



**NEMRUT KRATER GÖLÜ VE ÇEVRESİNİN ULUSLARARASI
JEOPARK AĞINA KATILIMI İÇİN GEREKLİ FİZİBİLİTE
ÇALIŞMALARI**
(TRB2/16/DFD/0006)



EKLER

Faaliyet 1: Nemrut Krater Gölü ve çevresinde jeosit alanlarının belirlenmesi amacıyla arazi gözlemleri

Proje alanında bulunan yüzeysel jeolojik oluşumlar, konumları itibari ile arazide belirlenecektir. Oluşumların envanteri oluşturulmuş ve 1/50000 ölçekli harita üzerine işlenmiştir.



Şekil 1. Nemrut Krater Gölü'nde gözlenen jeositler

Jeosit 1 Seyir Terası: Bu alandan bakıldığında başta Van Gölü olmak üzere oldukça geni bir alanın gözlenmesi mümkün olmaktadır. Alanın doğu tarafına bakıldığında Rahva Düzluğu Kuzeyde Van Gölü Batıda ise Muş Ovası rahatlıkla gözlenebilmektedir. Ayrıca kuzeybatı doğrultusunda Süphan Dağı gözlenebilmektedir. Buraya gelecek olan ziyaretçiler, seyir terasından gözlem yaparak rahatlıkla buldukları noktadan pekçok önemli coğrafik izlem gerçekleştirebilecektir.





Jeosit 2 Obsidiyen Seviyeleri: Jeopark alanı önemli bir volkanik alan olduğundan, volkanizmanın oluşturduğu pekçok ürün bulunmaktadır. Bunlar içerisinde en çok ilgi çekenlerin başında obsidiyenler gelmekte ve rahatlıkla gözlenebilmektedir.



Jeosit 3 Kaldera: Jeopark alanının önemli özelliklerinden birisi de Nemrut Kalderası'dır. Kaldera koni biçimli olup, tabanda 36 km² ve yukarıya doğru genişleyerek 48 km²'ye ulaşmaktadır. Ziyaretçiler Şekil 1'de görülen yoldan aşağıya doğru kalderanın içerisine gidebilmektedir.



Jeosit 4 Buhar Bacası: Alanın batı kesiminde büyük krater gölüne yakın yamaçlarında ve yamaç eteğinde buhar çıkışları vardır. Buhar çıkışları değişik noktalardan çok sayıda doğal olarak gerçekleşmektedir.



Jeosit 5 Kk Gl: Buhar ıkıřlarının hemen yakınında bulunan ve kk gl olarak tanımlanan alanda sıcak su ıkıřları olduėu iin ılık bir gl yapısı vardır.





Jeosit 6 Büyük Göl: Dünyanın en büyük krater göllerinden birisi olan Nemrut Krater Gölü, alanın batı kesimini neredeyse kaplamaktadır.

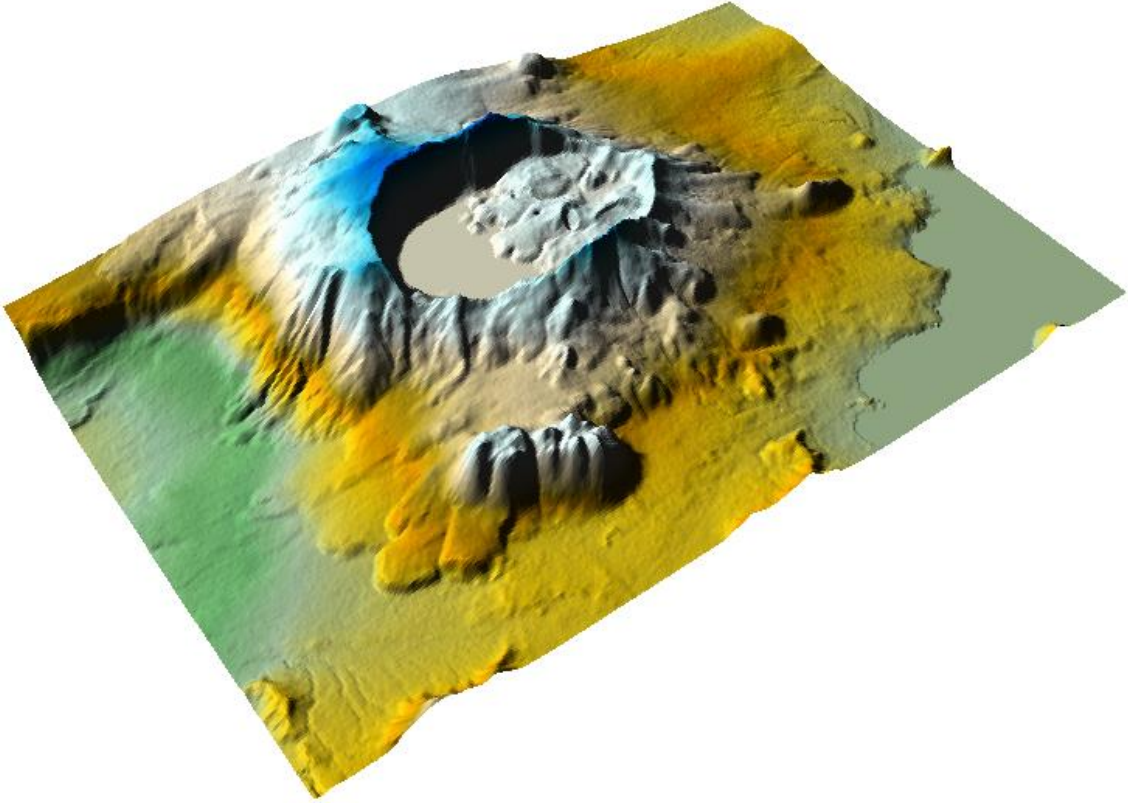
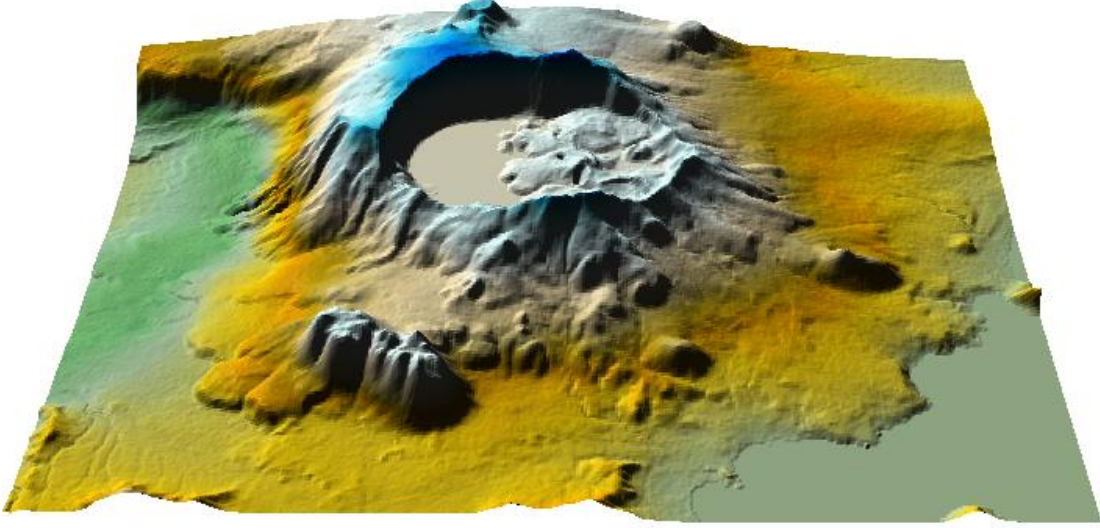


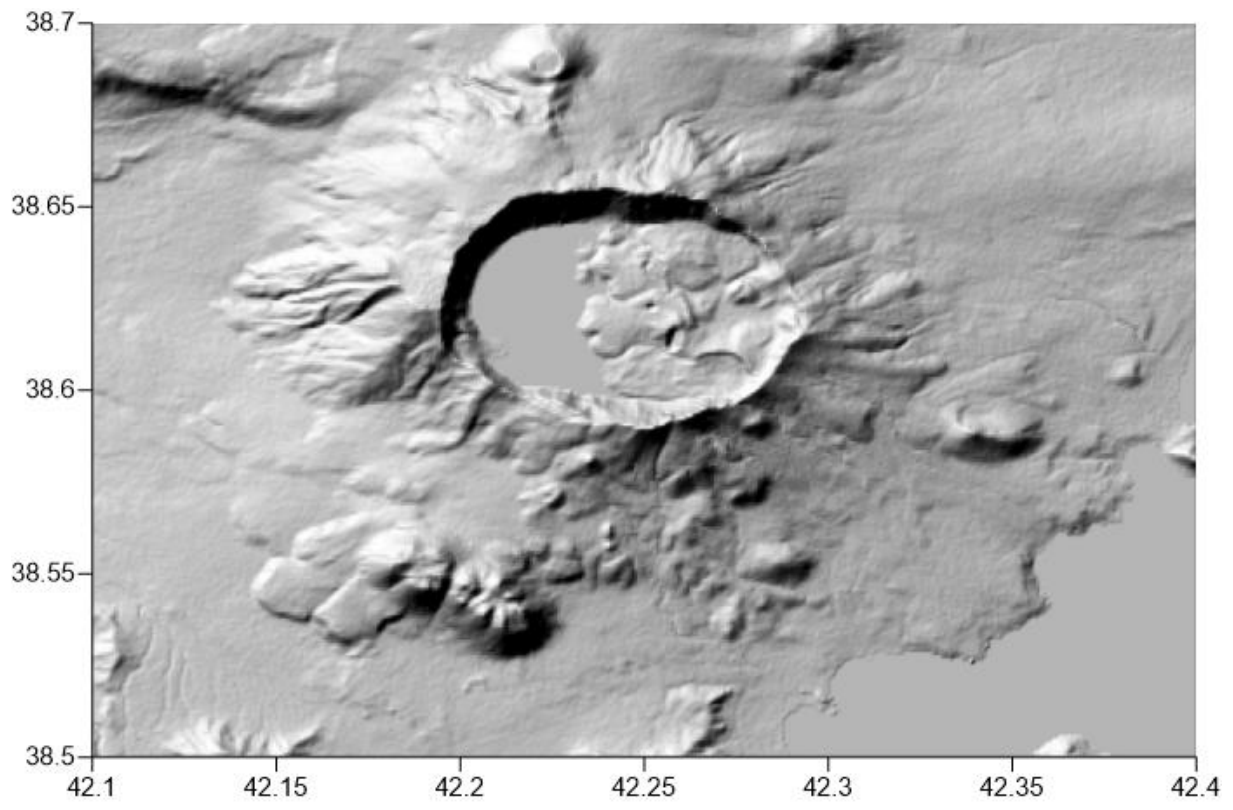


Jeosit 7 Bazaltik Sütunlar ve Kaldera Yamaçları: Alanın kuzey doğusunda Kalderanın kuzey yamaçları gözenebilmektedir. Bu yamaçlarda bazaltik sütunlar görülmeye değerdir.



