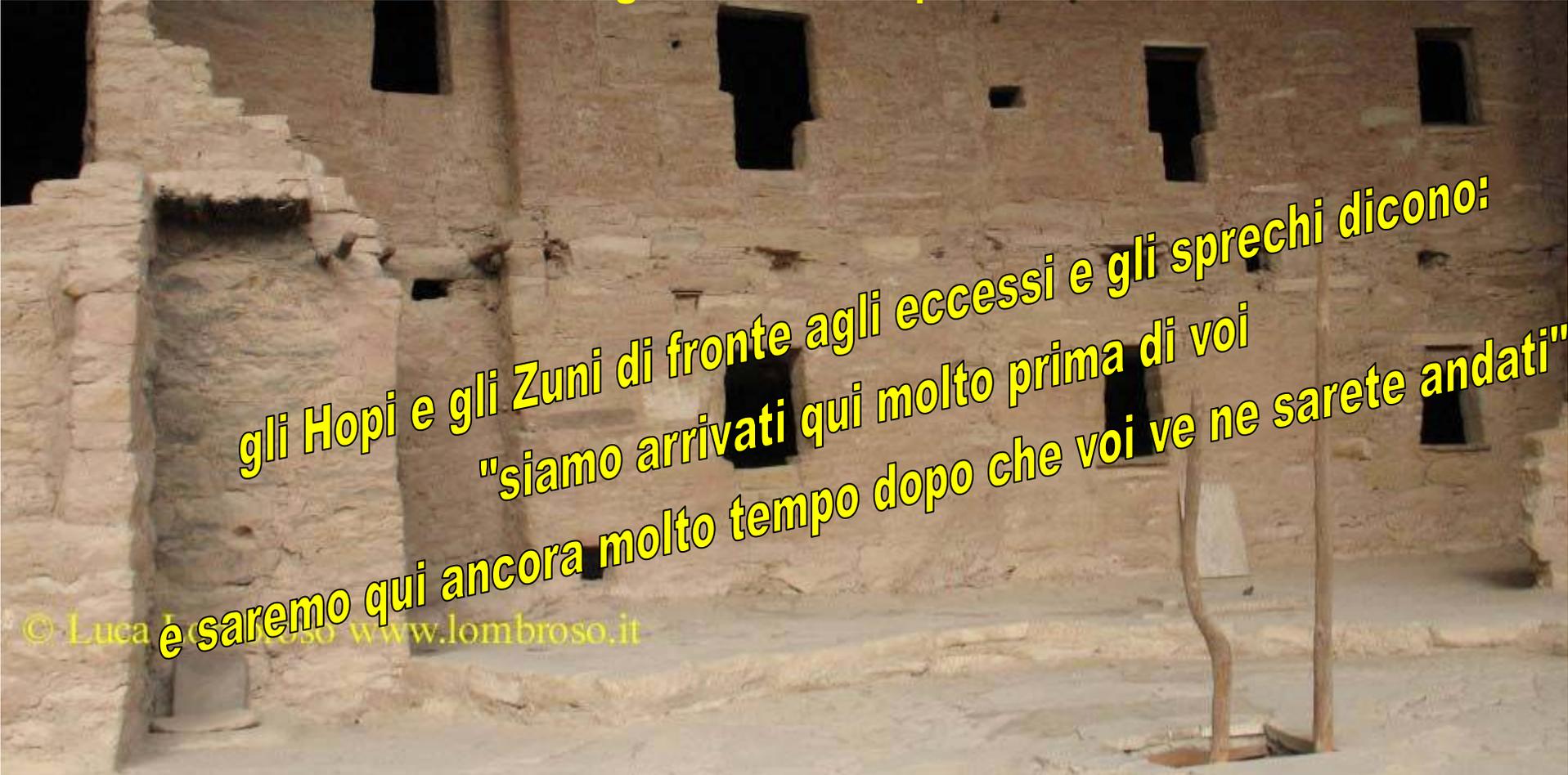
Una serie di annate propizie, con piogge sufficienti... può determinare la crescita della popolazione che a sua volta si svilupperà in maniera più complessa e interdipendente, diventando meno autosufficiente...

CON IL SOPRAGGIUNGERE DI UNA SERIE DI ANNATE DIFFICILI TALE SOCIETA' NON SARA' PIU' CAPACE DI RISOLVERE I SUOI PROBLEMI NE' DI RIPRENDERSI

Tuttora a distanza di 800 anni nella zona non cresce quasi più nulla. I depositi di rifiuti rilevano che iniziò a scarseggiare il cibo, la carne di cervo, rimpiazzate da selvaggina più piccola e quindi da topi. I resti dei topi interi senza testa

Sono stati rinvenuti nei coproliti umani

“Questo posto sembra una steppa mongola devastata dagli Unni: dove avranno mai trovato la legna da ardere e per le costruzioni?”



