

## An Evaluation of the Detection Study of the Petroglyphs in the Region of Cholpon-Ata, Kyrgyzstan

### *Kırgızistan Çolpon-Ata Bölgesi'ndeki Petrogliflerin Belgeleme Çalışmaları Üzerine Bir Değerlendirme*


Leyla KADERLİ\* Chynara ALİEVA\*\*


**Abstract:** Rock paintings (petroglyphs) are found in different regions and in many parts of the world. The different symbols and depictions on the rock paintings provide various clues concerning lives in ethnographic terms, as well as the relations of cultures with their surroundings as an indicator of their beliefs. Today, in research on petroglyphs, the meanings of symbols and the origins of the cultures they belong to are mostly discussed within the scope of different topics such as chronological order. To the northwestern of the city of Cholpon-Ata situated on the northern shore of the Issik Lake in Kyrgyzstan are found approximately a thousand petroglyphs of various sizes. Today, only a part of this area is enclosed by wire and used as an open air museum and is protected by a watchman sent by a museum in Cholpon-Ata. These monuments, which are proof of ties with past cultures, have unfortunately started to dissolve through the destruction of time, humans and nature. Although the petroglyphs in this region are legally protected, they are gradually disappearing from various factors arising from tourism activities, vandalism, natural life, climatic conditions and the geologic structure of the stone. The main purpose of this study is to document these monuments witnessing to history, to make basic determinations to create an archive, to bring them into the literature and to contribute to the history, culture and promotion of the country.

**Keywords:** Petroglyphs • Rock Paintings • Archeopark • Issik Lake • Cholpon-Ata

**Öz:** Kaya resimleri (petroglifler) dünyanın birçok bölgesinde farklı coğrafyalarda görülmektedir. Kaya resimleri üzerinde yer alan farklı semboller ve tasvirler, kültürlerin, inançların bir göstergesi olarak çevresi ile olan ilişkileri yanında etnografik yaşamlar hakkında da çeşitli ipuçları vermektedir. Günümüzde petroglifler ile ilgili yapılan araştırmalarda sembollerin anlamları ve ait oldukları kültürlerin kökenleri daha çok kronolojik sıralama gibi birbirinden farklı konular kapsamında ele alınmaktadır. Çalışma kapsamında incelenen Kırgızistan'ın Issık Göl'ün kuzey kıyısında yer alan Çolpon-Ata şehrinin kuzeybatısında yaklaşık bin adet çeşitli boyutlarda petroglifler bulunmaktadır. Günümüzde bu alanın sadece bir bölümü, tel çekilerek açık hava müzesine dönüştürülmüş ve Çolpan Ata'da bulunan bir müze tarafından görevlendirilen bir bekçi yardımı ile güvenliği sağlanmaya çalışılmaktadır. Geçmiş kültürlerle bağların bir kanıtı olan bu anıtlar ne yazık ki zaman, insan ve doğa tahribatı içinde çözülmeye başlamışlardır. Bu bölgedeki petroglifler yasal olarak korunmaya alınmasına rağmen yürütülen turizm faaliyetleri, vandalizm, doğal yaşam, iklimsel şartlar ve taşın jeolojik yapısından kaynaklanan çeşitli faktörlerden dolayı giderek yok olmaktadır. Bu çalışmanın temel amacı tarihe tanıklık eden bu anıtların belgelenmesi, arşiv oluşturulması için temel tespitlerin yapılması, literatüre kazandırılması ve ülke tarihine, kültürüne ve tanıtımına katkı sağlamasıdır.

**Anahtar Kelimeler:** Petroglifler • Kaya Resimleri • Archeopark • Issık Göl • Çolpan Ata

\* Dr., Erciyes Üniversitesi Mimarlık Fakültesi Mimarlık Bölümü, Kayseri  0000-0002-3497-6664  
leylakaderli@erciyes.edu.tr

\*\* MA. Arch.,  0000-0002-4554-2538 | chynara.8907@gmail.com

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Societies in different parts of the world in the past have painted their lifestyles independently from each other on rocky sites, stone or cave surfaces, sometimes in the form of realistic depictions but most usually in the form of graphics. These rock arts are widespread across several continents from South America to Africa, Australia, Europe and Asia<sup>1</sup>. In the Asian continent they exist in the Ural Region, Siberia, Tuva Republic (Russian Republic), Mongolia and from Kyrgyzstan, Uzbekistan, Kazakhstan to the Far East<sup>2</sup>. The rock art/petroglyphs in Central Asia, which were painted on rock surfaces or in the inner parts of caves, date from the Paleolithic Age. Research carried out in Central Asia show the paintings dating to the Paleolithic Age predominantly depict hunting scenes or are depictions of animals<sup>3</sup>. In Turkey, several petroglyphs have been found most densely in the Eastern Anatolia Region but also on the slopes of the Taurus mountains, near Ankara and in the Black Sea Region. The number known is increasing, due to recent surface surveys and scientific research<sup>4</sup>.

Petroglyphs, which are dated to a broad range of time, were to be seen from the Paleolithic Age, spreading to the rock surfaces during the Mesolithic and Neolithic Ages and were widely made in several centers during the Chalcolithic Age. Thereby, they have become not only the symbol of populations but also a means of expression and visual communication, becoming a part of their culture and art<sup>5</sup>. These depictions primarily appeared as the most primitive form of alphabet and the preform of the language of symbols, and evolved into stamp seals and the runic alphabet<sup>6</sup>. This drawing tradition was maintained in several regions until the Middle Age<sup>7</sup>. The petroglyph sites, which run parallel to the scattered settlements of the Turkic populations in different geographies, possess similar depictions and can be traced from the Turkic homelands to Anatolia and Europe<sup>8</sup>. Being historical documents, petroglyphs are the reflections of a former populations' cultural life styles, social and economic

<sup>1</sup> Francfort 1998, 302-318; Ceylan 2008, 366; Demir 2009, 17; Bahn *et al.* 2015, 1-17; Baysal 2017, 1-2; Güneri 2018, 149-160.

<sup>2</sup> Tashbayeva 2001a, 9-79; Ranov 2001, 122-150; Khujanazarov 2001, 80-121; Samashev 2001, 151-220; Kubarev 2002, 99-119; Francfort & Jacobson 2004, 53-78; Rogozhinskiy 2004; Güneri 2005, 15-33; 2012, 41-188; Rozwadowski 2007, 401-406; Graç 2008, 209-230; Rogozhinskiy 2008, 83-94; Demir 2009, 16; Somuncuoğlu 2011, 1; Amanbaeva *et al.* 2011, 43-72; İmat *et al.* 2012, 203-219; Martinov 2013; Devlet 2015, 124-148; Rozwadowski & Lymer 2015, 149-163; Jacobson Tepfer 2015, 164-195; Akgün 2019, 152; Kutlu 2020, 503-527.

<sup>3</sup> Ögel 1988, 110; Çoruhlu 1998, 66; Musabayev 1998, 1-2; Roux 2001, 52; Martinov 2013; Ceylan & Özgül 2018.

<sup>4</sup> Demir 2009, 5-19; Somuncuoğlu 2011a, 1; İmat *et al.* 2012: 203-219; Ceylan 2015a, 9-27; 2015b, 7-28; Üngör 2016, 357-370; Bingöl 2016, 347-355; Özgül 2016, 371-390; Günaşdı 2016, 391-407; Başbuğ & Özer 2017; Ceylan 2018, 155-198; Ülkümen 2018, 126-135; Üngör 2018, 325-346; Karageçi 2018, 561-578; Bingöl 2018, 43-57; Ülkümen 2019, 533-552; Güler 2020, 33-42; Özgül 2020, 219-245; Bingöl 2020; Toprak 2021, 359-389; Ceylan & Aydın 2021, 535-556; Özgül 2021, 781-818.

