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Scuola di Scienze e Tecnologie
Sezione Geologia
<http://www.unicam.it/geologia/unicamearth/>

Istituto di Istruzione Secondaria Superiore

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Activity C4. **THE LANDSCAPE CREATED BY THE FORCES OF NATURE.**

ITALY – Tuesday February 23, 2021



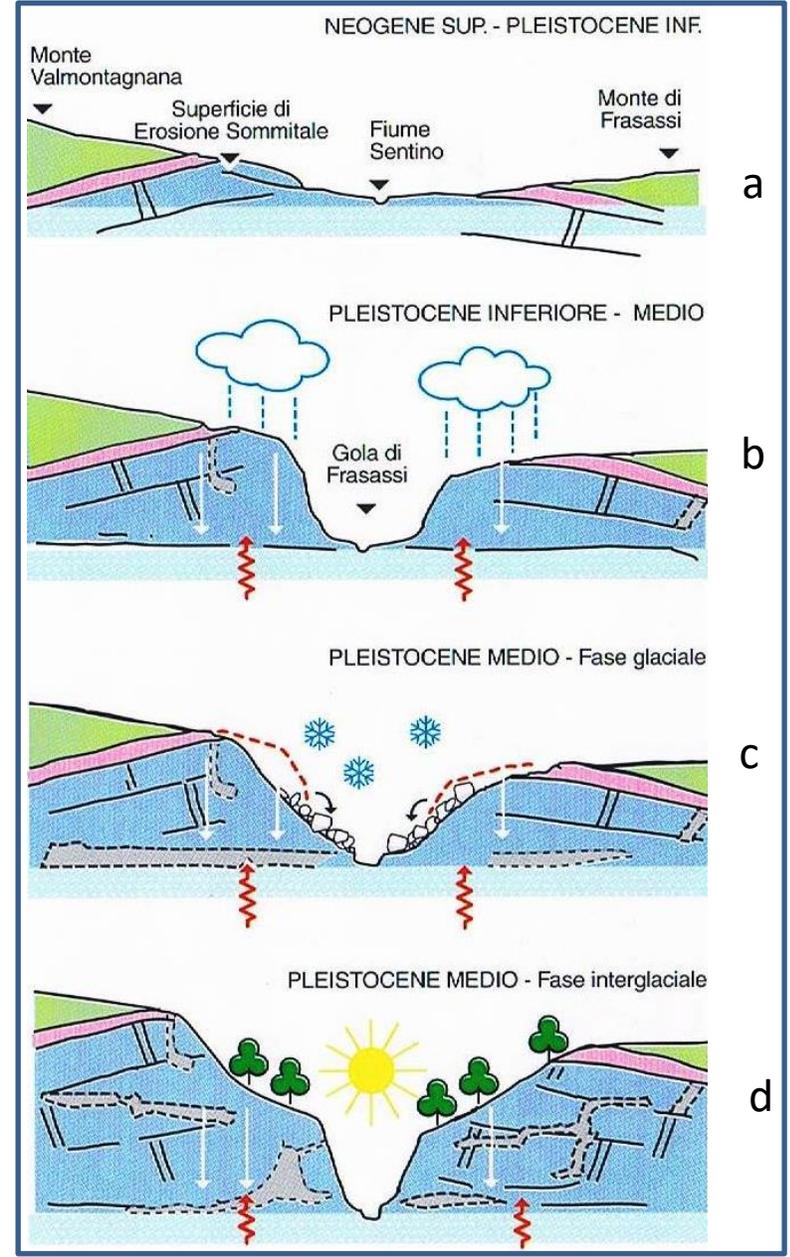
Energy from water: Frasassi karst plains origin

2D scientific liceum. School: IISS Polo Carlo Urbani - Porto Sant’Elpidio



The formation of the karst plains

✓ The formation of the karst plains in the Frasassi area began at the end of the Neogene, about 2 million years ago, and is still ongoing. In this scheme (not to scale) it is illustrated in four stages: a), b), c) and d).



Legenda

| | | | | | |
|---|-------------------------------------|---|-------------------------|---|--------------------|
|  | Risalita di acqua solfurea |  | Falda acquifera |  | Maiolica |
|  | Infiltrazione di acque superficiali |  | Formazione del Bugarone |  | Calccare massiccio |
|  | Cavit  carsiche | | | | |

Tratta e modificata da:
 A. Bocchini & M. Coltorti
 Il Carsismo della Gola di Frasassi (1990) 155 - 179

Fig. 1 – From “Guida del Parco n°3 il mondo sotterraneo” (2000), Comunit  Montana dell’Esino –Frasassi. The drawing is not to scale.