**gli Hopi e gli Zuni di fronte agli eccessi e gli sprechi dicono:
"siamo arrivati qui molto prima di voi
e saremo qui ancora molto tempo dopo che voi ve ne sarete andati"**



b 1 2006-02-24 10:23:38

Calatrava Web 2 2006-02-24 10:24:43



Perché i Re e i nobili non furono capaci di risolvere quei problemi così evidenti che minacciavano le loro civiltà? La loro attenzione era evidentemente concentrata su mire personali e a breve termine, quali arricchirsi, intraprendere campagne militari, costruire monumenti, rivaleggiare con altre élite e sottrarre ai contadini cibo sufficiente per poter mantenere le loro attività.

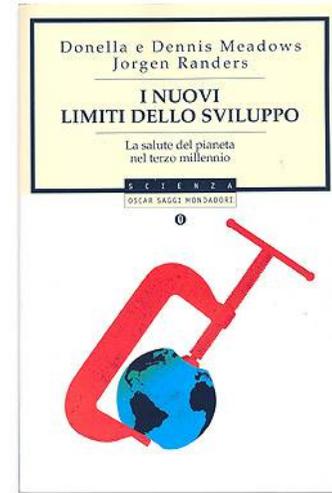
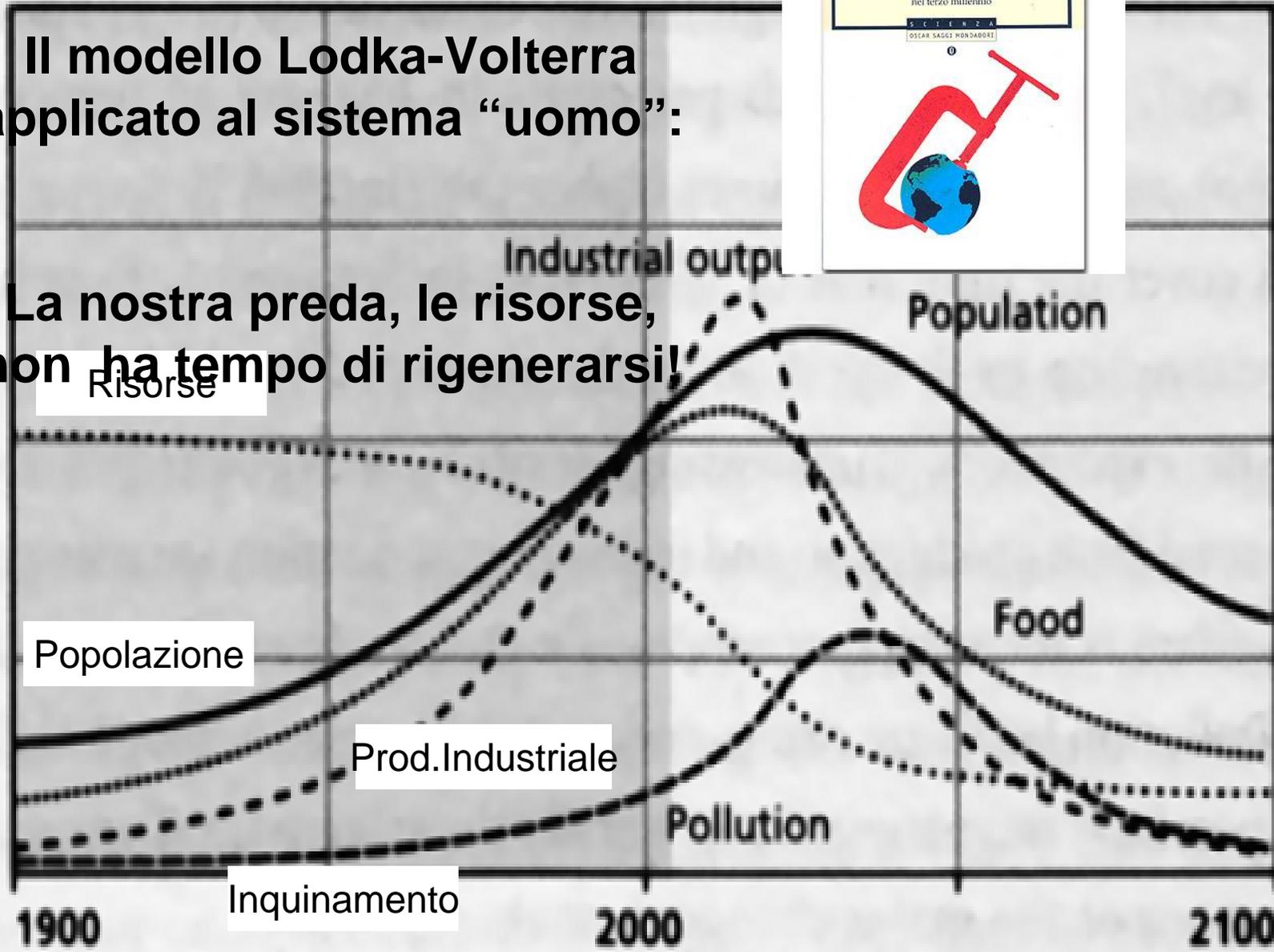
J.Diamond, Collasso, Einaudi 2005