<sup>5</sup> Ceylan 2015a, 16; 2015b, 10; 2016; Güler 2020, 34.

<sup>6</sup> Doğan 2001, 161; Demir 2009, 6; Somuncuoğlu 2011b, 44; Türkoğlu 2019, 67.

<sup>7</sup> Hermann 2011; 2012; 2013; 2014; Taşağıl 2011, 69-71; Somuncuoğlu 2011b; Kutlu 2020, 503-527.

<sup>8</sup> Wilhem, Uyanık 1957, 619-625; Çoruhlu 1997, 13; Samashev 2001, 151; Tashbayeva 2001, 9; Khujanazarov 2001; Ceylan 2002, 426; Alyılmaz 2004, 157-163; Ceylan 2008, 163; Somuncuoğlu 2008, 54; Demir 2009, 5-19; 2010, 5-29; İmat *et al.* 2012, 203-219; Özgül 2015, 172; Ceylan 2015a, 9; Rozwadowski & Lymer 2015, 149-163; Üngör 2016, 357-370; Baysal 2017, 1-19; Özderin 2017, 167-191; Ceylan 2018, 163-164; Akgün 2019, 151-164; Güler 2020, 33-42; Kutlu 2020, 503-527; Ceylan & Aydın 2021, 535-556.

conditions and beliefs; in short their identities as a whole. Today petroglyphs obtain critical importance as a historical source.

The research area for this study is the Issyk Lake Cholpon-Ata region in Kyrgyzstan, where the petroglyphs preserve the cultural remnants of past Central Asia Turkic populations<sup>9</sup> (Fig 1). Several locations within the Issyk Lake region host a considerable number of petroglyphs. Among these petroglyphs, the ones in the Cholpon-Ata Open Air Museum were examined and detected for the purposes of this study.

The petroglyphs situated in the vicinity of the Cholpon-Ata settlement on the northeast part of the Issyk Lake are named after this settlement. They have survived as witnesses of a long history, embodying part of a cultural heritage and a broad cultural landscape, also facilitating national faith tourism.



Fig. 1. Map of Kyrgyzstan (<https://www.turkiye-rehberi.net/harita/k%C4%B1rg%C4%B1zistan/kirgizistan-haritasi.jpg>)

## Petroglyphs

The definition of the word “petroglyph” is the writing, engraving or carving of pictures on rock and cave surfaces. The term is the combination of two words, *petra* (πέτρα), meaning “rock” and *glyphe* (γλυφή), meaning “carving/engraving” in the Greek language. Its first use was as *pétroglphe* in French. According to C. Ayılmaz, petroglyph essentially refers to “carving on stones”. The term is being used to denote “depictions on rock”, “tablet on rocks”, “rock illustrations” and “stone carvings”. The petroglyphs, having been formed through the techniques of “carving”, “tattooing”, “scraping” and “painting” on stones, rocks and caves are described by experts as the “means of expression”, “means of communication” and even the “alphabet” of their eras<sup>10</sup>.

From an archaeological perspective, petroglyphs are defined as incised images on stones. Petroglyph is a form of pictographic letter generated by humans long ago through painting and description. They are considered to mirror the religious and cultural lives of human groups who lived during the High Paleolithic, Mesolithic, Neolithic and Bronze Ages as well as the Early Ages<sup>11</sup>. This art of carving/incising on rocks became commonplace in different eras in different regions throughout the world.

<sup>9</sup> Tashbayeva 2001; Hermann 2010; 2011, 1-3; Somuncuoğlu 2011b, 21-22; Yılmaz 2013, 223-248; Çoruhlu 2016, 15-21; Hermann 2017, 10-13; Güneri 2018, 149-160.

<sup>10</sup> Yalçınkaya 1977, 9-15; 1978, 67-82; Demir 2009, 5-19; Somuncuoğlu 2011b, 24-44; Ayılmaz 2014, 157; Baysal 2017, 1-17; Akgün 2019, 51-164; Gökçe & Akgün 2020, 26-51.

<sup>11</sup> Yalçınkaya 1977, 9-15; 1978, 67-82; Dcusupakmatov 2006, 5; Demir 2009: 5-19; Akgün 2019, 51-164; Gökçe & Akgün 2020: 26-51.

Paleolithic Age (approximately 600.000 B.C.–10.000 B.C.) rock art predominantly depicted hunting scenes and wild animals such as mammoth, rhinoceros, horse, deer, while the human figure is a rare occurrence. In the Mesolithic (10.000 B.C.–8.000 B.C.), and especially the Neolithic (8.000 B.C.–5.000 B.C.) ages, rock art became more widespread and complex<sup>12</sup>. It was composed of illustrations of the lives of primitive people, hunting and war scenes and mythological drawings. In this period, human figures were depicted in motion, the drawings stressing a focus on the action itself, such as arrow shooting and fleeing animals. Mesolithic rock art, though, is characterized by multidimensional expression, the artist presenting oneself as a part of a population, constantly on the move. Neolithic Age rock art is identified with the less frequent depiction of domestic animals compared to wild animals and herds are generally depicted<sup>13</sup>. From early periods, petroglyphs on the cave walls or rocky surfaces were carved with a scraper or simply painted to generate a sense of depth incised. It is assumed that vertical striation, oblique striation or the pinpoint techniques were employed to draw the contours of animal figures on rock art. The colors were sometimes obtained by a natural method: by carving on the inner and outer layers of a rock, which played out the differences between the color tones<sup>14</sup>.

Various evaluation criteria were established to examine petroglyphs. Main production methods depending on the materials and techniques change over time, which help researchers to distinguish the differences and to an extent classify petroglyphs. M. Uyanık (1974, 60) states that *petroglyphs* can be classified under five categories: realist, semi-realist, symbolic, semi-symbolic and markings<sup>15</sup>. I. Yalçinkaya (1978, 70) however, argues that there isn't much variation in technique, but generally a sharp and solid object was used either to hit the rock or in some cases to make incisions<sup>16</sup>. Again referring to M. Uyanık, another classification method is to group the petroglyphs and the rocks in respect to the surface of the rock being engraved and their elevation in the topography. Research findings suggest that rock art were worked on from very small surfaces to large ones of up to two square meters. In terms of topographic classification, most petroglyph sites were situated near very high mountains, lakes and other water sources at a high elevation. It is expected that different evaluation criteria will be advanced as research in this field accumulates more information<sup>17</sup>.

There are several reasons to make petroglyphs and several meanings attached to them. Some are related to death, burial rites, afterlife and rituals. In this context, there are references to tombs and kurgans near some petroglyph sites<sup>18</sup>. Moreover some of them are considered to be constructed with the intent of defining the borders between the communities and tribes<sup>19</sup>. Communities passed on features of their culture, ranging from parts of their daily lives to life after death, from simple animal drawings to hunting scenes, from ceremonies to festivals. They transferred their mythological beliefs,

<sup>12</sup> Yalçinkaya 1977, 9-15; 1978, 67-82; Somuncuoğlu 2011b, 23-44; Baysal 2017, 4; Karageçi 2018, 563-564; Akgün 2019, 51-164; Gökçe & Akgün 2020, 26-51.

<sup>13</sup> Dubrovsky & Grachev 2011, 5-8; Baysal 2017, 4.

<sup>14</sup> Yalçinkaya 1977, 9-15; 1978, 67-82; Üngör 2016, 360; Özer 2016, 10; Baysal 2017, 17; Gökçe & Akgün 2020, 26-51.

<sup>15</sup> Ayrıca bk. Baysal 2017, 10.

<sup>16</sup> Ayrıca bk. Uyanık 1974, 60; Baysal 2017, 10.

