

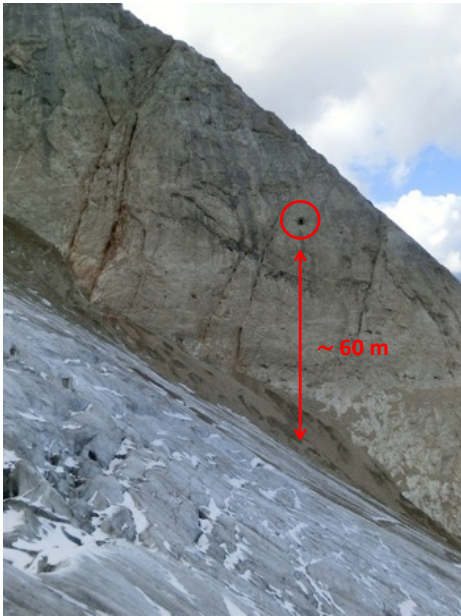




1



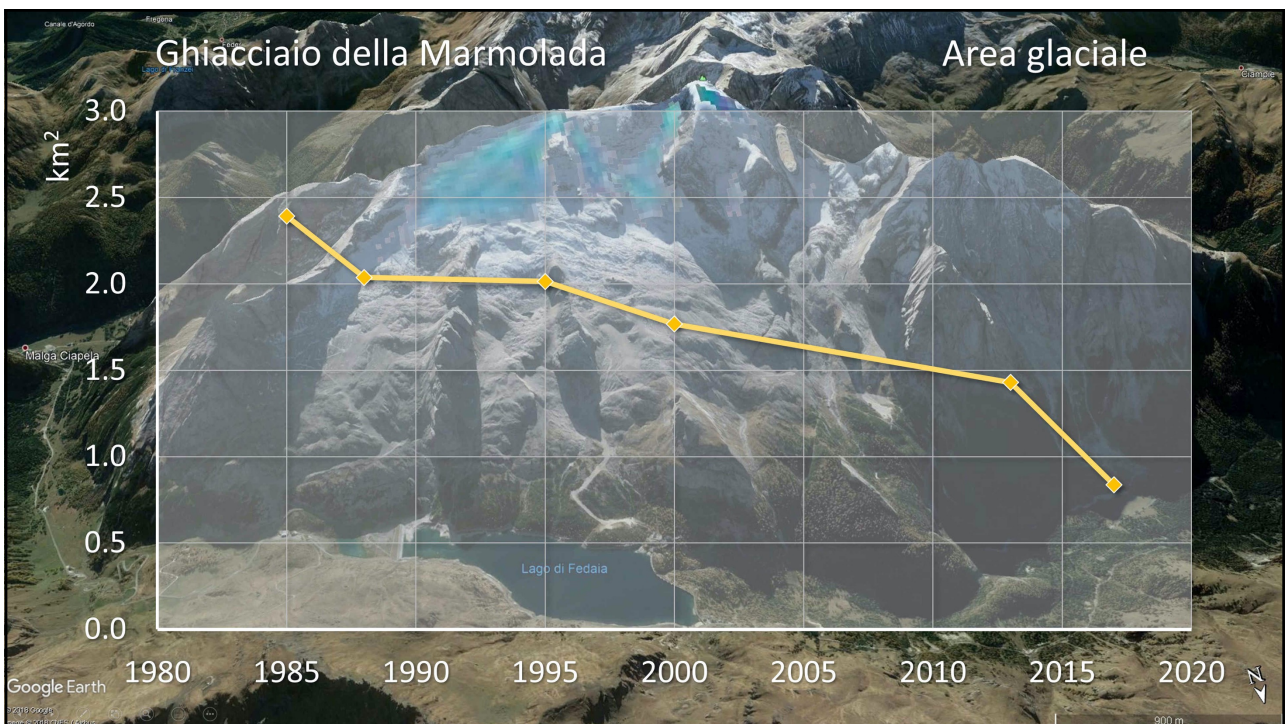
2

Dolomiti: Ghiacciaio del Marmolada

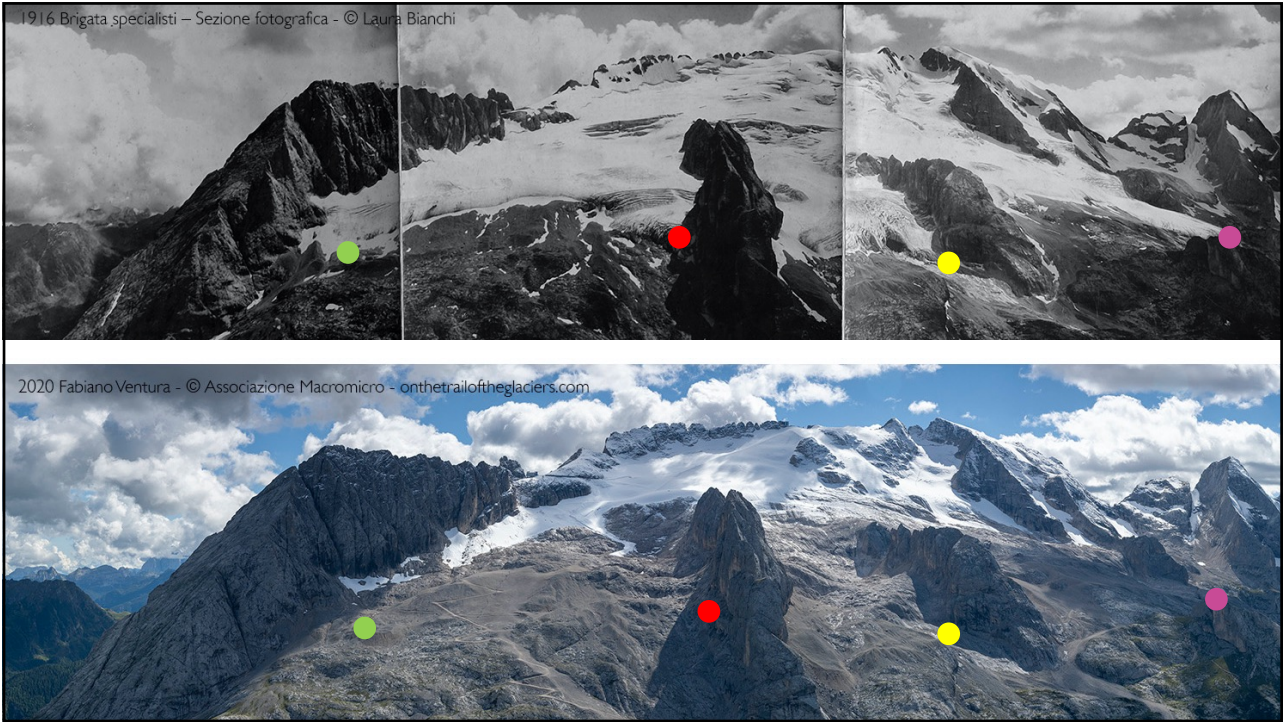




Antico rifugio alpino costruito nel 1877 sulla via normale a Punta Penia, alla quota di circa 3000m