State of the World

Il modello Lodka-Volterra applicato al sistema "uomo":

La nostra preda, le risorse, non ha tempo di rigenerarsi!





TOM^{the} **DANCING BUG**
PRESENTS:

BY
RUBEN
BOLLING

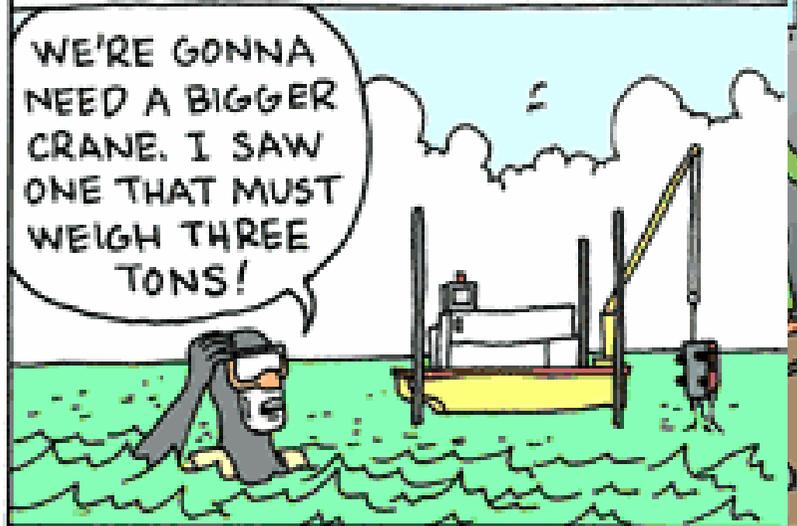
IT IS BELIEVED THAT IT WAS ANCIENT AMERICA'S UNYIELDING WORSHIP OF THESE TOTEMIC VEHICLES THAT LED TO THE OIL WARS OF THE EARLY 21ST CENTURY.

AMERICANS WERE ACTUALLY CONVINCED BY THEIR POLITICAL HIGH PRIESTS THAT THEY SHOULD SACRIFICE THEIR CHILDREN AND THE ENVIRONMENT TO APPEASE THE S.U.V.'S' INSATIABLE APPETITE FOR "GASOLINE".



MEANWHILE, THIS WINTER DIVERS WILL BE BRAVING BRUTALLY HOT WEATHER TO EXCAVATE AN ANCIENT "PARKING LOT" IN THE SUBMERGED LAND OF "NEW ENGLAND."

WE'RE GONNA NEED A BIGGER CRANE. I SAW ONE THAT MUST WEIGH THREE TONS!



Gli impatti generazionali

- Anni fa
 - 4,000,000,000
 - 1,000,000,000
 - 600,000,000
 - 200,000,000
 - 5,700,000
 - 1,100,000
 - 200,000
 - 10,000
 - 150
 - **Come umani, il nostro impatto sul pianeta è avvenuto in una frazione del tempo necessario allo sviluppo del nostro impianto cerebrale**
 - Fonte: The Oil Drum <http://www.theoil Drum.com/node/2243#more>
- | Anni fa | generazioni | Eventi |
|---------------|-------------|----------------------------------|
| 4,000,000,000 | | prime forme di vita |
| 1,000,000,000 | | organismi unicellulari |
| 600,000,000 | | “esplosione” della vita |
| 200,000,000 | | primi mammiferi |
| 5,700,000 | 285,000 | dallo scimpanze ai primi ominidi |
| 1,100,000 | 55,000 | Primi Sapiens |
| 200,000 | 10,000 | homo sapiens |
| 10,000 | 500 | Sviluppo agricoltura |
| 150 | 7 | rivoluzione industriale/petrolio |



70 g di
prodotto
79 kg scarti



HOW BIG
IS YOUR
FOOTPRINT?



