Distribution and Characteristics of World Geoparks in South Korea

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Abstract This paper examines World Geopark in South Korea as a case study. It begins by outlining the geological and tectonic background of the Korean Peninsula, whose basement consists of Archean to Paleoproterozoic rocks. These rocks form three continental blocks and constitute a rich geological foundation shaped by multi-stage evolution. The distribution and characteristics of global geoparks are then analyzed. As of 2025, South Korea is home to seven UNESCO Global Geoparks (designated between 2010 and 2025), which feature diverse landforms such as volcanic, sedimentary, and structural formations, with some sites also encompassing cultural relics. Finally, the study highlights that 25 of South Korea's national parks have not yet applied for geopark status and thus hold significant potential. Due to differing evaluation criteria between UNESCO Global Geoparks and South Korea's national parks, future applications involving multiple parks could expand the scale of geoparks, providing valuable insights for geoscience research and park development across East Asia.

Key words South Korea, Geological heritage, Asian geological network, Global geoparks, National park

0 Introduction

As key sites for preserving the history of Earth's evolution and protecting geological heritage, geoparks have gradually become a major focus in global resource conservation and sustainable development since the late 20th century. In the mid-1990s, Europe took the lead in proposing the need to protect geologically significant areas and enhance their scientific and social value. In 2000, the European Geoparks Network was formally established, providing a collaborative framework for the conservation of regional geological heritage. In 2004, the UNESCO-led Global Geoparks Network (GGN) was officially launched, marking the globalization and standardization of geopark development.

South Korea is situated within the East Asian tectonically active belt. The unique geological evolution of the Korean Peninsula—from the formation of the Archean basement to Cenozoic volcanic activity—has given rise to a wide variety of geological heritage. Since Jeju Island was designated as a Global Geopark in 2010, South Korea has progressively established a coordinated development framework linking national and global geoparks, through policy refinement, regulatory improvements, and increased investment in scientific research. This approach offers valuable insights for geological conservation, park planning, and the utilization of geoheritage. Focusing on South Korea's seven UNESCO Global Geoparks, this paper begins by outlining the tectonic background of the Korean Peninsula, then systematically analyzes the spatial distribution, key geoheritage characteristics, and tectonic affiliations of these geoparks. The study aims to provide a reference for geopark research and development across East Asia.

1 Geological structure of the Korean Peninsula

1.1 Formation of basement rocks and division of continental blocks

The oldest rocks in the Korean Peninsula are Archean metamorphic rocks formed about 2.5 billion years ago (Ga). These ancient rocks, along with Paleoproterozoic metamorphic and igneous rocks formed between 1.9 and 1.8 Ga through endogenic processes, constitute the basement complex of the peninsula. From north to south, this basement is divided into three major blocks: the Nangrim Block, the Gyeonggi Block, and the Yeongnam Block, which are separated by regional tectonic belts. The Nangrim Block, composed of Paleoproterozoic rocks, is located in the areas of Hamgyong, Pyongan, northern Gangwon, and Hwanghae Provinces. It is distinctly separated from the Gyeonggi Block, composed of Paleoproterozoic rocks in Gyeonggi, southern Gangwon, and Chungcheong Provinces, by the east-striking Imjin River Belt, which extends from the Imjin River to the Sariwon area. The Gyeonggi Block is bounded from the Yeongnam Block to the south by the Okcheon Belt. The Yeongnam Block consists of Paleoproterozoic to Mesoproterozoic rocks in the Jeolla - Gyeongsang Provinces area. The Okcheon Belt extends northeast from the Jeungnam area (including Honam) to the Taebaek and other Gangwon regions. It is primarily composed of the Taebaeksan Basin in the northwest and the Okcheon Metamorphic Belt in the southwest, the latter being largely situated in Gangwon Province. Most of these Archean to Paleoproterozoic metamorphic and igneous rocks were formed at depths of about 35 km and were subsequently exhumed to the surface through prolonged weathering, erosion, and tectonic uplift.

