MUDEUNGSAN
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GLOBAL GEOPARK
Mudeungsan UNESCO Global Geopark

Mudeungsan, a Mountain that embraces the history of Mother Nature
Rocks, a microcosm of the living Earth

Geosites in Mudeungsan UNESCO Global Geopark
Columnar Joints in the Mudeungsan area
Periglacial sites
Geology and Geomorphology sites
Paleontology site
Sedimentary sequence
Mixed Culture-geology sites

Historical Cultural Sites in Mudeungsan UNESCO Global Geopark

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UNESCO Global Geopark
UNESCO Global Geoparks are geological sites certified by UNESCO for their “special significance in scientific research, rarity, and aesthetical values. They also retain a potential with geological, ecological, archeological, historical, and cultural importance to promote regional prosperity through their preservation, education, and tour programs.”

Status (July. 2019)
The Mudeungsan area, known for picturesque sceneries and history of the Mother Nature’s long period of time, was certificated as a National Geopark in 2014 and UNESCO Global Geopark in April 2018. Loved by people around the world, the mountain continues adding a new page to its history.
The volcanic explosion of 87 million years ago during the late Cretaceous Period of the Mesozoic Era
History of the Earth carved in stones and earth by water, wind, and gravity

Mudeungsan Mountain that embraces the history of Mother Nature

In the late Cretaceous Period of the Mesozoic Era (87 million years ago), when a volcano of Mudeungsan Mountain was exploded, the extrusive volcanic ashes and pyroclastics were spread out by water, wind, and gravity. With time, the volcanic ashes were accumulated and hardened to create volcanic stones (tuff) that were cooled and contracted for repeated times to develop pentagonal or hexagonal columnar joints. Living things of the mountain had been fossilized with the process of sedimentation, and columnar joints created the beautiful and mysterious sceneries of Mudeungsan Mountain.
Dynamic energy flow that has continued for billions of years
Volcanic rocks of Mudeungsan Mountain created by the tectonic process and climate change

Rocks, a microcosm of the living Earth

Geologically, the southwestern part of the Korean peninsula that covers the Mudeungsan area is located in the southwest of Ogcheon Zone. Along a tectonic line called “Honam Shear Zone,” there had been intense volcanic activities in the Korean Peninsula from the early Cretaceous to the early Cenozoic. With a number of small sedimentary basins having been developed since the Mesozoic Era, the area has experienced traces and changes of the Earth for a long time such as climate and geological changes and rock formations. The rocks in Mudeungsan area have the Earth’s traces of 2 billion years ago. The mountain is covered with the Cretaceous sedimentary and igneous rocks, including Jangdong Formation, Mudeungsan tuff, Dogok rhyolite, micrographic granite, and dacite, which fall in a temporal range between the Precambrian (gneiss), the Paleozoic era (metasedimentary rock), and the Jurassic period (plutonic rock).
There are 20 Geosites in the Mudeungsan area, including columnar joints, geomorphological sites showing the Earth’s climate change for the past 100,000 years, dinosaur fossils and sedimentary layers, and a mixed culture-geology sites created by the spirit of land and human beings.
The columnar joints developed at Mudeungsan Mountain are geologic structures developed by contraction due to slow cooling dacitic tuff composed of volcanic ash expelled in the volcanic explosions during the late Cretaceous period of the Mesozoic era (approximately 85~87 million years ago). This columnar jointed Mudeungsan Tuff was exposed to the ground surface by weathering after a long time to consequently create the colonnades.

The Mudeungsan Tuff was formed by one or more than two eruptions, in which the columnar joints in Gyubong Colonnade are of world-class scale with the column width of up to 7m. The columnar joints in Mudeungsan Mountain are designated as Natural Monument No. 465.

Columnar joints in the Mudeungsan area

- Mudeungsan Summit Colonnade (3 Peaks)
- Seoseokdae Colonnade
- Ipseokdae Colonnade
- Gwangseokdae (Gyubong Colonnade)
- Sinseondae Colonnade

Columnar joints in the Mudeungsan area were formed in the late Cretaceous and show a wide range (over 3km² scale) on the mountain more than 750m above sea level, which is the only one in the world. They have a great value and academic significance in that they show the history as they were.
The volcanic rocks’ weathering and erosion, which leads to forming spectacular columnar joints

**Mudeungsan Summit Colonnade (3 Peaks)**

The summit area of the Mudeungsan Mountain comprises NE-SW ridge-forming three peaks including Cheonwangbong Peak, the highest (1,187m), and Jiwangbong, Inwangbong peaks. The spectacular rock cliffs in the summit area are ‘colonnades of columnar joints’ exposed as the columnar-jointed Mudeungsan Tuff weathered and eroded since its formation. The Mudeungsan Tuff is a volcanic rock formed by a magma extruded in the late Cretaceous age (87~85Ma) and a welded tuff made by welding of pyroclastic flow.

