# The calcareous nannofossils across the Cretaceous-Paleogene boundary in northern Romania (Bucovina and Maramureş)

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Three sections from north-eastern Romania (Bucovina), within the Vrancea Nappe (Cuejdiu – Runcu Valley), Tarcău Nappe (Putna – Putna Valley section), and from northern Romania (Maramureş), from Poiana Botizei (Botiza Valley) were compared. These sections were studied in order to establish the Cretaceous-Paleogene boundary.

The lithostratigraphic context that provided the study of the Cretaceous/Paleogene boundary in the Moldavidic flysch is the one belonging to Tarcău and Vrancea Nappes.

The section from Runcu Valley, near Cuejdiu, contains a lithological succession characteristic to the central-eastern part of the Moldavidic flysch (Lepşa and Runcu formations). The delineation of the K/Pg boundary based on calcareous nannoplankton provides the premises for the correlation with the western part of the Moldavidic basin and for better outlining the bioevents and tectogenetic events that have influenced the Moldavidic flysch basin. At the base of the section, rich Upper Cretaceous calcareous nannofossils appear, with: *Arkhangelskiella cymbiformis, Broinsonia* ssp*., Micula* ssp*.,* a.o. An interval that contain, besides Cretaceous, also Paleogene taxa follow. Upper Cretaceous calcareous nannofossils, with *Nephrolithus frequens,* a.o., but also Paleogene taxa: *Biantolithus sparsus, Cyclagelosphaera alta, Cruciplacolithus tenuis, Podorhabdus elkefensis*, are present. The K/Pg boundary is probably located in this interval. The next interval contain rare Paleogene and rare reworked Cretaceous taxa.

Calcareous nannofossils from the turbidites of the Putna Valley section (Hangu and Izvor formations) (Tarcău Nappe) were investigated in order to identify the Cretaceous/Paleogene boundary. The abundant late Cretaceous and Paleogene calcareous nannofossil assemblages along the first part of the section are followed by a barren interval in nannofossils, then, again the Paleogene forms and sometimes reworked late Cretaceous taxa. The Cretaceous biozones with *Micula prinsii, M. murus* and *Nephrolithus frequens* are present. The first part of the Paleogene contains frequent calcispheres - especially *Opercudinella operculata* and *Markalius inversus, Ericsonia* ssp., *Cruciplacolithus primus*.

The section from Maramureş area, from Poiana Botizei, belong to the Poiana Botizei Klippen Zone (Red Marls) (Puchov Marls) (Cenomanian–Paleocene). In the Poiana Botizei section, the calcareous nannofossil assemblages at the base of the section, with *Micula staurophora, Ceratholithoides kamptneri, Broinsonia verecundia* point to the presence of Upper Cretaceous deposits. This assemblage is followed by *Micula murus, Arkhangelskiella maastrichtiana, Nephrolithus frequens*, a.o. An interval with few Lower Paleogene nannofossils of small sizes and reworked Upper Cretaceous taxa was also identified, followed by an interval barren in calcareous nannofossils. The Lower Paleocene calcareous nannofossil assemblage contains: *Cruciplacolithus primus, Biantholithus sparsus, Markalius inversus, Biscutum melaniae, Neocrepidolithus* cf. *cohenii*, and relatively frequent thoracospheres.