1.2 Distribution and characteristics of Neoproterozoic - Paleozoic rocks

1.2.1 Neoproterozoic rocks. Neoproterozoic rocks are primarily exposed in the extensive area from Haeju to Wonsan in the southern part of the Nangrim Massif, and are predominantly composed of sedimentary rocks. In recent years, discoveries of Neoproterozoic rocks have also been documented in the vicinity of the Imjin River Belt, the Hongseong area of South Chungcheong Province, and the northeastern section of the Okcheon Metamorphic Belt.

1.2.2 Paleozoic rocks. Paleozoic rocks can be divided into two major categories: sedimentary and igneous, which exhibit signifi-

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cant differences in spatial distribution and lithological characteristics. Paleozoic sedimentary rocks are primarily concentrated in the Pyeongnam Basin of Pyeongan Province, the Taebaeksan Basin of Gangwon Province, and the Okcheon Metamorphic Belt, with minor exposures also found in the Imjin River Belt and the northeastern part of Hamgyong Province.

Among these, the Paleozoic sedimentary rocks in the Pyeongnam and Taebaeksan Basins are divided into two sequences: the Joseon Supergroup, deposited in a marine environment during the early Paleozoic (Cambrian – Silurian) and dominated by limestone; and the Pyeongan Supergroup, formed in the late Paleozoic (Carboniferous – Permian) and characterized by coal-bearing strata, which lies unconformably over the Joseon Supergroup. In addition, Devonian sedimentary rocks are developed within the Imjin River Belt, while the precise depositional age of Paleozoic sedimentary rocks in the Okcheon Metamorphic Belt remains unclear. In northeastern Hamgyong Province, the Tumen Supergroup, composed of Carboniferous – Permian sedimentary rocks, is exposed. Paleozoic igneous rocks are mainly distributed in northeastern Hamgyong Province, where the Tumen Supergroup is exposed, with minor occurrences also identified in the Hongseong and Mungyeong regions.

1.3 Mesozoic geological evolution and rock characteristics

The geological evolution of the Korean Peninsula in the Mesozoic era is characterized by the limited distribution of sedimentary rocks and the extensive intrusion of igneous rocks.

1.3.1 Sedimentary rocks. Sedimentary rocks from the Triassic and Jurassic periods are restricted to a few localized areas, whereas Cretaceous sedimentary rocks are widely distributed throughout the Gyeongsang and Jeolla provinces. These Cretaceous deposits are collectively referred to as the Gyeongsang Nonmarine Supergroup. This supergroup consists of lacustrine sediments, and since the lake environments provided suitable habitats for dinosaurs, the Cretaceous layers preserve abundant fossils such as dinosaur footprints, eggs, and bones.

1.3.2 Igneous rocks. Igneous rocks from the Late Permian to the Cretaceous, a subduction zone formed around the Korean Peninsula, and associated igneous rocks extensively intruded into the basement rocks. Among these, Jurassic granites intruded on a massive scale into the Korean Peninsula and, together with Archean and Proterozoic rocks, form the tectonic foundation of the peninsula. The granites intruded during this period are referred to as the Daebo Granite. Recent studies indicate that some of the Jurassic granites exposed in the northern part of the Gyeonggi Massif were formed during the Triassic continental collision event of the Korean Peninsula. Meanwhile, the high-pressure granulites discovered in the Hongseong area of South Chungcheong Province provide direct evidence for this Triassic continental collision process.

It should be noted that while Triassic and Jurassic sedimentary rocks in the Korean Peninsula are limited in both distribution and scale, the Jurassic granites formed at depths of approximately 15 km constitute the basement of the Cretaceous sedimentary rocks. This indicates that the entire Korean Peninsula had already undergone regional uplift prior to the Cretaceous period.

1.4 Cenozoic geological evolution and landform formation

During the Cenozoic era, the expansion of the East Sea led to the separation of the Japanese Islands from the Korean Peninsula. This process resulted in the uplift of the eastern region of the Korean Peninsula, forming a rigid block terrain. Subsequently, volcanic structures such as Baekdusan Mountain, Ulleungdo, Dokdo, and Jeju Island were developed, along with the Ogeeumling Tectonic Belt. Meanwhile, Cenozoic sedimentary rocks formed in the Hamgyong Province and Pohang areas. These developments ultimately established the fundamental framework of the modern geological and geomorphological structure of the Korean Peninsula (Fig. 1).