If you go up to Cheonwangbong, you can see not only Gwangju but also Damyang, Hwasun, Yeongam, Naju, Jeonbuk Province Sunchang, etc. On a clear day, you can also see Jirisan Mountain. It is said that on the top of the Jiwangbong peak, rests a Ttwimbawi (Rock) on which General Kim deok ryeong mastered his martial arts to courageously face the enemies during Imjin War (Japanese invasion of Korea in 1592). If you go up to Cheonwangbong, you can see not only Gwangju but also Damyang, Hwasun, Yeongam, Naju, Jeonbuk Province Sunchang, etc. On a clear day, you can also see Jirisan Mountain. It is said that on the top of the Jiwangbong peak, rests a Ttwimbawi (Rock) on which General Kim deok ryeong mastered his martial arts to courageously face the enemies during Imjin War (Japanese invasion of Korea in 1592).

* Welding: The process that combines hot ash particles into a dense rock

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**Seoseokdae Colonnade**

The Seoseokdae Colonnade (1,050m), located southwest of Cheonwangbong (1,187m), the highest peak of the Mudeungsan, belongs to the Natural Monument No. 465 along with Ipseokdae Colonnade (950m). It is the representative site in Mudeungsan comprising over 200 polygonal stone pillars that are lined up like folding screens. The columns of the colonnade are about 30m high in average and 1~2m wide in diameter. The rock that composes the Seoseokdae Colonnade is a volcanic rock named Mudeungsan Tuff, which was formed by welding of pyroclastic material in the late Cretaceous about 85 million years ago. During the slow cooling of the tuff, the volume was reduced by contraction, creating the vertically developed columnar joints due to the tensile force acting on it. In this place, as Mudeungsan Mountain has Gwangju, you can see the panoramic view of the city area and Wolchulsan Mountain in the distance. And the glare of Seoseokdae at sunset makes this spectacle.

Seoseokdae Colonnade provides a unique scenery, with the varying heights of the stone pillars seemingly soaring and singing to the skies, extending from the bottom part to the observatory to the top part. This geological feature has been formed on the slope of a land that was formed by repeated freezing and melting under periglacial climate.
The Ipseokdae Colonnade is located southwest of Mudeungsan Peak, about 950m above sea level. It belongs to the Natural Monument No. 465 along with Seoseokdae Colonnade (1,050m), which is 400m far to the north. The Colonnade comprises about 40 polygonal columns of 1 to 2m widths, lined with about 120meters east and west. The rock composition of the colonnade is a volcanic rock called Mudeungsan Tuff, which erupted about 85 million years ago. On the upper part of the colonnade, there is a unique shape of rock called Seungcheonam, which appears rising to the sky as the stone pillars are tilted sideways.

Gyubong Colonnade, situated 850m above sea level, is one of the three spectacular colonnades as with Seoseokdae and Ipseokdae in the Mudeungsan. It is designated as the Cultural Heritage Site No. 114, along with Jigong Talus Slope, located to the northwest. The colonnade is centered around the Gyubongam temple. Its height is about 30 ~ 40m, and its maximum diameter is about 7m, which makes this colonnade one of the largest column-holding colonnade in the world. The colonnade forming rock is composed of a volcanic rock called Mudeungsan Tuff.

**Ipseokdae Colonnade**

The Ipseokdae Colonnade is located southwest of Mudeungsan Peak, about 950m above sea level. It belongs to the Natural Monument No. 465 along with Seoseokdae Colonnade (1,050m), which is 400m far to the north. The colonnade comprises about 40 polygonal columns of 1 to 2m widths, lined with about 120meters east and west. The rock composition of the colonnade is a volcanic rock called Mudeungsan Tuff, which erupted about 85 million years ago. On the upper part of the colonnade, there is a unique shape of rock called Seungcheonam, which appears rising to the sky as the stone pillars are tilted sideways.

