O 57. GEOLOGICAL APPROACH TO ÇITDERE NATURAL PROTECTION AREA

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ABSTRACT: Karabük region has a dense forest area. The forest area is one of most important location for Oxygen content in Turkey. There are many nature and wildlife protection areas in the Karabük region.
Çitdere region is a Nature Protection Area (NPA) in Karabük province. The Çitdere Nature Protection Area (ÇNPA) consists of two polygon and different types of rock community. ÇNAP covers of Early-Late Cretaceous Ulus formation. Ulus formation consists of Early-Late Cretaceous clastic sedimentary rocks (conglomerate-sandstone-mudstone and marl alternation). The Sunduk member (as a member of the Ulus formation) include carbonate rocks. The southern polygon of the ÇNAP consists of clastic rocks and the northern polygon consists of carbonate rocks.
The ÇNAP is very close to the North Anatolian Fault Zone (NAFZ). Therefore, the region is frequently influenced by active seismic movement. Seismic movements affect very loosely packed sedimentary rocks more than carbonated rocks. So, the karstic limestones (Late Cretaceous Ulus formation-Sunduk member) in the northern polygonal contain safer areas for natural wildlife. This situation shows that the areas of the Çitdere Nature Conservation consisting of carbonates rocks resistance to landslides and earthquakes. Furthermore, the area including of karstic carbonate rocks covers natural shelters and feeding areas to natural wildlife.

Keywords: Çitdere, Karabük, Natural Protection area, Geological approach

1. INTRODUCTION

Çitdere Nature Protection Area (CNPA) is located in the southwest of Karabük province. Accumulation of main Tecronic of Turkey in the Pontian in the western part of the main tectonic Association (West-Pontides) is located in the Istanbul zone (Figure 1).
Çitdere Nature Protection Area is located in a dense forest texture as well as a very steep topography. The rock assemblages in the region are located to the north of the North Anatolian Fault (NAF) line and have a very folded and fractured internal structure (Figure 1).

2. MATERIAL AND METHOD

Geological map of the study area was made. Samples were collected systematically in places where the sequence is thick. Also, random sampling was realized from different lithologies. The thin sections and acetate peels from samples were prepared for determining the petrographic and sedimentological characteristics of different facies.

3. GEOLOGICAL SETTING

The Ulus formation, which is widespread in the region, contains Early and Late Cretaceous sandstone, shale, conglomerate, limestone and various types of blocks. There is a Late Cretaceous Sunduk member in the Ulus formation. The Sunduk member generally consists of late Cretaceous aged carbonated rocks.