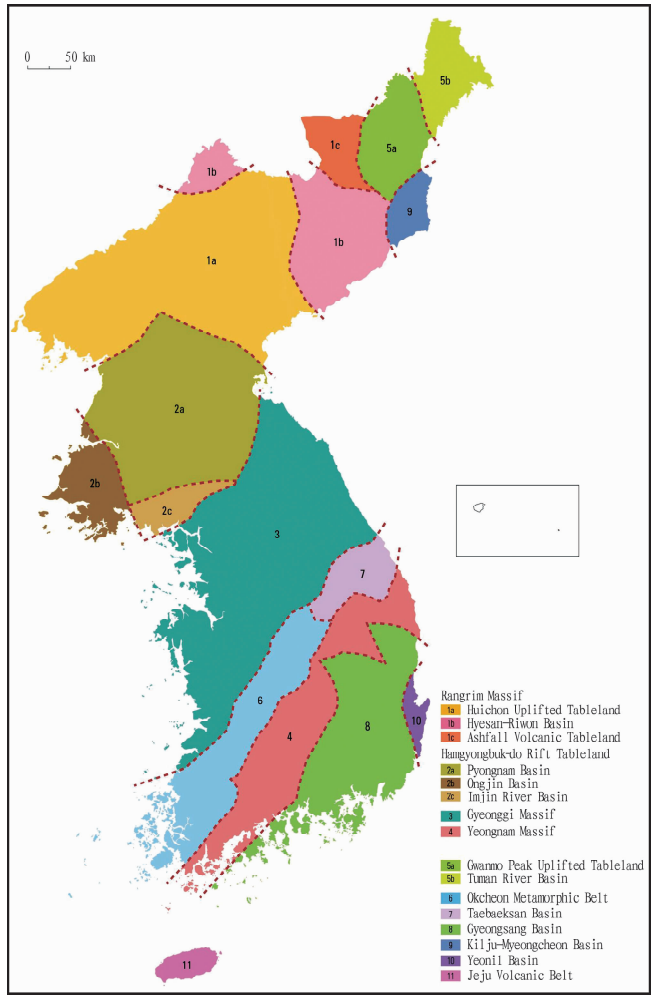

Fig. 1 Geological structure map of the Korean Peninsula

2 Distribution and core characteristics of world geoparks in Korea

2.1 General situation of distribution By April 2025, South Korea has a total of seven members in the UNESCO Global Geoparks network. The inclusion of these sites, spanning from 2010 to 2025, demonstrates a progressively expanding spatial distribution

characteristic that covers the entire country. The Jeju Island UNESCO Global Geopark (2010) was the first of its kind in South Korea. It was subsequently joined by Cheongsong (2017), Mudeungsan (2018), Hantangang (2020), and the Jeonbuk West Coast (2023). Recently, the Danyang UNESCO Global Geopark and the Gyeongbuk East Coast UNESCO Global Geopark were officially approved during the 221st session of the UNESCO Executive Board Meeting held in Paris, France, in April 2025. This latest addition further completes the layout of South Korea's UNESCO Global Geoparks (Fig. 2).

Fig. 2 Distribution of world Geoparks in South Korea

2.2 Core characteristics of representative world Geoparks

2.2.1 Jeju Island UNESCO Global Geopark (2010). As the largest island in South Korea, Jeju Island is a complete volcanic entity in itself, renowned as a "museum of volcanic landforms" and designated as the country's first Global Geopark. Its core geological heritage showcases a complete sequence of volcanic activity, including Suwolbong Peak, a representative hydrovolcanic edifice; Sanbangsan Mountain, a classic example of a lava dome; Yongduam (Dragon Head Rock) and the Jungmun Daepo Coast columnar joints formed by volcanic eruptions; and the Geomunoreum lava tube system created over tens of thousands of years. The geopark also encompasses significant sites beyond volcanism, such as the Seogwipo Fossil Shell Beds, which preserve records of marine environments from one million years ago; Cheonjiyeon Waterfall, shaped by karst processes; and Seongsan Ilchulbong (Sunrise Peak), a quintessential tuff cone and parasitic volcano.

