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## **AN EXAMPLE OF TOURISM POTENTIAL OF KARSTIK HERITAGE: MAN ROCKS (Göller Summer Resort Area-Kozan-Adana)**

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### **Abstract**

Karstic areas are getting more and more attractive every day with their visual characteristics they have in terms of tourism. In particular, caves, karstic tunnels-bridges, travertines are mainly karstic tourist attractions. Recently man rocks from karstic ruiniform landforms have become a major tourist attraction. These landforms which are developed on the Miocene conglomerates are rare karstic structures. Karstic landforms, which are described as man rocks on the Göller Highland in the western part of the Eastern Taurus Mountains, are located in the Adana District of the Mediterranean Region, north-east of Kozan District (50 km from Kozan District). This area has great potential for tourism. Rapid karstification and physical decomposition of conglomeratic limestones at sea level at the height of 930-2230 m are the resultant landforms. The lapies, ruiniforms, sinkholes, caverns formed on the conglomerates are of interest in terms of tourism. These figures, which are subject to different myths and stories by the people of the region, are visited by Kadirli, Osmaniye, Kozan and Adana, which are very hot in the summer, and by the people who are on the plateau for the highland activities. The area where these figures are located is also the subject of activities such as mountain climbing, paragliding, camping, trekking, festival. These landforms of karstic heritage are damaged by anthropogenic influences (housing, transport, agriculture, livestock, etc.), depending on the activities of the plateau. The purpose of this work is to draw attention to this karstic heritage, including elements of cultural heritage, to ensure that it is assessed in the context of sustainable tourism and to provide suggestions for preservation.

**Key Words:** Karstic landforms, conglomerate, man rocks, karstic heritage

Introduction

Interesting shapes in karstic areas constitute an important potential for ecotourism and nature

tourism (Atalay etc. 2015; Hamilton-Smith, 2006; 2007; Hall, and Day, 2014). Such places are known by stone forest (Knez, & Slabe, 2001; Knez, Liu & Slabe, 2012), man rocks and fairy chimneys in the world. In particular, these karst ruiniform shapes are defined as mysterious places and are likened to various shapes by people and are believed in various stories. These areas, which are integrated with the most interesting stories, are becoming a popular destination for both domestic and foreign tourists.

The Göller Highland and its Surrounding Area are located in the Adana Region of the Mediterranean Subregion, in the north of the province of Adana, north of the Kadirli district in the North-Northeast and in the northeast of the Kozan District. Study Area, Savrun River in the east of Gezit Mountain and Seyhan (Göksu) River in the west is an area with natural boundaries (Figure 1). With the effect of the Mediterranean climate, there are many highlanders coming from Adana-Kozan-Kadirli and Osmaniye to Göller Highland and its Surroundings.

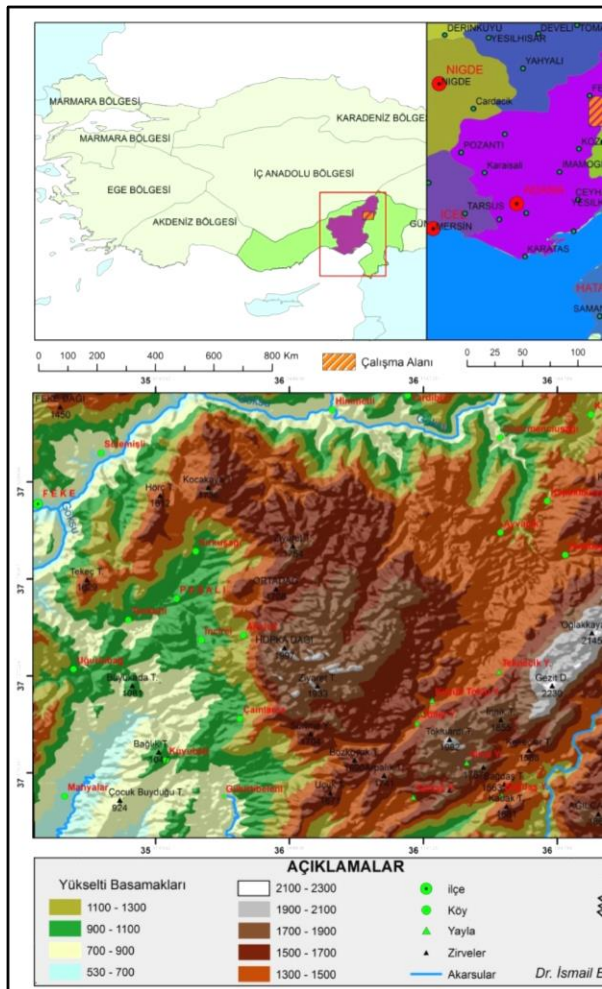


Figure 1. Location Map of Göller Highland and Its Surroundings Yakın

### Purpose

The main aim of this study is to determine the tourism potential of karst ruiniform landforms located on Hopka Mountain-Göller Highland and to raise awareness about the region. Again, the people of the region by a large influx of visitors in this area to offer suggestions for a more regular ecotourism activities.