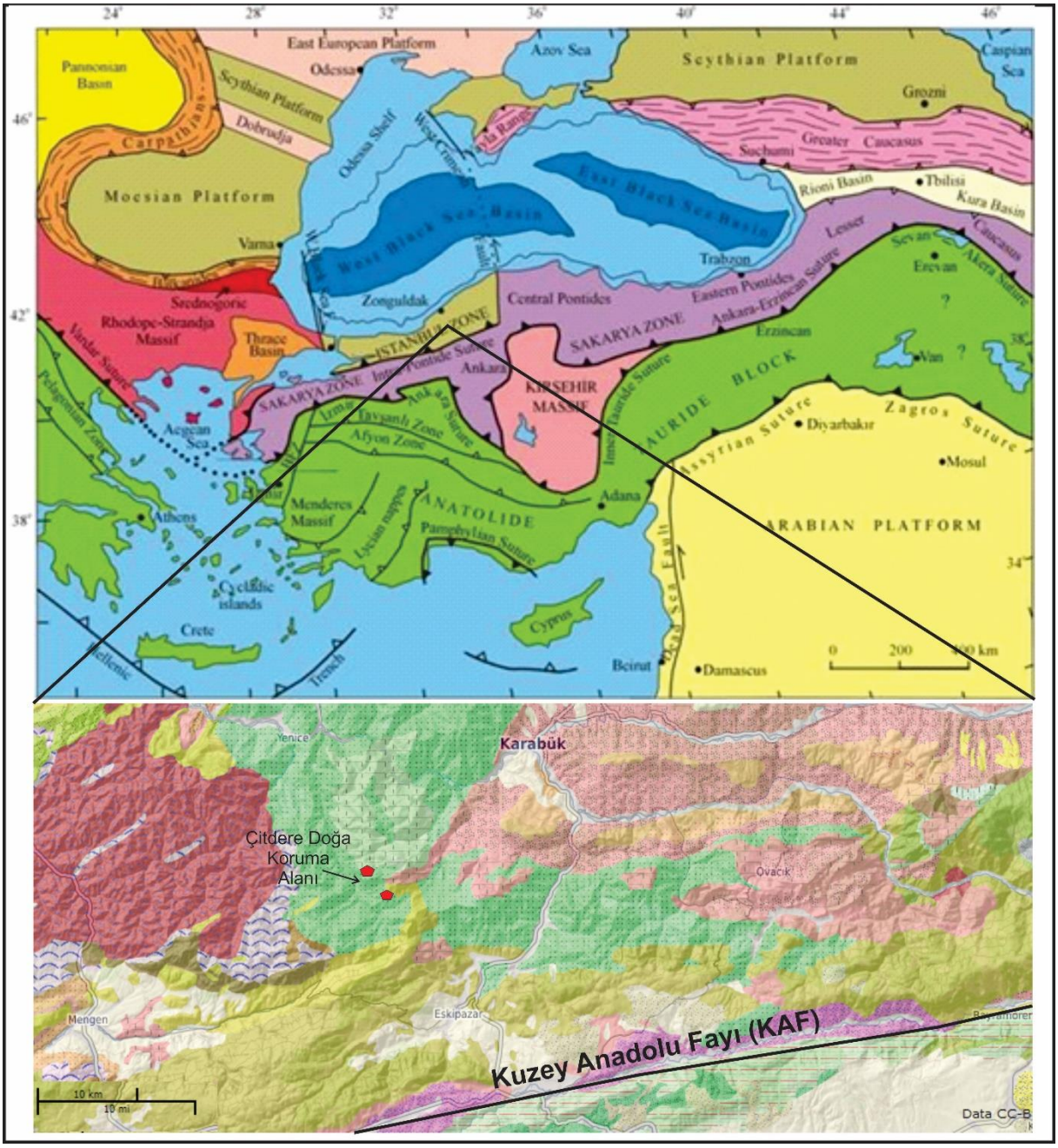

Figure 1. Geo-tectonic location of Çitdere Nature Protection Area and its surroundings (Alan and Aksay, 2002)

4. RESULT

4.1. Ulus Formation (Upper Cretaceous)

ÇTKA consists of two separate polygons. The southern polygon consists entirely of the Ulus formation (Figures 3 and 4). The northern polygon consists of a member of Sunduk, which is generally composed of carbonated rocks within the Ulus formation.

Early-Late Cretaceous aged sandstone-mudstone-marl and occasionally limestone intercalated sedimentary rocks. There are marble blocks at the base of the unit, which is composed of phylloid type rocks (Figure 4). Marble blocks consist of crystalline limestones (Folk 1962). There are clastic facies consisting of mudstones and sandstones on the blocky series. It consists of thick bedded sandstones and thin-medium bedded and occasionally laminated mudstones. Despite the predominance of green color, there are colored laminae in the mudstones (Figure 5). Sandstones are yellow-green colored, medium-

bedded and sometimes laminated. Sandstones with quartz arenite (and greywacke composition are mostly fine grained (Dott, 1964).