<sup>17</sup> Cheremisin 2006, 89-100; Baysal 2017, 10; Özderin 2017, 176.

<sup>18</sup> Somuncuoğlu 2011b, 68.

<sup>19</sup> Alimov 2004, şekil 1-5; Yılmaz 2013, 228.

knowledge of cosmology, religious rituals and scenes entailing various compositions on to rocks<sup>20</sup>. Petroglyphs identified with Turkic culture are deemed to have been disseminated from Asia over a vast geography by close proximity encounters like wars, migrations and Silk Road trade<sup>21</sup>. It can also be concluded that the sanctity of these sites, together with the topographic characteristics were important. They were perceived as open air temples hosting visitors and assuming the transference of requests, wishes, rites-rituals and foresight.

### Petroglyphs in Kyrgyzstan, Issyk Lake, Cholpon-Ata Region

Petroglyphs are commonly found within several regions of Kyrgyzstan<sup>22</sup>. Saimaluu-Tash in Jalal Abad region, Zhaltyrak-Tash in Talas region and the Issyk Lake petroglyphs are the most popular ones. The petroglyphs in this region abound in similarities with the Tamgaly petroglyphs in Kazakhstan<sup>23</sup>. In Kyrgyzstan, Saimaluu-Tash in the Fergana Valley is the densest petroglyph site. It is assumed that a total of approximately 10.000 petroglyphs are found in Saimaluu-Tash<sup>24</sup>. They articulate depictions offering a diversity of symbols and scenes. Wild or domesticated animals like argali (wild sheep), maral (deer), bulls, horses, dogs, pigs were drawn alone or in groups. Additionally various rituals, human figures and hunting scenes were depicted. In recent years Turkish researchers conducted new studies in Saimaluu-Tash and the local administration initiated the preparation of conservation plans for the coming years<sup>25</sup>. This site was nationalized and earned protection status under the Law on the Protection and the Use of Historical and Cultural Monuments of the Republic of Kyrgyzstan, accepted in 1999 by the Legislative Assembly of Jogorku Kenesh. Kyrgyzstan Ministry of Education and Culture is the authority responsible for the preservation of the monuments, while the Department of Archaeology and Ethnology Department of the Institute of History of the National Academy of Sciences is responsible for the scientific research studies<sup>26</sup>. Research at this site showed these geometric style rock art examples are among the oldest rock art group and this finding was supported by solid proofs dating them to 3000 B.C.<sup>27</sup>. Consequently, the number of research has recently been increased in the Zhaltyrak-Tash, in previous research known as Ur-Maral<sup>28</sup>.

The majority of Issyk Lake region petroglyphs are found in Toru Aygır, Chirpykti, Tamchy, Chok-

<sup>20</sup> Demir 2009, 5-19; Çağdaş 2011, 43; Üngör 2016, 39; Akgün 2019, 151.

<sup>21</sup> Alyılmaz 2004, 158.

<sup>22</sup> Tashbayeva 1995; 1998; 1999, 72-75; 2001b, 179-187; Somuncuoğlu 2008; 2011b; Alyılmaz 2004, 157-163; Hermann 2010; 2011; Taşağıl 2011, 71; Amanbaeva *et al.* 2011, 43-72; Hermann 2017; 2018, 11-16; 2020, 180-184; Katarzyna 2017, 9-30; Ülkmen 2018, 126-135.

<sup>23</sup> Rogozhinskiy 1999, 7-43; Hermann 2011, 1; Amanbaeva *et al.* 2011, 43-72.

<sup>24</sup> Sher 1978, 163-171; Sher *et al.* 1979; Tashbayeva 2001, 9-79; Somuncuoğlu 2008, 1; 2011b; Yılmaz & Danişman 2010, 143-159; Amanbaeva *et al.* 2011, 53-54; Yılmaz 2013, 223-248; Muradaliev & Sultangaziev 2013, 15; 66; Yılmaz 2013, 223-248; Ceylan & Aydın 2021, 538.

<sup>25</sup> Somuncuoğlu 2011b, 16-22; Yılmaz 2013, 223-248.

<sup>26</sup> Unesco 2022, [http://www.kyrnatcom.unesco.kz/culture/saymaly\\_tash.htm](http://www.kyrnatcom.unesco.kz/culture/saymaly_tash.htm)

<sup>27</sup> S. Somuncuoğlu, conducted research from 1991 to 2000 with an archaeology team (interruptions in 1997 and 1998) for 8 periods. They worked in Saimaluu-Tash I site from 1991 to 1996 and in the mountainous region in Saimaluu-Tash II from 1999 to 2000. See, Somuncuoğlu 2011b, 44; Sultanbekova 2018, 30.

<sup>28</sup> Gaponenko 1963, 101-110; Sher *et al.* 1995, 81-85; Tashbayeva 2001, 53; Hudjakov *et al.* 2003, 40-57; Tashbaeva & Francfort 2005, 12-17; Amanbaeva *et al.* 2011, 43-72; Hermann 2017, 1-13.

Tal, Ornok, Sarı-Oy ve Kara-Oy areas and between the cities of Balykchy and Cholpon-Ata<sup>29</sup> (Fig. 2). These petroglyphs represent the best of Saka figurations and a fair amount of goat and deer drawings<sup>30</sup>. However, the cavalymen drawings detected in the nearby regions are not found here<sup>31</sup>. Among the eight sites on the northern shores of Issyk Lake, Cholpon-Ata possesses the most diversified and densely imbedded petroglyphs. A considerable number of petroglyphs and balbals (statuettes) within the 42 hectares stretching from the slopes of Kungey Ala-Too to the shores of the Lake. During the comparative study covering four sites in the Issyk Lake region, L. Hermann (2017, 7-9), detected 409 petroglyphs in Cholpon-Ata and reported that there were 285 goat drawings, 32 horse drawings, 26 dog drawings, 18 camel drawings, 17 deer drawings. These petroglyphs were dated to Bronze and Iron Ages, the Turkic Era and the Middle Ages.

By late 19<sup>th</sup> century, the petroglyphs of Kyrgyzstan for the first time began attracting the attention of scientists. The naturalists and historians studying in the area were the first to report on the rock art in the Issyk Lake Region. In 1886, the botanists A. N. Krasnov and Ignatiev, who were conducting research in the Han-Tengri region, reported coming across illustrations on rocks. In 1887, F.V. Poyarkov wrote about camel and wild goat drawings in an area south of Issyk Lake but it was received with little enthusiasm<sup>32</sup>. Shortly afterwards in 1893-1894 the Russian researcher Bartold discovered some rock art in the Issyk Lake region and made sketches of them. During the same years (1893-1894) artist and anthropologist S. M. Dudin and V. V. Bartold Semireçyu elaborated on rock art in their excursion notes of Issyk Lake, mentioning the difficulty of reaching the area<sup>33</sup>. In his report, V. V. Bartold described rock art as a form of archeological monument. The first extensive research about petroglyphs were initiated subsequently following the construction of the postal service road in the Fergana Valley by N. G. Khludov in 1902<sup>34</sup>. Later in the 1930's B. M. Zima detected new petroglyph sites during excursions by Issyk Lake and the Talas Valley and published the finds<sup>35</sup>. This was followed by the works of M. E. Masson, M. E. Voronets and T. G. Obolduyeva and the research by A. N. Bernshtam in 1946 focusing on scientific data, style and dating<sup>36</sup>. The consequent studies by Soviet archeologists established that chronological rock art continued until the end of the Middle Ages but evolved into a form of vandalism in modern times<sup>37</sup>. More comprehensive studies were executed by Maryashev and the Kyrgyz archeologist Pomaskina and Vinnik<sup>38</sup>. Sher and his team devised a more

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<sup>29</sup> Sher *et al.* 1995, 72-85; Amanbaeva *et al.* 2011, 43-72;

<sup>30</sup> Sher 1980, 53.