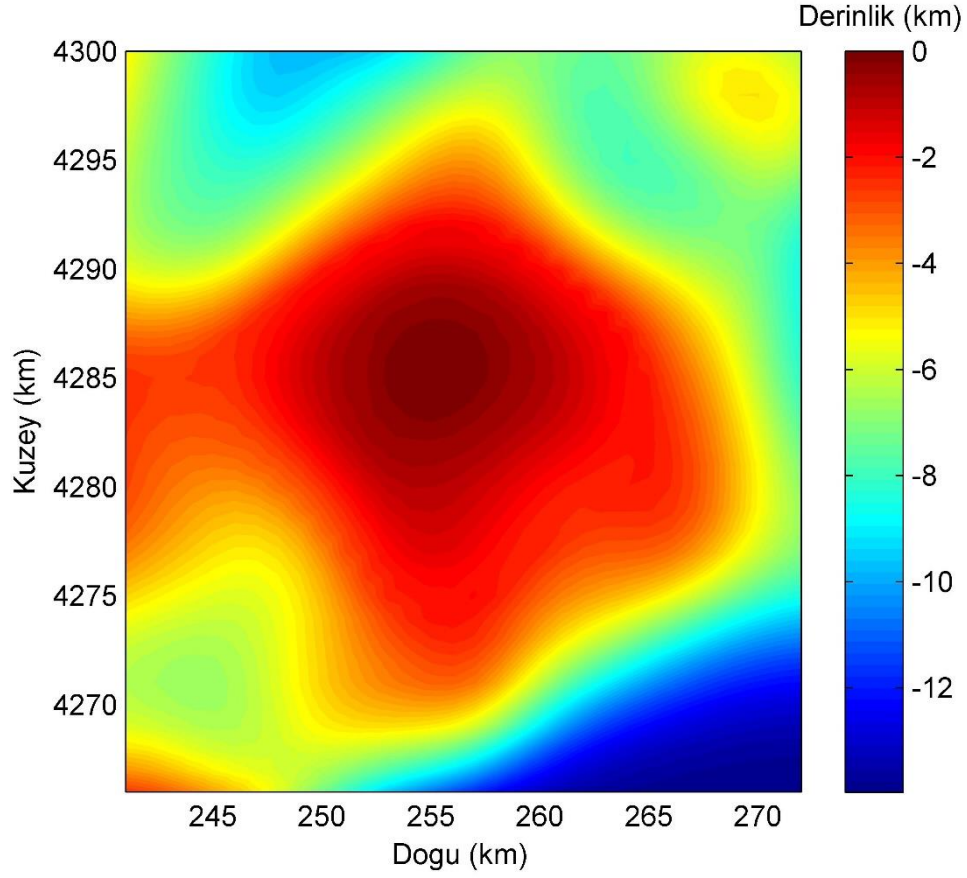
Faaliyet 2: Nemrut Krater Gölü ve çevresinin yüzey yapısının üç boyutlu gösterim haritalarının Harita Genel Komutanlığı'ndan alınan sayısal topoğrafik haritalar kullanılarak proje alanına ait üç boyutlu gösterim haritaları oluşturulmuştur.



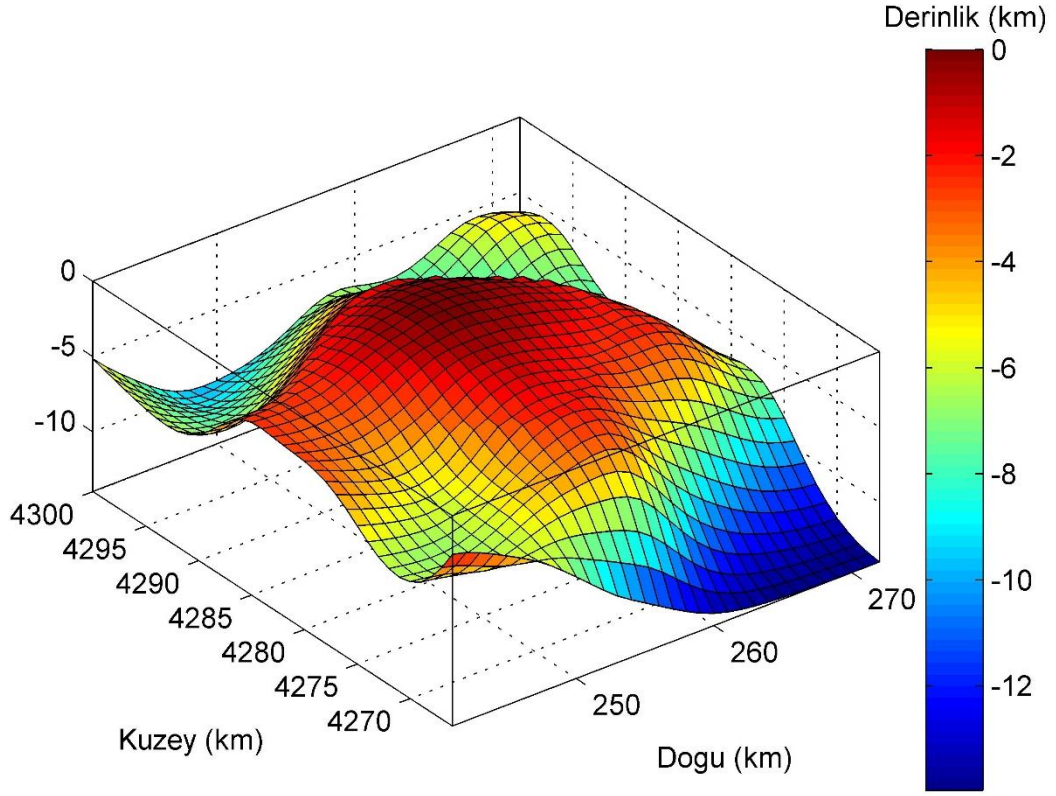


Faaliyet 3: Nemrut Krater Gölü ve çevresinin gravite ve manyetik verilerinden derinlik modellerinin oluşturulması

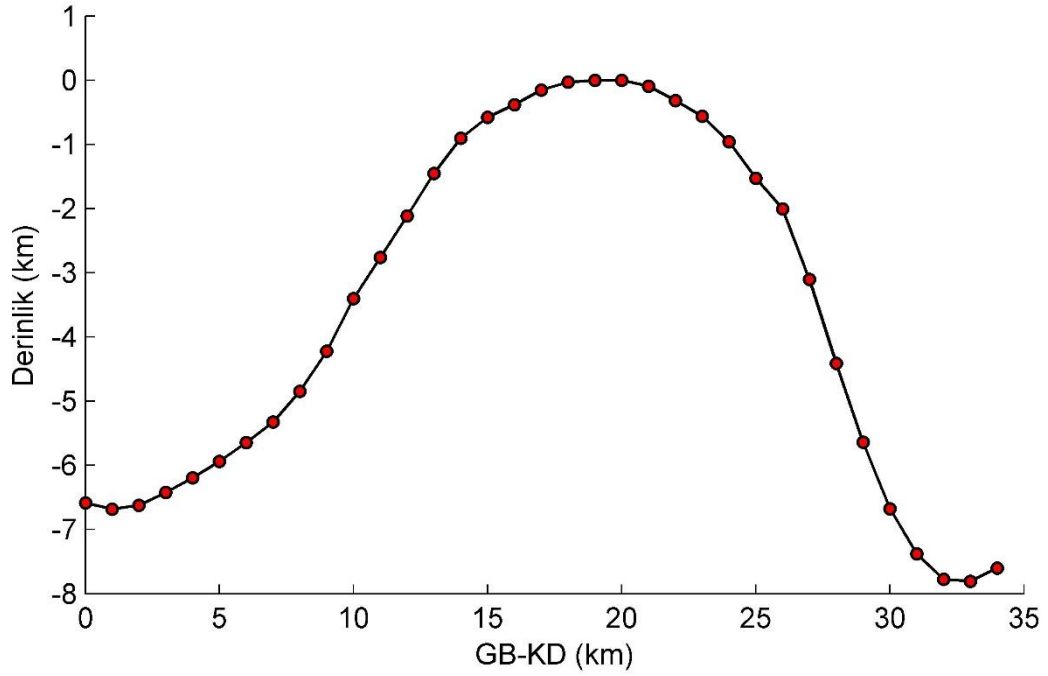
MTA Genel Müdürlüğü'nden alınan gravite ve manyetik sayısal haritalar yardımıyla 3B modelleme tekniği kullanılarak Nemrut Kalderasının derinliğe bağlı olarak yapısal özellikleri ortaya konmuştur. Kaldera derinliğinin yaklaşık 6.5 km olduğu belirlenmiştir. Elde edilen sonuçlara göre kaldera yapısının derinliğe bağlı değişimi farklı görüntü ve kesitlerle sunulmuştur.



Şekil. Kaldera yapısının yeraltı uzanımının kontur haritası



Şekil. Kaldera yapısının yeraltı uzanımının kabartma haritası olarak sunumu



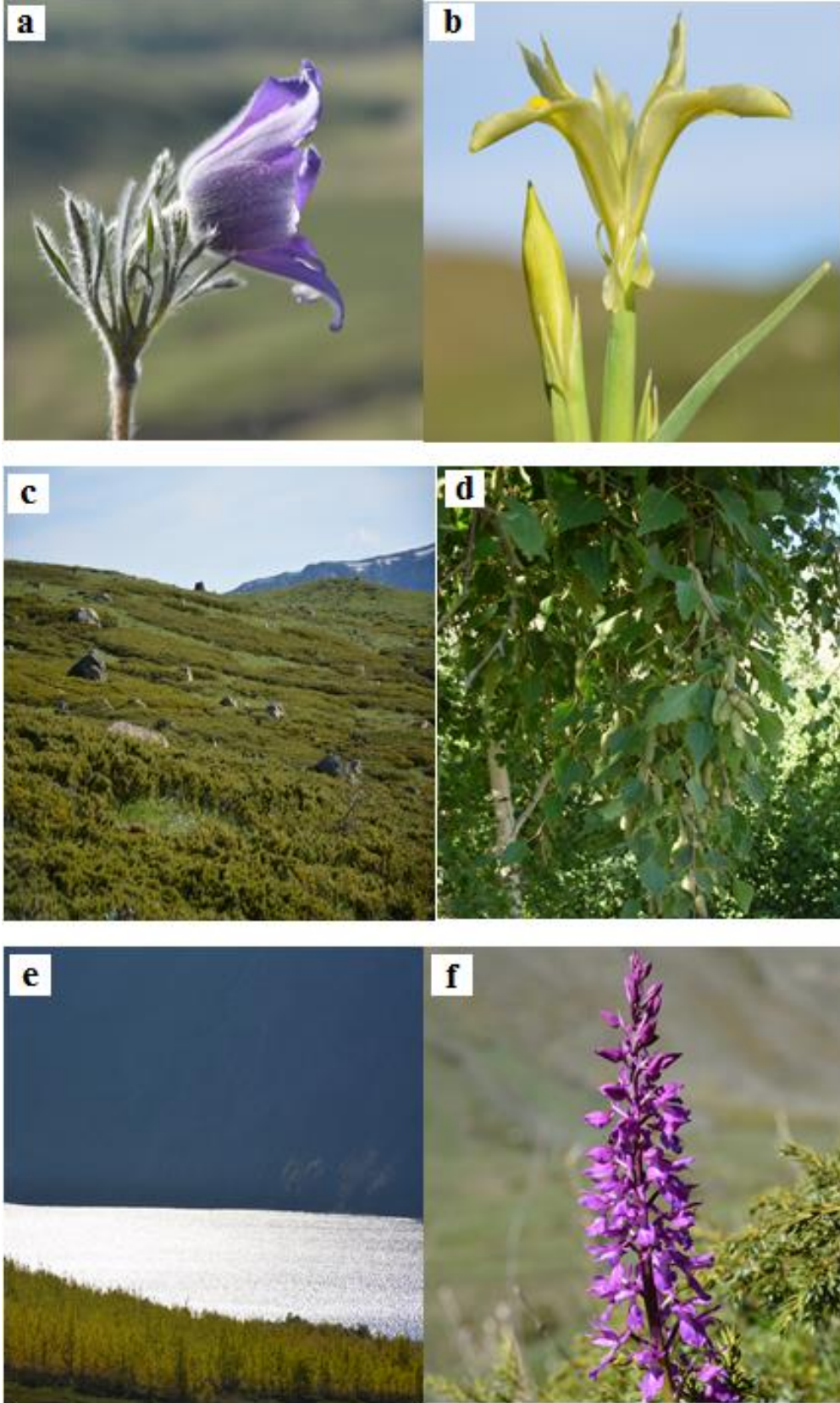
Şekil. Kaldera yapısı için kontur haritasından GB-KD yönelimli olarak alınan derinlik kesiti

Faaliyet 4: Proje alanında bulunan biyolojik çeşitliliği ortaya koymak ve alandaki konumlarını belirlemek üzere proje alanında arazi çalışması gerçekleştirilmiştir. Bu çalışmalar ışığında aşağıdaki bilgiler elde edilmiştir.