**Gwangseokdae (Gyubong Colonnade)**

Gyubong Colonnade, situated 850m above sea level, is one of the three spectacular colonnades as with Seoseokdae and Ipseokdae in the Mudeungsan. It is designated as the Cultural Heritage Site No. 114, along with Jigong Talus Slope, located to the northwest. The colonnade is centered around the Gyubongam temple. Its height is about 30 ~ 40m, and its maximum diameter is about 7m, which makes this colonnade one of the largest column-holding colonnade in the world. The colonnade forming rock is composed of a volcanic rock called Mudeungsan Tuff.

**The secret of the sizes of colonnades?**

The size of the colonnade depends on the cooling speed of the tuff. The slower it cools, the bigger it is, the faster the smaller it is. The cooling speed depends on the size of the tuff and altitude.

A. Jiwangbong / B. Enterance of the military camp / C. Helipad / D. Seoseokdae Colonnade / E. Ipseokdae Colonnade / F. Sinseondae Colonnade / G. Donghwasateo / H. Gwangseokdae(Gyubong Colonnade)

**The world’s largest colonnade, the miraculous Gwangseokdae Colonnade**

It is estimated that the large columnar joints in Gwangseokdae were formed by slowly cooling and forming tuff located at the base of the volcanic ash deposition layer, and then exposed to the surface through weathering.

The large-sized joint wall of Gwangseokdae Colonnade
Located on the southwest ridge of Buksan Mountain, which is 778 meters above sea level, Sinseondae is a stone colonnade consisting of pentagonal or hexagonal pillars with a height of about 6m. The Mudeungsan Tuff, the composing rock of the Sinseondae, erupted about 87~85 million years ago, which corresponds to the late Cretaceous period of the Mesozoic.

The Eoksaepyeongjeon, located in the vicinity of the Sinseondae, is a plateau consisting of two steep slopes and three gentle slopes. It is presumed that the gentle slope surface has undergone a flattening process due to freezing and thawing under periglacial climate in the past. The plateau is strewn with rock debris derived from the steep slope and is covered with vast areas of flame grass, creating a spectacular scene.

Periglacial sites
- Deoksan Talus Slope (Neodeol)
- Jigong Talus Slope (Neodeol)
- Wind Hole
- Jangbuljae Cryoplanation Surface
- Baekma (White Horse) Ridge

The history of topographic formation, “underneath the ground during the glacial epoch but now aboveground”

Under periglacial climate in the Mudeungsan Mountain area, which used to be located at the edges of glaciers, gentle slopes had been formed through the repeated freezing and melting of water. This led to the exposure of colonnades to the surface.
A pile of stones scattered from weathering of stone pillars

Deoksan Talus Slope (Neodeol)

Neodeol means a slope with a lot of stone, is also called Neodeolgeong (pure Korean). In Cretaceous (about 87 to 85 million years ago), Mudeungsan Colonnades was developed during the slow cooling process and contraction of tuff by a volcanic eruption. The colonnade was weathered and fell into the Neodeol now. Deoksan Neodeol is the largest talus slope in Mudeungsan with a length of 600m and a maximum width of 250m. Deoksan and Jigong Talus Slope as well are the representative talus slopes in Mudeungsan Mountain.

If you look closely into the colonnades, you will notice that they have thin lines. With the continuous weathering process, the cracks are split up to become talus slopes called “neodeol.”

Ongoing weathering process

Patterns drawn by Neodeol

During the freezing and melting of land, the cracked pieces of colonnades moved following the directions of valleys and other geographical features. This left huge patterns drawn by the rocks on the land.

Distribution diagram of rock blocks (Neodeol)

The Jigong Talus Slope (Neodeol) is located on a southern slope of the Mudeungsan Mountain about 1,000 to 1,100 meters above sea level, and is developed with a width of 150 meters, in a tongue-shaped form with the upper boundary downward. The average inclination of the talus slope is 20° to 35°, and the size of the rock that makes up the talus is up to 4-5m.

It is designated as the Cultural Heritage Site No. 114, along with Gyubong Colonnade, located to the southeast. It is said that a Buddhist monk, Raong, who learned Buddhism from a monk of India, Master Jigong, named Jigong Neodeol and built a stone chamber here and laid over a billion stones with his internal power obtained from meditation.