<sup>31</sup> Kutlu 2020, 512.

<sup>32</sup> Tashbaveya 2001a, 11.

<sup>33</sup> Bartold 1996, 415-422; Tashbaveya 2001, 11.

<sup>34</sup> Tashbaveya 2001a, 11.

<sup>35</sup> Zima 1958, 113-114; Tashbaveya 2001a, 11.

<sup>36</sup> Masson 1940; 1948; Bernshtam 1948; Tashbaveya 2001, 12; Voronets 1951; Bernshtam 1952, 222-230; 1997.

<sup>37</sup> Cherkasov 1960; Tashbaveya 2001, 13; Moskalev 2004, 232; Alieva 2019, 37.

<sup>38</sup> Pomaskina 1969; 1970; Pomaskina 1972; 1973; 1974; Maryashev 1970; Vinnik & Pomaskina 1975; 87-101; Tashbaveya 2001, 12; Amanbaeva *et al.* 2011, 43-72; Hermann 2017, 1.

technical documentation process which helped developing the finding and dating methods<sup>39</sup>. Tashbaveya and her team extended their research to encompass all the neighboring areas<sup>40</sup>. In the aftermath Nurmametov and Hermann conducted wide scale comparative research<sup>41</sup>. Despite the increase in research publications, Miklashevich argues that none of the preservation projects being conducted or their outputs were published<sup>42</sup>.

Owing to their touristic value, petroglyphs were brought under protection within the confines of an open air museum and are in display as the “Open Air Petroglyph Museum” under the responsibility of Issyk Lake Ethnography Museum. The process was accompanied by a rise in the quantity of research<sup>43</sup>. The region not only invigorated interest in its history but also about its potential natural life, its landscape, biosphere reserves, ecology and tourism. Many international projects in the region are being executed<sup>44</sup>.

In 2015, J. Katarzyna (2017, 9-30) examined the Cholpon-Ata Open Air Museum and the petroglyphs regarding their potential for tourism and emphasized that this research was thoroughly documented<sup>45</sup> (Fig. 2). However, this document could not be traced, neither in interviews with the museum officials nor found in the archival research for this study.

In 2018, C. Alieva, supervised by L. Kaderli, documented these petroglyphs using digital technology and formulated suggestions for their publicity in her thesis project<sup>46</sup>. This article was assessed through the revision and updating of this thesis research. An experimental documentation research was conducted in the same area by Lublin University in 2019 in which digital documentation (Laser scanner and 3D Modelling) was explained by quantitative data<sup>47</sup>.

Petroglyphs in the Issyk Lake region are found in the valleys and crossings between the mountains, in the pastures and on the roads. Most of them are on rocks lying in the directions of West, South and East. Although the rocks’ bronzing/blackening degrees vary substantially, the depictions can be distinguished from afar. The engravings scraped on the dark side of the rock stand out, while some illustrations on the almost completely white bottom were preserved as if they had been recently drawn;

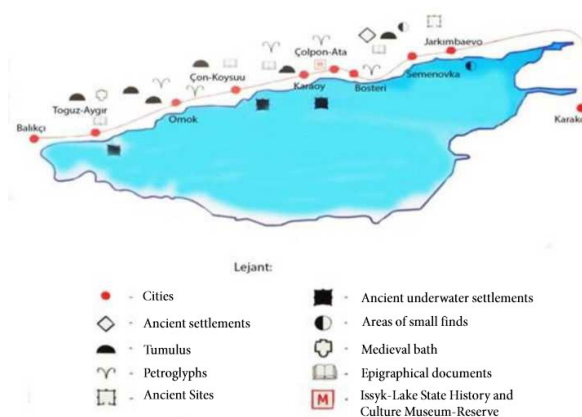


Fig. 2. The historical and cultural monuments of Issyk-Lake. Brochure: Иссык-Куль страж древности (Issyk-Lake Antique Custodian)

<sup>39</sup> Sher *et al.* 1979; Sher 1980; Tashbaveya 2001, 13; Amanbaeva *et al.* 2011, 43-72.

<sup>40</sup> Tashbaveya 1988; 1995; 1998; 1999; 2001a; 2001b; 2005.

<sup>41</sup> Nurmametov 2004; 2006; Hermann 2010; 2011; Amanbaeva *et al.* 2011, 43-72; Hermann 2017, 1-10.

<sup>42</sup> Miklashevich 2003, 113.

<sup>43</sup> Tashbayeva *et al.* 2001a, 9-79; Tzhan *et al.* 2011; Hermann 2017, 4.

<sup>44</sup> Hünninghaus 2001; Uhlemann *et al.* 2003; Aidarbekova 2007; Schmidt 2011, 73-76; Kozhokulov *et al.* 2021.

<sup>45</sup> Katarzyna 2017, 9-30.

<sup>46</sup> Alieva 2019.

<sup>47</sup> Miłosz *et al.* 2019, 18-25.

among which some exhibit lighter tones. The three fundamental techniques defined by A. N. Bernshtam, namely, shadow style, contour and skeletonization are noticeable in these petroglyphs<sup>48</sup>. They resemble Tamgaly petroglyphs in terms of their proportions, dimensions, directions and depictions<sup>49</sup>.

The Foundation for the Protection of Cultural and Historical Monuments of the Republic of Kyrgyzstan commissioned a project for the transformation of the Cholpon-Ata site into an open-air museum from 1985 onwards but the project was not realized. Still in 1987 the area where the monuments lay was provided protection for the purpose of its transformation to an open-air museum again and its administration was entrusted to the museum. On 9<sup>th</sup> March 1993, the Kyrgyz government issued a special decree to change Cholpon-Ata Open Air Museum's status to an archaeological protected area and assigned its responsibility to the Museum of Ethnography in Lake Issyk. Today, Lake Issyk State Historical and Cultural Museum and Reserve is striving to protect and improve the museum in its own capacity and integrate this cultural heritage with the city<sup>50</sup>.

Lake Issyk Open Air Museum Reserve is the most visited place in the region because of the precious monuments and its relatively more accessible location.

### Depictions

The petroglyphs in Issyk Lake Cholpon-Ata Open Air Museum are unrivalled in their symbols and depictions. They are mostly animal illustrations such as wild goat, deer, bull and camel<sup>51</sup>. The deer, goat, sheep and other animal drawings compose the basis of Turkic communities' common depictions<sup>52</sup>.

The meanings of the rock art depictions change depending on the epoch within the historical process and traditions<sup>53</sup>. According to K. Tashbaveya (2001, 69) the drawings in this region must be dated to the period 2000 B.C.–1000 A.D., the majority of them to be associated with the VI<sup>th</sup> century B.C. when Saka groups settled in the Issyk Lake region.

The beginning of Göktürk domination and Mongol invasions until the Middle Ages is described in this region as the Turkic Era<sup>54</sup>. In this era, religious ritual scenes were drawn with a single figure or a composition of many figures and war scenes depicted two adversaries or a group of them. Likewise, single figures or figures in groups were incised in hunting scenes<sup>55</sup>. The depiction of animal figures so often was presumably because Turkic populations revered them as sacred beings<sup>56</sup>.

E. A. Miklashevich who pursued Central Asia Studies between 1995 and 1999 states that Issyk Lake petroglyphs of the Intermediate Bronze Age (end of 2000 B.C.–VII<sup>th</sup> century B.C.), Saka (VIII<sup>th</sup>

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<sup>48</sup> Vinnik 1975, 12-87.

<sup>49</sup> Hermann 2011, 1.