Türkiye'nin iklim özelliklerinden kaynaklanan çeşitliliğe, toprak ve jeomorfolojik özelliklerinde dolayı, bitkiler için farklı yaşam alanları oluşturmaktadır. Bu farklı yaşam alanları bitki türlerinin yayılış alanlarını önemli derecede etkilemektedir. Örneğin volkanik dağlardaki kraterler birçok bitkinin sığınma alanıdır. Yaklaşık 62 Km³ hacminde piroklastik malzemenin püskürmesi sonucu gerçekleştiği düşünülen Nemrut Kalderası (Karaoğlu Vd., 2005; Avcı 2005), Huş (*Betula pendula*), Titrek Kavak (*Populus tremula*) toplulukları dışında Çınar yapraklı Akçaağaç (*Acer platanoides*), farklı Üvez türleri (*Sorbus umbellata*, *S. torminalis*), Barut Ağacı (*Frangula llnus*), Dağ Muşmulası (*Cotoneaster sp.*), Mahlep (*Cerasus mahaleb*), Erik (*Prunus sp.*), Meşe türleri (*Quercus spp.*), Ardiç (*Juniperus communis*) ve krater endemik Krater Düğünçiçeği (*Ranunculus crateris*) gibi çok sayıda türe yaşam alanıdır (Tatlı, 1982; Avcı 2005). Bu bitki toplulukları yanı sıra çok sayıda (450-500 takson) otsu bitkiyi barındırmaktadır. Bu otsu bitkilerin bir kısmı aşağıdaki cinslere aittir; Çivit Otu (*Isatis sp.*), Kayagülü (*Aethionema sp.*), Karanfil (*Dianthus sp.*), Nakıl (*Silene sp.*), Kuzukulağı (*Rumex sp.*), Kantaron (*Hypericum sp.*), Gazal Boynuzu (*Lotus sp.*), Beşparmakotu (*Potentilla*), Handok (*Chaerophyllum sp.*), Deli Çakşır (*Prangos sp.*), Andızotu (*Inula sp.*), Ölmezçiçek (*Helichrysum sp.*), Kanaryaotu (*Senecio sp.*), Papatya (*Anthemis sp.*), Civanperçemi (*Achillea sp.*), Pireotu (*Tanacetum sp.*), Kenger (*Gundelia sp.*), Peygamber Çiçeği (*Centaurea sp.*), Unutmabeni (*Myosotis sp.*), Emzikotu (*Onosma sp.*), Deliçay (*Stachys sp.*), Kedi Nanesi (*Nepeta sp.*) Kekik (*Thymus sp.*), Nane (*Mentha sp.*), Adaçayı (*Salvia sp.*) Ajdarbaşı (*Lallemantia sp.*), Mavişot (*Veronica sp.*), Sütleşen (*Euphorbia sp.*), Soğan (*Allium sp.*), Ters Lale (*Fritallaria sp.*), Acıçığdem (*Colchicum sp.*), Süsen (*Iris sp.*), Salep (*Orchis sp.*) Balkaymak Salebi (*Dactylorhiza sp.*), Hasır Otu (*Cyperus sp.*), Geven (*Astragalus sp.*). Yukarıda bir kısmı yazılan ve büyük çoğunluğu tıbbi ve aromatik bitkilerden oluşan taksonları ekoturizm gezilerde Nemrut Kalderası'nda görmek mümkündür (Şekil 1).

Kaynaklar

1. Avcı, M.(2005). "Çeşitlilik ve Endemizm Açısından Türkiye'nin Bitki Örtüsü". İstanbul Üniversitesi Edebiyat Fakültesi Coğrafya Dergisi (Electronic), Sayı 13: 27- 55.
2. TATLI, A. 1982, "Nemrut Dağı'nın Bitki Sosyolojisi ve Bitki Ekolojisi Yönünden İncelenmesi", Atatürk Üniversitesi Fen Fakültesi Dergisi 1(1): 537-549.



Şekil 1. a. Dağ lalesi (*Anemone sp.*) b. Süsen (*İris sp.*) c. Ardıç (*Juniperus communis*) d. Huş (*Betula pendula*) e. Titrek Kavak (*Populus tremula*) d. Orkide (*Orchis sp.*)

NEMRUT KALDERASI FAUNASI

Nemrut Kalderası kendine has bir iklimi özelliđi göstermesinden dolayı farklı habitat tiplerini barındırmaktadır. Alanda farklı habitatların bulunması memeli türlerinin çeşitlenmesinde önemli bir rol oynamaktadır.

Kalderada yayılış gösteren başlıca memeli türleri arasında kirpi (*Erinaceus concolor*), yaban tavşanı (*Lepus europaeus*), tarla faresi (*Microtus schidlovskii*), Anadolu yer sincabı (*Spermophilus xanthophrymnus*), Anadolu kör faresi (*Nannospalax xanthodon*), kızıl tilki (*Vulpes vulpes*), kaya sansarı (*Martes foina*), alacasansar (*Vormela peregusna*), boz ayı (*Ursus arctos*), yaban domuzu (*Sus scrofa*) gelmektedir.



Kirpi (*Erinaceus concolor*)



Yaban Tavşanı (*Lepus europaeus*)



Tarla Faresi (*Microtus schidlovskii*)



Anadolu Kr Faresi (*Nannospalax xanthodon*)



Anadolu yer sincabı (*Spermophilus xanthophrymnus*)



Kızıl Tilki (*Vulpes vulpes*)



Kaya Sansarı (*Martes foina*),



Alacasansar (*Vormela peregusna*)



Yaban Domuzu (*Sus scrofa*)

Faaliyet 5: Ülkemizde daha önce jeopark statüsü kazanmış olan Kula Jeopark alanının ziyaret edilmesi

Kula Jeopark alanı uluslararası statüde ülkemizde bulunan tek jeoparktır. Bu alanda yapılan düzenlemelerin yerinde incelenmesi ve başvuru sürecinde elde edilen deneyimlerin bilgisini almak amacıyla bir gezi yapılması planlanmıştır



1.1 KULA, TÜRKİYE'YE ROL MODEL OLUYOR

UNESCO Sertifikalı Kula Jeoparkı Türkiye'ye rol model oluyor. Bitlis'te yer alan Nemrut Dağı'na ve yakın çevresine UNESCO Jeopark Sertifikası almak için girişimlerde bulunan Eren Üniversitesi yetkilileri Kula'ya çalışma ziyaretinde bulundu.

Bitlis Eren Üniversitesi Rektör Yardımcısı Prof. Dr. Aydın Büyüksaraç, Yrd. Doç. Dr. Murat Kürşat ve Yrd. Doç. Dr. Yunus Levent Ekinci, Jeopark çalışmaları için Kula'ya üç günlük çalışma ziyaretinde bulundu. Kula Belediye Başkanı Hüseyin Tosun'u makamında ziyaret eden Büyüksaraç ve ekibi, Nemrut Dağı ve çevresinin Jeopark sahası olması için yaptıkları çalışmaları paylaştı. Kula'nın tescilli bir jeopark olmasının Bitlis için büyük bir avantaj teşkil ettiğini belirten Büyüksaraç, Kula'nın Nemrut Dağı ve çevresi için iyi bir model olduğunu söyledi. Büyüksaraç, çalışma ziyareti süresince Kula Jeopark Koordinatörü (CBÜ JARUM) Yrd. Doç. Dr. Erdal Gümüş ile birlikte Kula Jeopark sahasında incelemelerde bulundular.

Başkan Tosun: "Kula, Jeopark Sertifikası Almaya Çalışırken Bize Örnek Olabilecek Her Hangi Bir Çalışma Yoktu"

Kula Jeopark sahası hakkında çalışma ziyaretinde bulunan Bitlis Üniversitesi Rektör Yardımcısı Prof. Dr. Aydın Büyüksaraç'ı bilgilendiren Kula Belediye Başkanı Hüseyin Tosun, "Kula, sahip olduğu coğrafik yapısı ve yaptığımız çalışmalar sayesinde Türkiye'nin ilk Jeopark sertifikasını UNESCO'dan aldı. Kula Jeopark sertifikası almaya çalışırken Türkiye'de bize örnek olabilecek her hangi bir çalışma yoktu. Şimdi, Jeopark konusunda daha emin adımlar atmak için Manisa Büyükşehir ve Salihli Belediyesi ile Jeopark Belediyeler Birliği'ni kurduk. Tecrübelerimizi, Bitlis Eren Üniversitesi'nden gelen Rektör Yardımcısı Prof. Dr. Aydın Büyüksaraç ve öğretim üyeleri ile paylaştık. Kula Jeoparkı'nda yaptığımız çalışmaları anlattık" diye konuştu. Heyet daha sonra Kula Jeopark Koordinatörü (CBÜ JARUM) Yrd. Doç. Dr. Erdal Gümüş ile görüşerek Jeopark başvuru süreçleri hakkında bilgi aldı.



Faaliyet 6: Nemrut Krater Gölü ve çevresinin uluslararası jeopark ağına başvuru dökümanı hazırlanması

Proje alanına ait gerekli bilgiler tamamlandıktan sonra başvuru ağına hazırlanması amacıyla varolan döküman içeriği ile ilgili tüm belgeler biraraya getirilmiş İngilizce olarak hazırlanması gereken bu döküman tamamlanmıştır.

INTERNATIONAL NEMRUT GEOPARK PROJECT



2016 | Bitlis | TURKEY

Promoter



PART A - IDENTIFICATION OF THE AREA

A.1. Name of the proposed Geopark

The region currently applying to become a Global Geopark is known as Nemrut Volcanic Province. It would be presented under the name of INTERNATIONAL NEMRUT VOLCANIC GEOPARK (ULUSLARARASI NEMRUT VOLKANİK JEOPARKI).

A.2. Surface area, physical and human geography characteristics of the proposed Geopark

Nemrut is a dormant volcano in Eastern Turkey, close to Lake Van. The volcano is named after King Nimrod who is said to have ruled this area in about 2100 BC. The most powerful eruptions of Nemrut occurred in the Pleistocene. Many small eruptions occurred during the Holocene, the last one in 1692. The top of the volcano is a large caldera that hosts three crater lakes. Nemrut is a [polygenic strato-volcano](#) located in the collision zone of the [Arabian](#) and Eurasian tectonic plates, which determines the seismic and volcanic activity in the region. The collision of these plates began in the Middle [Eocene](#) and closed the stretch of water, which in the Mesozoic formed the Tethys Ocean. Nemrut, along with three other extinct volcanoes of eastern Turkey: Ararat, Tendürek and Süphan, is located in the area of a complex fault, which runs along the boundary of the Arabian and Eurasian plates in the territory of the Armenian Highland. It is the westernmost of these volcanoes, the only one that remains active, and generally the only volcano in Anatolia, which erupted in the historical period. Nemrut is located 10 km north of the city Tatvan, in the north-western shore of Lake Van (Figure 1).