2.2.2 Cheongsong UNESCO Global Geopark (2017). Located in the mountainous region of central-eastern South Korea, this geopark lies within the country's largest sedimentary basin, the Gyeongsang Basin. Its name derives from "green treasure" and the "ecology of pine trees." The park features a complete and continuous geological sequence, recording multi-period geological evolution from a foundation of Precambrian metamorphic rocks (over 500 million years old). This is successively overlain by Triassic plutonic rocks (200 – 250 million years), Cretaceous sedimentary and volcanic rocks (60 – 150 million years), Tertiary intrusive and plutonic rocks (60 million to 2 million years), and finally Quaternary alluvial deposits (less than 2 million years). The interaction between rhyolitic volcanic activity and water has formed the geopark's iconic features, notably the Cheongsong spherulitic rhyolite and the Dalgi Mineral Spring site.

2.2.3 Mudeungsan UNESCO Global Geopark (2018). Centered around Mudeungsan Mountain in Gwangju, this geopark holds a significant place in the local community's spiritual and cultural life. Its geological heritage is defined by the imprint of Cretaceous volcanic activity, notably featuring large, interconnected polygonal tuff columns that record at least three distinct phases of volcanism. Additionally, the park boasts a diverse range of geo-morphological features, including extensive glacial landforms, a unique microclimate environment, and well-preserved dinosaur footprints.

2.2.4 Hantangang UNESCO Global Geopark (2020). This geopark boasts an exceptionally rich geological composition, encompassing diverse lithologies from the Precambrian to the Quaternary periods, including Precambrian and Paleozoic metamorphic rocks, Jurassic and Cretaceous granites, Cretaceous volcanic rocks, Quaternary basalts, and glacial-era soils. Its primary academic significance lies in the "Imjingang Belt," formed by the collision of the Paleozoic Sino – Korean and Yangtze Cratons, which is considered a lateral extension of China's Qinling – Dabie – Sulu Orogenic Belt and represents a key tectonic feature in East Asia. Geomorphologically, the area features typical V-shaped valleys developed in granite and metamorphic rock terrains, columnar jointed cliffs formed by basalt, and prominent fluvial erosion differentiation phenomena resulting from lithological contrasts. Its "fluvial-style volcanic landforms" are considered rare among global volcanic geoparks.

2.2.5 Jeonbuk West Coast UNESCO Global Geopark (2023). This geopark serves as a natural cross-section showcasing 2.5 billion years of geological history in western South Korea, with tidal sedimentary landforms as its core feature. The Gochang Tidal Flat, one of only 19 coastal wetlands globally with a tidal range exceeding 5 m, contains a 40-m thick muddy sedimentary layer accumulated over 8 500 years, ranking among the world's thickest tidal deposits and rich in Holocene sediments. The area also holds multiple international designations, being recognized as a UNESCO World Natural and Cultural Heritage site, a Biosphere Reserve, and a Wetland of International Importance.

2.2.6 Danyang UNESCO Global Geopark (2025). This geopark is distinguished by its stratigraphic structure and tectonic relics spanning 1.3 billion years, encompassing folds and thrust fault zones within granite-gneiss, as well as diverse stratigraphic sequences of limestone, quartzite, and sandstone, making it an ideal area for studying the tectonic evolution of the Korean Peninsula. A defining characteristic of the park is the profound integration of geology and human culture: over 200 limestone caves contain traces of human habitation dating back to the Stone Age, with abundant archaeological findings providing key evidence for research into early human history in East Asia. Additionally, the ancient Buddhist manuscripts housed in the Guyensa Temple Mu-

seum attest to the region's long-standing religious heritage and its deep connection with Korean ethnic culture.

2.2.7 Gyeongbuk East Coast UNESCO Global Geopark (2025). Encompassing areas such as Pohang, Gyeongju, Yeongdeok, and Uljin, this geopark represents the largest Cenozoic fossil distribution area on the Korean Peninsula, documenting traces of tectonic evolution and volcanic activity in East Asia. Its core geological heritage includes the Seongryu Cave, an 870 m long limestone cave adorned with stalactites, which provides crucial evidence for studies of ancient sea levels and marine ecosystems; and the Yangnam Columnar Jointing cluster, formed by the cooling and contraction of volcanic magma, which displays a distinctive fan-shaped or radial pattern lying flat along the ground. A highlight of the park is its emphasis on connecting geology with daily life and culture: the local "Yangnam Columnar Jointing Bread" exemplifies how geological features inspire contemporary cultural expressions, while the Gyeongju Historic Areas—the capital site of the Silla Kingdom—and the nearby UNESCO World Heritage Site "Seokguram Grotto and Bulguksa Temple," renowned for its white granite statue of Buddha, illustrate the profound synergy between geological resources and historical cultural development.