In recent years, in the highlands of the Göller and in the immediate vicinity of the terrestrial activities to be carried out very intensively, and thus especially destroyed by housing construction, this man is to offer suggestions for the protection of rocks. These shapes formed as a result of karstic solution have an important geomiras.

### Methods

Research is mostly based on interpretation by observing on-site. For this reason, especially in summer, when climatic conditions were suitable for inspection, field studies were conducted. In addition to geomorphological research during the field surveys, tourists were interviewed and interview questions were asked. As a result of interviews conducted with both visitors and locals, the tourism potential of the region has been tried to be extracted. At this stage the stories about the man rocks have

been quite impressive. In order to help the visitors to benefit from GIS technology, tourism map was created.

ArcMap10.2.2 package program was used to create the images of the study. First of all, digitization of topography maps and TIN map were generated from the digital map. Raster

(DEM) from TIN was produced by using the package program. Using the DEM map hillshade, slope, aspect maps are produced. This data obtained with the help of ArcMap, location, physical, geology and tourism map is drawn.

### **Causes of Man Rocks in the Göller Highland and its Near Surroundings**

The emergence of man rocks in the Göller Highland and its Surroundings is related to the presence of conglomeratic limestone in the region. There are different opinions on the exact age of this lithology stored in a completely high energy shallow marine environment. Yılmaz and Gürer (1994) are considered to be the same formation as the Middle Miocene age in the Andırın region. However, its age is thought to be Upper Miocene (Ege, 2015a). According to Yılmaz and Gürer, this formation is mainly composed of conglomerate, sandstone, marl alternations and reef limestone intercalations. This unit covers all the units under an angular unconformity. It is a unit consisting mainly of conglomerate and sandstone (Yılmaz & Gürer, 1994).

There is no doubt that the climate also has a major role in the emergence of karst ruiniform (man rock) forms in the region. As a result of the precipitation amount and lithology which is suitable for karstification, carbonate rocks are formed (Photo 1A-B). Tectonism is another factor that influences karstification in the region. There are very young and old faults in the region, which have been in the case of continuous compression rising since the Upper Miocene. Faults have led to much more expansion of the karstic shapes and at the same time to the deep (Ege, 2016).

### **Tourism Potential Of Ruinform ( ) Landforms (Man Rocks)**

These figures, which in the first appearance resemble towers, can be compared to a number of human forms, are basically karstic landforms. The physical decomposition elements, which occur with both karstization and physical separation, prevent the karstification from moving deeper, leading to more lateral separation. These figures are known as fairy chimneys, which develop in a much more characteristic way on tuffs, which are relatively resistant to abrasion and which are volcanic external spraying. In the Göller Highland, Hopka Mountain and its surroundings, some of the people who are completely symmetrical and asymmetrical in some of its surroundings and some of them are closed middle part, some of them are called “**Kaklik**”. In the end there is an interesting karstic topography resembling a tower in this area. In addition to this which are interesting shapes like mushrooms, it is possible to see natural bridges formed as a result of karstification (Photo 2,A,B,C,D).

These karstic figures, whose scientific explanation has been explained above, have made a variety of myths by simulating various human forms by local people. A very famous story about banditry, which was widespread in the last period of the Ottoman Empire and the first years of the Republic, provided an adaptation to the area. The famous story about Rock Mans in the region is as follows:



**Photo 1. A-Conglomerate B-Lapies on the Conglomerates**

A happy wedding procession moves on with drums and clarions. All villagers are in there except for elder grandmothers, grandparents, babies in the cradle and mothers nursing their babies in the wedding ceremony. So a joy is a happiness!! everyone was so happy. Because this is a merger of a couple and the establishment of a happy family. Eaten, drunk, enjoyed, one after the other danced during two days. Third day, jewelry were weared and one after the other danced. Finally, It's time for the boy (güvey) to get home. Mother of the bride was crying, mother-in-law were began to rejoice. On the white horse, the wedding dress with the bridal gown, red veil and jewelry were going in front of the wedding procession. As we approach the groom's house, the enthusiasm has increased more drummer clapper, clarions began to blow more forcefully and played fingers faster: wedding procession were coming, mother-in-laws were dancing on the way. Youngs, teens, ladies, children, were playing as if were not tiring, playing sprightly on the way. But suddenly what happened... drums and clarions were remained silent and weddenig prossetion was sadly stopped. People were curiously wondering what's going on with each other, the front on were seeing blain fate itself. At an unexpected moment tung army too crowded sarcastic horsemen and infantry were embarressed. This is tung army, their intentions are worse, don't know. During the sound of the last gavel voice on the air; started arrows catapults were throw on the wedding procession . The bride knew that moment, the most powerful one can help them and started to burn. Oh!!! my God, you can either stone us or bird. So it happened, the bride first wish was occurred and they were stone. In many parts of Anatolia,