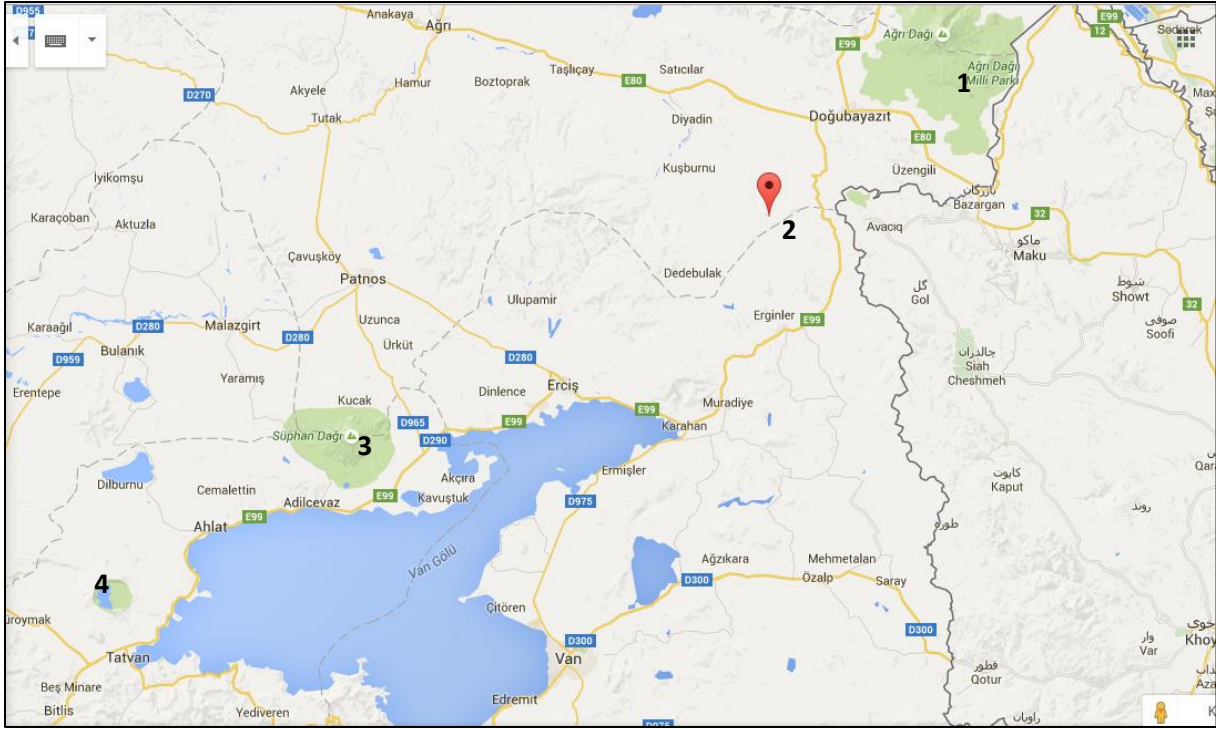


Figure 1. Major volcanoes of eastern Turkey (1) Ararat M. (2) Tendürek M. (3) Süphan M. (4) Nemrut M.

Nemrut was probably formed in the early Quaternary Period, about 1 million years ago. It showed the greatest activity in the Pleistocene, with regular eruptions occurring in the Holocene. In the middle Pleistocene, about 250,000 years ago, a major eruption formed a lava flow over 60 km long, which blocked the water discharge from the Van basin and formed Lake Van, the world's largest alkali endorheic lake. In the same period, the conical top of the volcano collapsed inward, forming an 8.3×7 km caldera. Later, the freshwater Lake Nemrut formed inside the caldera, becoming the world's second largest caldera lake. Subsequent eruptions separated a small lake from Lake Nemrut.

Nemrut volcano has an elliptical shape, its size at the base is 27×18 km, and its center contains 377.5 km³ of volcanic materials. The caldera of Nemrut is the largest in Turkey, the fourth largest in Europe and sixteenth largest in the world. Approximately 400.000 people live around Nemrut proposed geopark.

A.3. Organization in charge and management structure (description, function and organogram) of the proposed Geopark

First of all it is important to mention to various administrative bodies in order to understand the management structure of the Geopark and representativeness of stakeholders in the territory. Nemrut Volcanic Mountain is located between Bitlis, Tatvan, Ahlat territories.

However all geosites of the Nemrut Volcanic Geopark are within the same area and controlled in one complexity. The Nemrut Volcanic Geopark is logistically and economically supported by the Bitlis Governorship and currently managed by a temporary body extracted from its sub departments (Fig 2).

- a) Governor: Is the official manager and confirmation body of the Geopark.
- b) The Steering Committee: Inspectorates the annual budget and plans of the Geopark.
- c) Administration Committee: Is the decision making organ of the Geopark
- d) Geopark Coordinator: Is the official represent and spokesman who coordinates and supervises all activities of the Geopark
- e) Scientific Committee: Is a supervising body dealing with research activities in the Geopark.
- f) Advisory Committee: Regulates the tasks of the Geopark territory represents.

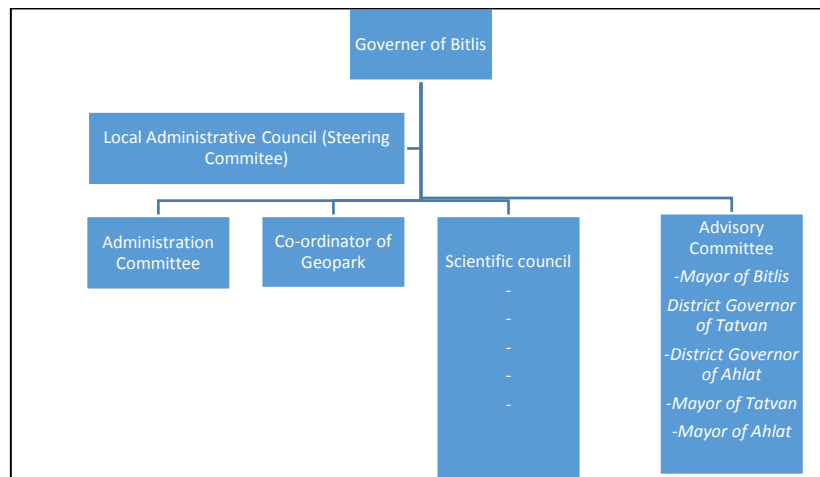


Figure 2. Organization scheme of proposed Geopark management

A.4. Application contact person and contact information (name, position, tel, fax, mail)

Name	Position	Information		
		Tel	e-mail	Fax
Address:				

PART B - GEOLOGICAL HERITAGE

B.1. Location of the proposed Geopark (please include a geographical map and the geographic coordinates longitude and latitude coordinates)

The region proposed to become a Geopark coincides with the geological park called the “Nemrut Volcanic Geopark”. Nemrut Volcanic Geopark territory is situated in the Eastern Region of Turkey, at Eastern Anatolia in Bitlis province. Majority of the geosites are in Tatvan town while it spreads on Muş Plain.

a)



c)

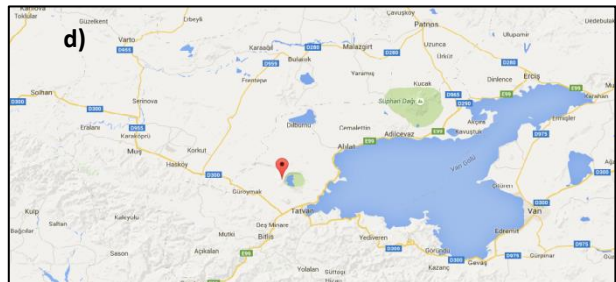


Figure 3 (a-d). Map showing the location of the aspiring territory with distance to the nearest Geopark

Table 1. Some distances from different parts of Turkey to Nemrut Volcanic Geopark.

Access to Nemrut Volcanic Geopark	Distance (km)	Travel (Hour)
Ankara Esenboğa Airport	1100	1:30
Istanbul Airports	1500	2:00
Van (by bus)	155	2:30
Muş (by bus)	80	1:10

Nemrut Volcanic Geopark is situated in a favourable geographical position which provides easy access by airway, road, train and sea from Van. The D300 (Muş-Bitlis) and D975 (Bitlis-Van) highways are the main connections between Nemrut Volcanic Geopark and the surrounding cities (Table 1 and Fig 4). Tatvan railway is one of two railway stations serving the town, the other one is the Tatvan Pier. Established in 1964 by the Turkish State Railways, it is serviced by a twice-weekly intercity train, the Van Lake Express and a weekly intercity train, the Trans-Asia Express, both to Ankara as well as a daily regional train to Elazığ. Some roads and the surrounding villages with the topographic image are shown in Fig 5. The nearest airport is in Muş; in one hour driving distance. Everyday there are direct flights from and to Ankara and Istanbul.

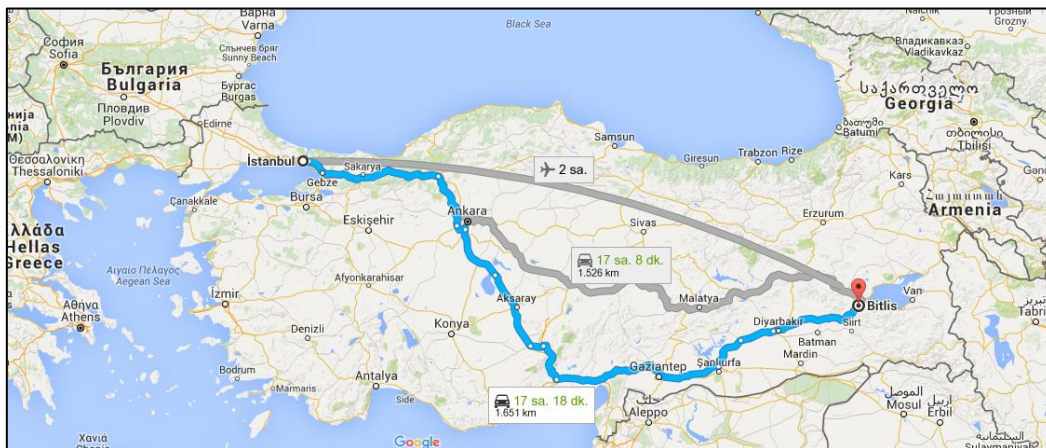


Figure 4. Map of transport connections of Nemrut Volcanic Geopark.