3 Geological overview of world geoparks in South Korea

Table 1 presents the basic information of the world geoparks in South Korea, and Table 2 lists the main types of geological relics in the world geoparks.

Table 1 Basic information of the world geoparks in South Korea

Park name	Major geological relics	Application time	Approval time	Distribution area	Tectonic area
Jeju Island Global Geopark	Volcano-tectonic landforms are predominant, including volcanic islands, columnar joints, marine-eroded igneous rocks, water-eroded igneous rocks, and marine fossils.	2009	2010	Jeju teukbyeol jachido, Jeju-si and Seogwipo-si	Jeju Volcanic Belt
Cheongsong Global Geopark	Igneous, metamorphic, and sedimentary rock landforms, Ball Rhyolite	2015	2017	Gyeongsangbuk-do, Cheongsong-gun	Gyeongsang Basin
Mudeungsan Global Geopark	Volcanic metamorphic landforms, glacial landforms, dinosaur fossils.	2016	2018	Gwangju Gwangyeoksi, Jeollanam-do, Damyang-gun and Hwasun-gun	Okcheon Metamorphic Belt and Yeongnam Massif
Hantangang Global Geopark	Fluvial volcanic igneous rock landform and valley granite landform.	2018	2020	Gyeonggi-do, Pocheon-si and Yeoncheon-gun, and Gangwon teukbyeol jachido, Cheorwon-gun	Gyeonggi Massif
Jeonbuk West Coast Global Geopark	Volcanic islands, volcanic landforms, Cenozoic sedimentary rock landforms.	2021	2023	Jeonbuk Teukbyeol jachido, Buan-gun and Gochang-gun	Okcheon Metamorphic Belt and Gyeonggi Massif
Danyang Global Geopark	Karst landforms and coral fossils.	2023	2025	Chungcheongbuk-do, Danyang-gun	Okcheon Metamorphic Belt, Gyeonggi Massif, and Taebaeksan Basin
Gyeongbuk East Coast Global Geopark	Volcanic landform, karst landform, Silla cultural heritage.	2023	2025	Gyeongsangbuk-do, Pohang-si, Gyeongju-si, Yeongdeok-gun, and Uljin-gun	Gyeongsang Basin and Yeonil Basin

Table 2 Main types of geological relics in world geoparks of South Korea

Type of geological relic			Name of geological relic	Name of geopark	Location
Geological (body/stratigraphic) section category	Stratigraphic section	National standard Section	Maepo Reverse Fault, Hyangsan-ri, Gilcheon Jungsang Fault, Nodong Reverse Fault, Jungnyeong Fault, Gilchon-ri Seoin Mountain Thrust Fault, Osari Detrital Zircon, Gidong-ri Chungsan Fault, Gonan-gur Layer, Nodong-se Fold, Nodong-ri Fold	Danyang Global Geopark	Danyang-gun
			Yeongdeok Unconformity	Gyeongbuk East Coast Global Geopark	Yeongdeok-gun
Paleontological category	Ancient humans		Hwasun Dolmen Site	Mudeungsan Global Geopark	Hwasun-gun
			Jeongokri	Hantangang Global Geopark	Yeoncheon-gun
			Gosu Cave, Yeocheon-ri Terraced Fields, Suyangye Site, Rodong Cave	Danyang Global Geopark	Danyang-gun
	Ancient animals	Ancient invertebrates	Goheungensis Coral Fossil, Daejeon-ri Fossil, Paralejurus Trilobite Fossil	Danyang Global Geopark	Danyang-gun
			Gwisang-ryu Fossil	Cheongsong Global Geopark	Cheongsong-gun