The formation of the karst planes: the glacial periods



- ✓ During the glacial periods (fig. c) of the Quaternary, the levels of the river and those of the underground aquifer remained the same because the water was trapped in the ice caps: (see below, fig. c) .

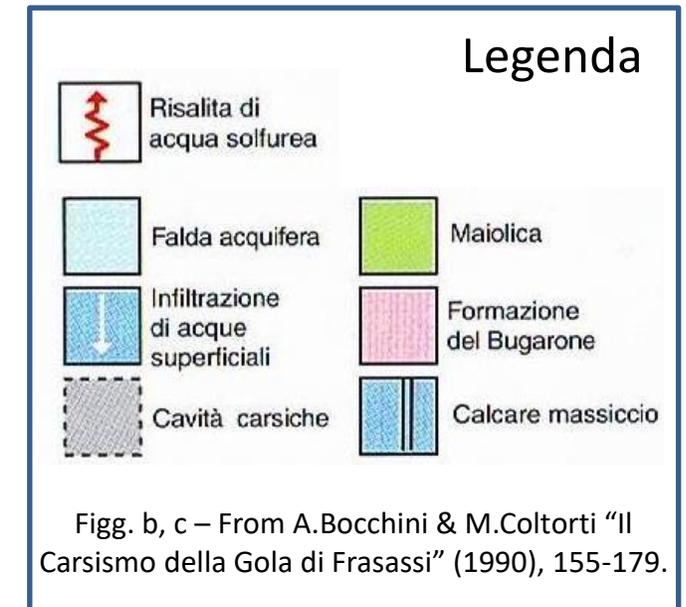
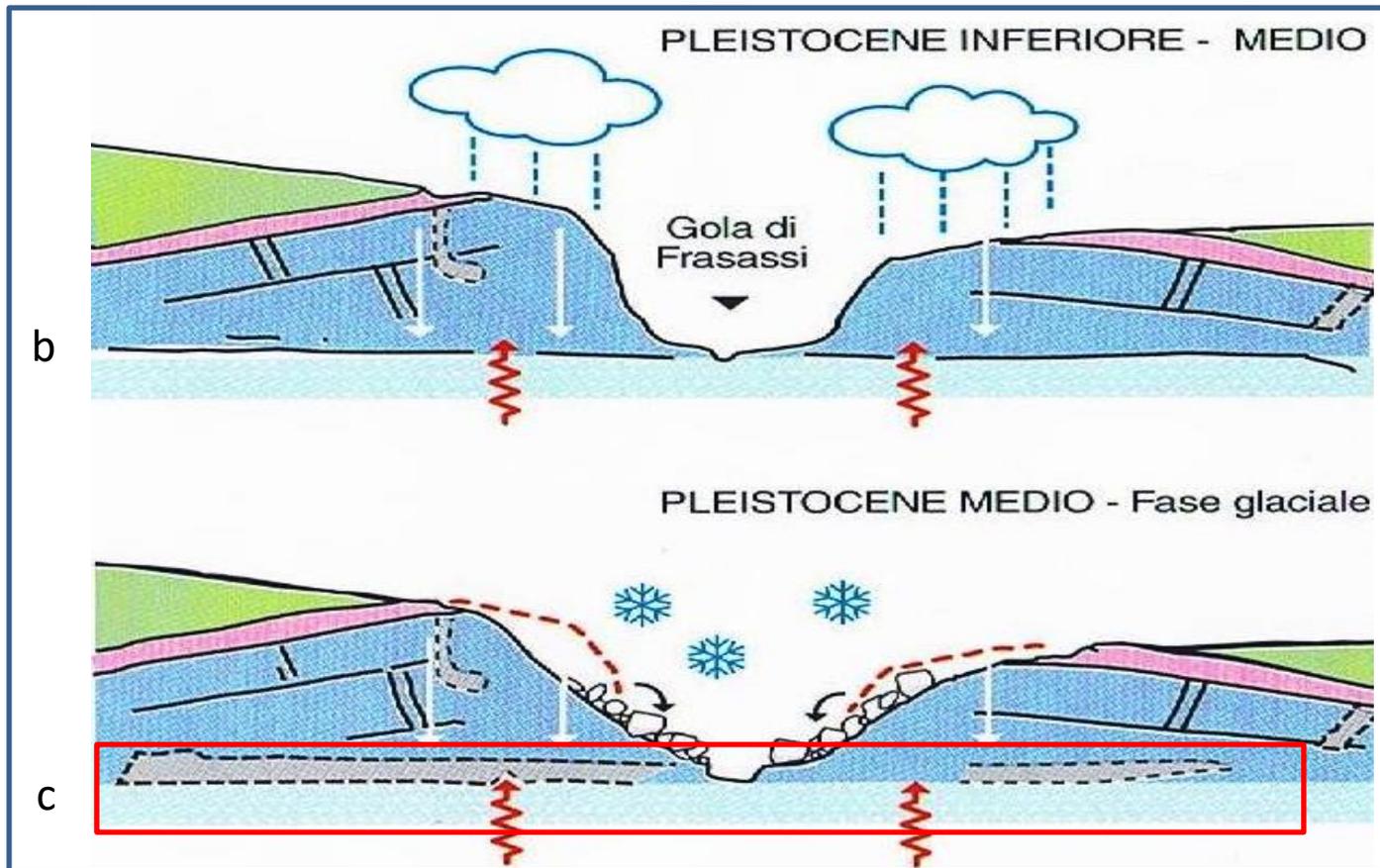