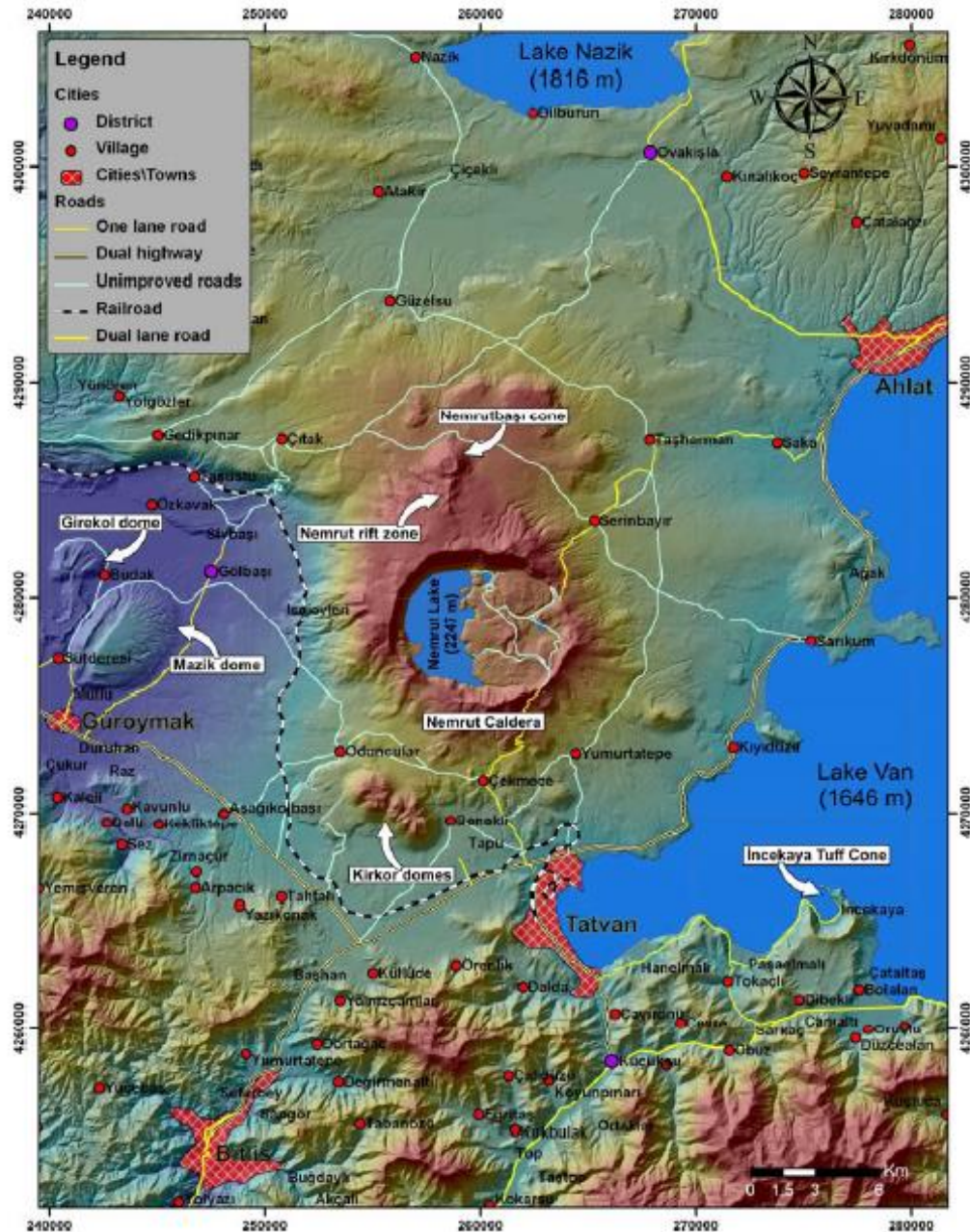


Figure 5. Some roads and the surrounding villages with the topographic map of Nemrut Caldera

B.2. General geological description of the proposed Geopark

Nemrut volcano, situated at the west of Lake Van, is one of the most important volcanoes of the Eastern Anatolia. It has a summit caldera with 8.5x7 km diameter. Volcanic activity of Mt. Nemrut started ~1 Ma ago and has continued in historical times. The most recent eruptions of the volcano were in 1441, 1597 and 1692 A.D. Amongst the Eastern Anatolian volcanoes; Mt. Nemrut is the most hazardous volcano for its vicinity, threatening 135,000 habitants living

nearby. The present volcanic activities are represented by hydrothermal and fumarolic output within the caldera.

Structural evolution of the volcano is mainly investigated in two stages (precaldera and post-caldera) separated by catastrophic caldera collapse. Pre-caldera products are dominated by felsic lava flows and domes. Nemrut and Kantaşı ignimbrite series represent the caldera forming activity, of which sequences are comprised of plinian units and ignimbrite flows. Post-caldera activity is represented by bimodal basaltic-rhyolitic effusive and explosive hydrovolcanic activity concentrated in the caldera and on Nemrut rift zone.

Plio-Quaternary volcanism played an important role in the present morphology of Eastern Anatolia. Mount Nemrut, situated to the western tip of Lake Van is one of the main volcanic centers in the region, with a spectacular summit caldera 8.5x7 km in diameter (Aydar et al., 2003; Ulusoy et al., 2008).

Nemrut caldera is situated just north of Bitlis-Zagros suture zone, close to the Bitlis edge (Fig. 6). The Bitlis Suture is a complex continent-continent and continent-ocean collisional boundary that lies north of fold-and-thrust belt of the Arabian platform and extends from southeastern Turkey to the Zagros Mountains in Iran (Sengör and Yılmaz, 1981; Bozkurt, 2001). Bitlis suture closed in the Eocene. This closure was then followed by prolonged convergence that involved distributed shortening all over the place, and then the strike-slip fault zones (NAFZ and MOFZ) came into being at <5 Ma, then the geometry changed at <3 Ma when the EAFZ developed (Bozkurt, 2001). Muş basin with 10-18 km width and ~92 km length is the most important structural feature at the western side of the volcano. It corresponds to the deformed and dissected remnant of the WNW-ESE-trending Oligo-Miocene Muş-Van basin located at the northern foot of the Bitlis suture zone (Koçyigit et al., 2001). Although the Muş basin seems to still retain its earlier nature of ramp basin, its northern margin-bounding reverse fault has a considerable dextral strike-slip component, implying an inversion in the nature of tectonic regime in the Pliocene (Koçyigit et al., 2001). On the other hand, Dhont and Chorowics (2006) define this basin as a half-ramp basin and indicate the northern boundary fault as transtensional dextral oblique-slip fault.

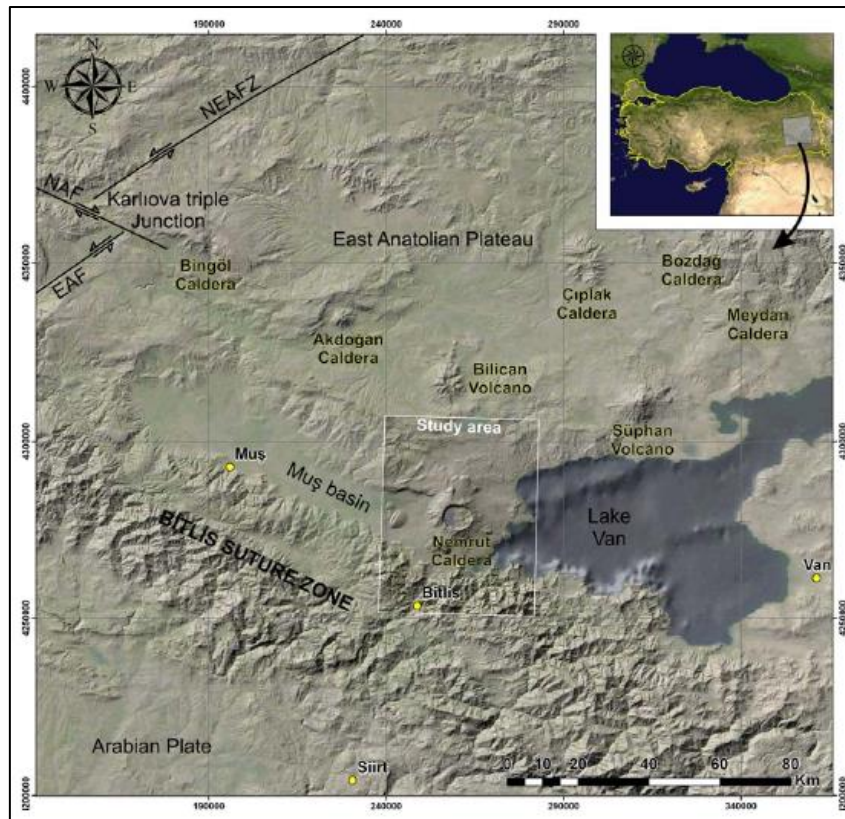


Figure 6. Map showing the study area and the volcanoes around the study area.

Lake Van, by its volume of 576 km is the fourth largest terminal lake and the largest soda lake on Earth (Landmann et al., 1996). The surface area amounts to 3522 km; its maximum depth reaches 460 m (Landmann et al., 1996). The water of the Lake is highly alkaline, with a pH of 9.8, and brackish with a salinity of 22 ‰ (Landmann and Kempe, 2005). Although the faults forming the Muş basin are WNW-ESE-trending, structural features in the Lake Van seem to be mainly directed in ENE-WSW and NNW-SSE (Fig. 6). Both this slight reversal in the structural alignments and location of Nemrut volcano at the center of this reversal is important in the context of regional tectonics. Close to the Nemrut Caldera, Incekaya tuff cone, and Mazik and Girekol domes may be regarded as in the system of Nemrut volcanism.

There are five intra-caldera lakes. Three small lakes are seasonal, while western half of the caldera is filled by fresh water. Near the northern rim, another lake with hot springs (~60°) is present where fumarolic activity can also be observed.

Nemrut volcano is located on a highly active tectonic zone: high magnitude seismic events have been reported (29.03.1907, M: 5; 27.01.1913, M: 5; 14.02.1915, M: 6; 03.11.1997, M: 5; 30.05.1881 (data from Bogaziçi University, Kandilli Observatory and Earthquake Research Institute, National center of earthquake monitoring.); 18.05.1881, M: 6.7 (Karakhianian et al., 2002) within a 30 km radius of the volcano during the last century (Ulusoy et al., 2008). One of the most active tectonic zones in the world; Karliova triple junction (Fig. 6) is located 125

km NW of the volcano, and Bitlis suture zone is 16 km south of the volcano. Structural evolution of the volcano in this active tectonic regime, its relation with the volcanic evolution and its role in the past and potential future activity forms one of the main aims of this study. Latest works documented that Nemrut volcano witnessed volcanic activity in the last millennium (Aydar et al., 2003; Ulusoy et al., 2008; Karakhanian et al., 2002; 2006). Wisps of smoke and hot springs can be found inside the caldera, hot springs also appear around the Mazik and Girekol domes at the eastern flank of the volcano. The present active tectonic regime, historical eruptions, occurrence of mantle-derived magmatic gases (Nagao et al., 1989; Güleç et al., 2002), the fumarole and hydrothermal activities on the volcano make Nemrut Volcano a real danger for its vicinity (Aydar et al., 2002; Ulusoy, et al., 2006b). The population in the vicinity of the volcano (~135,000), especially in the nearby towns is significantly important. Besides, Bitlis city grows to the north, towards the volcano. Nagao et al. (1998), and Feraud and Özkocak (1993), previously pointed out that Nemrut volcano may be potentially active. As well as other Anatolian volcanoes, there is a big gap on the research on the activity of Nemrut volcano.

A detailed geological map of the volcano is shown in Fig. 7. Geological rock names were defined according to the extensive petrological work of Çubukçu (2008).

1.1.1

1.1.2 Late stage

At this stage, about 20 small craters and maars formed at the cracks located on the caldera floor, mostly along the central fault. A number of craters with a diameter of 10–100 m formed outside of the main cone, mainly in its northern part. They include Girigantepe (2433 m), Arizintepe (2445 m), Kayalitepe (2311 m), Mezarliktepe (2409 m), Atlitepe (2281 m), Amis (2166 m), Kevriağa (2087 m), Avuştepe and Sivritepe, which is the highest point of Nemrut. Basaltic lava of these craters are the youngest volcanic rocks within Nemrut. The last eruption took place on 13 April 1692. Since then only bursts of steam were observed at the bottom of the caldera, indicating fumarolic activity.

Pre-volcanic basement

Pre-volcanic basement rocks can be divided into three main groups as Bitlis metamorphics, Çatak ophiolites, and Tertiary sediments (Ahlat formation). The stratigraphy of the basement rocks in the Nemrut area is fairly well known (Gunderson, 1988). However, the basement rocks have been structurally disrupted several times since the Mesozoic (Gunderson, 1988). In the vicinity of Nemrut, all of the pre-volcanic basement rocks are cut by the faults which separate Muş basin from Bitlis metamorphics on the south and from Tertiary sedimentary rocks on the north (Gunderson, 1988).

Historic Urartian stronghold near Tatvan pier was built on recrystallized limestones of Bitlis Metamorphics (Fig 7).

Çatak Ophiolites

Commonly thrust on top of the Bitlis Metamorphics are Cretaceous ophiolitic rocks (Gunderson, 1988; Atasoy et al., 1988), these rocks are usually thrust from north to south, and were emplaced during Eocene and Miocene compressional events (Gunderson, 1988). Çatak ophiolites typically include serpentines, greenstones, cherts, micrites, limestones, and greywackes (Gunderson, 1988). These rocks are cropped out east of Ahlat town, out of our study area. Tertiary sediments are overlain by volcanic products of Nemrut along Yolgözler, Yünören, Sikeftan, Bahçe and Atakır villages, though it is not possible to observe ophiolites. North to the Nemrut volcano, they are probably overlain by volcanic products (Atasoy et al., 1988).