<sup>50</sup> Alieva 2019, 26; Çolpon-Ata Açık Hava Müzesi'nin Raporu, Çolpon-Ata 2018.

<sup>51</sup> Tashbaveya 2001, 67; 2004, 105-106; Nurmametov 2004, 148; Amanbaeva *et al.* 2011, 43-72; Alieva 2019, 41.

<sup>52</sup> İmat *et al.* 2012, 215; Kutlu 2020, 504.

<sup>53</sup> Francfort 2002, 80-89.

<sup>54</sup> Kutlu 2020, 508.

<sup>55</sup> Somuncuoğlu 2011b, 282; Üngör 2016, 39; Cheremisin & Rogozhinskyi 2020, 300-337.

<sup>56</sup> Hoppal 2013, 221; Akgün 2019, 154.

century B.C.–III<sup>rd</sup>. century A.D.), Usun (III<sup>rd</sup> century B.C.–I. century A.D.) are chronologically assessed within Ancient Turkic history and cult. While some of the drawings on the rocks were dated to the Middle Ages, some are dated to more modern eras<sup>57</sup>.

In this study, the common depictions found among the petroglyphs in Cholpon Ata are evaluated. One of the most repeated is the wild goat. The goat figure is abundant in areas where Turkic populations inhabited, therefore it is associated with this culture<sup>58</sup>. It is observed throughout all Asia, though densest in the Caspian Sea basin, Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan, Tajikistan borders/territories, but also extending to Siberia in the North and Anatolia in the West<sup>59</sup>. K. Tashbayeva (*et al.* 2001a, 9-79) argues that goat depictions are most dominant in Kyrgyzstan<sup>60</sup>.

### Wild Goat Depictions

The goat carries a significant status among Central Asian Turkic populations from very early ages because it represents the basis of Turkic steppe life, pastoralism and animal husbandry<sup>61</sup>. It retains symbolic meanings in Turkic culture despite the fact that Shaman traditions accepted it as a sacrifice animal. However, from time to time the wild goat was seen as the symbol of the God of Earth, consequently being sacrificed in mourning ceremonies, in honoring the souls of ancestors and in protection against bad spirits. The wild goat is also one of the signs of the 12 animal Turkic calendar, expressed by the word “sigun”<sup>62</sup>. It is granted the symbol of immortality because in the Taoist Holy Mountain Legend, wild goats have attained immortality after feeding on the sigun plant<sup>63</sup>. They are also associated with the hunting culture. Controversially, some rock art scenes depicting the fight between adversary concepts portray wild goats as the losers, the unfavorable party. Goat motifs were generally accepted as the symbol of all nomadic tribes. Henceforth small goat figurines made of bronze were carved on belt buckles, harnesses, tablets, gravestones, finial flagpoles and goat figures were drawn on carpets<sup>64</sup>. The figure persevered its sanctity among the Central Asian Turkic communities. Similarly in Turkish history, many Turkish tribes in the past took on names, nicknames and titles with the word “goat” (“keçi” in Turkish) like Akkeçililer, Kızılkeçililer, Sarıkeçililer and “teke” (“male goat” in Turkish) Tekeoğulları<sup>65</sup>.

Although the majority of Cholpon-Ata rock art goat figures were drawn in a similar style, they were depicted both stationary and in motion. In some illustrations the goats’ horns were accentuated through oversizing (Figs. 3-4). They were extended to the back or twirled upwards<sup>66</sup>. The horns were more detailed in some depictions; they were drawn single or double, depending on the perspective. Some were drawn remarkably long, short or in unusual proportions.

The body parts of the wild goats were styled in diverse forms: large and realist, by linear illustration

<sup>57</sup> Miklashevich 1997, 11-14; 2003, 1-60; Alieva 2019, 42.

<sup>58</sup> Demir 2010, 5-19.

<sup>59</sup> Demir 2010, 6.

<sup>60</sup> Ayrıca bk. Demir 2010, 6.

<sup>61</sup> Ceylan 2015a, 20.

<sup>62</sup> Güler 2020, 41.

<sup>63</sup> Somuncuoğlu 2011b, 80; Özer 2016, 25-26; Güler 2020, 38.

<sup>64</sup> Graç 2008, 209-230; Çağdaş 2011, 63-63; Ceylan 2015, 22.

<sup>65</sup> Ceylan 2015a, 22.

<sup>66</sup> Alieva 2019, Kat. 29, 33, 56, 227.

or through outer contour drawing (Fig. 4).

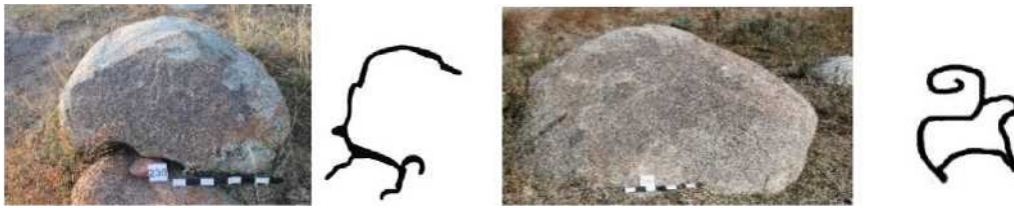


Fig. 3. Cholpon-Ata Wild Goat Drawings (Alieva 2019, 242, 151 Cat. Nr. 236, 56)



Fig. 4. Cholpon-Ata Wild Goat Drawings (Alieva 2019, 174, 239 Cat. Nr. 102, 229)

### Deer Depictions

Another animal depiction repeatedly depicted in the Cholpon-Ata Open Air Museum are of the deer. The deer depictions often used by Turkic societies are mostly among the hunting scenes<sup>67</sup>. Among their most significant features are their speed, agility and the periodic shedding of their antlers. In ancient eras, the deer figure was considered to be in connection with the origins and evolution of the cosmos and a sacred being representing beginnings and ends, forming the main theme in rebirth and regeneration<sup>68</sup>.

Deer were revered as a sacred animal in pre-Islamic Turkish culture. Subsequently it was part of their art, culture and mythology<sup>69</sup>. Although accepted as sacred, it was allowed to hunt and sacrifice deer<sup>70</sup>. On the other hand seeing a White deer meant happiness, peace and luck would flourish within that community. In the Buddhist belief the deer signified self-sacrifice and Buddha, while in Chinese tradition it is the manifestation of wealth and long life<sup>71</sup>.

An important symbol in rock art is the tree of life drawn on the deer antlers. The deer depiction passed on originally as the symbol of Indo-European and Saka people. The tree of life was frequently depicted on masks with human figures next to the deer depictions in Saka era graves. Yet, these symbols are also encountered in Andronovo



Fig. 5. Cholpon-Ata Deer Figure (Alieva 2019, 141 Cat. Nr. 36)

<sup>67</sup> Kubarev 2012, 134.

<sup>68</sup> Dalkesen 2015, 59; Akgün 2019, 154.

<sup>69</sup> Ögel 2003, 570-582; Akgün 2019, 154; Güler 2020, 39-40.

<sup>70</sup> Roux 2011, 72.

<sup>71</sup> Çoruhlu 1999, 161, 162; Ögel 2003, 573; Çelik 2007, 26-29; Çatalbaş 2011, 52.

and Usun era finds<sup>72</sup>.

Deer are the embodiment of immortality, purity, spiritual guidance regeneration and transformation in the history of Kyrgyzstan. It is regarded as the divine sign of being chosen and the manifestation of the tree of life with its branch-like antlers. Some deer species' antlers resemble the double bow and crescent -as observed in Alacahöyük Hitite Sun Disk-, hence being associated with these symbols in some cultures<sup>73</sup>. The tree grows on the deer, merging origins and life (Fig. 5). For some other cultures, the sun, gold and the deer combined represent the origin of that community<sup>74</sup>.