1 anello d'oro:
1000 t di scarti



1 PC: 1000
kg scarti



“i vantaggi e gli svantaggi dello sfruttamento della natura... non ricadono sugli stessi attori, sulle stesse regioni e sulla stessa epoca ma si distribuiscono inequamente. Vantaggi e svantaggi si concentrano in diversi gruppi sociali, in posti diversi e talvolta in periodi diversi” - W.Sachs, 2005

"Zaino ecologico" delle importazioni UE dai paesi in via di sviluppo
(importazioni: stabili da anni su circa 500 Mt/anno)



08.10.2007 ore 24 - 6,751.210.258

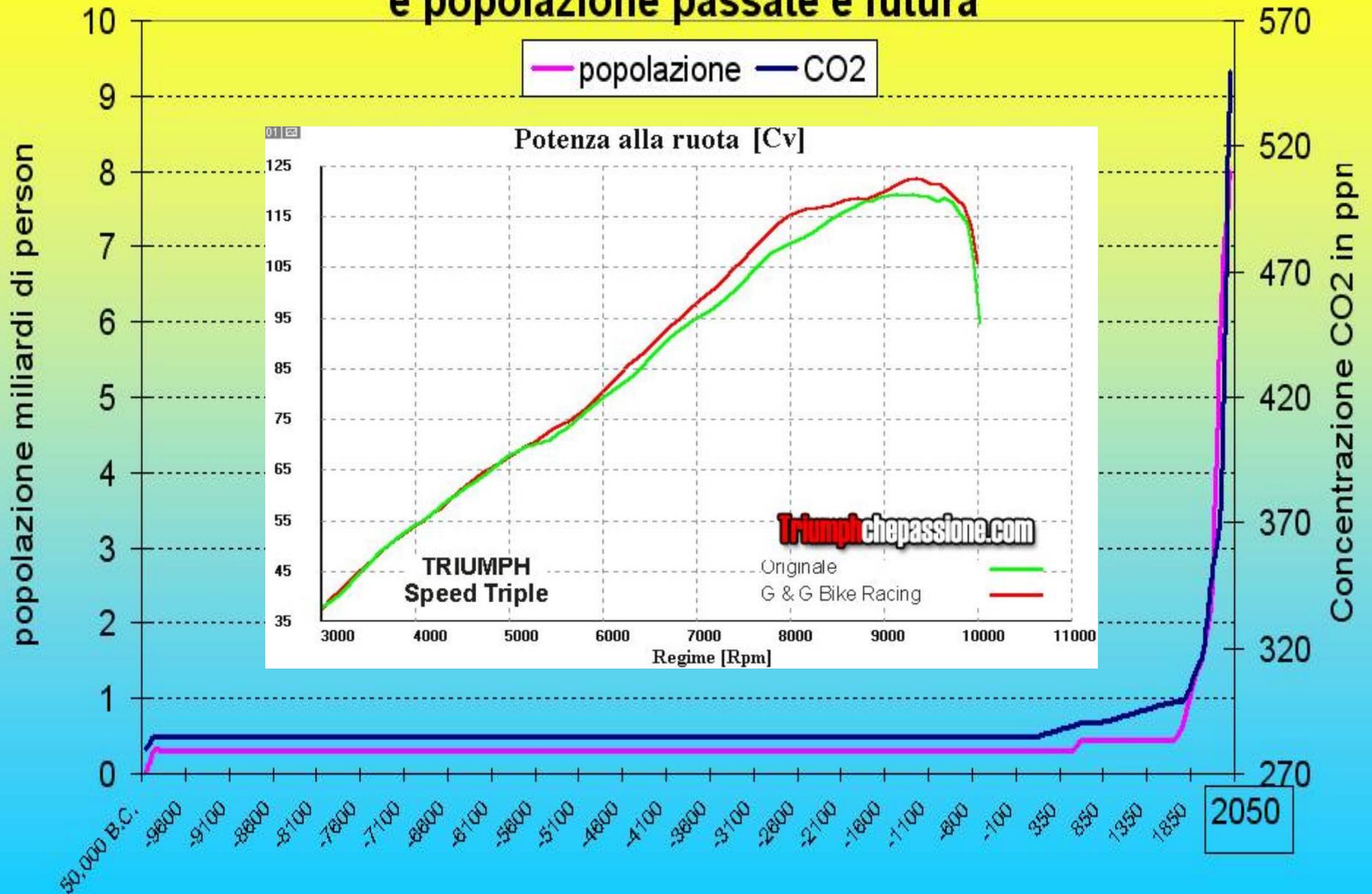
<http://www.ibiblio.org/lunarbin/worldpop> -