Tertiary Sediments (Ahlat formation)

Tertiary sedimentary rocks overlie Cretaceous ophiolitic rocks unconformably (Gunderson, 1988). The sedimentary rocks were deposited in small, usually E-W trending elongated basins that were opened between the Eocene and Miocene (Gunderson, 1988). The sedimentary sequences typically include sandstones, mudstones, carbonates, lacustrine and coarse-grained fluvial deposits (Gunderson, 1988). Tertiary sedimentary rocks outcrop to the west and northwest of Nemrut volcano and at the east of the Ahlat Town. Ahlat formation is represented by Eocene and Oligocene conglomerates and sandstones, Miocene limestones, and Pliocene lacustrine deposits (Güner, 1984; Gunderson, 1988; Atasoy et al., 1988). In the near vicinity of the Nemrut volcano, there are four main volcanic centers: Süphan volcano, Bilican volcano, Kolango dome, and İncekaya Tuff Cone.

B.3. Listing and description of geological sites within the proposed Geopark

In the proposed Geopark, seven specific geosites; view terrace, vapour chimney, basaltic columns and caldera scarps, obsidian levels, caldera region, small lake and grand lake are shown in Figs 8-15.

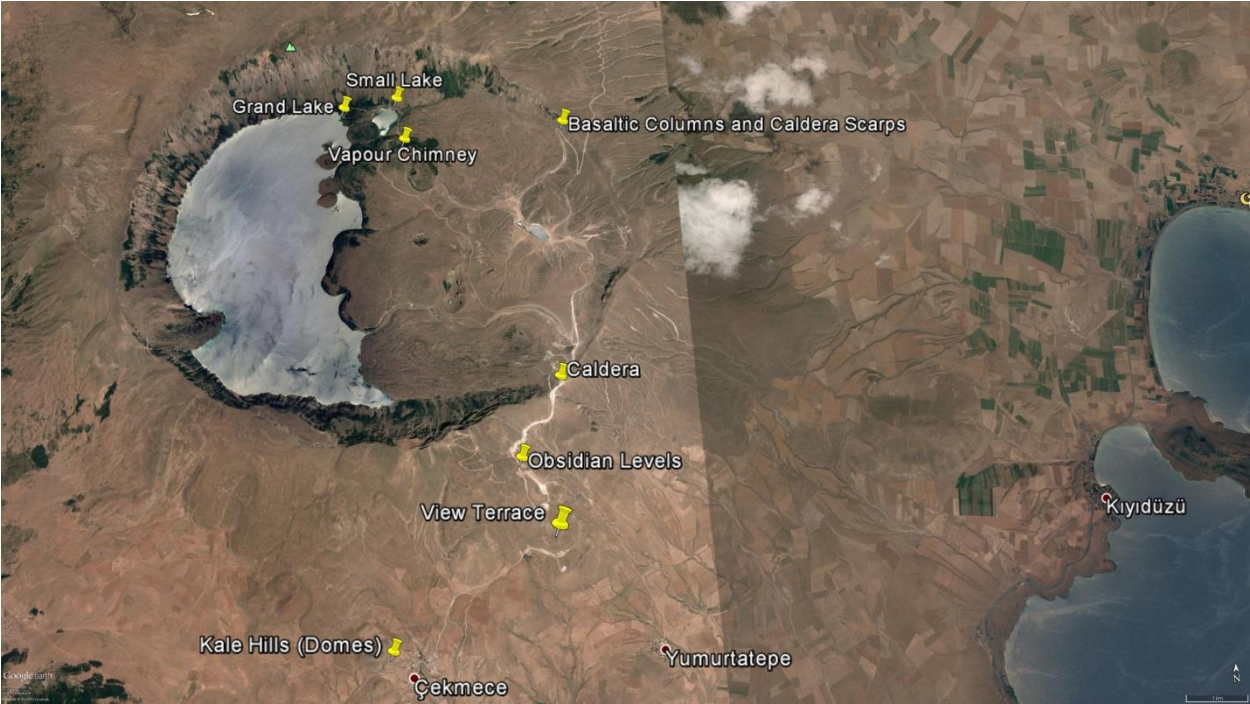


Figure 8. Location of Geosites in proposed Geopark



View Terrace



Obsidien Levels



Caldera





Vapour Chimney





Grand Lake



<p>Small Lake</p>	
<p>Basaltic Columns and Caldera Scarps</p>	

4. Listing and description of other sites of natural, cultural and intangible heritage interest and how they are related to the geological sites and how they are integrated into the proposed Geopark

Nemrut ignimbrite is the most voluminous product of the volcano. With some exceptions the flow unit is generally welded, well-welded and consolidated. Blocks of ignimbrite are used as raw material for construction purposes for thousands of years. Regionally, Nemrut ignimbrite constitutes the main construction material of Urartian, Seljukian, Armenian and Ottoman architecture. This tradition continues today; especially Ahlat town and old Bitlis city are constructed totally by using Nemrut ignimbrite. Locally, the

welded ignimbrite blocks mined from Nemrut ignimbrite are called “Ahlat stone”. In addition to the modern production processes, it is still possible to see the traditional production methods (Fig. 9). On the other hand obsidian is an important material for the ancient times. Most people accept it as holly stone. Urartus used the obsidian in their sculptures and monuments (Fig. 10). Primitive life needed hunting material to hunt wild animals and protect against enemies. That’s why they produced hard weapons. The obsidians are very stiff and cutter material. Therefore obsidians were used as weapon in the ancient time (Fig. 11).



Figure 9. Traditional mining of ignimbrite blocks, near Yasin hill at west of Ahlat town. Photograph by Adem SÖNMEZ (Those who wrest a living from the stone), used with permission of photographer.



Figure 10. Obsidian eye on the monument

Geotourism part of International Nemrut Volcanic Geopark Project aims to reveal the potential of said area and possible use of it in tourism activities. It will be helpful to shortly state the term 'Geotourism' to realize the Geotourism in Nemrut Geopark.

Geotourism is defined from different perspectives. In details, Newsome and Dowling¹ explain the Geotourism in two parts. First part of the term 'geo' refers 'geology and geomorphology and the natural resources of landscape, landforms, fossil beds, rocks and minerals, with an emphasis on appreciating the processes that are creating and created such features'. The latter part, 'tourism' includes 'visitation to geosites for the purposes of passive recreation, engaging a sense of wonder, appreciation and learning'. For Sadry 'Geotourism is a knowledge-based tourism, an interdisciplinary integration of the tourism industry with conservation and interpretation of abiotic nature attributes, besides considering related cultural issues, within the geosites for the general public'². From these views some of popular Geo-tourism destinations can be seen from the photos;



Harriman State Park, USA.³



Geopark Vulkaneifel.⁴



Wave Rock, Western Australia⁵



Danxia Landforms, China⁶

¹ David NEWSOME, and Ross DOWLING (2006) *Geotourism: Sustainability, Impacts and Management*, Elsevier Butterworth-Heinemann, Oxford, p. 4-6.

² S. N. BAHRAM, (2009), *Fundamentals of geotourism: With emphasis on Iran*. Tehran-Iran: Samt Organization Publishing.

³ Newsome and Dowling, 2006, p. 177.

⁴ Newsome and Dowling, 2006, P. 106.

⁵ Ibid, p. 14.

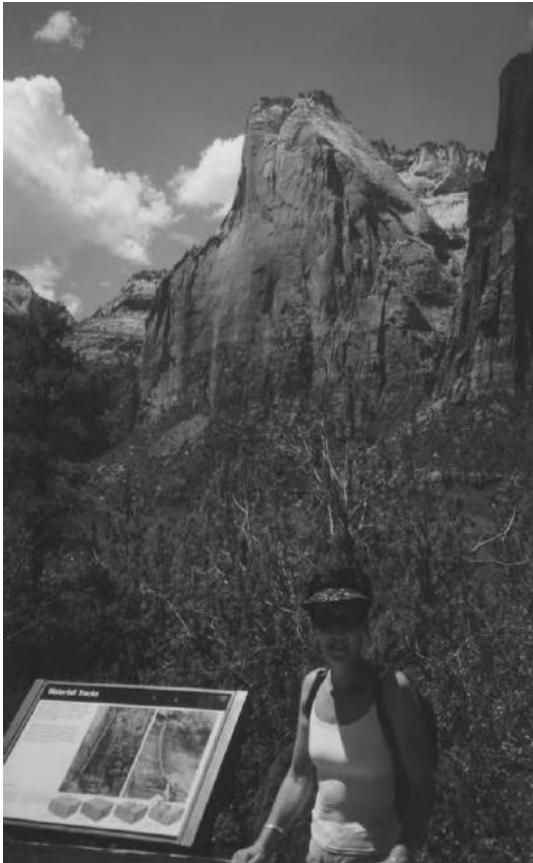
⁶ Ibid, p. 147.



Plant Fossil⁷



Marble Arch Caves, Ireland.⁸



Interpretive Plaque, Zion National Park.⁹



Finger of God.¹⁰

⁷ M.Sercan Gürsoy and Gül Güneş, *Jeoturizm ve Sürdürülebilirlik: Kızılcahamam-Çamlıdere Örneği*, Journal of Ankara Studies, December 2014, 2 (2), pp. 203-215., p. 211.

⁸ Ibid, p. 192.

⁹ Ibid, 251.

¹⁰ Ibid, 47.

Beside the importance of 'geo' in geo tourism, some views use it with tourism as a whole. In other words, Geotourism is a kind of 'tourism that sustains or enhances the geographical character of the place being visited –it's environment, culture, aesthetics, heritage and the well-being of its residents'.¹¹ From these short views by taking into consideration the interdiscipliner characteristic of Geotourism, tourism potential of Nemrut Volcanic Geopark is listed in the following parts.

C - Geoconservation

Nemrut Caldera (Nemrut Kalderasi). 17/04/2013; Bitlis; 4,589 ha; 38°37_10_N 042°13_54_E. Nature Monument. The caldera of the Nemrut volcano, located on the western shore of Lake Van in the eastern part of Turkey (Eastern Anatolia), is one of the most important wetlands of Bitlis province and is part of an active stratovolcano which has a unique structural morphology in Turkey. The eastern half of the caldera is filled by pyroclastic deposits related to maar-like explosion craters, lava domes and flows. The western half is filled by a freshwater lake and a small lake with hot springs, in addition to a number of small temporal lakes. The largest lake, Lake Nemrut, has a half-moon shape, an average depth of 100 meters, and colorless, odorless and drinkable water. There are rich plant communities in the caldera and Velvet Scoter *Melanitta fusca* used to breed in Nemrut in 1989. The site is government-owned, but some livestock grazing takes place. The main activities are recreation and tourism, and there is a winter sports and ski centre in the surrounding area. The main ecological threat to the site is overgrazing. Ramsar Site no. 2145. Most recent RIS information: 2013.

Tag countries:

[Turkey](#)

Url: <https://rsis Ramsar.org/ris/2145>

Featured: No

Id Ramsar: 2145

Geo location: POINT (42.2433 38.6227)

Area: 4589

1. Current or potential pressure on the proposed Geopark

In spite of strict legislative regulations which compromise majority of the geological and nongeological (mixed) monuments within the proposed Geopark area, there is still considerable pressure on these sites. The threats can be grouped as anthropogenic and natural due to their origin. Prehistoric Human Footprint Fossil Geosite is for instance threatened by natural erosion due to the loosely adhered characteristic of the volcanic ash layer that holds the fossil imprints. Anthropogenic agents are the main threatening both geological and non-geological (mixed) heritage in the proposed

¹¹ M. A. STUEVE, (2002) <http://destinationcenter.org/wp-content/uploads/2012/01/geotourism1-survey.pdf>

Geopark area. The lava flow plains were unfortunately considered to be useless and subjected to illegal disposal of domestic wastes.