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Type of geological relic			Name of geological relic	Name of geopark	Location
			Cheolamsan fossil site	Gyeongbuk East Coast Global Geopark	Yeongdeok-gun
		Vertebrate paleontology	Seoyuri Dinosaur Fossil Site	Mudeungsan Global Geopark	Hwasun-gun
			Jinri Dinosaur egg	Jeonbuk West Coast Global Geopark	Buan-gun
			Hari Mass Extinction	Danyang Global Geopark	Danyang-gun
			Sinseong-ri Dinosaur Fossils	Cheongsong Global Geopark	Cheongsong-gun
			Yeonamdong fossil site	Gyeongbuk East Coast Global Geopark	Pohang-si
Category of minerals and mineral deposits	Typical mineral origin	Typical mineral origin	Dogyeri Adakite	Gyeongbuk East Coast Global Geopark	Yeongdeok-gun
Major categories of geomorphological landscape	Rock landform landscape	Granite landform landscape	Mudeungsan Summit Colonnade , Seoseokdae Colonnad, Ipseokdae Colonnade, Gwangseokdae, Sinseondae Colonnade	Mudeungsan Global Geopark	Gwangju Gwangyeoksi
			Mudeungsan Summit Colonnade	Mudeungsan Global Geopark	Hwasun-gun
			Soyosan Rhyolitic Dome, Jingeunggul Cave, Cheonmabong Peak	Jeonbuk West Coast Global Geopark	Gochang-gun
			Jeokbyeokgang, Mohang Peperite, Gulbawi Cave, Jasper, Gyewhado Conglomerate, Rheomorphic Tuff	Jeonbuk West Coast Global Geopark	Buan-gun
			Goseokjeong	Hantangang Global Geopark	Cheorwon-gun
			Hwajeokyeon, Bidulginang Falls, Art Valley and Pocheon Stone	Hantangang Global Geopark	Pocheon-si
			Daerian Valley, Gocheondan Peak, Inhul Shore, Jungseon Rock, Haseon Rock	Danyang Global Geopark	Danyang-gun
			Gian Cliff, Byeongdandaegi Tableland, Pajeon-ri Granite, Songgang-ri	Cheongsong Global Geopark	Cheongsong-gun
			Namsan Granite	Gyeongbuk East Coast Global Geopark	Gyeongju-si
			Yeongdeok Unconformity, Jukdosan Tombolo, Gyeonjeongri Coast, Yongchupokpo Falls, Yongdeokri migmatite, Sunrise park	Gyeongbuk East Coast Global Geopark	Yeongdeok-gun
			Bulyeong Valley, Geumeumri Diorite, Granitic Gneiss at Giseong port	Gyeongbuk East Coast Global Geopark	Uljin-gun
		Clastic rock landscape	Jeokbyeok Red Cliffs	Mudeungsan Global Geopark	Hwasun-gun
			Jeokbyeok Red Cliffs	Mudeungsan Global Geopark	Damyang-gun
			Maae Buddha Statue	Jeonbuk West Coast Global Geopark	Gochang-gun
			Mt. jijang tuff	Hantangang Global Geopark	Pocheon-si
			Baekuiri Layer	Hantangang Global Geopark	Yeoncheon-gun
			Daehyeonhwagang Gneiss, Iping Migmatitic Gneiss, Sapyeong-ri Rock	Danyang Global Geopark	Danyang-gun
			Jubangcheon Gneiss, Jayeollim Deposit, Banghojeong Pavilion, Manan-ri, Baekseoktap	Cheongsong Global Geopark	Cheongsong-gun
			Guryongso Pond	Gyeongbuk East Coast Global Geopark	Pohang-si
			Golgulam Hermitage	Gyeongbuk East Coast Global Geopark	Gyeongju-si
			Daejinri gneiss	Gyeongbuk East Coast Global Geopark	Yeongdeok-gun
			Deokgu Valley	Gyeongbuk East Coast Global Geopark	Uljin-gun
		Soluble rock landform (karst landform) landscape	Dodan Sambong, Ondal Cave, Seongmun Gate, Sangseon Rock, Soseon Rock, Sandaesan Mountain, Yeongchun North Wall, Yeongcheon Cave, Gupung Palmun, Cheondong Cave, Mancheonhagyeong Stream, Hyeoncheon-ri, Daejigok Valley, Hwangjeongsan & Chilseong Rock, Eden Cave	Danyang Global Geopark	Danyang-gun
	Volcanic landscape	Volcanic tectonic landform	Gusipo Gamakdo, Daejukdo	Jeonbuk West Coast Global Geopark	Gochang-gun