<http://www.census.gov/ipc/www/popclockworld.html>

http://earthobservatory.nasa.gov/Newsroom/NewImages/images.php3?img_id=17524



Pianeta Terra: andamendo di CO2 e popolazione passate e futura

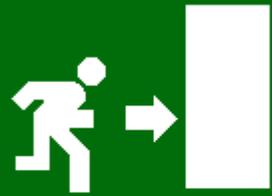




**CONFERENZA NAZIONALE
SUI CAMBIAMENTI CLIMATICI**

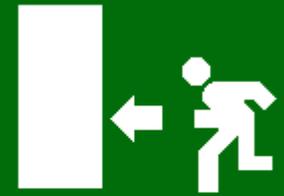
PROMOSSA DAL MINISTERO DELL'AMBIENTE
E DELLA TUTELA DEL TERRITORIO E DEL MARE

**È IL MOMENTO
DI AGIRE.**



USCITA DI
EMERGENZA

**Spegni – cammina
riduci - ricicla**



USCITA DI
EMERGENZA



Mapping the Future of World Population

Projected Gain and Loss from 1995 to 2025

How many people will live on the planet 20 years from now? Where will they live? Where will population grow, and where will it decline?

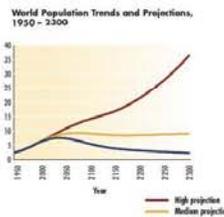
The maps on this poster illustrate a projected possible answer to these questions, applying new methods of mapping population density and of projecting its future.

No one can predict the future of human population with any certainty, but United Nations demographers offer a series of projections that suggest a world population of between 7.5 billion and 8.5 billion in 2025. (A projection is a conditional forecast based on specific assumptions about the future.) That compares to today's 6.5 billion people. Even the highest of these projections assumes continued declines in fertility rate and increases in life expectancy worldwide, and there is no certainty of either. Still, such projections are taken as the best expert guess at the range of likely future population sizes.

Although demographers have projected the populations of individual countries for decades, until recently more detailed projections of highly localized population change have not been attempted. But the advent of high-resolution mapping and new datasets of population density begins to make such maps possible. This map, a product of a collaboration of researchers at Columbia University's Center for Climate Systems

Research (CCSR) and Population Action International (PAI), uses both population projections and population density maps produced in the 1990s to project population density in spatial detail for the year 2025. Although at first glance the map may appear to be illustrating population density, it does that only indirectly. The colors and shading of each "grid cell"—which are 2.5 kilometers or one and a half miles in size—indicate the projected population gain or loss in that grid cell between 1995 and 2025. Projected increases in population density are shown as progressively darker shades of orange and decreases in density in blue.

Population density varies widely, from one or two people who may inhabit a square mile or less to the hundreds of thousands on the same amount of land in Hong Kong. The maps handle this diversity of densities by using a logarithmic scale for the different gradations of color, meaning that each shade of color represents about 10 times more people, added or lost, on the grid cell, than the lighter shade next to it on the scale.



The median projection, most commonly cited among UN projections, is the one used to make this world map of projected population distribution in 2025. The upper and lower curves define the range of what the UN demographers consider possible paths for world population between the present and the end of the 23rd century.

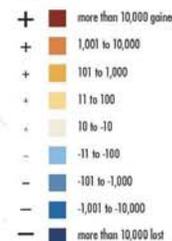
Source: United Nations Population Division, 2002

Any part of the world map can be enlarged for detailed viewing. In this example, the geographic projection indicates a mix of population density increases and declines in part of West Africa. With enough data, the size of each grid cell on such maps could be reduced further, allowing even higher resolution in mapping future population and spatially projecting their future. As resolution increases, however, confidence in the projection results may decline.