2. Current status in terms of protection of geological sites within the proposed Geopark

Majority of the key geosites within the proposed Geopark area are under strict legislative protection and recognition of the Ministry of Culture and Tourism. These protected territories are categorized as Historical Sites, Archaeological Sites, Urban Site which and finally Natural Sites. Volcanic Cone and lava flow are designated and protected within the frame of "Natural Site" statue. Natural Monuments; all kind of transportable and in-transportable monuments on the ground, under the ground or under water which belongs to historical, prehistorically or geological periods that worth to be protected due to their rarity and aesthetical value.

D - Economic Activity & Business Plan (including detailed financial information)

1. Economic activity in the proposed Geopark

Basic economic activities around Nemrut are agriculture-stockbreeding and tourism. Tourism is much more important than the former one since Nemrut Geopark has great advantages in the region.

2. Analysis of geotourism potential of the proposed Geopark

Firstly, transportation facilities make it preferable destination. Muş and Van airports are used to access not only to Nemrut but also to Tatvan and Bitlis city centre. Distance to Muş airport is 70 km whereas 130 km to latter one. Moreover, railway and highways are other transport options. Beside, visitors can also travel via ferryboats from Tatvan District to Van city centre. Secondly, accommodation possibilities give visitors to stay next to Nemrut Geopark. Especially, Tatvan has tourism operation license hotels that have transportation service from hotels to Mount Nemrut. Third advantage of Nemrut Geopark is location. Mount Nemrut is en excellent destination since it has been located in the middle of popular tourism alternatives. On the one side, visitors are able to enjoy by Geotourism, on the other side, other tourism activities allow them to stay more around the Nemrut Region. In this section, possible tourism activities around Nemrut Geopark are listed in details.

1.2 3.1. Thermal Tourism

There are numerous thermal waters around the Nemrut Geopark. However, since most of them can not be used for health or other purposes, popular four of them listed as below¹²;

- a) Güroymak Budaklı-Çukur Thermal Water
- b) Gülsuhan Thermal Water
- c) Bölük yazı Ilıcak Thermal Water
- d) Mount Nemrut Thermal Water

¹² For more see: <http://www.kulturportali.gov.tr/turkiye/kars/TurizmAktiviteleri/kaplica>

Thermal Water	Water Temperature	Distance to Tatvan (km)	Tourism Facility
Güroymak Budaklı-Çukur	40-50 °C	35	-
Gülsuhan ¹³	43-44 °C	30	✓
Bölük yazı Ilıcak	44 °C	45	-
Mount Nemrut	40-60 °C ¹⁴	12	-

1.3 3.2. Cultural Tourism

The region around the Nemrut Geopark has a cultural aspect. There are so many historical places and artifacts where visitors can easily reach. Main areas are;

Tombs: Usta Şagirt (*a*, Ahlat), Çifte Kümbet (*b*, Ahlat), Abdurrahman Gazi (*c*, Ahlat), Emir Ali (*d*, Ahlat), Emir Bayındır (*e*, Ahlat), Küfrevi (*f*, Bitlis), Şeyh Babo (Üryan Baba- Bitlis).¹⁵



Graveyard: Selçuklu Graveyard (Ahlat): Seljuks tombstones of Ahlat give important information about the beliefs and history they belong to. Situated on about 50 acres, Seljuk graveyard is the biggest not only of Anatolia, but also of all the Islamic.¹⁶ General view from Seljuks Graveyard;¹⁷

¹³ <http://nemrutgulsuhankaplicari.com/>

¹⁴ The water temperature ranges from 40 to 60 °C depending on the season.

¹⁵ All the tombs' photos retrieved from: <http://www.kulturportali.gov.tr/turkiye/bitlis/anitlar>

¹⁶ www.bitliskulturturizm.gov.tr/Eklenti/6657.bitlistanitimbrosurupdf.pdf?0

¹⁷ http://www.ahlat.gov.tr/index.php?option=com_content&view=article&id=54&Itemid=26



Castles: Bitlis, Ahlat, Adilcevaz and Tatvan Castles.

Mosques: Ulu Mosque (Bitlis), Gökmeşdan Mosque (Bitlis), Şerefiye Mosque (Bitlis), İskender Paşa Mosque (Ahlat), Tuğrul Bey Mosque (Adilcevaz).

Madrasas: İhlasiye (Bitlis), Yusufiye (Bitlis)^{18,19}



Hammam/Turkish Bath: Han Hamamı (Bitlis), Paşa Hamamı (Bitlis).

Caravanserai: Hatuniye (Bitlis), Paşin Hüsrev Paşa (Bitlis), Başhan (Bitlis), El-Aman (Bitlis).

Bridges: Narlıdere (Bitlis), Emir Baydır (Ahlat).

1.4 2.3. Sea Tourism

Lake Van next to Mount Nemrut is the largest lake in Turkey. It is a saline soda lake and has area of more than 3,700 square km. The coast length up to 600 km has natural beaches and tourism facilities²⁰.

1.5 2.4. Sport Activities

As the city receives the most snowfall in Turkey, Bitlis' climate is suitable for skiing even in April. Bitlis has ideal snow quality and snow level, the resort also features Turkey's longest ski tracks.²¹ Therefore, Nemrut Geopark will be a great destination for the sport activities. The biggest advantage of Nemrut is the distance to local sport activity places. The sport activities around the Nemrut can be listed as;

a) Winter Sports²²

Çırtkaya Ski Center (g): It is in Bitlis city centre. There are 35 rooms, 70 bed capacity and a 50 vehicle capacitated car park, one ski house and one teleski facility. The length of the teleski in Bitlis Ski Centre is 950m and 600 capacitated. It picks the skiers from 1510 m to 1700 m distance.

¹⁸ <http://www.bitlispress.com/>

¹⁹ <http://www.kulturportali.gov.tr/turkiye/bitlis/kulturenvanteri/yusufye-medreses>

²⁰ https://en.wikipedia.org/wiki/Lake_Van

²¹ <http://www.anadolujet.com/aj-en/anadolujet-magazin/2014/april/articles/5-wonders-of-bitlis.aspx>

²² <http://www.skiingturkey.com/resorts/bitlis.html>



Nemrut Ski Center (h): The 2550 meters long lift which starts from the Nemrut Kardelen Hotel and Ski Resort to summit has the capacity to carry 1000 skiers per hour. The stunning Nemrut Crater Lake at one side and the beautiful Lake Van on the other, the ski resort waits for ski enthusiasts from all ages.

Rahva Ski Center: It has been founded at Rahva (10 km to Nemrut) and has two baby lifts at 300m height.

b) Hunting and Line Fishing: As the numbers of land animals high in Tatvan-Reşadiye and Bitlis-Sarıkonak, hunting is one of the popular activities.²³ Moreover, Mount Süphan (I)²⁴, 50 km from Nemrut, is a wild life developing area.



Line fishing is another activity in the region. Crater Lake and the other lakes (Lake Van, Lake Nazik and Lake Aygır) around Nemrut are available for line fishing even in winter.

c) Trekking, Camping and Climbing: Mount Nemrut and Mount Süphan are evaluated as the best places for trekking in Bitlis City. Beside the trekking, Camping and Climbing are other possibilities for the fans especially in Nemrut, Süphan and also next to Lakes.

d) Water Sports: Adilcevaz has water sports facilities. Moreover, as the largest Lake in Turkey, Lake Van is open to much kind of water sports.

e) Photography: There are lots of natural landscapes not only in Nemrut but also in the other parts explained above.

f) Flora: Nemrut Caldera and Mount Süphan have endemic plants;²⁵

In Nemrut; there are more than 450 plant species and 44 % of them belong to Nemrut and 8,4 % of them is known as endemic plant. **Main trees and shrubs are;** Trembling poplar (*Populus tremula*), Dwarf Juniper (*Juniperus communis* subsp. *nana*), Sycamore (*Acer platanoides*), Rowan Tree (*Sorbus umbellata*, *Sorbus torminalis*, *Sorbus tamaschjanae*, *Sorbus aria*), Buckthorn Berry (*Rhamnus frangula*), Oak (*Quercus pinnatifida*), Pedunculate Oak (*Quercus robur*

²³ <http://www.bitliskulturturizm.gov.tr/TR,56232/sportif-etkinlikler.html>

²⁴ <http://bolge14.ormansu.gov.tr/14bolge/MASTER%20PLANLARI/MASTER%20PLANI%20%20B%20C4%B0TL%20C4%B0S.pdf>

²⁵ Ibid.

subsp.pedunculiflora), Rock Cotoneaster (*Cotoneaster nummularia*), Plum (*Prunus divaricata*), White Salix (*Salix alba*), Salix (*Salix pedicellata*, *Salix cinera*), Greek Juniper (*Juniperus excelsa*), Alder Dogwood (*Frangula alnus*).

Some of steppes species in Nemrut Caldera; Astragalus, prickly thirt (Acantholimon), (Onobrychis megataphros), Clustered Dock (*Rumex acetosella*), Thyme (*Thymus kotchyanus*), (*Alyssum pateri*), (*Festuca ovina*), *Salvia* (*Salvia* sp.), *Ranunculus* (*Ranunculus crateris*), (*Silene arguta*), White Clover (*Trifolium arvense*), Anise (*Pimpinella kotschyana*), Sagebrush (*Artemisia fragrans*), Knapweed (*Centaurea triumfetti*).

Endemic plants on Mount Süphan are; *Isatis undulata*, *Marrubium vanense*, *Salvia odontochlamys*, *Paracaryum leptophyllum* ve *Verbascum coronopifolium*.

2 3. FACILITIES FOR SUSTAINABILITY

Facilities for sustainability in Nemrut Geopark listed under 4 titles.

Facility 1: Visiting Thermal Waters:

1: Güroymak Çukur, 2: Gülsuhan, 3: Bölükyazı Ilıcak, 4: Mount Nemrut.



Facility 2: Visiting Historical Places:

5: Tombs and Seljuks Graveyard: Usta Şagirt, Çifte Kümbet, Abdurrahman Gazi, Emir Ali, Emir Bayındır.

6: Tombs: Küfrevi, Şeyh Babo.

7: Castles: Bitlis, Ahlat, Adilcevaz and Tatvan Castle.

8: Mosques: Ulu Mosque (Bitlis), Gökmeşdan Mosque (Bitlis), Şerefiye Mosque (Bitlis), İskender Paşa Mosque (Ahlat), Tuğrul Bey Mosque (Adilcevaz).

9: Madrasas, Hammam/Turkish Bath, Caravanserai: İhlasiye, Yusufiye, Han Hamamı, Paşa Hamamı, Hatuniye, Paşin Hüsrev Paşa, Başhan, El-Aman.

10: Bridges: Narlıdere (Bitlis), Emir Bayındır (Ahlat).

Facility 3: Sport Activities Tours:

11: Winter Sports: Çırtkaya Ski Center, Nemrut Ski Center, Rahva Ski Center:

Facility 4: Geo-education: Engineering department in Bitlis Eren University has possibility to educate the students in Nemrut Geopark by field works. Moreover, academic staff in Bitlis Eren University leads the geo-education seminars for the students in high schools, secondary and primary schools.

3 REFERENCES

BAHRAM, S. N. (2009) *Fundamentals of geotourism: With emphasis on Iran*. Tehran-Iran: Samt Organization Publishing. <http://physio-geo.revues.org/4873?file=1>

GÜRSOY M.Sercan and Gül Güneş, (2014), Jeoturizm ve Sürdürülebilirlik: Kızılcahamam-Çamlıdere Örneği, *Journal of Ankara Studies, December, 2 (2)*, pp. 203-215.