Jigong Talus Slope (Neodeol)

Tongue-shaped rocky (talus) slope on the southern slope below the peak
Topographic change of Jangbuljae Pass

Jangbuljae Cryoplanation Surface is an attraction point where one can see the top of such colonnades as Ipseokdae at a glance. What if it is 50,000–60,000 years ago? Then, we would not be able to enjoy the scenery. The flat slope, which was a result of the repeated freezing and melting of land, is nature’s gift to us.

Wind Hole

Wind hole refers to a fracture or hole in the rock where cool breezes come out in the summer, and warm winds come out in the winter. In the summer, when the air flowing into the talus slope area passes through the spaces in the underground, it meets warm air, and it is cooled rapidly by the thermal expansion, and cold blood is produced. In winter, the air that enters the underground space gets warmer and lighter, and when it comes out, it becomes warmer than its surrounding temperature. The inside and outside temperatures show a maximum difference of 27°C (average 20°C difference). More than 20 were found between Nuebong (peak) and Kkomakjae (hill), ranging from 900m to 1000m above sea level.

Jangbuljae Cryoplanation Surface

Jangbuljae is a place that goes through Mudeungsan Mountain where you can look at the colonnade of the summit at a glance. It is formed through a slope planarization process by freezing and thawing under the influence of the past glacier-climate. And, it is a geosite that tells how the area has changed in the past due to its connection with the Mudeungsan summit, especially Ipseokdae. The formation of Jangbuljae was dated at 50~60ka using 36Cl from the inside of quartz particles. Jangbuljae slopes are almost flat or gently angled. Solifluction took place in periglacial conditions to move soil and rock blocks downslope. And the flat and gentle slopes were formed as the irregular surfaces of the weathered products were filled.

Formation principle of a wind hole

Cold and warm wind formed from air passing between rocks, with 27 difference between inside and outside

Flat or gently angled slopes formed from downward movement of soil and rock blocks in periglacial time
The 2.5km-long, large ridge that runs from Jangbuljae Pass, through Naktabong Peak, to the top of Anyangsan Mountain

**Baekma (White Horse) Ridge**

The Baekma Ridge is a 2.5km-long, large ridge that runs from Jangbuljae, through Naktabong Peak, to the top of Anyangsan Mountain, and is located between 800 and 900 meters above sea level. The ridge was named Baekma, meaning a white horse, because the flame grasses over the ridge resemble the mane of a white horse. The satellite image shows that there are many large and small talus assemblies at an altitude of 500 to 900 meters on the southwestern slope of the Baekma ridgeline. On the other hand, there are few talus observed on the northeastern slope because physical weathering caused by the repeated freezing and melting of ice between cracks in rocks in winter is concentrating on the southwestern slope where the sun shines, creating the rock masses that make up the talus.
Saeinbong Peak

The Saeinbong Peak, a peak at an elevation of 488 meters above sea level and dome-shaped with a vertical cliff on its side, consists of a felsic volcanic rock called rhyolite. Saeinbong Peak has large-scale vertical joints and numerous horizontal cleavages developed along the lava flow structure. The cliff is thought to have been formed by continued rock collapse along the vertical joints. At the top, there is a panhole of 20cm in diameter and 10cm in depth, formed by repeated freezing and thawing. The name “Saeinbong” derives from the fact that the dome-shaped peak was called “Saeinbong” or “Ingwaebong” because it looked like a royal seal.

Paths of lava left on rocks

Sticky lava flows horizontally to make thin cracks on rocks and create cut slopes. They are seen as traces from which we can estimate that lava of cut slopes of the Dogok rhyolite had flown on the rocks.

What are panhole and tor?

Panhole: A shallow depression or basin eroded into flat or gently sloping cohesive rock, formed by physical, chemical weathering processes on the upper part of granitic rock.

Tor: A large, free-standing rock outcrop that rises abruptly from the surrounding smooth and gentle slopes of a rounded hill summit or ridge crest.

Uisangbong Peak

In a distant view from Wonhyosa Temple toward the summit of the Mudeungsan Mountain, there can be seen the Uisangbong Peak (550m) before the summit, with a rounded top and a cliff in the western side, which forms a wonderful view. This area is composed of the Late Cretaceous micrographic granite, which is well exposed in the upper part of the peak. Weathering topography such as panhole and tor are well known in this area, including the famous panholes of Bimajok and Byeoru stones.