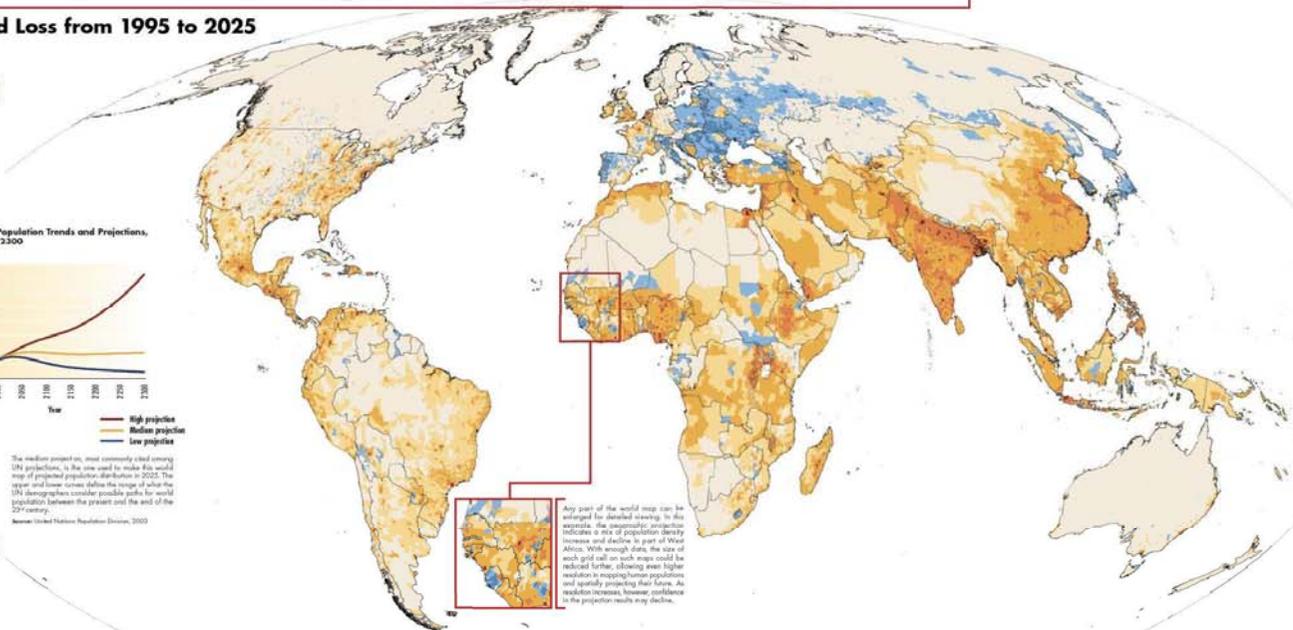
Population density varies widely, from one or two people who may inhabit a square mile or less to the hundreds of thousands on the same amount of land in Hong Kong. The maps handle this diversity of densities by using a logarithmic scale for the different gradations of color, meaning that each shade of color represents about 10 times more people, added or lost, on the grid cell, than the lighter shade next to it on the scale.

Projected Population Change: 1995-2025

Population gained or lost per grid cell*



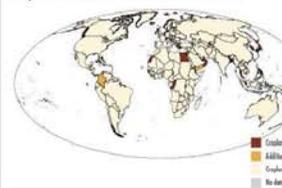
*A grid cell is a square 2.5 kilometers (or one and a half miles) on each side. The size of the grid cell determines how detailed the map is.



Population and Natural Resources

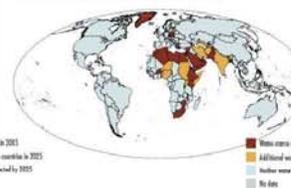
from PAI's Web Feature, "People in the Balance"

Cropland-Scarce Countries in 2005 and 2025



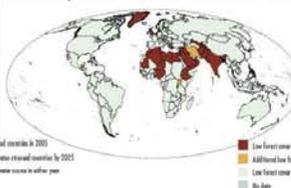
■ Cropland scarce in 2005
■ Additional cropland scarce in 2025
■ Cropland scarce only projected by 2025
■ No data

Water-Short Countries in 2005 and 2025



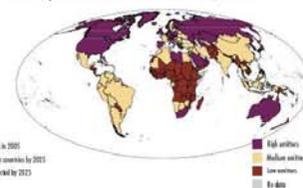
■ Water scarce or water stressed in 2005
■ Additional water scarce or water stressed in 2025
■ Water scarce or water stressed only projected by 2025
■ No data

Low Per Capita Forest Cover Countries in 2005 and 2025



■ Low forest cover in 2005
■ Additional low forest cover in 2025
■ Low forest cover only projected by 2025
■ No data

Per Capita Emissions of Carbon Dioxide, 2005



■ High emitter
■ Medium emitter
■ Low emitter
■ No data

More people and higher income worldwide are multiplying humanity's impacts on the environment and on the natural resources that are essential to life. These world maps show the countries that are either facing resource scarcities now or are projected to face scarcities by 2025, based on a medium population projection.

The planet's fresh water, fisheries, forests and atmosphere are already strained. Based on these trends, it is a good bet that the rest of the 21st century will witness even greater pressures on natural resources, perhaps much greater pressures.