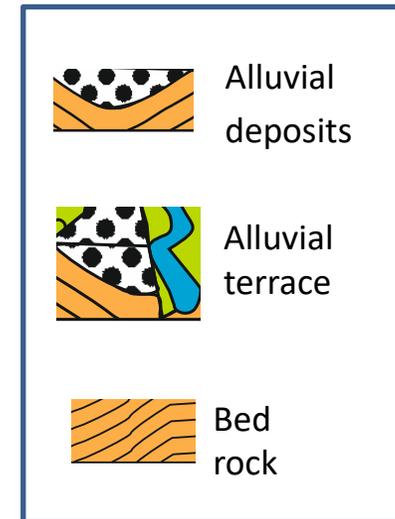
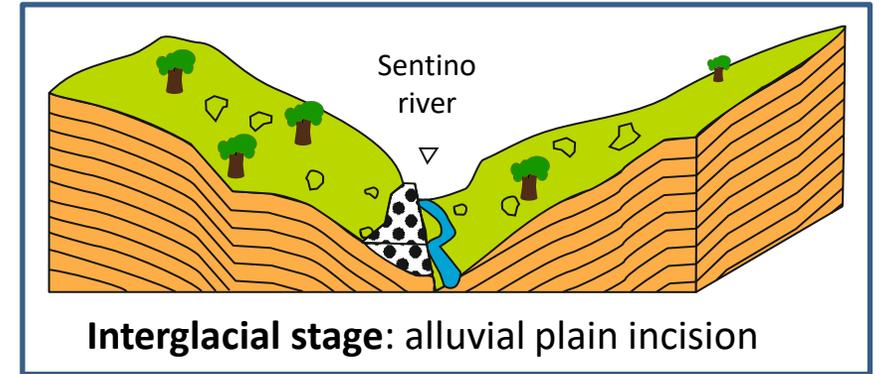
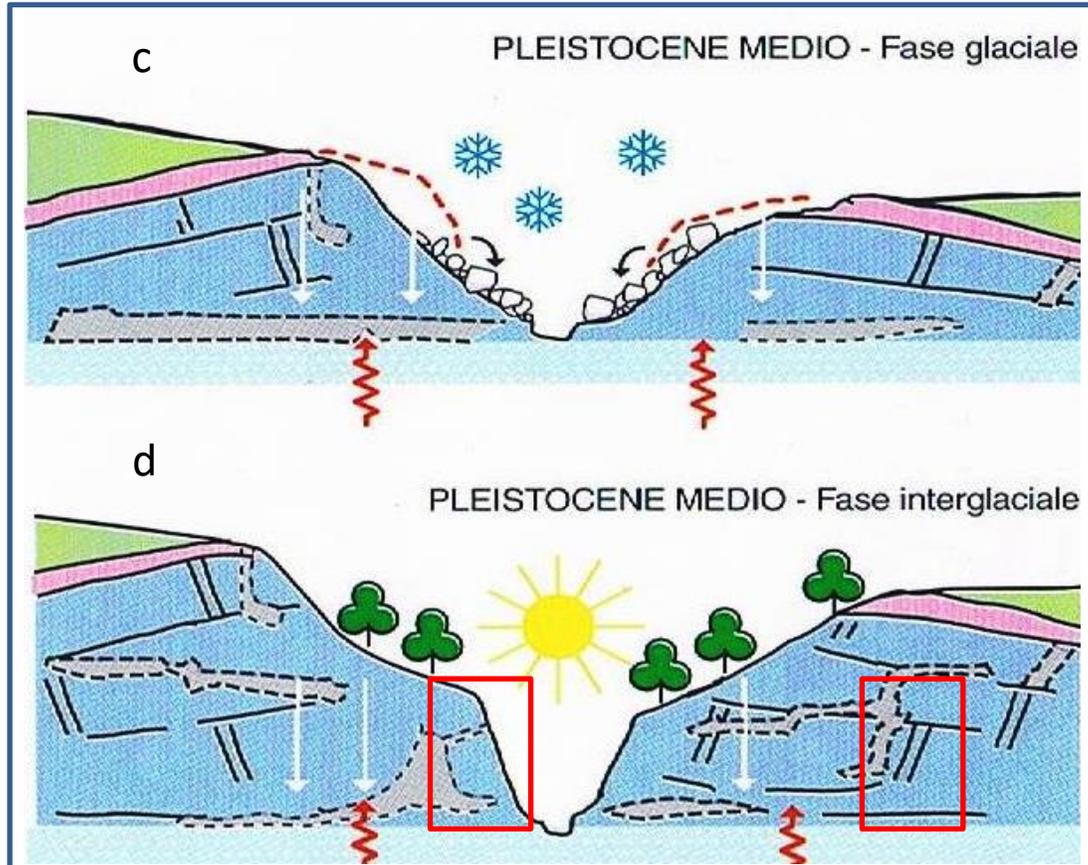
Fig. b, c - From “Guida del Parco n°3 il mondo sotterraneo” (2000), Comunità Montana dell’Esino – Frasassi.