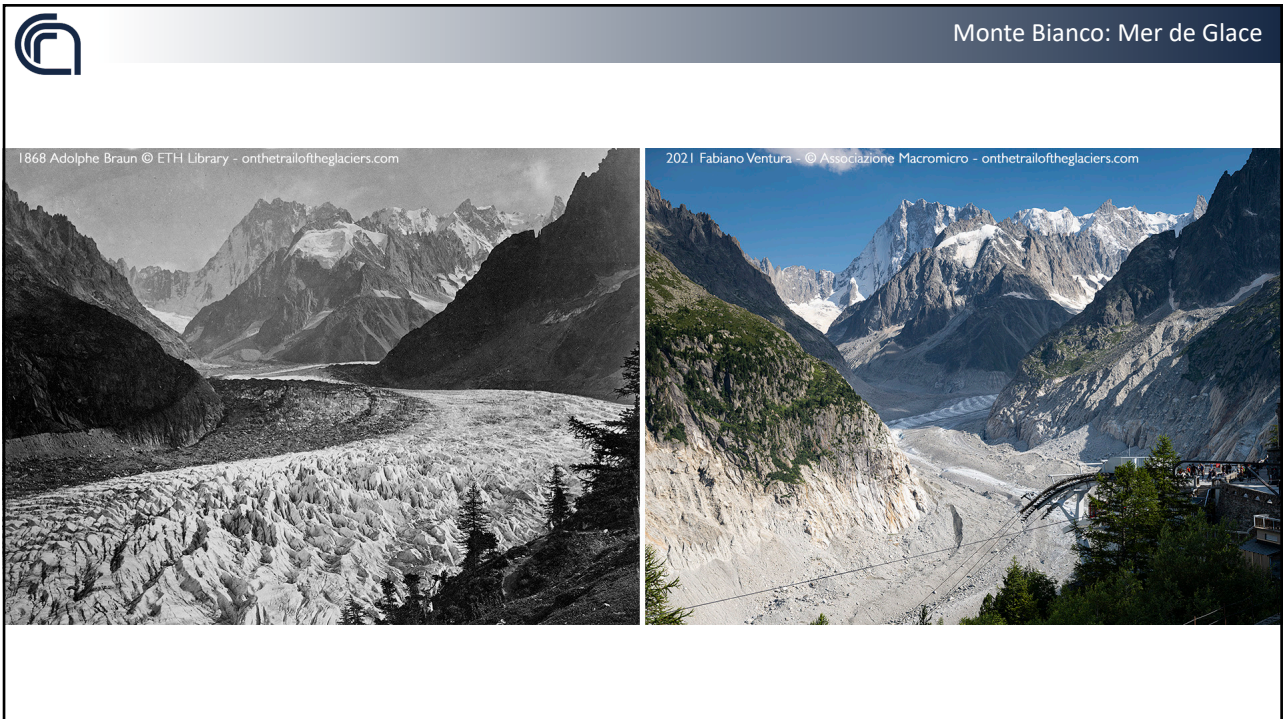
3



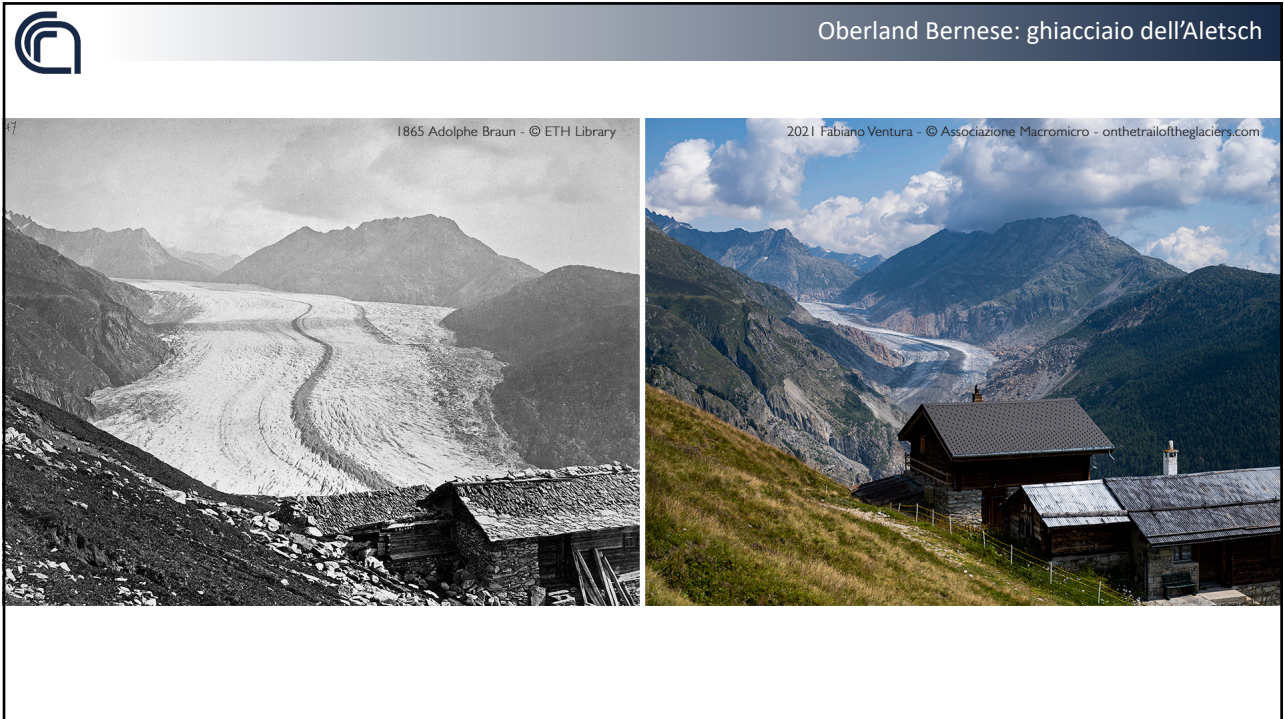
4



5



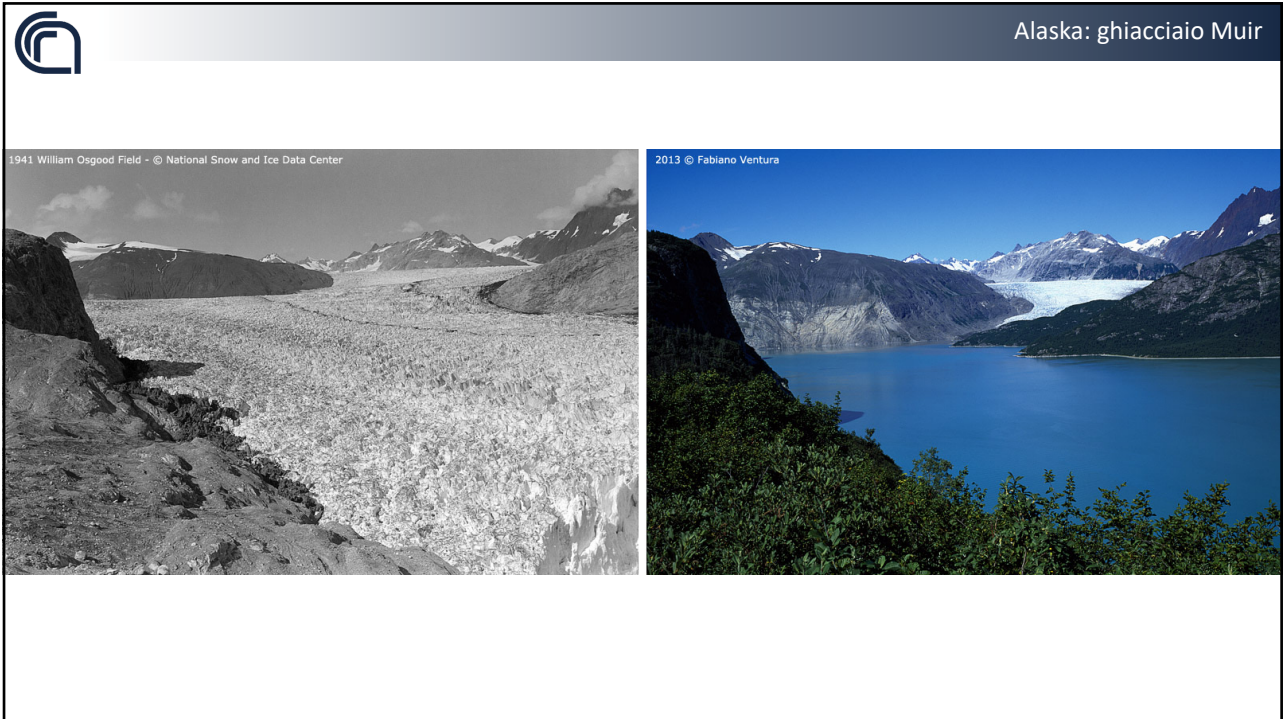
6



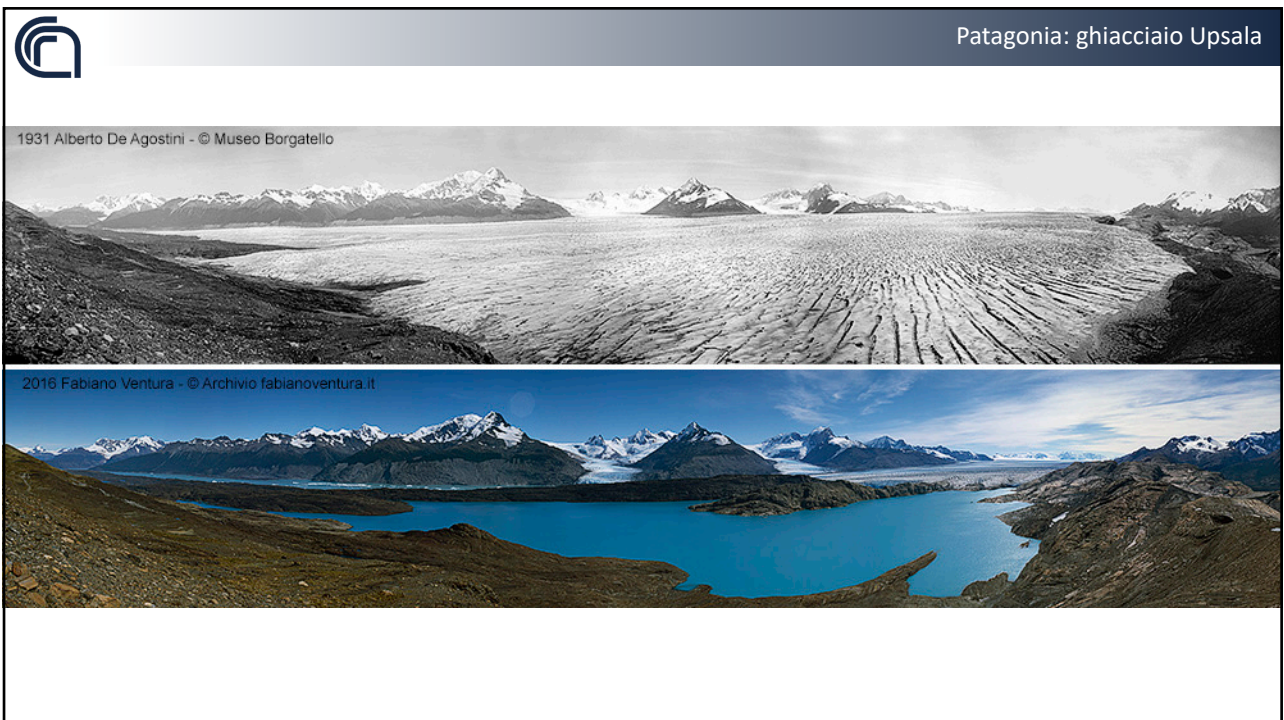
7



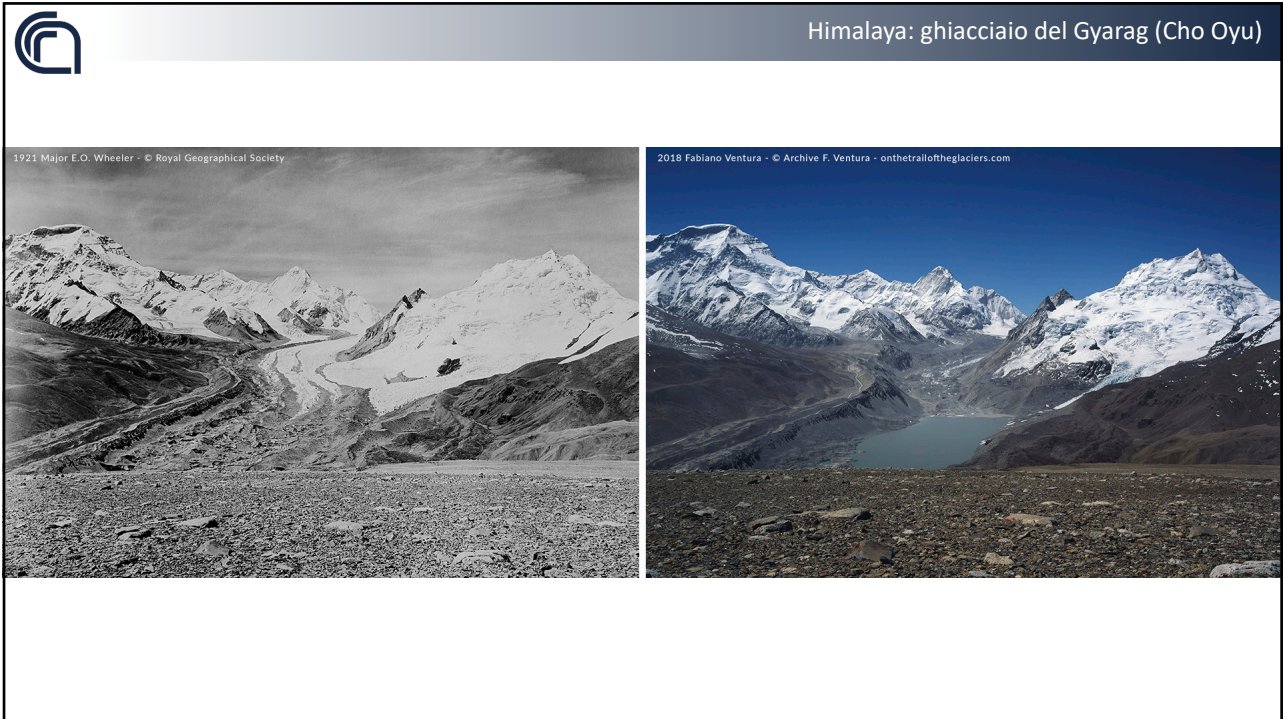
8



