

## The Scaglia Formation in southern Ticino: Paleoceanography of the Albian and the Cenomanian in the central Tethys

Contact persons: Karl Föllmi, Thierry Adatte (Uni Lausanne), Rudolf Stockar (Museo cant. Storia Naturale Lugano); [karl.foellmi@unil.ch](mailto:karl.foellmi@unil.ch), 021 692 43 63

### Context

The goal of this master thesis is to study the geochemistry and sedimentology of the pelagic Scaglia Formation, which outcrops in the gorges of the Breggia, east of Balerna, Ticino. The Gorges of the Breggia lodges a unique succession of well-exposed Jurassic and Cretaceous pelagic sediments, which represent the central Tethys. Whereas in coeval sections in central Italy the geochemical history is well established, this is not the case for the Scaglia Formation in the Breggia. The goal of this thesis is therefore to study the impact of oceanic anoxic events, Milankovitch cycles, and changes in fertility in this particular part of the Tethys during the “Mid”-Cretaceous.

The section is well accessible and can be studied during most of the year.

### Objectives and Methods

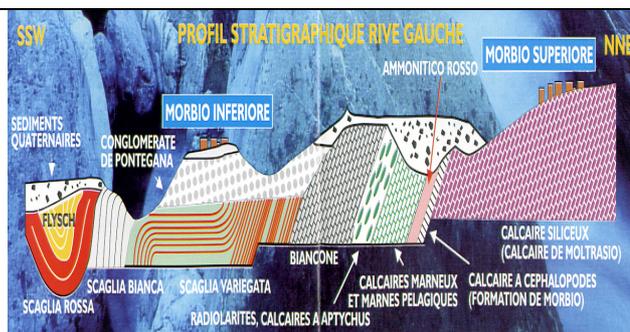
The section through the Scaglia Formation should be studied and documented in detail for all stratigraphic and sedimentological aspects; furthermore it should be measured and sampled in detail. The samples should be analysed for their facies and microfacies, geochemistry (organic matter, phosphorus, stable carbon and oxygen isotopes) and mineralogy.

The goal is to put the results of the analyses and interpretations into the wider context of “mid”-Cretaceous climate and global change.

### Literature

Erbacher, J., Huber, B.T., Norris, R.D., and Markey, M. (2001). Increased thermohaline stratification as a possible cause for an ocean anoxic event in the Cretaceous period. *Nature* 409: 325-327.

Friedrich, O., Norris, R.D., and Erbacher, J. (2012). Evolution of middle to Late Cretaceous oceans - A 55 m.y. record of Earth's temperature and carbon cycle. *Geology* 40: 107-110.



### Sites WEB

<http://www.unil.ch/Jahia/site/iste/op/edit/lang/en/pid/91752?matrix=9709yes>

### Choice of orientation:

Sedimentary, Environmental and Reservoir Geology