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it is told in many different ways this folk rumor. But this story is a mountain at the tip of the Antitoros Mountains, which is standing in the north of Adana, which is standing up against the eastern extension of the Taurus Mountains. According to some, the Hokka, Okka by some, but also by the child is the rumor of the mountain known as Hopka. Approximately 40 km from the Kozan direction, the southern part of Hopka Mountain, which reached to Tokmanaklı village, appears with all its glory. The first section is called "Gavur Hopka". Generally and foreign tourists coming to the region, this story is explained to the exaggerated expression. In the minds of people listening to the story. Hopka Mountain is becoming more meaningful and people are beginning to look at the land differently. Listeners begin to compare each of the rocks to a peasant, a waterhole, an infantry. In this way, creating a very different charm, this area accepts a large number of domestic and foreign visitors.

The area where the Man Rocks are located is currently being evaluated in areas such as photo safari, hiking, trekking, camping, horseback hiking, paragliding, plateau tourism, mythology tourism. There are lot kinds of Man Rocks which have different morphology. Some of them are as a like mushrooms. The lower part is larger and the upper part is narrower. There are knuckles on the Man Rocks (Figure 1A). Some of them are also similar fairy chimneys (Figure 1B). Some are naturel bridges (Figure 1C). Highs of them are nearly 5-6 meters. The other shapes of man rocks are as a like cone. These are the most common figures on the study area (Figure 1D). They are concentrated in light sloping pit areas similar to valleys.



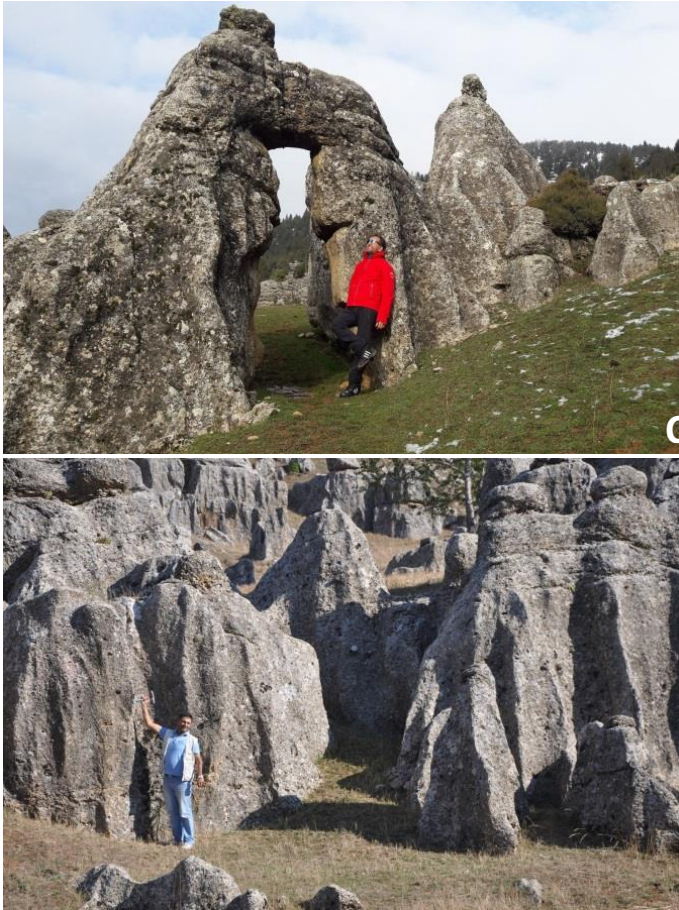


Photo 2. There are a lot kind of Man Rocks which have different morphology A- As a like mushrooms Man Rocks; B- fairy chimney Man Rocks, C-Natural Bridge Man Rocks, D-Cone Man Rocks

### **Conclusions and Recommendations**

Karstification is larger as known in the Turkey. Upper Miosen conglomerate is found horizontally and incongruously on the other formation which are older Upper Miocene formations the karstic forms developed on the conglomeratic limestones are very different and interesting.

Ruiniform (ruin relief) shapes, similar to the tower- mushrooms (Adam rock), have a fairy chimney look. Therefore, this area is named as a Cappadocia of Adana.

These images on the Hopka Mountain, along with the visual beauties, have created a special charm with a famous story.

In this area, which is a frequent destination for domestic and foreign visitors, it is mandatory to plan for a regular tourism activity. These rare karstic landforms of erosion should be put into the service of tourism by making necessary efforts to make it a tourist attraction center.

The promotion of the region in the vicinity should be done very well and the local people should be trained. Today, irregular and random tourism activity should be made more regular and controlled.

This area again is very important extrem sports and other sportive activities: hiking, paragliding, observation, trekking, snowboard etc.

It is necessary that the visitors do not harm these natural formations and these shapes should be preserved as geoheritage. This area can be got coverage Geo Park.

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