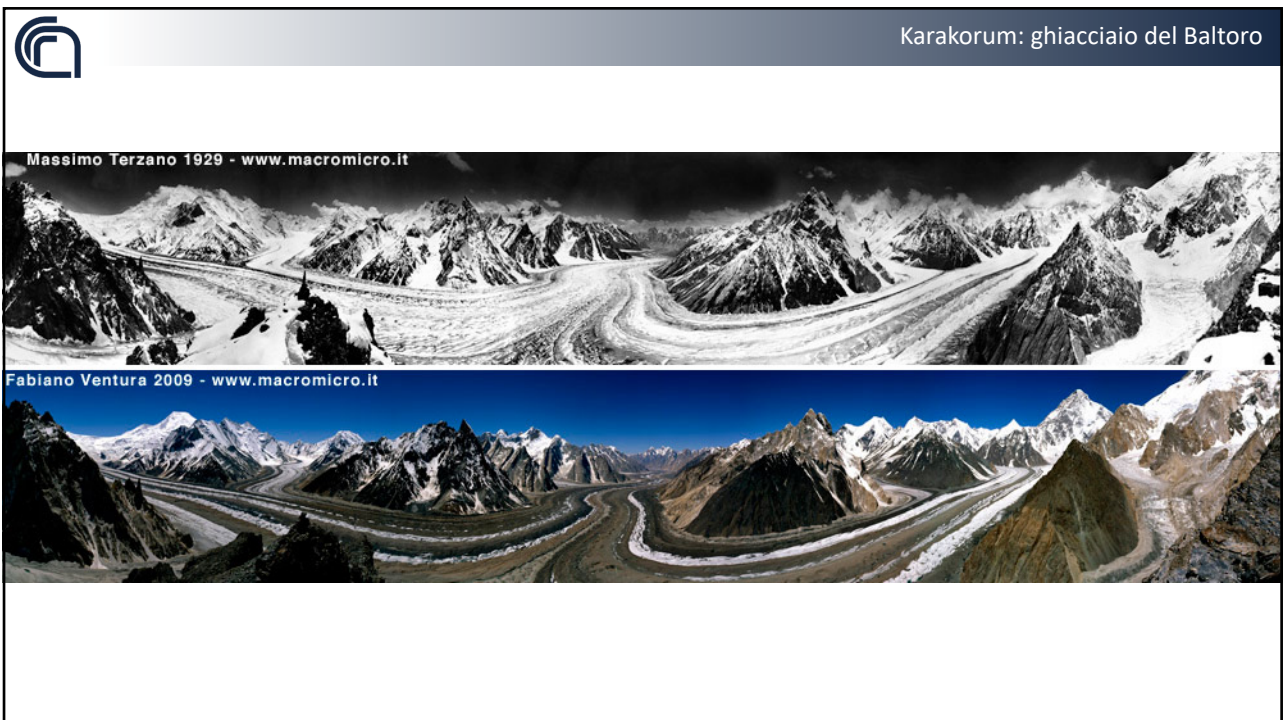
9



10



11



12



13



14



15



16





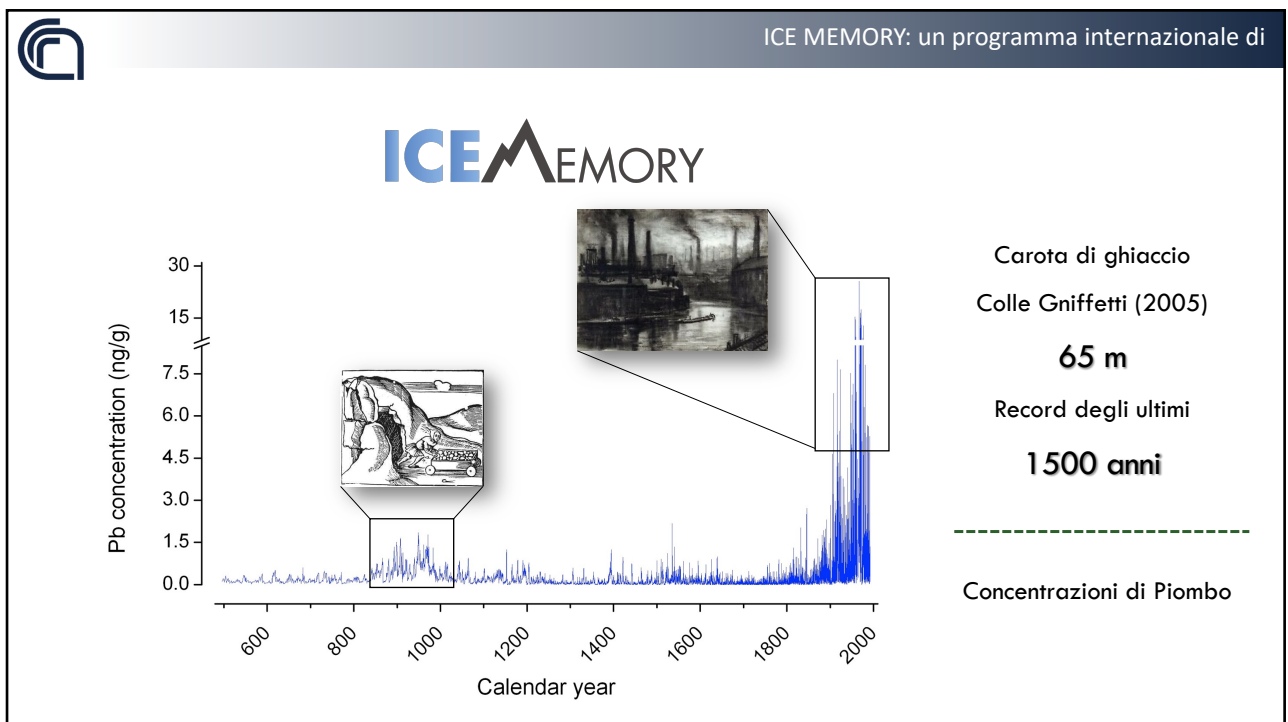
17



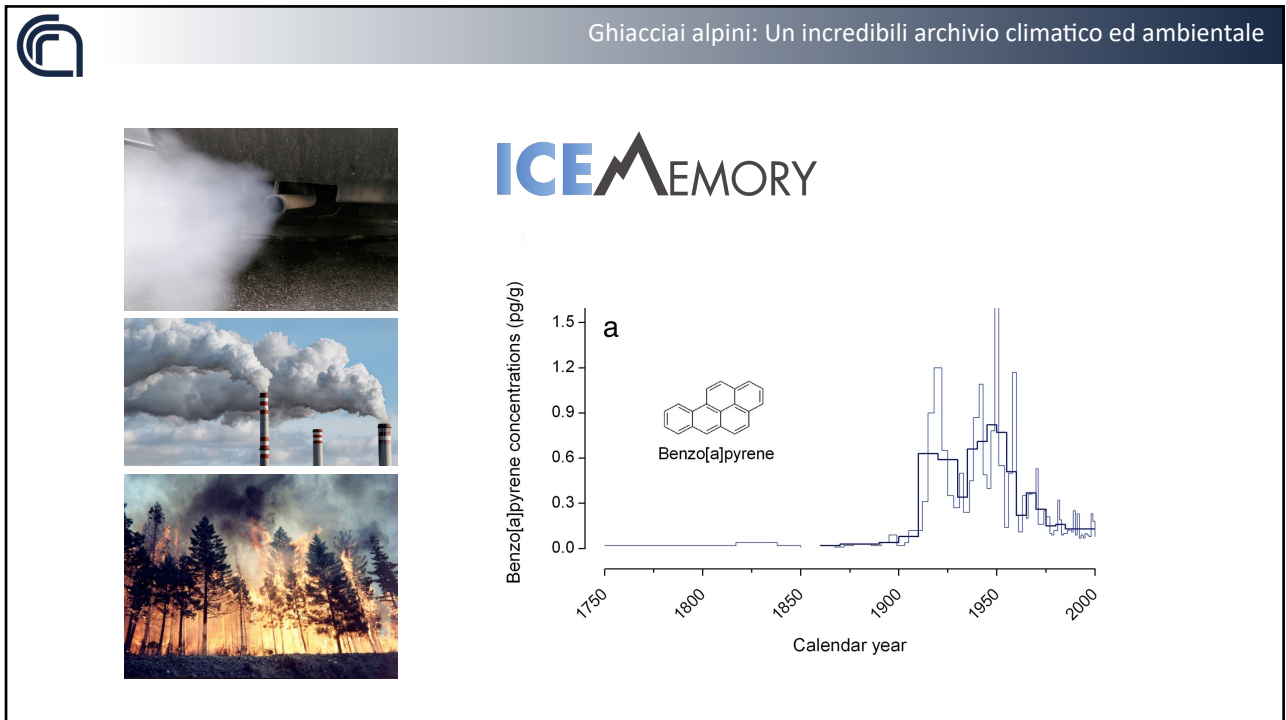
18



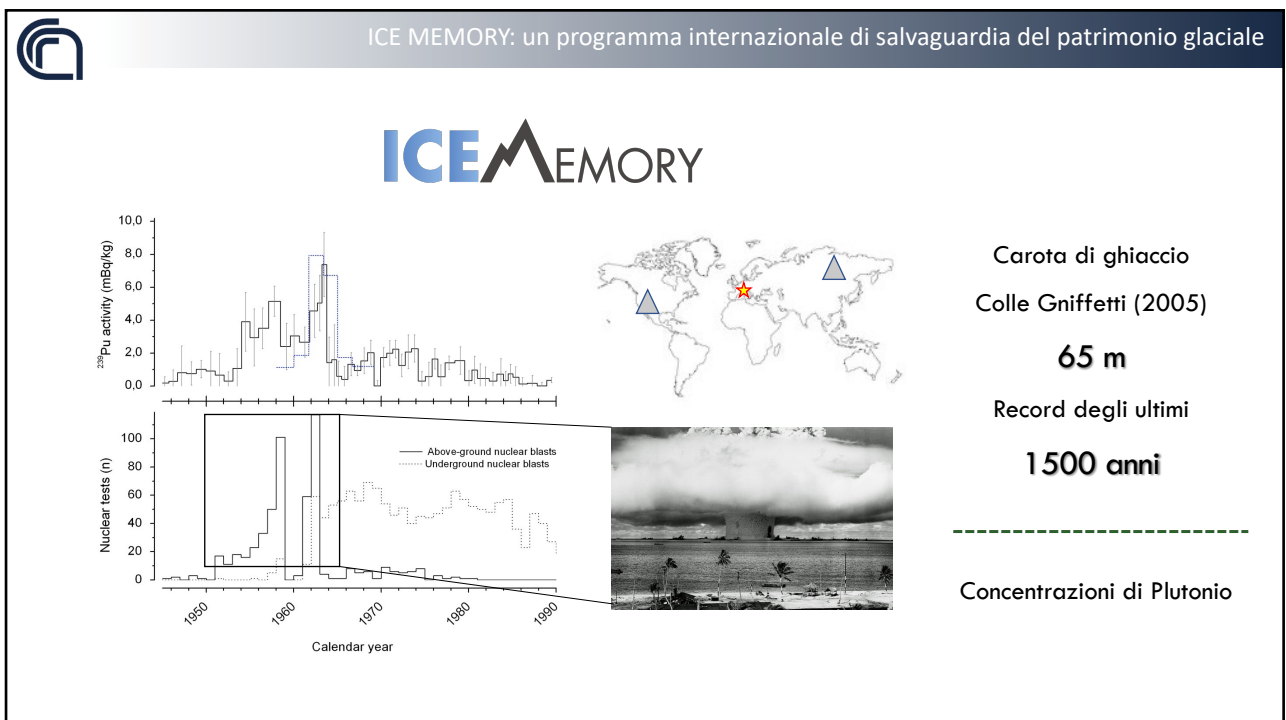
19