According to legend, General Deok-ryung Kim, who was commanding the army raised in the cause of justice during the Choseon-Japan War (1592 ~ 1598), took a horse from the Jumping Stone of Jiwangbong Peak and jumped all the way to here creating the panhole of the Bimajok Stone as the horse’s footprint.
Inflow of granitic magma in the Mesozoic Era

Occurrence of denudation and erosion in the fault and fault lines

Outcrop formation of the current Gwangju granite

This is the outcrop exposed by granite that was formed by crystallization of magma underground in Jurassic for a long time eroded. It is composed of Jurassic granite, and Jurassic quartz diorite as well as Cretaceous quartz porphyry and micrographic granite. Jurassic granites include biotite granite and granodiorite. The two types are collectively called Gwangju Granite. This site has faults and slickensides demonstrating its geological history.

Mudeungsan Gwangju Granite

The Simujigi Waterfall is a natural waterfall 700 meters above sea level and located under the Gyuibongam Hermitage. It is especially large on heavy rainy days. The waterfall is named Simujigi (meaning three rainbows) as it has rainbows under sunshine after rain. The bedrock is Mudeungsan tuff. The Simujigi Waterfall is 72m long and divided into three sections of the upper part (35m), middle part (15m), and the lower part (32m). The upper parts are at a 45° angle; the lower part, about 7m, falls vertically, which is spectacular.

Simujigi Waterfall

Over time, water transforms hard and soft rocks into different shapes. This is the reason the scenery and the angles of the waterfall changes with time.

Waterfall moving backward

Gwangju, the land of granite

Most areas in Gwangju, including its city center, are covered with granite. Volcanic activities resulted in the rise of the Mudeungsan Mountain, creating a beautiful scenery.

Formation of Gwangju granite

Transmutation

Sedimentary rocks

Hard rocks

Granite

Inflow of granitic magma in the Mesozoic Era

Occurrence of denudation and erosion in the fault and fault lines

Outcrop formation of the current Gwangju granite
The igneous rocks in the Jeungsimsa Valley comprise andesitic tuff, andesite, and granite intruded them underground. White chalcedony or green epidote of varying sizes are seen within the oval-shaped amygdaloidal structure in the andesite. The history of the igneous rock formation in this area is interpreted as the micrographic granite intruded into a repeated alternation of the tuff, which were formed by deposition of pyroclastic detritus in volcanic explosions, and the andesite, which were formed from erupted liquid lava.

* Amygdaloid: Mineral-filled pores formed by gas bubble escape when lava solidifies
* Micrographic granite: A type of granite produced by cooling the felsic magma in the relatively shallow underground, characterized by cuneiform like graphic texture visible under microscope observation.

**Jeungsimsa Andesite**

The igneous rocks in the Jeungsimsa Valley comprise andesitic tuff, andesite, and granite intruded them underground. White chalcedony or green epidote of varying sizes are seen within the oval-shaped amygdaloidal structure in the andesite. The history of the igneous rock formation in this area is interpreted as the micrographic granite intruded into a repeated alternation of the tuff, which were formed by deposition of pyroclastic detritus in volcanic explosions, and the andesite, which were formed from erupted liquid lava.

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**Volcanic rock formation process**

1. **Andesitic lava eruption**
2. **Andesitic tuff caused by volcanic explosion**
3. **Pyroclastic detritus (tuff)**
4. **Rocks made with solidified volcanic ashes**
5. **Volcanic explosion**
6. **Micrographic granite inflow**

**Paleontology site**

- Seoyuri Dinosaur Fossil Site
Establishment of dinosaur speed acceleration theory based on dinosaur tracks

Seoyuri Dinosaur Fossil Site

Around 1,500 dinosaur footprints from the late Cretaceous and 73 tracks have been found on 6 sedimentary layers at Seoyuri Dinosaur Fossil Site. Thanks to the extended walking tracks of carnivorous dinosaurs (max 54m), experts were able to publish papers for the first time on the acceleration of dinosaurs when they run. It is also significant that the site has many footsteps of carnivorous dinosaurs rather than herbivorous dinosaurs as it proves various carnivorous dinosaurs lived on the Korean peninsula.
The Jeokbyeok Red Cliffs was named after the landscape resembles the Red Wall in the upper reaches of Yangtze River in China, in that the water facing rock cliff with its horizontally developed stratification is in harmony with the surrounding vegetation. On its cliff face, thin-bedded sedimentary rocks, such as sandstone, mudstone, and tuff, repeatedly alternate to show well-developed stripes (bedding planes). This area was part of the Neungju Basin that formed during the Late Cretaceous of Mesozoic, and there was a lake developed throughout the present Gwangju, Naju, Damyang and Hwasun areas. Various sedimentary structures are observed in the sedimentary rocks, such as cross bedding, ripple marks, mudcracks, and evaporative mineral molds, which suggests that this area was the periphery of a lake under an arid climate.