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Type of geological relic			Name of geological relic	Name of geopark	Location
			Solseom Islet, Dae/So-hyeongjedo	Jeonbuk West Coast Global Geopark	Buan-gun
			Udo	Jeju Island Global Geopark	Jeju-si
			Marado	Jeju Island Global Geopark	Seogwipo-si
		Volcanic karst landscape	Soisan	Hantangang Global Geopark	Cheorwon-gun
			Mudeungsan Gwangju Granite	Mudeungsan Global Geopark	Hwasun-gun
			Chuwolsan Mountain Orbicular Rock, Gamagol, Mudeungsan Gwangju Granite	Mudeungsan Global Geopark	Damyang-gun
			Saeinbong Peak, Uisangbong Peak, Mudeungsan Gwangju Granite	Mudeungsan Global Geopark	Gwangju Gwangyeoksi
			Gochang Mudflat, Songyeri Archean Gneiss	Jeonbuk West Coast Global Geopark	Gochang-gun
			Wido Chidori Beach, Jinri Columnar Joints, Ulgeum-bawi Rock, Fish-bone vein system	Jeonbuk West Coast Global Geopark	Buan-gun
			Auraji pillow lava	Hantangang Global Geopark	Pocheon-si
			Jwasangbawi Rock, Eundaeri Planticular joint and Fold Structure	Hantangang Global Geopark	Yeoncheon-gun
			Geomunoreum Lava Tube System, Manjanggul Lava Tube, Suweolbong Tuff Ring	Jeju Island Global Geopark	Jeju-si
			Sanbangsan Lava Dome, Yongmeori Tuff Ring, Jungmun Daepo Columnar-Jointed Lava, Seogwipo Formation, heonjiyeon Waterfall, Seongsan Ilchulbong Tuff Cone	Jeju Island Global Geopark	Seogwipo-si
			Yeonhwadong, Yongchu Valley, Geumsudae, Gyeolgok Valley, Hwagang Magma Rock, Myeonbongsan, Sura-ri	Cheongsong Global Geopark	Cheongsong-gun
			Homigot Marine Terrace, Daljeon-ri Columnar Joints, Volcanic complex of Hindigi, Bunokjeong Pavillion	Gyeongbuk East Coast Global Geopark	Pohang-si
			Tomb of King Munmu, Yangnam Columnar Joints	Gyeongbuk East Coast Global Geopark	Gyeongju-si
	Glacial landscape	Glacial erosion landscape landform	Mount Josan, Cheongsong Ice Valley	Cheongsong Global Geopark	Cheongsong-gun
	Flowing water landscape	Flowing water deposit landform landscape	Dusan U-shaped Valley	Danyang Global Geopark	Danyang-gun
	Marine erosion and marine deposit landform landscape	Marine deposit landform landscape	Ungok Wetland & Dolmens site	Jeonbuk West Coast Global Geopark	Gochang-gun
			Chaeseokgang	Jeonbuk West Coast Global Geopark	Buan-gun
			Goraebul Coast	Gyeongbuk East Coast Global Geopark	Yeongdeok-gun
			Wangpicheon River, Pyeonghae Sand Dune	Gyeongbuk East Coast Global Geopark	Uljin-gun
Water landscape category	Spring water landscape	Cold spring landscape	Samtong	Hantangang Global Geopark	Cheorwon-gun
	Limnological landscape	Lake landscape	Baengnokdam	Jeju Island Global Geopark	Seogwipo-si
		Marsh wetland landscape	Damyang Wetland	Mudeungsan Global Geopark	Damyang-gun
	Waterfall landscape	Waterfall landscape	Simujigi Waterfall	Mudeungsan Global Geopark	Hwasun-gun
			Gamagol Valley	Mudeungsan Global Geopark	Damyang-gun
			Jeungsimsa Andesite	Mudeungsan Global Geopark	Gwangju Gwangyeoksi
			Seongye Waterfalls, Jikso Falls	Jeonbuk West Coast Global Geopark	Buan-gun
			Jiktang WaterFalls, Sambuyeon Falls	Hantangang Global Geopark	Cheorwon-gun
			Jaein Falls	Hantangang Global Geopark	Yeoncheon-gun
			Yeongyeon Falls	Cheongsong Global Geopark	Cheongsong-gun
			12 Waterfalls of Naeyeonsan	Gyeongbuk East Coast Global Geopark	Pohang-si