20



21



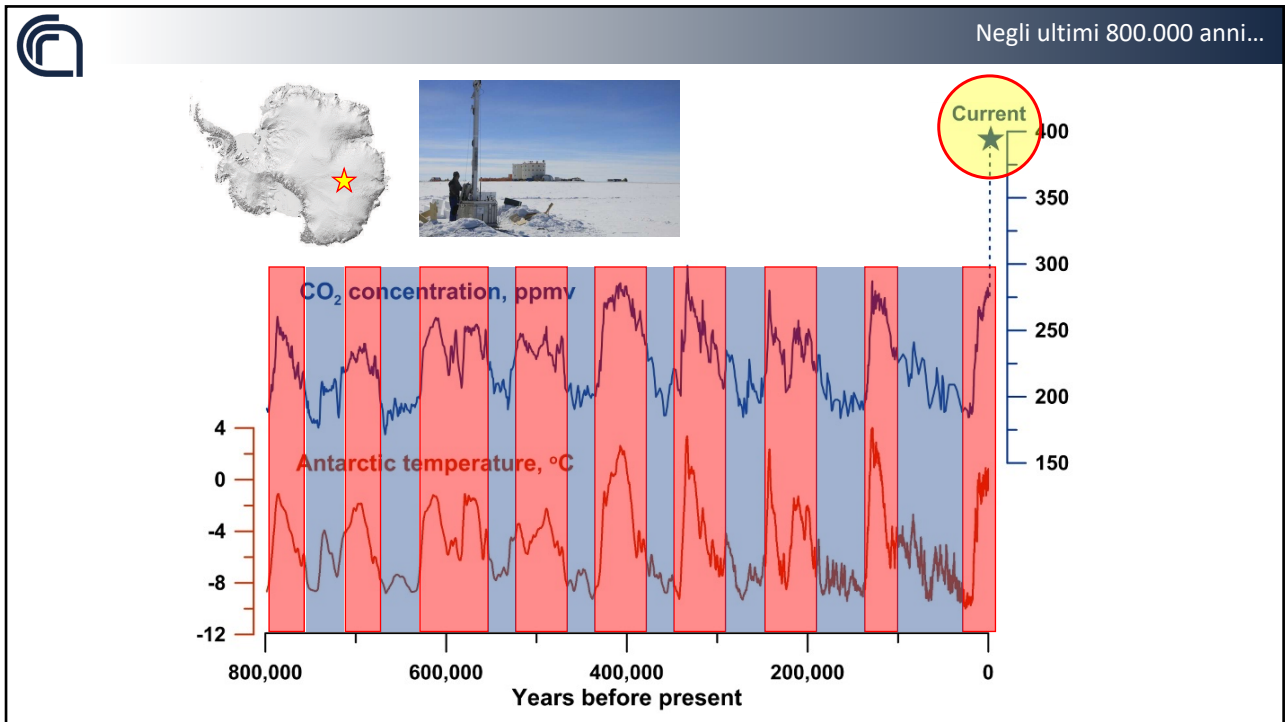
22



23



24



25



26

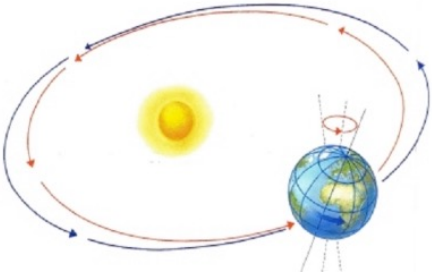


27




28

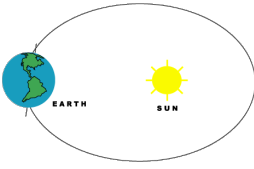
Forzanti climatiche naturali: i cicli di Milankovick