**Jeokbyeok Red Cliffs**

Marvelous and various sedimentary beds, a part of the Neungju Basin formed during the late Cretaceous Period,

Red cliffs and nature 90 million years ago

At the time when red cliff sedimentary rocks were formed, there were a large lake and mountains with volcanic eruptions in the Neungju Basin area, where red cliffs can be found. Dinosaurs and other living organisms were living in nature during the Cretaceous Period of the Mesozoic Era.

**Mixed culture-geology sites**

- Hwasun Dolmen Welded Tuff
- Unjusa Stratified Tuff
- Chunghyodong Clay Mineral Site

Reconstruction of Neungju Basin
Hwasun Dolmen Welded Tuff

The Hwasun Dolmen Site is the area where numerous southern style dolmens have been found with many ancient relics, which is a typical tomb style of the Bronze Age. Being world-famous for dolmen size and occurrence density, this site is designated as Historic Site No. 410, and is listed as a UNESCO World Heritage Site. The building stones of 600 dolmens are from the Cretaceous welded tuff strata cropping out in this area over 4km. The use of the tuff for the covering stones of the dolmens is based on weathering characteristics of the tuff rock splitting into plates. In this way, the geological significance and the history and culture have been combined and designated this place as a geosite of Mudeungsan UNESCO Global Geopark.

Unjusa Stratified Tuff

The rocks around the Unjusa Temple are all made of the well-stratified Cretaceous tuff which formed by deposition of pyroclastic materials (e.g., volcanic ash, lapilli, volcanic rock mass). The statues of the Buddhas and stone pagodas in Unjusa Temple, unlike others made of granite generally, have a relatively flat form and blurred face. This is because the statues and pagodas were made of the well-stratified tuff layer which can easily be taken around the Unjusa Temple. Ancestors who made the statues and pagodas understood the characteristics of the tuff which could easily split along the layer and be weathered. And they used these properties to make stone Buddhas and stone pagodas. Thus, the geological characteristics of the surrounding rocks are reflected in Unjusa’s stone Buddhas and stone pagodas, which is designated as a geosite of Mudeungsan UNESCO Global Geopark.
The Mudeungsan area was formed by Mesozoic igneous activity, and the vicinity of Chunghyodong kiln site is composed of the weathered soil made of crystallized magma. This kiln site was the place where potteries were produced from the end of the Goryeo Dynasty to the beginning of the Joseon Dynasty. The 3m thickness pottery sediments found together in this area show 6 stage of changes from Buncheongsagi to White porcelain in the potteries by period. The geological analysis results of excavated ceramic materials have found that the weathered soil of granite has been used for making them. Particularly, the source of kaolin which is the main material on the surface of the Buncheongsagi was found nearby. Thus, we know that the geological characteristics of the Mudeungsan Mountain were reflected in the process of making and developing the Mudeungsan Buncheongsagi so this site is designated as a geosite of Mudeungsan UNESCO Global Geopark.
The Chuwolsan mountain is 731m above sea level and has strange rock formations and cliffs with trees that make up magnificent views. It is also known as the Chosen-Japan War (1592~1598) battlefield and a place of protest by Donghak Peasants’ Army. The comprising rocks are ‘Naejangsa Volcanics’ formed by volcanic activity during the Cretaceous period of the Mesozoic Era. It consists of various types of volcanic rocks, such as rhyolite, rhyolitic porphyry, rhyolitic breccia, and welded tuff. In particular, the volcanic rock in the middle of the mountain is welded tuff showing orbicular structure, and is characterized by its pillow lava-like appearance.

Gamagol is located along the valley near Chijaesan and Yongchusan mountains, and the Gamagol Ecological Park is being built here. In addition to Yongsu Pool, where the Yeongsangang River originated, there are beautiful valleys, waterfalls, and oddly formed rocks and strangely shaped stones, and many kiln sites where dishes and roofing tiles were baked during the Joseon Dynasty, which are called Gamagol. In the Gamagol region, Naejangsa Volcanics composed of volcaniclastic rocks of dacitic to rhyolitic tuff are distributed together with joints, faults, and talus slopes.