NEWSOME, David and Ross DOWLING (2006) *Geotourism: Sustainability, Impacts and Management*, Elsevier Butterworth-Heinemann, Oxford.

STUEVE, M. A. (2002) <http://destinationcenter.org/wp-content/uploads/2012/01/geotourism1-survey.pdf>

Bitlis: Bitlis is located in the Eastern part of Turkey. It is connected to other urban centres by road, including Tatvan on Lake Van, 25 km to the northeast, and the cities of Muş (Mush), 100 km northwest, and Diyarbakır, 200 km to the west. The climate of Bitlis can be harsh, with long winters and heavy snowfalls.²⁶ Name 'Bitlis' comes from the commander Bedlis who built a castle after Alexander the Great's order. Bitlis is known as beautiful city in the valley as the city located in valley. Bitlis was governed by the Urartians, Medes, Persians, Alexander the Great, Byzantines, Ottomans. After the foundation of Turkish Republic Bitlis became a province.²⁷ Bitlis has hundreds of historical structures including tombs, castles, caravansarai, bridges, graveyards, mosques and madrasas.

Views from Bitlis Castle²⁸



²⁶ <https://en.wikipedia.org/wiki/Bitlis>

²⁷ <http://www.bitliskulturturizm.gov.tr/TR,56204/tarihce.html>

²⁸ <http://ercaninal.blogspot.com.tr/2013/02/bitlis.html>

El-Aman Caravansarai;

Information Office; El-Aman Caravansarai was built in 16th Century by the Ottoman Governer Hüsrev Paşa. This historical structure is rebuilt by Bitlis Eren University. It is being used as a cultural center for congress, seminars and meetings by the University. In near future El-Aman will be serving as an information office for the Nemrut International Volcanic Jeopark. View from El-Aman²⁹;



Paragliding; Since the altitude of Mount Nemrut is more than 2,500 meters, paragliding can be further sport activity.

Landscape: Mount Nemrut enable visitors to spectacular view of Ahlat (North side), Lake Van (East side), Muş Plain (West Side), Tatvan District (East Side) in a short time, therefore, there will be specific points for this activity.

Pearl Mullet (İnci Kefali): Witness to Pearl Mullet migration is a popular activity in Lake Van. Pearl Mullet, only found in soda saline Lake Van, is an endemic fish. It immigrates to freshwaters every year to fertilize. Visitors are able to watch 'İnci Kefali' migration especially in May and first week of June in Erciş³⁰. View from İnci Kefali Migration;³¹³²³³³⁴



²⁹ <http://www.beu.edu.tr/IcerikDetay.aspx?zcms=1214>

³⁰ District of Van City. Distance to Mount Nemrut is about 180 km.

³¹ <https://www.youtube.com/watch?v=UBU38Sp91IA>

³² <http://www.ensonhaber.com/vanin-baliklari-yine-ucuyor-2012-06-06.html>

³³ <http://www.ensonhaber.com/vanin-baliklari-yine-ucuyor-2012-06-06.html>

³⁴ <http://www.vizyonvan.com/firma.php?firmaid=177>



Bridges: Emir Bayındır Bridge (Foto; Bülent Akarsu)



Seljuks Graveyard.³⁵



4. Overview and policies for the sustainable development of:

East Anatolian Development Agency is a Regional Development Agency operating in Region TRB2 consisting of Van, Hakkari, Bitlis, Muş provinces in East Anatolian part of Turkey under the auspices of Ministry of Development in Turkey. East Anatolian Development Agency promotes cooperation and communication among local actors including members of local government, private sector, universities, NGOs, local media and the public. The Agency provides financial and technical support to the projects developed by local actors through support programs with funds transferred to the Agency from the central budget. East Anatolian Development Agency creates Regional

³⁵ <http://www.forumgercek.com/turkiyeden-tarihi-yerler-ve-mekanlar/60441-ahlat-selcuklu-mezarligi-bitlis-3.html>

Development Plans which outline development priorities for the Region. The Agency also supports planning efforts and capabilities of local-institutions. The agency each year selects a priority theme for the support of the local development projects.

5. Policies for, and examples of, public and stakeholder awareness in the proposed Geopark.

Rising public awareness on the geoh heritage of Nemrut Volcanic Crater was one of the major tasks of the Geopark Project Team. Public information processes will be carried out through a strategic plan includes regular meetings with public representatives, stake holders, decision makers, public open presentations in the Municipal hall, a bilingual website dedicated for the promotion of the Geopark Project, website of the Nemrut Vocanic Crater, dispersal printed informative material and finally press releases for newspapers and interviews on Radio-TV channels.

1- [diyarbakirradyo](http://diyarbakirradyo.com.tr): Bitlis Nemrut Dađı Krater Gölü uluslararası Jeopark olma yolunda. Eren Ün v.Rektör Yrd. Aydın Büyüksaraç 10.45'te. <https://t.co/LJHeLPLLeKV> - 2016-07-10 06:25:30



2- Gazetevatan

4 Nemrut Krater Gölü uluslararası jeopark

30 Haziran 2016 Perşembe - 2:30



Dünyanın en büyük ikinci krater gölü olan Nemrut Krater Gölü'nde, [Bitlis](#) Eren Üniversitesinin hazırladığı "Uluslararası Jeopark Projesi" kapsamında çalışmalara başlandı. BEÜ Mühendislik Mimarlık Fakültesi İnşaat Mühendisliği Bölümü Öğretim Üyesi ve Rektör Yardımcısı Prof. Dr. [Aydın](#) Büyüksaraç "Coğrafik bilgiler ve jeolojik oluşumların ötesinde, bu alan oldukça önemli bir turizm potansiyeline sahip. Nemrut Krater Gölü dünyanın ikinci, Türkiye'nin ise en büyük krater gölü. Bu alanda meydana gelen patlama sonucu 5 farklı göl oluşmuştur. Buranın uluslararası jeopark kapsamına alınmasıyla bu bölgenin turizm potansiyeli oldukça önemli bir noktaya ulaşacak. Uluslararası boyutu oluştuktan sonra, yabancı turistlerin buraya ilgisi artacak" dedi. Alanda yapacakları çalışmaları ve hazırlayacakları raporları [UNESCO](#)'ya göndereceklerini anlatan Büyüksaraç, UNESCO'nun bu alanı uluslararası jeopark kapsamına alması için gerekli çalışmaları yürüteceklerini bildirdi.

3- Nemrut Krater Gölü 'uluslararası jeopark' olma yolunda

Bitlis Eren Üniversitesinin (BEÜ) hazırladığı "Uluslararası Jeopark Projesi" kapsamında, dünyanın en büyük ikinci krater gölü olma özelliğine sahip Nemrut Krater Gölü'nde jeopark çalışmalarına başlandı.



Fotoğraf:AA/Şener Toktaş

BİTLİS - ŞENER TOKTAŞ

Bitlis Eren Üniversitesi'nin (BEÜ) hazırladığı "Uluslararası Jeopark Projesi" kapsamında, dünyanın en büyük ikinci krater gölü olma özelliğine sahip **Nemrut Krater Gölü**'nde jeopark çalışmalarına başlandı.

Avrupalı Seçkin Destinasyonları (EDEN) Projesi kapsamında "mükemmellik ödülü" alan Türkiye'nin en büyük krater gölü Nemrut'ta, akademisyenler tarafından jeolojik oluşum, endemik bitkiler, hayvan türleri, arkeolojik yerleşimler ve kaldera içindeki göllerde araştırma yapılacak.

BEÜ Mühendislik Mimarlık Fakültesi İnşaat Mühendisliği Bölümü Öğretim Üyesi ve Rektör Yardımcısı Prof. Dr. Aydın Büyüksaraç'ın koordinesinde, jeofizik, jeoloji, biyoloji, arkeoloji bölümündeki akademisyenler ve turizm uzmanından oluşan 7 kişilik bir ekiple çalışmalara başlandı.

Doğu Anadolu Kalkınma Ajansı'nın (DAKA) desteğiyle hayata geçirilen bu proje, kentin turizmine ve ekonomisine büyük katkı sağlayacak.

Büyüksaraç, AA muhabirine, Türkiye'nin en büyük, dünyanın da ikinci büyük krater gölü olarak tanımlanan Nemrut Krater Gölü'nün oldukça geniş bir alana yayıldığını söyledi.

Krater gölü alanının deęişik bir coęrafyaya sahip olduğunu, Nemrut ve çevresinin bu coęrafyadaki en büyük volkanik daęlar arasında yer aldığını ifade eden Büyüksaraç, şöyle konuştu:

"BEÜ olarak Nemrut'ta, DAKA'nın desteęiyle 'Uluslararası Jeopark Oluşumu' çalışmasını başlattık. Öncelikle alanda jeolojik oluşum, endemik bitkiler, hayvan türleri, gölleri ve arkeolojik yerleşmeleri araştıracağız. En son 1941 yılında aktif olduğunu bildiğimiz Nemrut Daęı volkanı, tarihsel kayıtlarda iki kayıttan biridir. Dięeri de Erciyes volkanizmasıdır. Yaklaşık 600 yıl öncesinde aktif olan yanardaę, bugün uyuyan bir yanardaę olup, aktif volkan olarak tanımlanmaktadır."

4.1.1 "Önemli bir turizm potansiyeline sahip"

Alanda yapılacak yatırımların bölgenin turizm etkinlięi açısından önemli olacağını belirten Büyüksaraç, alanın turizm potansiyeline sahip olduğunu dile getirdi.

Nemrut Krater Gölü'nün dünyanın ikinci, Türkiye'nin ise en büyük krater gölü olduğunu vurgulayan Büyüksaraç, "Bu alanda meydana gelen patlama sonucu 5 farklı göl oluşmuş. En büyük gölün derinlięi 155 metreye kadar ulaşıyor. Bu gölün ortalama derinlięi 100 metredir. Oldukça derin bir göl yapısını oluşturmaktadır. Krater gölünün etrafı 4 bin metre yüksekliğe kadar ulaşmakta. Kraterin ağız geniřlięi yaklaşık 48, dip geniřlięi ise 36 kilometrekaredir. Dolayısıyla bir koni yapısı meydana gelmiştir." diye konuştu.

4.1.2 "Nemrut, Türkiye'de ikinci uluslararası jeopark olacak"

Alanda yapacakları çalışmaları ve hazırlayacakları raporları UNESCO'ya göndereceklerini anlatan Büyüksaraç, **UNESCO**'nun bu alanı uluslararası jeopark kapsamına alması için gerekli çalışmaları yürüteceklerini bildirdi.

Türkiye'de řu anda batıda sadece Kula Volkanik Alanı'nın, uluslararası jeopark kapsamında yer aldığını anımsatan Büyüksaraç, "Doęu Anadolu'da da buranın uluslararası jeopark kapsamına alınmasıyla bu bölgenin turizm potansiyeli oldukça önemli bir noktaya ulaşacak. Türkiye'de ikinci uluslararası jeopark konumu ortaya çıkacak. Uluslararası boyutu oluştuktan sonra yabancı turistlerin buraya ilgisi artacak çünkü çok fazla doğal oluşum var. Ayrıca doğa sporlarıyla da burası yoğun ziyaretçi alacaktır. Nemrut Daęı'nda kış sporları yapılmakta. Güzel bir tesis ve telesiyej sistemi mevcut. Burada rüzgar bol olduğu için yamaç paraşütü de yapılabilir. Yürüyüş yolları ve doğal alanlar rehberler eşliğinde gezilebilir. Nemrut birçok turistik potansiyele

sahip. Sadece bu alan deęil, aynı zamanda Van Gölü'nü de görme şansı mümkün."şeklinde konuştu.

Çalışmaların rapor ve fizibilite niteliğinde olacağını anlatan Büyüksaraç, UNESCO'nun öncelikli olarak bu çalışmaların yapılmasını istediğini söyledi.