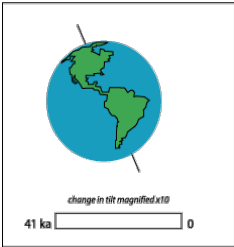
Il fisico croato Milankovick scoprì che le variazioni nei parametro orbitali della Terra possono spiegare buona parte della variabilità climatica preantropica. In particolare questi parametri orbitali:

- OBLIQUITA'
- ECCENTRICITA'
- PRESSIONE

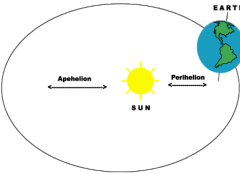




100 90 80 70 60 50 40 30 20 10 0  
Time \* 1000 years ago



41 ka 0



20 18 16 14 12 10 08 06 04 02 00  
Time \* 1000 years ago

29



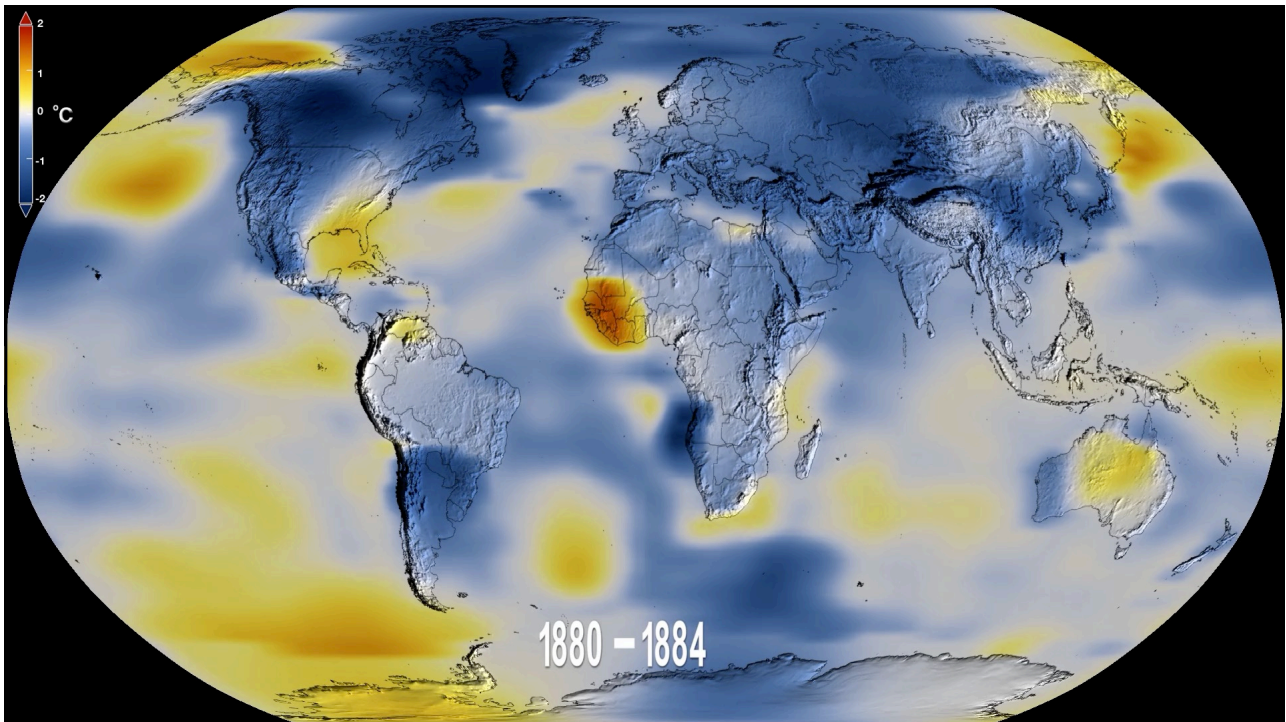
[Credit: NASA]

“Recent changes in the climate are widespread, rapid, and intensifying, and unprecedented in thousands of years.

