

# THE CARNIAN PLUVIAL EPISODE IN THE DOLOMITES AND NEARBY REGIONS: HISTORY OF THE RESEARCH AND PERSPECTIVES

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The Carnian Pluvial Episode (CPE) was a perturbation of the Late Triassic climate that had a strong impact on marine and terrestrial ecosystems (Fig. 1). The CPE is still a relatively neglected episode if compared to the other global ecosystem turnovers of the Mesozoic. Nevertheless, the CPE is synchronous with a major biological turnover, with both extinction among many marine and terrestrial groups and, remarkably, one of the most important evolutionary phases in the entire history of Life. The first significant radiation of dinosaurs, the spread of conifers and bennettitaleans, the first common occurrence of calcareous nannofossils, and the first reefs built by scleracti-

nian corals all occurred during or soon after the CPE. Furthermore, the first common occurrence of amber dates to the CPE. Ammonoids and conodonts, the two most important groups for the biostratigraphy of the Triassic, were also subject to a significant turnover. Many localities in Italy had a primary role for the understanding of the CPE, and still represent benchmarks for new studies. Some of these localities are paradigmatic examples of the geological and biotic processes that were occurring during this interval of geologic time, and should be designated as geosites. While recent studies on the CPE focused on identifying the episode globally, and far from the best studied regions of Western Tethys and the European continent, the Italian CPE localities could still provide a wealth of information on this event, especially concerning the evolution of shallow marine and terrestrial groups. Indeed, a significant portion of present knowledge of the CPE derives from studies on stratigraphic sections of the Carnian of the Dolomites and nearby areas, where several sections that encompass the CPE have been described. Furthermore the Dolomites' CPE fossil association is among the most relevant at the global scale as testified for example by the presence of the oldest quantitatively important deposit of amber and the best dated archosaur ichnoassociations that recently allowed to link, for the first time, the timing of the first dinosaur diversification to the CPE. Finally, CPE-related morphologies are one of the key features that contributed significantly to shape the unique landscape of the Dolomites, recognised as a UNESCO World natural heritage site. In this talk we will provide a review of the history of research on the CPE in the Dolomites and elaborate on some perspectives both on research and scientific dissemination aspects that might shape further projects by universities, museums, administrations and the private sector.

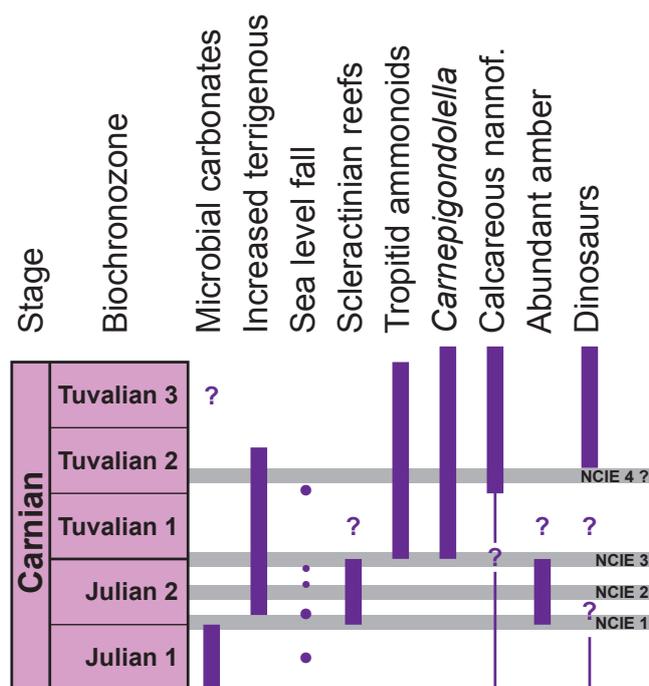


FIG. 1: A life scene from 232 million years ago, during the Carnian Pluvial Episode © Davide Bonadonna.