The deer depictions in Cholpon-Ata Open Air Museum were portrayed in a similar style to the wild goat drawings. Some were drawn in a stylized linear form while others were drawn more realistic and voluminous. The deer figures in linear style are remarkable. The imitation of deer figures drawn with a particular style and technique mirror its real version.

The size of the petroglyph numbered 36 in the Catalog and also included in the thesis is 1,60x1,73x0,85 meters. The deer figure's body is thin and long, legs vertical to the body with a tail vertically positioned and antlers in the shape of a pine tree. The wild goat's body at the front was drawn fairly distinctively<sup>75</sup> (Fig. 6).

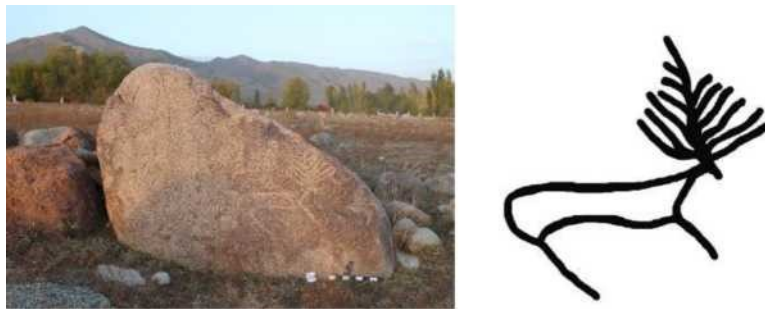


Fig. 6. Cholpon-Ata Deer Figure (Alieva 2019, 243 Cat. Nr. 238)

The petroglyph numbered 147 in the Catalogue and also included in the thesis the mother deer is accompanied by another deer<sup>76</sup>. The size of this rock is 2,05x1,80x1,45 meters. The portrayed mother deer is about 1.80 meters, almost the size of an actual deer. This deer couple depiction is thought to be the biggest petroglyph in Central Asia. The image of the legendary mother deer in the Kyrgyz mythology (Müyüzdüü-ene) was expressed<sup>77</sup>. The deer were drawn in a realist style surrounded by dark images which look like different patterns.

### Bull Depictions

The oldest rock in Cholpon Ata reserve is a bull depiction dated to the end of Late Bronze Age (approx. XII<sup>th</sup> century B.C.)<sup>78</sup>. The bull was the medium of power and divine expression frequently used across various faiths from the prehistoric age onwards. The bull figure and the bull horn exploited a

<sup>72</sup> Dalkesen 2015, 59; Özgül 2016, 371-390.

<sup>73</sup> Salt 2018, 125; Akgün 2019, 154-155; Güler 2020, 39.

<sup>74</sup> Jacobson 1993, 47, 33; Dalkesen 2015, 60-61; Esin 2006, 203-216; Akgün 2019, 153.

<sup>75</sup> Alieva 2019, 147.

<sup>76</sup> Alieva 2019, 243.

<sup>77</sup> Akgün 2019, 155.

<sup>78</sup> Alieva 2019, 49.

significant status among the Neolithic settlements and later the Aegean civilizations in Anatolia. Due to the belief that it possessed a protective power, the bull figure was carved as an ornament in architecture. Ancient Turkic groups held that the figure represented power, consequently indicating rulership<sup>79</sup>.

The bull figure in Cholpon-Ata reserve has a distinctive drawing longer than a meter, expressing a realist figure: an erect voluminous body with a hump where the bull's neck and back unite<sup>80</sup> (Fig. 7). It is also considered to be the ancestor of domesticated cows.



Fig. 7. Cholpon-Ata Bull Depiction (Alieva 2019, 143 Cat. Nr. 40)

### Camel Depictions

In ancient Turkic culture, two-humped camels were preferred for their thirst-resistant capacity for transport of freight and as military animals. In sacrifice scenes, the camel is usually excluded from the sacrificed animals<sup>81</sup>. In Turkic mythology heroes accept especially male camels (buğra) as the origin (töz) since they indicate bravery. No mention of consuming camel meat was traced, supported by the Muslim explorers' assertion that the eating of camel meat was forbidden<sup>82</sup>.

Camels were believed to store water in their humps in ancient times, associating it with the desert and attributes like moderation, humility, harmony and resilience. Interrelated with the ruler class like royal family and wealth, camel was also perceived as a symbol of religion and prayer because of its kneeling posture<sup>83</sup>. Moreover, it was associated with power, the state and being a protector in various stories<sup>84</sup>.

The Cholpon-Ata rock art depictions of camels are usually carrying freight or in a free state. It is suggested that these scenes reflect the vivid times of the Great Silk Road. Still, camel depictions aren't to be observed in all regions. Similar camel depictions were found among Tamgaly petroglyphs<sup>85</sup>. In Cholpon-Ata there are only two petroglyphs with camel depictions<sup>86</sup> (Fig. 8).

<sup>79</sup> Ögel 1995, II, 536; Çatalbaş 2011, 52; Çağdaş 2011, 48.

<sup>80</sup> Alieva 2019, 143.

<sup>81</sup> Roux 2011, 64.

<sup>82</sup> Çoruhlu 2002, 146; Tansu & Güvenç 2015, 6.

<sup>83</sup> Wilkinson 2010.

<sup>84</sup> Ögel 1995, 538-541; Çatalbaş 2011, 52.

<sup>85</sup> Kutlu 2020, 514.

<sup>86</sup> Aliyeva 2019, 232.



Fig. 8. Cholpon-Ata Camel Descriptions (Alieva 2019, 232, 216 Cat. Nr. 217, 184)

### Dog Depictions

Although dog depictions in the Turkic culture were expressed as frequently as the wolf figure, the latter being affiliated with origins and power, it assumes a secondary role. In Shaman rituals, the powerful Shamans were represented by strong and noble animals such as eagles while shamans of a lesser influence were portrayed as dogs. Dogs were also sacrificed in Turkic communities' burial ceremonies. Additionally, Turkic cosmology identifies the dog with death<sup>87</sup>.

According to the Buddhist reincarnation principle, a sinner is reborn a dog in his/her third reincarnation. Ancient Indian mythology describes dogs as the guardian of the World of the dead and a sign of misfortune<sup>88</sup>.

In Turkic cultures, unlike the wolf or eagle, the dog didn't become a national symbol but attained favorable meanings like friendship, loyalty and patience in the post-Islamic era<sup>89</sup>. There are four dog depictions in the site. They were drawn with volume<sup>90</sup> (Fig. 9).

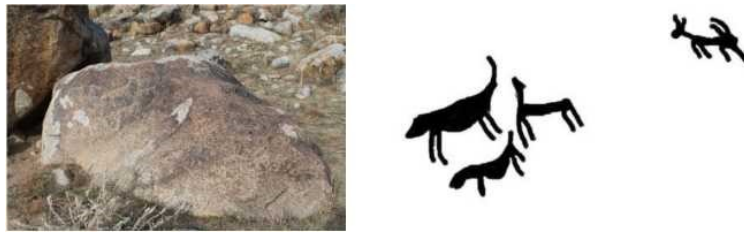


Fig. 9. Cholpon-Ata Dog Depictions ( Alieva 2019, 134, Cat. Nr. 32)

### Human Depictions

Humans also transformed their own images onto rocks and their figures were always drawn in action. These depictions portray, most probably always a male, sometimes together with hunting tools (Figs. 10-11).



Fig. 10-11. Cholpon-Ata Human Depictions (Alieva 2019, 138 Cat. Nr. 30, 234 Cat. Nr. 219)

<sup>87</sup> Çoruhlu 2002, 157-158; Roux 2011, 87; Çatalbaş 2011, 54; Tansu & Güvenç 2015, 11.