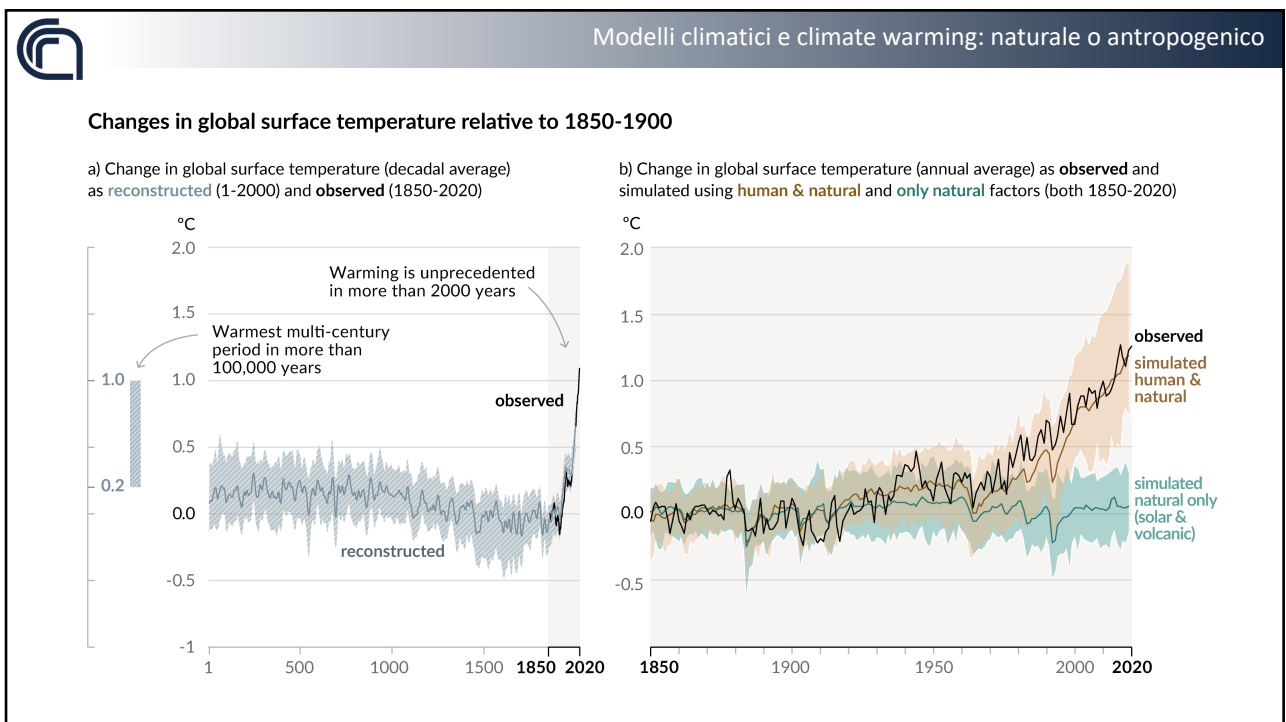
  
 INTERGOVERNMENTAL PANEL ON climate change




30

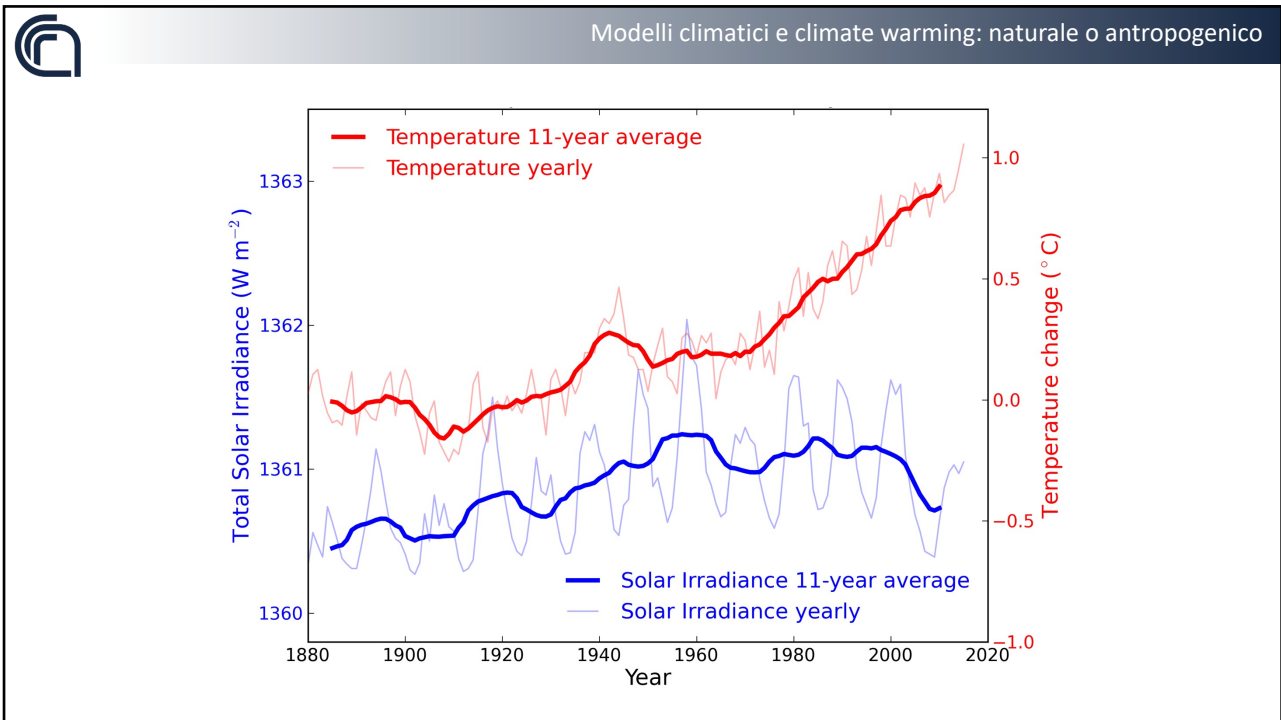


31

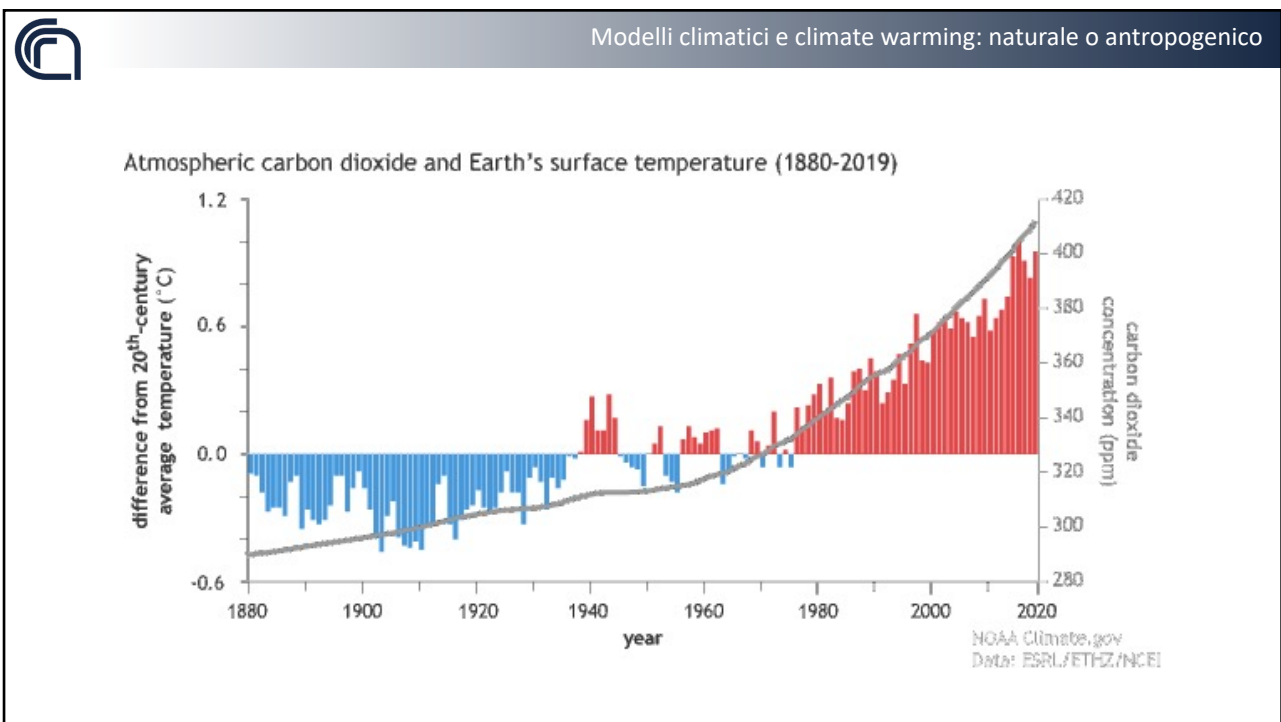


32



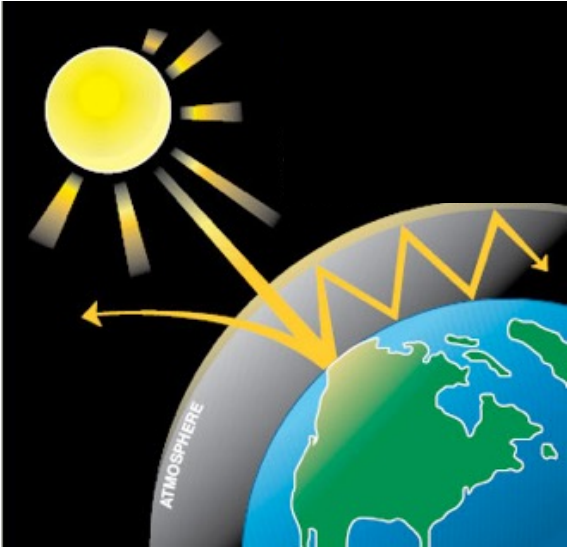


33



34

L'atmosfera terrestre e l'effetto serra



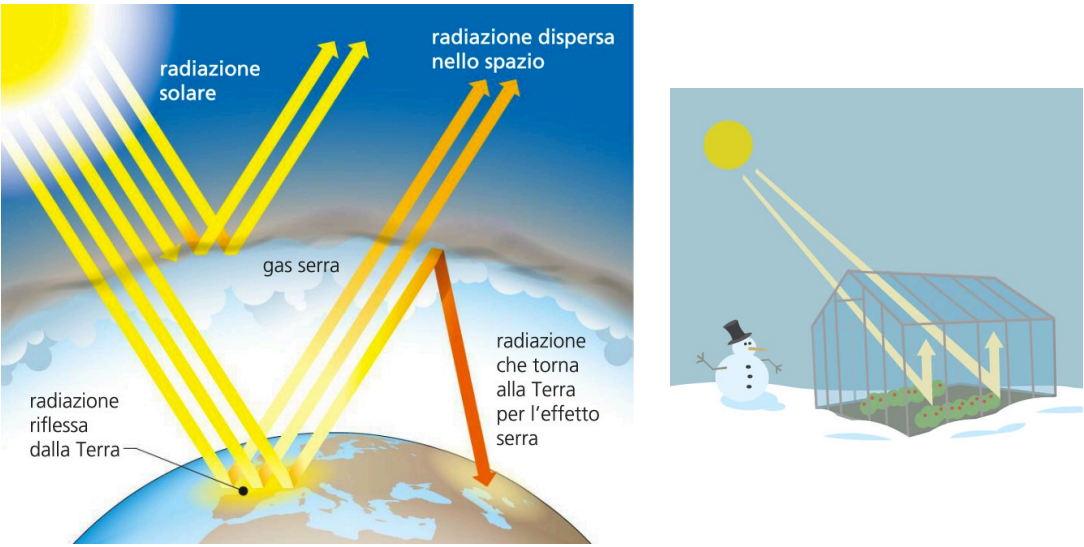
Spessore atmosfera 10-18 km  
(raggio terrestre ~ 6400 km)

$N_2$  (78%),  $O_2$  (21%), Ar (0.9%)  
Vapore d'acqua (1-4%)  
Altri... TRACCE

The diagram on the left shows the Sun emitting yellow rays towards Earth. Some rays are reflected away, while others hit the Earth's surface. A layer labeled 'ATMOSPHERE' surrounds the Earth, with arrows indicating the path of radiation. On the right, a 3D block diagram shows the composition of the atmosphere: a large blue block for  $N_2$ , a smaller red block for  $O_2$ , a tiny yellow block for Ar, and a very small grey block for  $CO_2$  and 'rest'.

35

L'atmosfera terrestre e l'effetto serra



radiazione solare  
radiazione dispersa nello spazio  
gas serra  
radiazione che torna alla Terra per l'effetto serra  
radiazione riflessa dalla Terra

The diagram on the left shows solar radiation (yellow arrows) hitting Earth. Some is reflected into space, some is absorbed by the ground, and some is reflected back up. Greenhouse gases (gas serra) in the atmosphere trap some of this outgoing radiation, sending it back down to the Earth (radiation that returns to Earth for the greenhouse effect). The diagram on the right shows a greenhouse with a snowman outside. Sunlight enters the greenhouse, warms the plants, and is reflected back inside, illustrating the same principle.

