

# The Cretaceous-Paleogene Transitions and Geological Evolution of the Southern Sakarya Zone, NW Turkey

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## Abstract

The Göynük (Bolu) and Nallıhan (Ankara) area, NW Anatolia, lies to the north of the Neotethyan (Izmir-Ankara-Erzincan) Suture Zone. It comprises units ranging from the Jurassic to Miocene ages. In the study area, Middle Jurassic-Lower Cretaceous age pelagic limestone (Soğukçam Formation) is the oldest exposed rock unit, overlain by the Upper Cretaceous detrital units (Gölpazarı Group) which include the Cenomanian-Campanian age turbidites (Yenipazar Formation) and the Maastrichtian age sandstones (Taraklı Formation). Over the Maastrichtian age sandstones, units exhibit varying facies from north to south of the study area. In the north, there occurs the coral-bearing Paleocene limestones (Selvipınar Formation). In the south, instead, there are clastics and bituminous shales (Kızılçay Group), overthrust by the pelagic limestone of the Jurassic and lower Cretaceous. The stratigraphy and spatial distribution of shallow marine and terrestrial sediments in the post-Maastrichtian age units suggest a progress of collision, but at different uplift rates at different locations. A slow uplift rate in the north seems probably to be related to an initial stage of the collision. A relatively fast uplift rate in the south and the presence of tectonic features such as E-W oriented folds, overturned folds and a thrust fault are related to shortening during a late collisional stage that affected the whole region.