<sup>88</sup> Çoruhlu 2002, 154-155.

<sup>89</sup> Çoruhlu 1999, 179, 180; 2002, 154-155; Çatalbaş 2011, 54.

<sup>90</sup> Alieva 2019, 134.

## Hunting Scenes

Hunting, one of the traditions of Turkic states, was considered an important activity in the earliest Turkic groups. The major goals of hunting in this era were food and fur supply, war maintenance, protection from dangerous animals and providing income. Hunting scenes carved on rocks in Asia is another reflection of the Turkic hunting culture. These scenes were repeatedly depicted in Central Asian rock art owing to the significance of prey and hunting for communities making their living through this activity. It is suggested that since ancient times hunting depictions were drawn as a form of sorcery to improve the chances of hunting success<sup>91</sup>. Within this context, sometimes sacred hunting animals such as deer were affiliated with passage to the underworld<sup>92</sup>. Deer and wild goat were the most depicted animals in hunting scenes, almost always drawn bigger than the hunter, thus accentuating their sanctity and significance<sup>93</sup>. Being part of rituals, these figures were included in the sacrifice and also in the blood shedding scenes<sup>94</sup>.

Cholpon-Ata rock art offers quite striking hunting scenes. Several rocks display scenes of various game being hunted. In one such scene near the center of the site, wild goats and other animals were drawn alongside the hunting human figures.

The petroglyph numbered 180 in the catalogue and also included in the thesis is centrally situated in the Cholpon-Ata Open Air Museum. This petroglyph sized 3,00x4,30x1,90 cm displays a large number of wild goats, hunters, leopards and a smaller wild goat on a single granite rock. Goat depictions are of approximately the same size and their contour drawings are carefully smoothed. The inner volumes of goat depictions were ornamented with original designs. Figures were drawn in the jumping position, the direction of their movement being marked. On the backstage of the hunting scene, hunters and predators such as leopards were incised. Looking at its ears and tail, the dog figure on the petroglyph suggests a different dog breed. Contrarily, wolf images are quite realistic though their tails generally looked different. The hunter figures on the rock were drawn in small sizes. Two hunters with bows and arrows sitting on top of a goat's horns alongside a hunter in a vertical position next to a toppled little goat were depicted which however not are clearly visible due to erosion (Figs. 12-13).

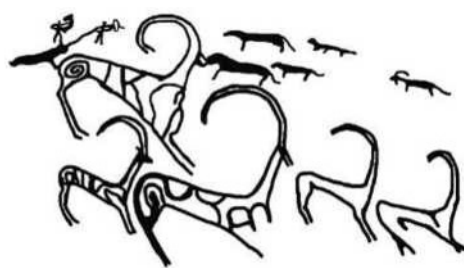


Fig. 12. Cholpon Ata Region Hunting Scene (Alieva 2019, 214 Cat. Nr. 180)

<sup>91</sup> Çoruhlu 2002, 160; Roux 2011, 41; Çağdaş 2011, 66-67.

<sup>92</sup> Çoruhlu 2002, 161.

<sup>93</sup> Çoruhlu 2002, 163.

<sup>94</sup> Roux 2011, 42.



Fig. 13. Cholpon Ata Region Hunting Scene (Alieva 2019, 212 Cat. Nr. 177)

In this depiction, a small size hunter figure attacking a goat appears in front of a big wild goat drawing. In close inspection of the wild goat figure, it is observed that the goat anatomy was carved in detail. Animal figures were depicted in large sizes whereas the human figure was carved smaller than in fact.

### Ritual Stone

The petroglyph, numbered 179, is named “the ritual stone” by the people and is assumed to possess healing powers against sicknesses (Fig. 14). The stone is divided in half and people believe it works its healing powers when a person sits or lies in between the two halves.



Fig. 14. Ritual Stone (Alieva 2019, 213 Cat. Nr. 179)

The ritual stone displays the sun, mountains and wild goat depictions. It is estimated that the sun and mountain depictions belong to recent history. The wild goat figure is voluminous with a bulky body and legs in vertical position, a tail straightening upwards, round-headed and with an inward curved horn.

### Conclusion

The Issyk Lake region has retained its sanctity despite the fact that its importance has waned from antiquity until today. Accompanying the changes in political borders within the course of history, migrations, the lives of Turkic communities, the Silk Road and trade impacted the region’s culture. The region, which has been commonly visited by neighbouring communities, regained its significance as Kyrgyzstan’s tourism potential, ecosystem and unique natural life started to be newly emphasised. In 2001, UNESCO granted protection to the world’s second highest elevation lake, the Issyk Lake, for its biosphere reserves.

Research and analyses suggest that petroglyph making continued intensively from the Iron Age to the Middle ages but declined afterwards. Nonetheless, classifying petroglyphs and ordering them chronologically within the development of history is a daunting task, given that some of the depictions, iconographic features and techniques have remained unchanged over long periods of time<sup>95</sup>.

<sup>95</sup> Kutlu 2020, 527.

Inquiring into Cholpon-Ata petroglyphs one discovers that they were held to be a medium of expression and were transformed into symbols in time (Fig. 15). Altogether, mythological animals such as deer and wild goat still exist in these lands. It is established that deer, bull and camel, frequently appearing in depictions, have been perpetuated in Turkic traditions, faith and culture and became embedded. The petroglyphs initially emerged independent of a specific style and assumed the artistic expression of Turkic Equestrian Steppe Culture and eventually became transformed into an art conveying the beliefs, emotions, socio-economic structures and enthusiasm of the Turkic communities living on the move. The similarities of the Cholpon-Ata petroglyphs with Tamgaly and Saimaluu-Tash allow us to predict that their dates of production were the same.

The primacy of documentation and presentation in the preservation of cultural heritage sites, together with the development of digital technologies, facilitates an interdisciplinary realm of study by conjoining programs and techniques employed in various disciplines. Despite being used in diverse research areas, Terrestrial Laser Scanning Technologies finds itself a wide scope of operation in the documentation of cultural heritage<sup>96</sup>. Instead of traditional methods of documentation used in the past the rapid developments in technology facilitates the use of new techniques, methods and technologies to measure, detect and document the findings. By the combined use of diverse

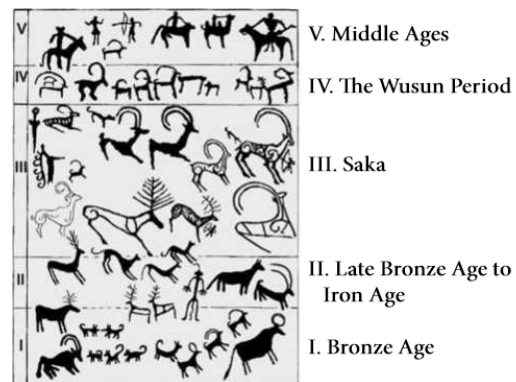


Fig. 15. Alieva 2019, 42

detection, scanning and recording devices (UAV, Laser Scanning, Lidar Scanning) more comprehensive and realistic modellings are prepared and these models are then converted into the desired program formats<sup>97</sup>.

Via the programs such as 3d Scanner, Metashape, Autocad and Photoshop it is possible to maintain very detailed documentation by way of data transfer to the quantitative settings. Photographs and coordinate data are analyzed by computer software Agisoft-Metashape (the software processing three dimensional spatial data of Photo-scan-Digital images) and transposed into a three dimensional DEM map with point cloud input to generate layout plans<sup>98</sup>. These new technologies enable not only two dimensional but also three dimensional documentation and therefore are utilized in various spheres<sup>99</sup>. These documents can be stored in digital archives forever and be reached by remote access from any location. Furthermore, these documents on the web sites designed to introduce and present this realm provide both the visitors and the researchers with information and documentation in several languages. Not only does this documentation offer information for detection or immediate detection for preservation purposes but they also deliver evaluations with respect to the post-restoration and conservation intervention decisions, effects of damage, predicted damage simulations for

<sup>96</sup> Lichti & Gordon, 2004, 1-16; Monna *et al.* 2009, 116-128; Çelik *et al.* 2020, 15-22; Domingo 2021, 6351-6357; Zainuddin *et al.* 2022, 537-542.