36



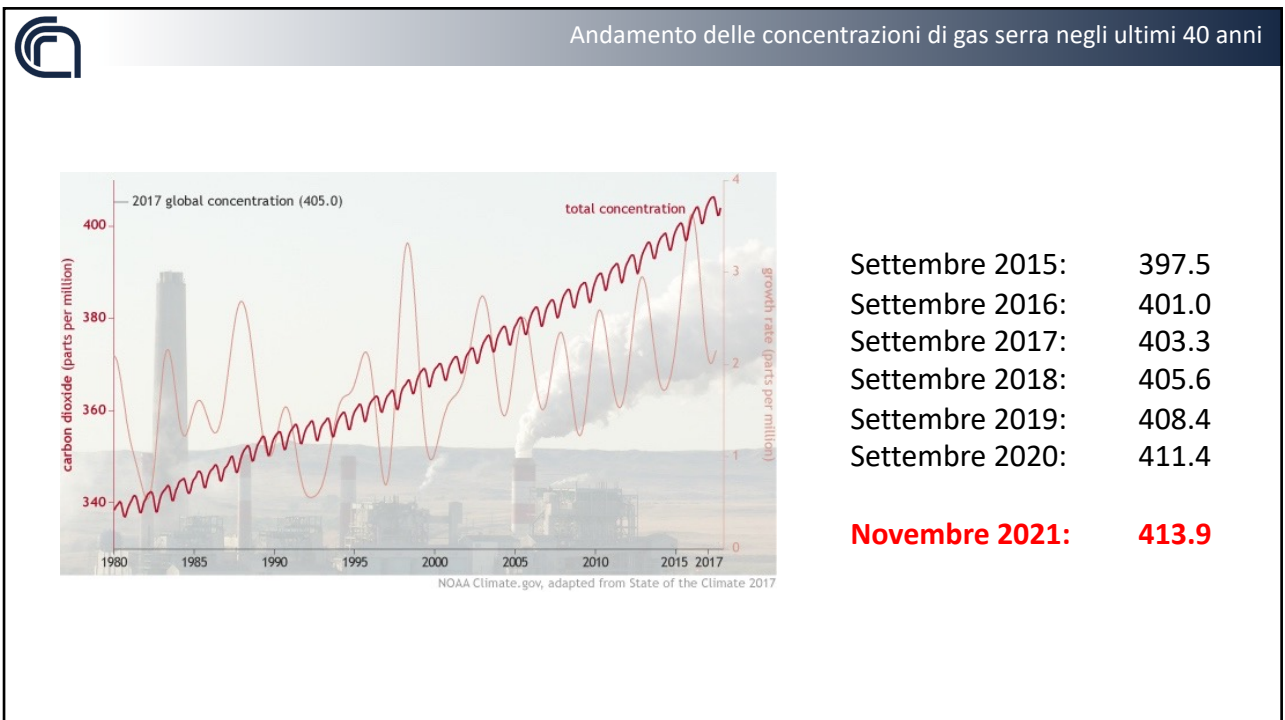
37



38



39



40



[Credit: Yoda Adaman | Unsplash]

“ It is indisputable that human activities are causing climate change, making extreme climate events, including heat waves, heavy rainfall, and droughts, more frequent and severe.

ipcc  
INTERGOVERNMENTAL PANEL ON climate change



41

Consenso scientifico riguardo l’impatto umano sul clima

IOP Publishing Environ. Res. Lett. 16 (2021) 114005 <https://doi.org/10.1088/1748-9326/ac2966>

ENVIRONMENTAL RESEARCH LETTERS

CrossMark

LETTER

Greater than 99% consensus on human caused climate change in the peer-reviewed scientific literature

OPEN ACCESS

RECEIVED 7 June 2021

REVISED 21 September 2021

ACCEPTED FOR PUBLICATION 23 September 2021

PUBLISHED 19 October 2021

Original content from this work may be used under the terms of the [Creative Commons Attribution 4.0 licence](#).

Mark Lynas<sup>1,\*</sup>, Benjamin Z Houlton<sup>2</sup> and Simon Perry<sup>3</sup>

<sup>1</sup> Visiting Fellow, Cornell University, Global Development, Alliance for Science, B75 Mann Library, Ithaca, NY 14850, United States of America

<sup>2</sup> Cornell University, Department of Ecology and Evolutionary Biology and Department of Global Development, Cornell University, Ithaca, NY 14850, United States of America

<sup>3</sup> Alliance for Science, Ithaca, NY 14850, United States of America

\* Author to whom any correspondence should be addressed.

E-mail: [ml866@cornell.edu](mailto:ml866@cornell.edu)

**Keywords:** global warming, climate change, scientific consensus

Supplementary material for this article is available [online](#)

42

Informazione climatica e media...

**#cartabianca**  
@Cartabiancarai3

**#Corona:** "Ammiro molto le proteste di Greta per l'ambiente. I potenti non hanno interesse, c'è un nichilismo del terzo millennio. Per cambiare qualcosa bisogna smantellare la civiltà dei consumi, delle automobili e delle industrie a carbone."

**#cartabianca**



**#cartabianca**  
@Cartabiancarai3

**#Battaglia:** "I cambiamenti climatici ci sono sempre stati, l'uomo non c'entra niente. La cosa grave è che ci stanno dicendo che, per evitare i disastri del clima, bisogna installare pannelli fotovoltaici, pannelli ecologici, auto elettriche."

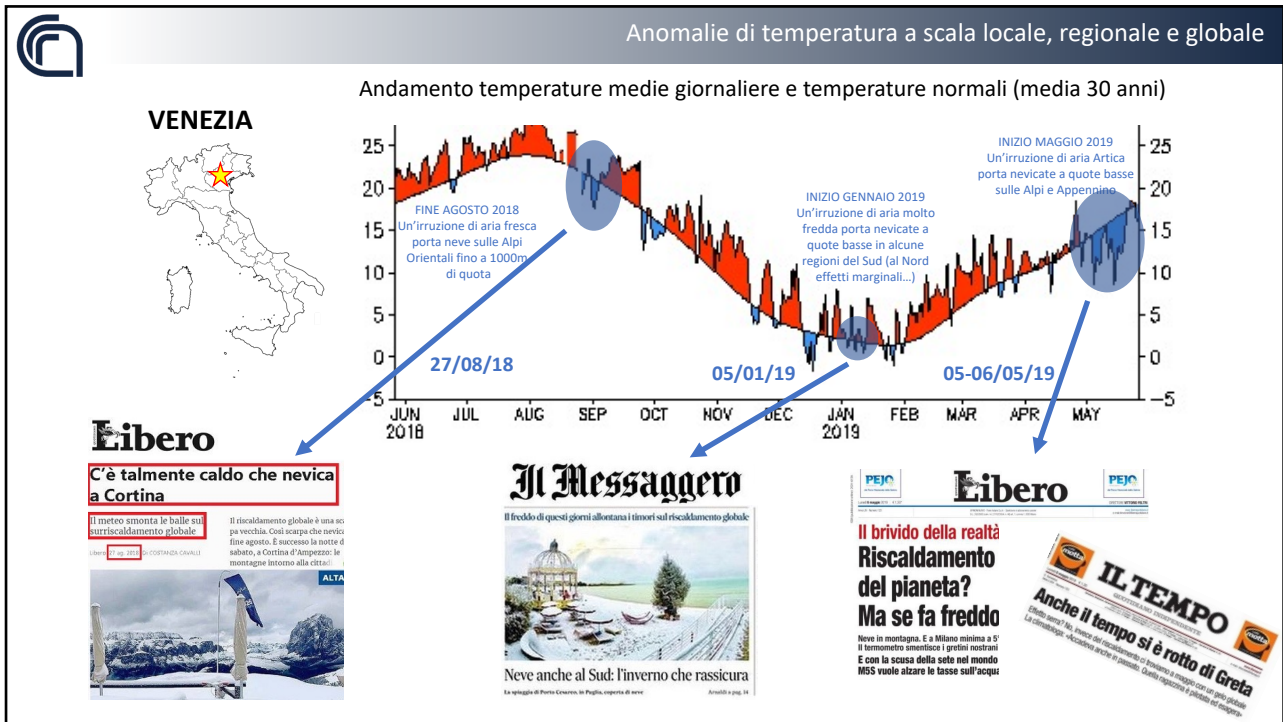
**#cartabianca**



43



44



45

It's a pity we're still officially living in an age called the Holocene. The Anthropocene, human dominance of biological, chemical and geological processes on Earth, is already an undeniable reality.

È un peccato che viviamo ancora ufficialmente in un'età chiamata Olocene. L' **ANTROPOCENE**, dominio umano di tutti i processi bio-chimici e geologici sulla Terra, è già una realtà innegabile.