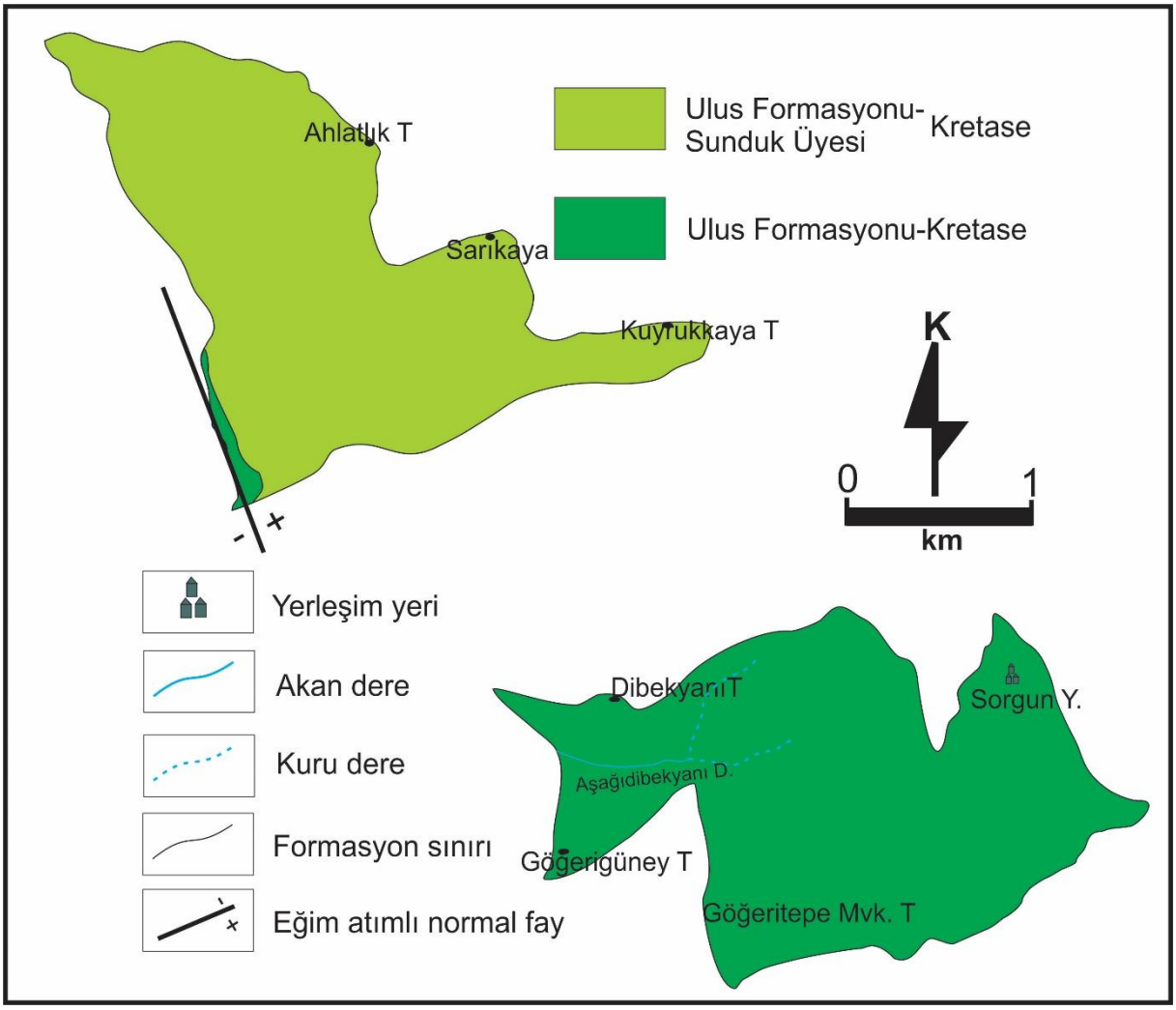

Figure 2. Geological map of Çitdere Nature Protection Area

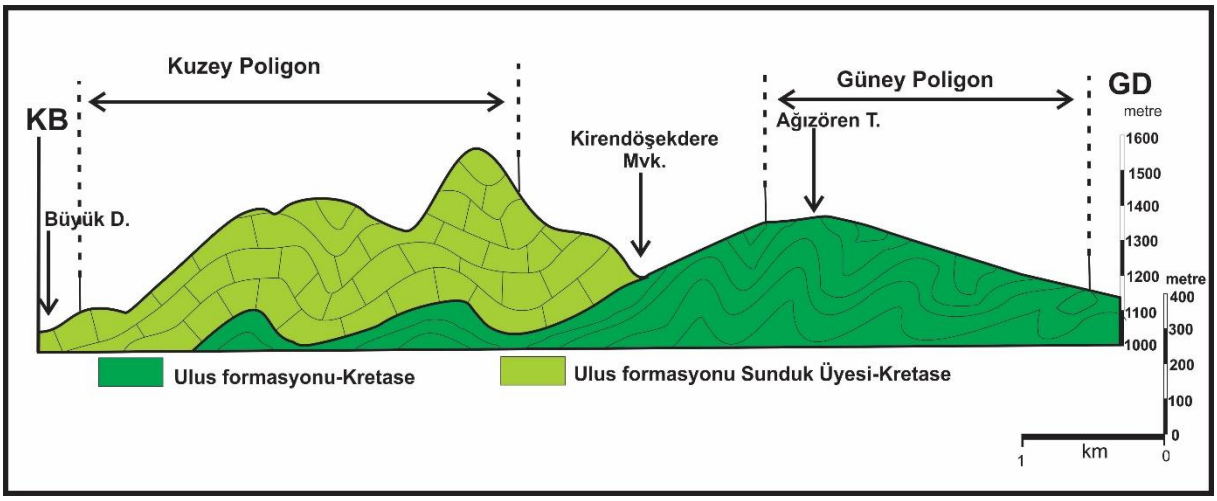

Figure 3 Geolpogical cross section of Çitdere Nature Protection Area

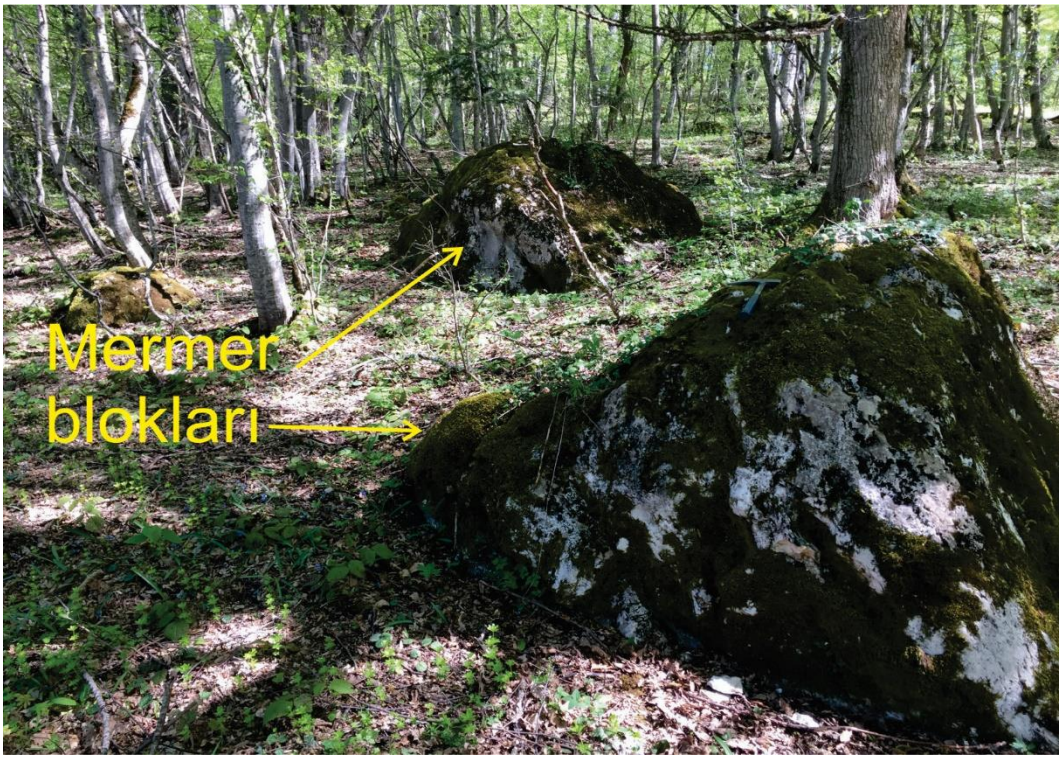

Figure 4. Marble blocks in Ulus formation at southern polygon of Çitdere Nature Protection Area

Figure 5 . Laminated mudstone-mudstone and sandstone alternation in Ulus formation

4.1.1. Sunduk Meber (Upper Cretaceous)

Sunduk member consists of platform type carbonated rocks such as beige colored medium-thick bedded biomicrite, oopelintra sparit, (Folk 1962).
Although the boundary relationship between Ulus formation and Sunduk member seems to be compatible in the study area, it is suggested by some researchers that there is a block.
In the Sunduklu member ETCA region, almost all of the northern polygon is composed of Sunduk member carbonated rocks (Figures 3 and 4).
The carbonates in the region are gray-beige medium thick bedded highly resistant carbonates biomic, starting with a very shallow platform type carbonate such as micrite, oo-pel intra-sparit (Figure 12). In the upper parts, deeper inner shelf type continues with abundant fossiliferous red algae carbonates (Figure 13). Typical fossils of the Late Cretaceous were identified at this level; Orbitoides sp and Siderolites sp. (Figure 6).