<sup>97</sup> Domingo *et al.* 2013, 1879-1889.

<sup>98</sup> www.agisoft.com; Horn *et al.* 2019, 1-10.

<sup>99</sup> Cassen *et al.* 2006, 187-193; Verhoeven 2017, 999-1033; Monna *et al.* 2018, 116-128; Horn *et al.* 2019, 1-10.

the near future and possible changes.

A holistic realist data system is embodied through the use of interdisciplinary techniques and methods in areas and topographies which are challenging to reach and hard to document, or in sites lacking a clearly defined architectural formation. Besides the two dimensional models, three dimensional models facilitate all architectural input pertaining to the construct, provide archiving and storing of these documents and protection of these documents by ensuring fast remote access, structural analyses and restoration practices which put theory into practice. Since the petroglyphs still remain in the open air under unfavorable conditions some depictions became eroded and illegible. RTI, a new documentation and analysis method also used in epigraphic research can also be successful in the documentation of petroglyphs<sup>100</sup>.

No.	GPS no.	Location on Map	Type of the Stone	Dimensions	Depiction	Color of the Stone	Condition of the Stone	Technique	Stone Direction	Direction of the Depiction	Note
1	17	ÇA-E15	Petroglyph	190x130x50	Wild Goat	Gray, brown	Repaired	Scraping	Southeast	Southeast	
2	18-19	ÇA-F15	Petroglyph	120x150x25	Wild Goat	Black, gray, brown, red	Repaired	Scraping	East	Northdoğu	
3	20	ÇA-F15	Petroglyph	130x80x83	Wild Goat	Black, brown	Crack, broken, lichen	Scraping	South	Southeast	
4	22	ÇA-F15	Petroglyph	250x180x150	Wild Goats	Black, gray, brown	Dissolving, broken, crack, color change, lichen	Scraping	West	North	
5	23	ÇA-F15	Petroglyph	100x90x45	Wild Goat	Gray, black, brown	Corrosion, lichen	Scraping	East	North	
6	24	ÇA-F15	Petroglyph	140x175x145	Wild Goats	Black, brown	Corrosion, lichen	Scraping	East	North	

Fig. 16. Inventory Study Catalog (Alieva 2019, 97-123)

These documents, which take on the task of laying the foundations for a protective plan, also promote designing sustainable protection projects. Efforts at the protection of the site can bear fruit only if these efforts are developed within the context of a site management design and program.

Digital photogrammetric documentation with DHA was used in the thesis research of this study to conduct contactless documentation. The current state of the petroglyphs, the exposure of their preservation status together with their locations, the materials and quality of the depictions were established. The petroglyphs were numbered, placed in the grid system on a map and their point locations were identified (Figs. 16-17). In addition, three dimensional documentation was performed for some examples and were subsequently archived.

242 petroglyphs were recorded, catalogued and digitally documented for the purposes of this study. During the digital documentation process monuments were photographed in their original settings initially and their GPS coordinates were drawn (Fig. 18). The exact location of each rock was entered on the map and their inventories were organized in the ArcGIS program. A barcode was defined to connect with digital data and it was accessible only by QR code reader application on mobile phones, which reads the barcode and allows Access to data<sup>101</sup> (Fig. 19). The web-page was enhanced with the addition of the data comprising inventory work.

During this study 242 petroglyphs were detected in the open air museum. The breakdown of the drawings is as follows: 212 wild goats, 6 deer, 6 hunting scenes, 2 camels, a dog, an ox, a human, 3 balbals, 9 undetailed drawings, 42 petroglyphs of which the drawings have been worn away.

<sup>100</sup> Díaz Guardamino & Wheatley 2013, 187-203; Akçay 2016, 1-16.

<sup>101</sup> Alieva 2019, 82.



No.	1	Description: Two successive mountain goats are depicted, their legs perpendicular to the body and the tail short. The horn on its head is curved from the outside inwards. The body part of the wild goat in the southeast is quite prominent.
GPS no.	17	
Location on Map	ÇA-E15	
Type of the Stone	Petroglyph	
Dimensions	190x130x50	
Depiction	Wild goat	
Color of the Stone	Gray, brown	
Condition of the Stone	Repaired.	
Technique	Scraping	
Stone Direction	Southeast	
Direction of the Depiction	Southeast	
		
No.	2	Description: In the depiction, one of the wild goats is in front of the other. The body of the wild goat in front is thick and long, its legs and tail are vertical, its horn part is thick and its two horns are curved from the outside inwards and it is lighter in color. The other one has a long body, straight legs, and two horns that are quite long and curved inward.
GPS no.	18-19	
Location on Map	ÇA-F15	
Type of the Stone	Petroglyph	
Dimensions	120x150x25	
Depiction	Wild goat	
Color of the Stone	Balck, gray, brown, red	
Condition of the Stone	Repaired. It is partially fixed with mortar.	
Technique	Scraping	
Stone Direction	Northeast	
Direction of the Depiction	Southeast	
		

Fig. 17. Inventory Study Catalog (Alieva 2019, 141-245)

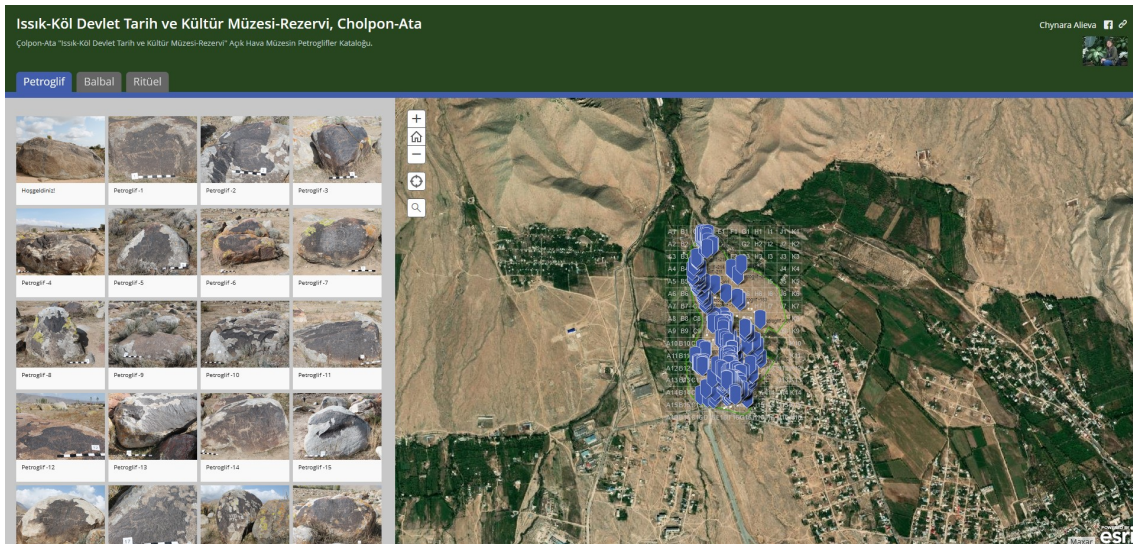
Fig. 19. Virtual Catalog Barcode, (Alieva 2019, 82; <https://www.arcg.is/18ayPG>)

Fig. 18. The Grid System and the Locations of Petroglyphs (Alieva 2019, 83)

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