Current demographic trends offer hope, however. Over the past 40 years the average number of children born to each woman has fallen from five to three there. Young people increasingly want to have children later and families smaller than their parents did. Policy makers have a choice: They can do nothing, or they can help ensure that in the 21st century the world's population peaks well below three billion people, simply by committing the financial resources to help couples realize their own private reproductive intentions.

(excerpted from *People in the Balance: Update 2006*, available at <http://www.populationaction.org/peopleinthebalance>)

How the Maps Are Made

How did the researchers at CCSR and PAI arrive at the projected population gain or loss of each grid cell? First, they took two maps of past population density called the Gridded Population of the World, which represent density in 1995 and 1999. These maps, maintained by Columbia University's Center for International Earth Science Information Network, is separate from the authority from CCSR, are based on detailed census and satellite information for spatial distribution of human population worldwide. Taken together, the two maps show population density in nearly a million grid cells at two different times in the past. They can also be compared to show changes in each grid cell between 1995 and 1999. These changes can then be extended to 2025 for each grid cell and adjusted so that all grid cells within a specific country added together are equal to the projected population under the United Nations Population Division's medium projection of population for 2025.

Then the maps show how economic trends vary different sets of data: a detailed map of population distribution in the recent past by small grid cells, and a population projection made for a future date and for entire countries. The adjustment necessary for each cell is more complicated than it might seem, however. Given the density of population change between 1995 and 1999, there's no easy or obvious way to bring all the grid cells up to the point where a nation's population equals the total that UN demographers project for 2025. The PAI and Columbia University researchers elected to use a technique known as share-of-growth for most of the globe, calculating each grid's share of a nation's population growth from 1995 to 2025. The researchers then extrapolated those shares of growth into the future as the national population grows to its projected 2025 total.

In a few cases, however, this technique actually produced the impossible result of negative population density. In such cases, the researchers used an alternative method known as shift-share, which extrapolated changes in each cell's share of total national population rather than a share of that population's growth. When some cells still "went negative," the researchers simply declared the grid cells unsharable in 2025 and selected the rest of that nation's grid cells accordingly to add up to the UN projection total.

There may be other methods or refinements for spatially projecting population data, especially in areas where population distribution becomes available. The researchers consider this a work in progress and hope to continue their work in the areas.

What They Show

Can we say anything new about world population as a result of looking at these maps and the spatial projections of human density that they depict? Several observations emerge, some more surprising than others.

- Globally, population is still growing and is projected to be much larger in 2025 (at 7.5 billion people) in the medium projection than today (at 6.5 billion). The vast majority of the world's inhabited land surface is currently experiencing, and is expected to experience, population growth in the 30-year period from 1995 to 2025.
- Nevertheless, large swaths of the earth's inhabited land surface are projected to experience population decline between 1995 and 2025. This projected decline is particularly significant in Eastern Europe, much of which has already begun experi-

encing decreases in population. More surprisingly, small pockets of underdeveloping regions in sub-Saharan Africa and South America are projected to lose population by 2025. The presence of dispersed areas of population decline in these regions reminds us of the inevitable diversity of population change around the world.

■ Although it is only indirectly evident in these maps, most of the areas of greatest projected population growth—regions such as eastern South Asia and eastern Asia—appear to be the most densely populated today. These areas, along with many others around the world, are likely to face significant challenges in adjusting to rapid population growth over the next few decades.

Maps to Watch?

A final fact is not evident in any map of human population. Little about population change is inevitable. Decisions that societies and their governments make today can have a significant impact on the paths that population size, structure and distribution follow in the years to come.

Population Action International hopes that this map will help spark further efforts to step in ahead of the population density implications of major population projections. In each region and country, such maps could benefit greatly from adjustment by local demographers, geographers and other experts who know the specific developments likely to happen in their areas that may affect future population density. We hope also that the maps will serve as a means in public and policy-making discussions of all countries about the implications of the world's population growth as it leads to 7.5 billion people and beyond.