*Paul Crutzen,  
premio Nobel per la Chimica 1995*

46



47

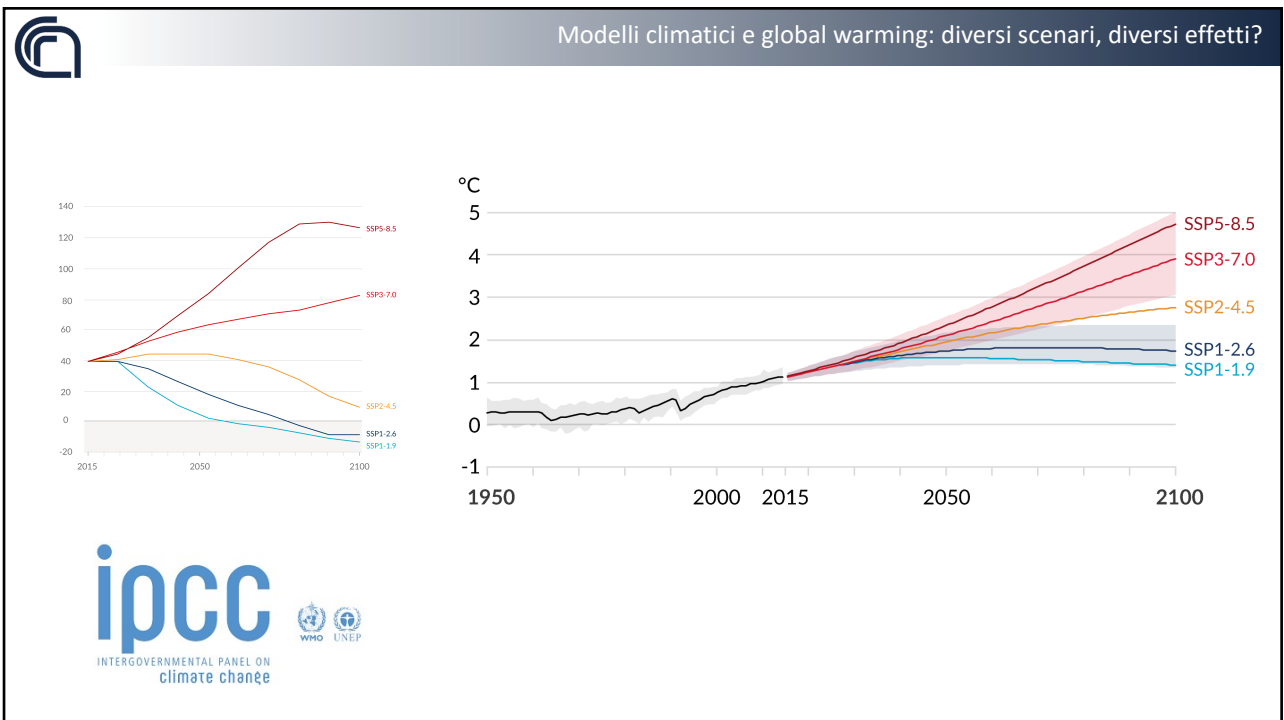


48

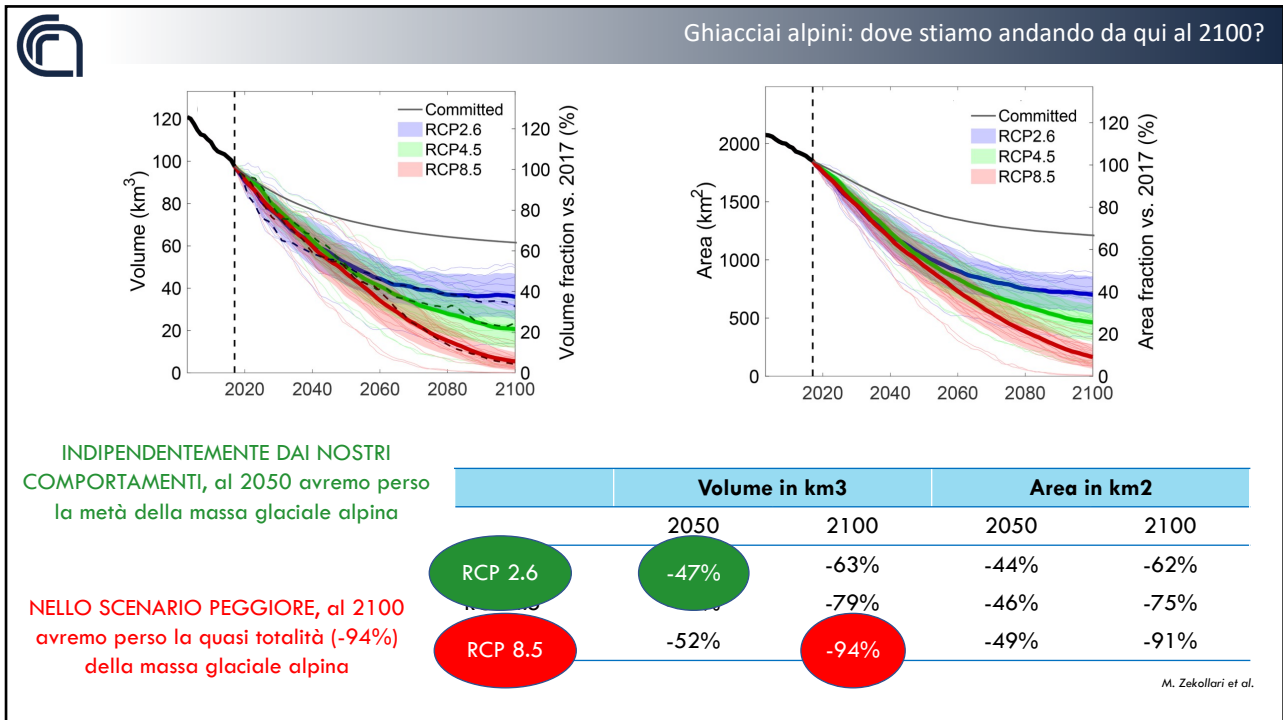




50



51



52

**Extreme heat**

More frequent  
More intense

**Heavy rainfall**

More frequent  
More intense

**Drought**

Increase in some regions

**Fire weather**

More frequent

**Ocean**

Warming  
Acidifying  
Losing oxygen

53



54



55



56



57



58



59



60



61




“There’s no going back from some changes in the climate system...”

[Credit: Jenn Caselle | UCSB]

ipcc  
INTERGOVERNMENTAL PANEL ON climate change





62



“...However, some changes could be slowed and others could be stopped by limiting warming.”

[Credit: Andy Mahoney | NSIDC]

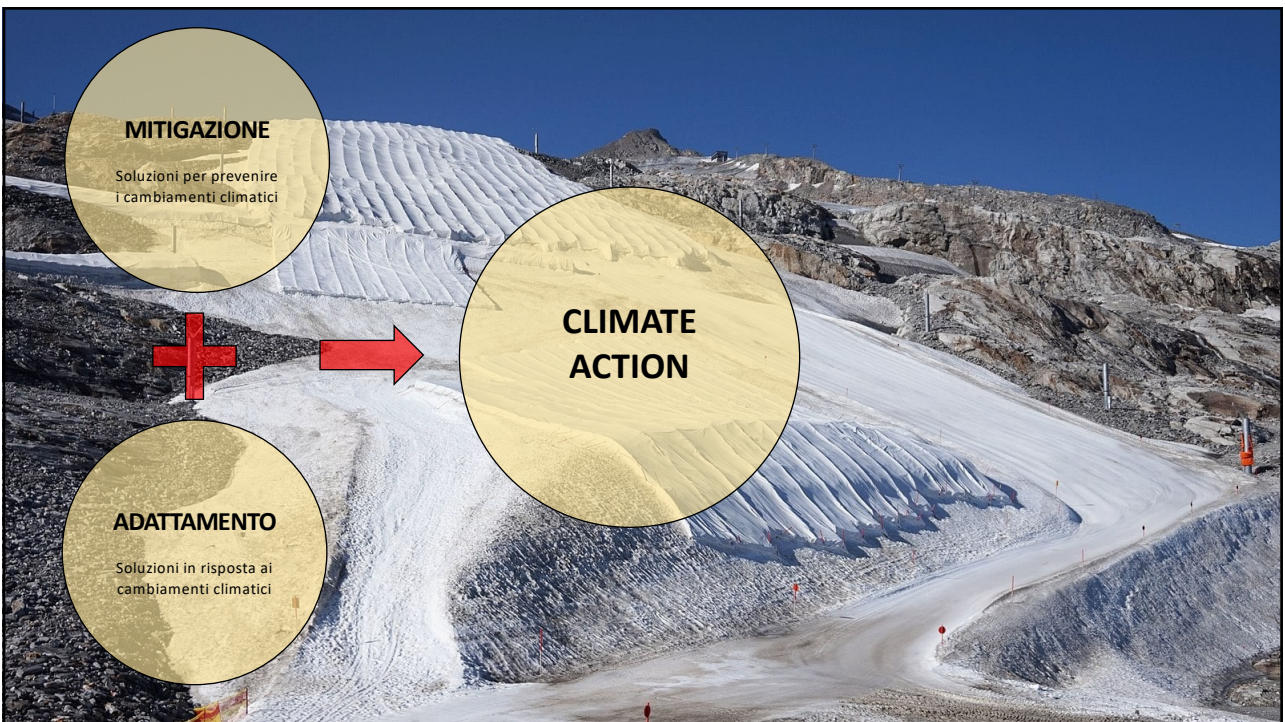
ipcc  
INTERGOVERNMENTAL PANEL ON climate change



63



64



65





“ The climate we experience in the future depends on our decisions now.

ipcc  
INTERGOVERNMENTAL PANEL ON climate change

WMO UNEP

66



67



68



69

