

***Heterohelix* and *Guembelitra* blooms before the K-Pg boundary in Haymana Basin, Turkey**

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Abundance and diversity patterns in planktonic foraminifera are important for paleo-environmental and paleoclimatic interpretations before and after the Cretaceous-Paleogene mass extinction. A 14,53 m-thick section was measured crossing the boundary between the Haymana Formation and the Yeşilyurt Formation in the northern part of the Haymana Basin. In the last 3.75 meters of the Maastrichtian below the K-Pg boundary, a series of quantitative analyses were carried out on planktonic foraminifera found above 63 and 150-micron screen sizes. By using foraminiferal bioevents, biozones were established which are: *Pseudoguembelina hariaensis* Zone for the uppermost Maastrichtian; P0 and *Parvularugoglobigerina eugubina* zones for the base of Danian. Additionally, paleobathymetry of the measured section was studied with the help of planktonic-benthic ratios. Calculations indicate approximately 340 m water depth for the depositional environment. Identification of deep water dweller planktonic foraminifers in the studied section, such as *Planoglobulina multicamerata* and *Gublerina cuvillieri* also supports this result.

Quantitative analyses resulted that at the end of Maastrichtian, *Heterohelix* species, which are tolerant to temperature, nutrient, oxygen and salinity fluctuations, dominated (~40 %) the environment while those which are not resilient such as *Globotruncana* species remained low (~10 %). On the other hand, *Guembelitra cretacea*, which show opportunistic blooms during environmental crisis and dwell at the surface of the water column, survived from the K-Pg mass extinction. This study, for the first time in Turkey, shows blooms of *Guembelitra cretacea* in Haymana Basin for the latest Maastrichtian and right after the K-Pg boundary in P0 Zone.

After the K-Pg mass extinction, first samples of the Danian P0 Zone are characterized by an abrupt increase in calcareous spherical forms whose diameters are ranging between 10 to 20 microns. Apart from that, another sharp increase was also found in echinoid fecal pellets at 2 cm above the boundary. Previously, the same pellet increment was recognized in the southern part of the basin. These discoveries support the idea of 'Echinoid fecal pellet peak as a K-Pg boundary marker'.

In the Haymana Basin, Maastrichtian mudstones are overlain by limestone and mudstone alternations in the Danian indicating a major change in the depositional regime after the K-Pg boundary. A similar stratigraphy has also been observed in the Mudurnu-Göynük Basin in the K-Pg boundary beds. This similarity in an interval of high chronostratigraphic resolution brings the question whether these two basins were connected to each other during end Cretaceous and the beginning of Paleocene.