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Type of geological relic			Name of geological relic	Name of geopark	Location
			Seongryugul Cave	Gyeongbuk East Coast Global Geopark	Uljin-gun
Category of environmental geological relic landscape	Mining heritage landscape	Mining heritage landscape	Myeongmaegi Spring	Jeonbuk West Coast Global Geopark	Gochang-gun
			Yucheonri Clay deposits	Jeonbuk West Coast Global Geopark	Buan-gun
			Chunghyodong Clay Mineral Site	Mudeungsan Global Geopark	Gwangju Gwangyeoksi
			Beopsudo To	Cheongsong Global Geopark	Cheongsong-gun

4 Conclusions

By 2025, the most recently approved UNESCO Global Geoparks in South Korea are the Danyang Global Geopark and the Gyeongbuk East Coast Global Geopark. Within the current South Korean national park system, apart from the areas already designated as UNESCO Global Geoparks, there remain 25 national parks. These include Bukhansan, Seoraksan, Naejangsan, Jirisan, Odaesan, Taebaeksan, Juwangsan, Sorisan, Gayasan, Woraksan, Deokyusan, Sobaeksan, and the Taean Coast. These parks harbor abundant geological heritage, providing a resource pool for future applications.

It is important to note that there are significant differences between the evaluation criteria for UNESCO Global Geoparks and South Korean national parks: the former emphasizes the scientific value and rarity of geological features, while the latter focuses more on ecological conservation and recreational functions. Based on this, South Korea may adopt a model of joint applications involving multiple national parks in the future. This approach would integrate resources, better align with the application requirements, and enhance the success rate of nominations for UNESCO Global Geopark status.

References

[1] WANG M, MIAO ZY. Study on the characteristics of global geoparks in China: Changes, distribution and types[J]. Journal of Shangqiu Normal University, 2023(12): 57 - 61. (in Chinese).
[2] CHEN AZ. On National Geopark. The Construction of National Geopark and the Development of Tourism Resources[C]. Beijing: China Forestry Press, 2002. (in Chinese).
[3] MAO LY. Types and distribution characteristics of the geoheritages in Fujian[J]. Geology of Fujian, 2025(2): 85 - 93.
[4] WANG CW, TANG HH. Research on the spatial distribution characteristics and influencing factors of geoparks in Taihang mountain area[J]. Journal of Hebei Geo University, 2022(1): 89 - 98.
[5] HONG X. Analysis on the spatial distribution characteristics and influencing factors of geoparks around Sichuan basin[D]. CHENGDU: Southwest Petroleum University, 2019. (in Chinese).
[6] WANG CW, HONG X. Spatial distribution characteristics and influencing factors of geoparks of Sichuan Province[J]. Acta Geologica Sichuan, 2021(4): 691 - 696. (in Chinese).
[7] XIE ZH, WU BH. Tourism spatial structure of resources-based attractions in China[J]. Scientia Geographica Sinica, 28(6): 748 - 753. (in Chinese).
[8] Korea Institute of Geoscience and Mineral Resources[J/OL] https://www.kigam.re.kr/
[9] Korea National Parks Corporation[J/OL] https://www.knps.or.kr/
[10] Jeju Island Global Geopark[J/OL] https://www.jeju.go.kr/
[11] Cheongsong Global Geopark[J/OL] https://www.csgeop.cs.go.kr/
[12] Mudeungsan Global Geopark[J/OL] https://www.geopark.gwangju.go.kr/
[13] Hantangang Global Geopark[J/OL] https://www.hantangeopark.kr/
[14] Jeonbuk West Coast Global Geopark[J/OL] https://www.jwcgeopark.kr/
[15] Danyang Global Geopark[J/OL] https://www.danyanggeopark.org/
[16] Gyeongbuk East Coast Global Geopark[J/OL] https://www.geotourism.or,kr/