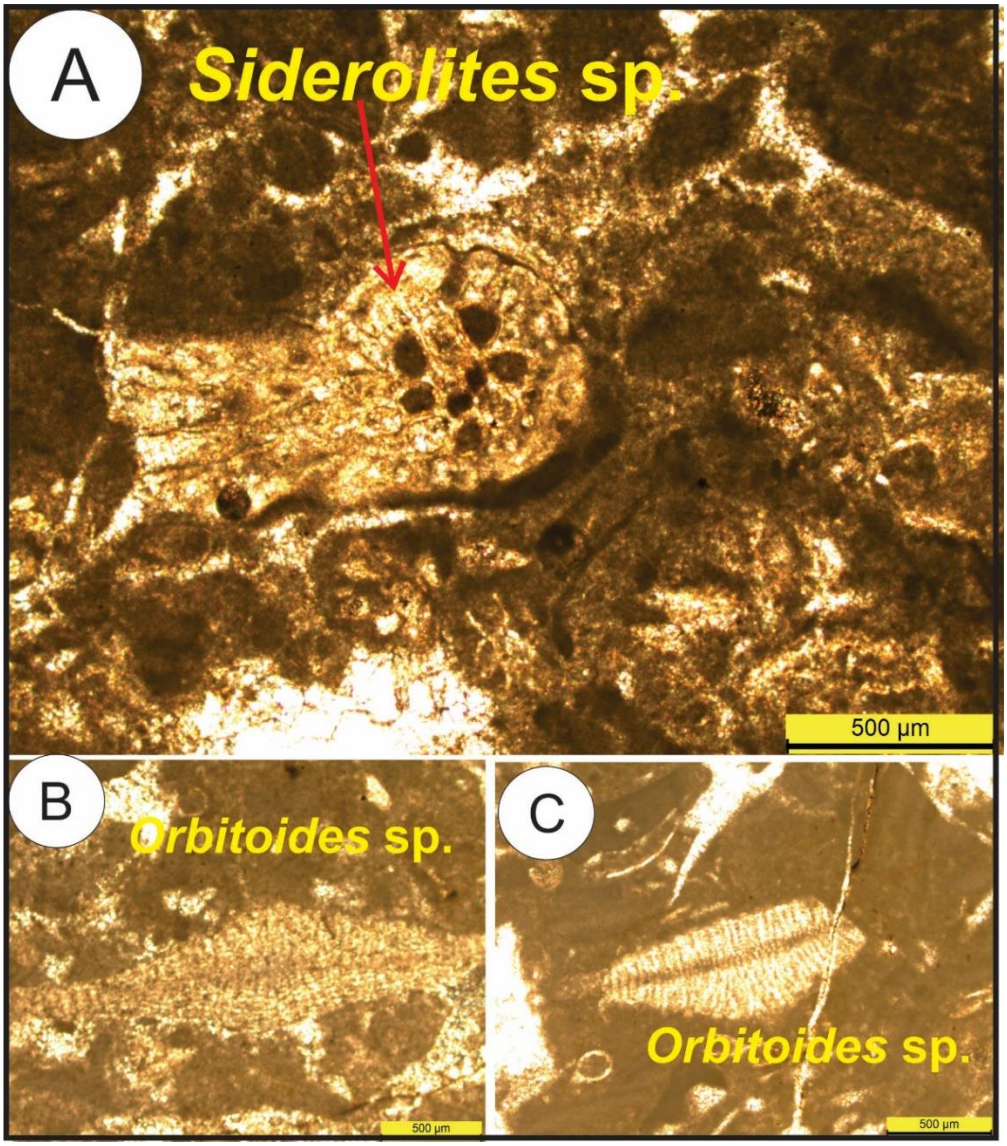

Figure 6. A. Biomicrite with Siderolites sp., B and C Orbitoides sp.

5. CONCLUSIONS AND DISCUSSION

1. As it is known, the region is an important conservation area in terms of wildlife. The fact that the forest is very frequent, the topography is highly variable, the rock characteristics in the region and the climate are among the main factors in terms of wildlife

2. Geological features of rocks are important in terms of maintaining the lives of wild animals of animals. In particular, it consists of northern polygonal carbonate rocks, which can dissolve with groundwater and surface waters to form caves.
3. In addition, the gaps between the layers of carbonate rocks are important for the housing and feeding of many small size animals. It is very important for the continuity of wildlife in the caves in the region.
4. In the southern polygon, there are clastic rocks of the Ulus formation. Since clastic levels have low strength and easily disintegrate, it is more difficult to form and protect resistant cavities and caves than carbonates. But in these areas, frequent weaving is stronger.
5. While carbonate rocks are more resistant to erosion, clastic rocks of Ulus formation may be less resistant. In addition, since the region is seismically mobile, wild animals nesting in carbonated rocks will be safer.
6. In addition, clastic rocks in the region appear to be very fragmented due to deformation and faulting. On steep slopes, such features can cause stone fall and collapse. It is also possible in landscapes rich with mudstones

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