For additional information about this data and research, please go to:

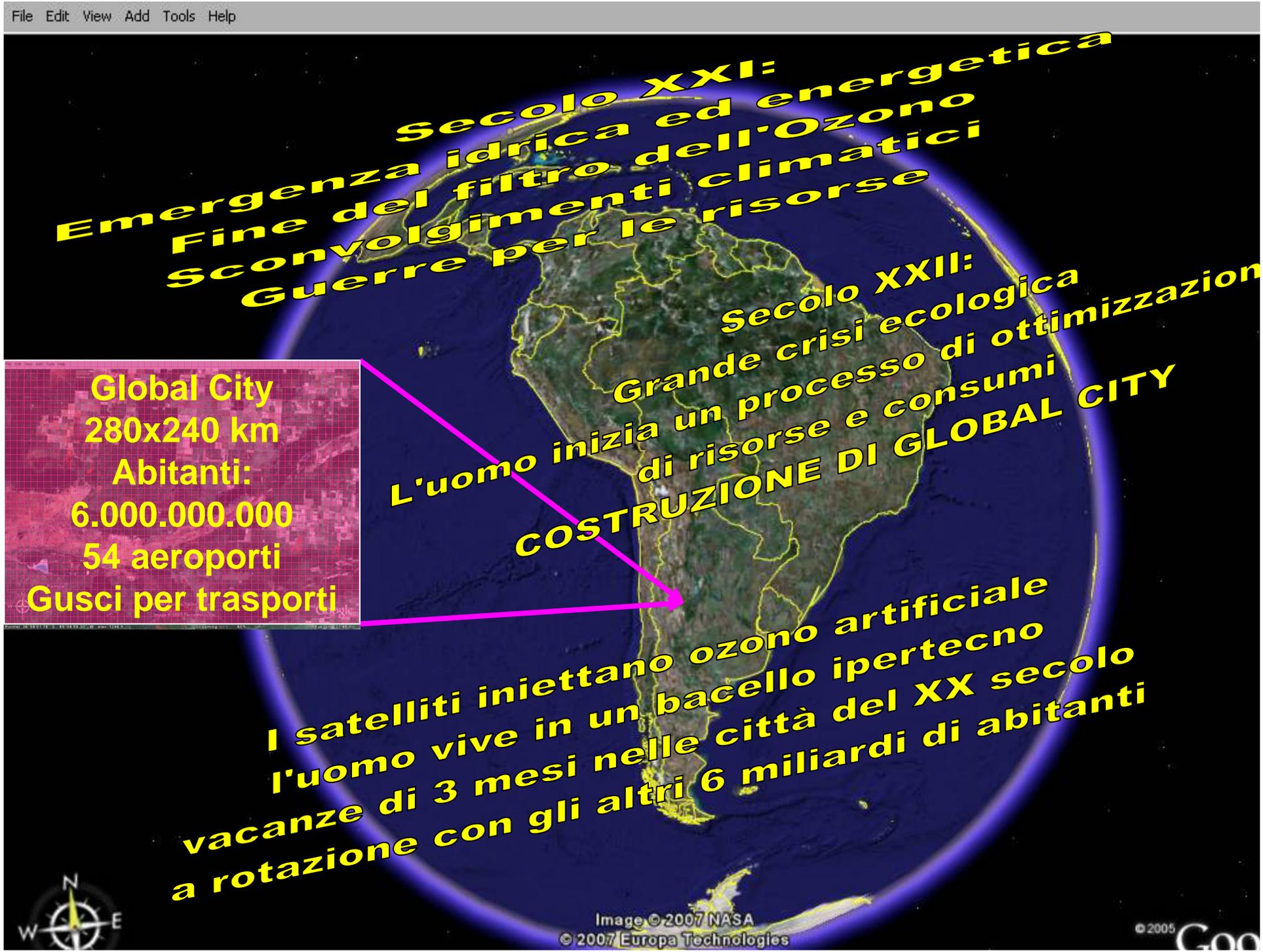
- www.populationaction.org/mappingthefuture
- www.columbia.edu/~pa01/populationmap



Geographic population projection by Stuart Griffin, Center for Climate Systems Research and Education, Population Action International
City University of New York Graduate Center and Hunter College, and Robert Engelman, Population Action International
Geographic Information Systems analysis by Jim Hackathorn
Text by Robert Engelman
Concept by Stuart Griffin and Robert Engelman

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Global City
280x240 km
Abitanti:
6.000.000.000
54 aeroporti
Gusci per trasporti

I satelliti iniettano ozono artificiale
l'uomo vive in un bacello ipertecno
vacanze di 3 mesi nelle città del XX secolo
a rotazione con gli altri 6 miliardi di abitanti







“La passività dei capi dell’Isola di Pasqua e dei Re Maya di fronte alle vere e grandi minacce che incombevano sulle loro società ci fa pensare all’estremo esibizionismo consumistico dei ricchi americani dei giorni nostri. E qui chiudo questa lista di paralleli inquietanti
Jared Diamond, *Collasso*, Einaudi 2005

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Thank you!

State entrando nella Terra del Sole

State lasciando la Terra del petrolio

