

# Revised calcareous nannofossil biostratigraphy and chemostratigraphy for the late Turonian–early Campanian at Seaford Head (southern England)

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The Seaford Head section is exposed along the sea cliffs on the south coast of England between Brighton and Eastbourne in the county of Sussex (50.7644°N, 0.1087°E; 50.7561°N, 0.1388°E). The succession comprises upper Turonian–lower Campanian white nannofossil chalk with a large number of named marls, flint layers, and fossil-rich beds, which provide excellent marker beds that can be traced through the Anglo-Paris Basin. The available stratigraphic framework consists of lithostratigraphy, chemostratigraphy, and biostratigraphy that is based on macrofossils, microcrinoids, and microfossils (calcareous nannofossils and benthic foraminifera).

This study aims to revise the calcareous nannofossil biostratigraphy of the late Turonian–early Campanian interval and calibrate it to a new high-resolution carbonate  $\delta^{13}\text{C}$  record that spans the upper Turonian–middle Santonian of the Seaford Head section. A total of 68 samples (1 sample/2 m) were analyzed for calcareous nannofossil content, and 712 samples (1 sample/10 cm) were measured for stable carbon isotopes. Changes in calcareous nannofossil assemblages were evaluated both in terms of semiquantitative and quantitative data with at least 300 specimens counted in each slide. Four different types of biohorizons were coded as follows: Base (B), Top (T), Base common (Bc), and Top common (Tc) occurrences.

We applied the available calcareous nannofossil biozonations for the Late Cretaceous (CC zones, the integrated NC\* zones, UC zones, and the Boreal UCi subzones). The calcareous nannofossil biostratigraphy was then integrated with the new stable carbon isotope chemostratigraphy. Absolute abundance patterns of marker taxa allow for a more accurate overview of the biohorizons and the definition of a revised, high-resolution calcareous nannofossil biostratigraphic framework for the Seaford Head section. This approach proves to be particularly useful in chalk sea deposits where processes of reworking and redeposition of sediments commonly occur.