The Damyang Wetland is a river wetland formed upstream in the mainstream of the Yeongsangang River, and has maintained its natural river shape and was designated as the wetland conservation area by the Ramsar Convention. The area forms a collective habitat for many birds and preserves excellent ecological environments in which various animals, including endangered species such as otters and leopard cat, inhabit the vegetation including large-scale bamboo colonies.

Geumseongsanseong is a fortress that was built of stones along the ridges. It is known that the first constructions was during the Three Kingdom Period. The surrounding area of the fortress is designated as a forested wetland for the conservation of forest genetic resources. Geologically, this zone, located at the southernmost part of the Jinan Basin, contains volcanic rocks including tuffs of various compositions related to the development of the basin, and sedimentary rocks such as conglomerate, breccia, sandstone, and mudstone deposited during the formation of the basin.
Mudeungsan Mountain, which is located at the city center, is a significant spiritual matrix of faith and the arts of the Gwangju and Jeollanam-do areas, where history and culture was born and spread. The Mudeungsan Global Geopark has several attractions loved by the world for their cultural, artistic, historical, and ecological values.
In Gwangju, a hub city of Asian culture, there are a number of cultural attractions such as Asia Culture Center (ACC); Gwangju Biennale Exhibition Hall where international contemporary arts are exhibited.

The Mudeungsan area is the birthplace of the village of culture and arts and home to the cultural city, Gwangju.

- Asia Culture Center, Gwangju Biennale, Gwangju Folk Museum, Uijae Museum and Chunseolheon, Yangrimdong Historical and Cultural Village

Some sites show the living history of the people who preserved righteous spirit: May 18th National Cemetery, symbols of the South Korean democracy movement, and Cheonjedan Altar where ancestors performed celestial god worship rituals for the peace of the country.

- May 18th National Cemetery, 5·18 Archives, Cheonjedan Altar, Jecheol Historic Site (iron making)

Hub city of Asian culture and the village of culture and arts

Culture and Arts

In Gwangju, a hub city of Asian culture, there are a number of cultural attractions such as Asia Culture Center (ACC); Gwangju Biennale Exhibition Hall where international contemporary arts are exhibited. The Mudeungsan area is the birthplace of the village of culture and arts and home to the cultural city, Gwangju.

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Spiritual Culture

The people who preserved the spirit of justice
The Mudeungsan area is home to the Buddhist attractions such as the millennium-old temples like Jeungsimsa and Wonhyosa temples as well as Yaksaam and Gyubongam hermitages. In particular, Unjusa Temple located at the Hwasun area is famous for Maitreya faith and the legend of thousand Buddha stone statues and thousand stone pagodas.

Roots of arts and intangible cultural heritages
Traditional Culture

Gwangju Traditional Culture Center often holds various events for tourists to learn and enjoy the southern provinces’ traditions and culture. The Mudeungsan Buncheong Exhibition Center in Chunghyo-donga used to be a place where potters in the 15th and 18th century made unique Buncheong celadons with a rough surface texture using soils of the mountain such as granitic soils.

At the foot of Mudeungsan Mountain, there are pavilions and gardens where writers of Korea’s traditional poetics called “Gasa” were inspired. The Gasa literature was flourished with active creation and interchange in the 16th century, starting from the pavilions and gardens.

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Nature in communion with citizens
Eco-culture

In Chunghyo-dong, a village located at the foot of the mountain, there are historic trees that have been together with the villagers: red leaf willow tree which is a living witness of the village’s history, a population of Hinoki cypress known as a healing forest, and a 500-year old Mudeungsan guardian tree.

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Pavilions and gardens with classical scholars’ spirit
Gasa(poetry) Literature

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Online
Website  http://geopark.gwangju.go.kr
Instagram  @geopark_mudeung_korea

Visitor Center
Mudeungsan UNESCO Global Geopark Center
71, Jeungsimsa-gil, Dong-gu, Gwangju
Mudeungsan UNESCO Global Eco Center
7, Choonghyosaem-gil, Buk-gu, Gwangju
Mudeungsan UNESCO Global Geopark Center in Wonhyo District
1550, Mudeung-ro, Buk-gu, Gwangju

Phone inquiry
Gwangju (Geopark Team)  +82-62-613-7852
Damyang (Division of Green Environment)  +82-61-380-2951
Hwasun (Division of Forest Income)  +82-61-379-3661