Interglacial stage



✓ During interglacial stages, vertical wells were formed in the underground environment (picture below, fig. d). At the same time, due to the melting of the ice caps, alluvial deposits (in black and white colour) were cut causing the formation of fluvial terraces (picture on the right side)



From PhD research project - P. Stroppa "The geosites as tools for teaching earth sciences at school" (2015), University of Camerino

Fig. c, d – from "Guida del Parco n°3 il mondo sotterraneo" (2000), Comunità Montana dell'Esino – Frasassi.



The formation of the karst plains (inside) and alluvial terraces (outside)



✓ At the same time as the caves evolved (the figure below), outside there were incision of the Frasassi' gorge and of the alluvial terraces (see picture on the right). With the slow but progressive lifting of the relief (energy from underground), the processes was going on

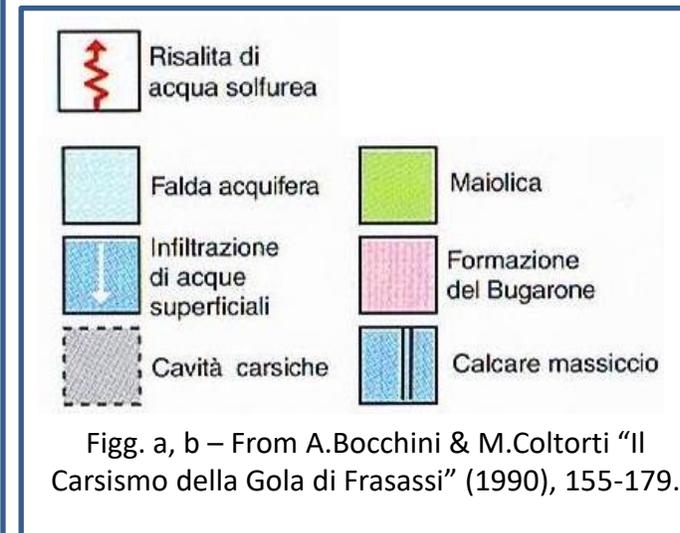
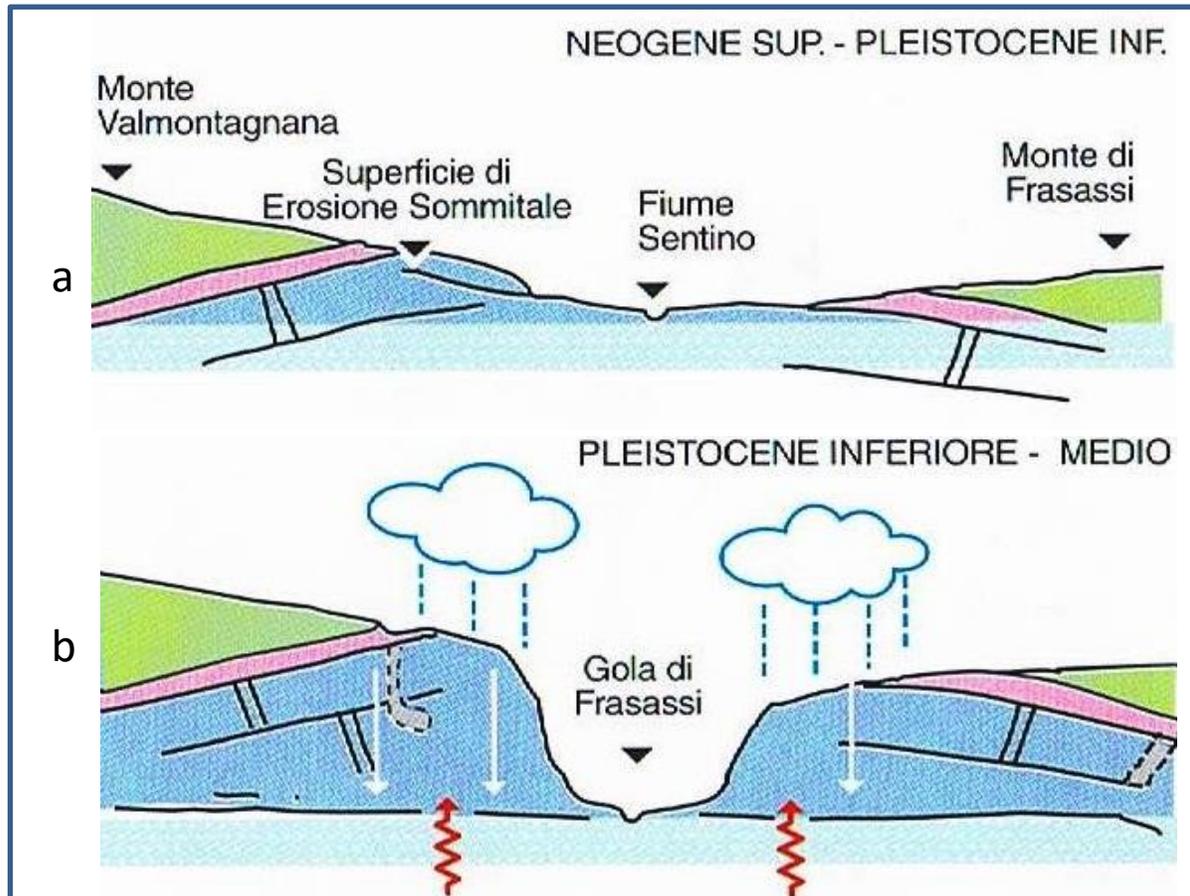
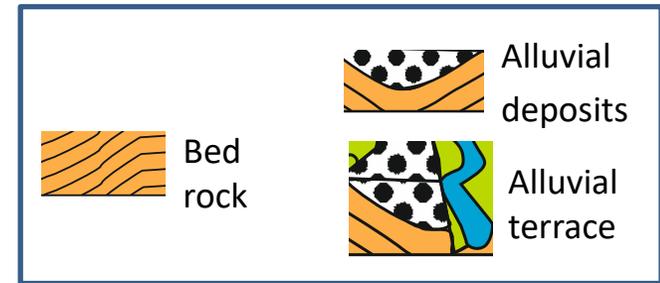
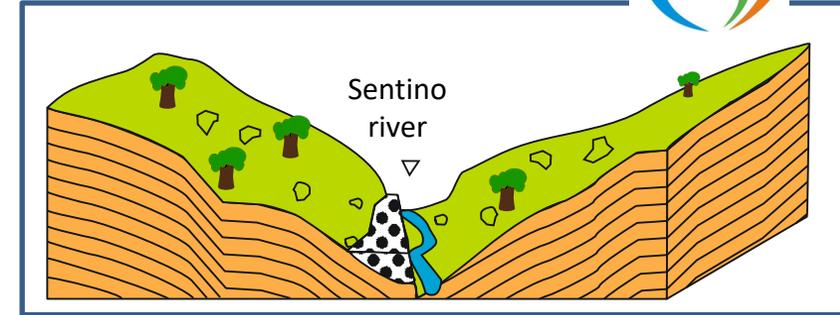


Fig. a, b – From A.Bocchini & M.Coltorti "Il Carsismo della Gola di Frasassi" (1990), 155-179.

Fig. a, b – From "Guida del Parco n°3 il mondo sotterraneo" (2000), Comunità Montana dell'Esino –Frasassi.

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Thanks for your attention



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Frasassi's Abbey



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