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NOMINATIONS OF NEW UNESCO GLOBAL GEOPARKS

DETAILS OF THE NOMINATIONS

SUMMARY

In accordance with Article 5.5 of the Operational Guidelines for UNESCO Global Geoparks as approved by the General Conference at its 38th session (38 C/Resolution 23) and with reference to document 201 EX/7, the details of the 10 nominations for new UNESCO Global Geoparks decided upon by the UNESCO Global Geoparks Council at its first statutory meeting during the International Conference on UNESCO Global Geoparks, in Torquay, United Kingdom of Great Britain and Northern Ireland, on 24 and 25 September 2016, are contained in the present information document for the Executive Board.



I. INTRODUCTION

1. The UNESCO Global Geoparks Council is responsible for new UNESCO Global Geopark applications and revalidations and is responsible for advising the Director-General on the strategy, planning and implementation of the UNESCO Global Geoparks within the International Geoscience and Geoparks Programme (IGGP). The Council is composed of 12 ordinary members, with the right to vote, who are individuals appointed by the Director-General of UNESCO on recommendation of the Global Geoparks Network (GGN) and Member States. In addition, the Director-General of UNESCO, the President of the GGN, the Secretary-General of the International Union of Geological Sciences (IUGS), the Director-General of the International Union for Conservation of Nature (IUCN) or their representatives are *ex officio* members of the Council without the right to vote.

2. After the launch of the UNESCO Global Geoparks designation at the 38th session of the General Conference in November 2015, the UNESCO Global Geoparks Council convened at its first statutory meeting during the International Conference on UNESCO Global Geoparks, in Torquay, United Kingdom of Great Britain and Northern Ireland, on 24 and 25 September 2016 where it has examined a total of 18 applications submitted by Member States for the nominations of new UNESCO Global Geoparks, including two requests for extensions from the existing UNESCO Global Geoparks.

3. The UNESCO Global Geoparks Council decided to nominate as new UNESCO Global Geoparks for the period 2017-2020 the following 10 sites:

- Arxan, China
- Causses du Quercy, France
- Cheongsong, Republic of Korea
- Comarca Minera, Hidalgo, Mexico
- Keketouhai, China
- Las Loras, Spain
- Leiqiong, China (extension of an existing UNESCO Global Geopark¹)
- Mixteca Alta, Mexico
- Qeshm Island, Islamic Republic of Iran
- Zigong, China (extension of an existing UNESCO Global Geopark¹)

4. The full report of this meeting was distributed to all Member States and Associate Member States of UNESCO in December 2016. In accordance with Article 5.5 of the Operational Guidelines for UNESCO Global Geoparks, the details of these 10 nominations decided by the UNESCO Global Geoparks Council are contained in the present information document for the Executive Board.

¹ In accordance with paragraph (xii) of Article 5.6 of the Operational Guidelines, should an existing UNESCO Global Geopark wish to change its size, but the proposed change amounts to more than 10% of the existing area, a new application must be made.

II. DETAILS OF THE 10 NOMINATIONS DECIDED UPON BY THE UNESCO GLOBAL GEOPARKS COUNCIL

5. **Arxan, China:** The area is located in the jurisdiction of Xing'an League, Inner Mongolia Autonomous Region. Arxan is a mid-low mountain region situated in the southwestern part of the middle section of the Daxing'anling range. Its major topographic features are mid-low hills formed from tectonic denudation, as well as basalt platforms and alluvial valley plains. The elevation ranges from 820 to 1,750 m, with an average of 1,100 m. The area is located at the point where the eastern Tianshan-Xing'an fold zone compounds with the Daxing'anling giant uplift belt of the Cathaysian tectonic system. It is a topographic boundary zone of China and a crust transition zone. As a volcanictectonic unit, it is part of the Datong-Daxing'anling Cenozoic volcanic activity zone. The area has abundant geoheritage of significant national and global value, including geomorphological, volcanic, granitic, and fluvial landforms, as well as water features (springs, lakes, rivers). The great variety of volcanic landforms, volcanogenic lakes and natural spring groups is a highlight attraction. Two positive reviews of the internationally significant geological heritage were received from the IUGS.

6. **Causses du Quercy, France:** The territory is located in the southwest quarter of France, at the northern end of the Occitanie/Pyrénées-Méditerranée region, 100 km from Toulouse. It is essentially a rural area covering the central third of the Lot County, between the Dordogne River in the north and the Tarn-et-Garonne County in the south. Its administrative contours are those of the municipalities that ratified the Charter of the Causses du Quercy Regional Nature Park which follow those of the limestone plateau ("Causses") of the Quercy, with an average elevation of 300 m. This plateau stands out from the low plains of the Aquitaine Basin bordering them to the south and west (average 135 m above sea level) and from the mountainous area of the Massif Central situated to the north and east (average 700 m above sea level, culminating at 1,885 m). The Causse is a vast plateau formed by Jurassic carbonate rocks deposited during the opening of the Atlantic Ocean, and is the result of an intense karstic activity that started 70 million years ago. As the result of unique geological circumstances, the Quercy "phosphatières" caves form an exceptional fossiliferous recording containing thousands of fossils in perfect conditions of preservation. The Quercy palaeokarst is the longest chronological sequence currently known in a continental domain worldwide and enabled the recording of the climatic, environmental and conditions for the evolution of life. Three positive reviews of the internationally significant geological heritage were received from the IUGS.

7. **Cheongsong, Republic of Korea:** Cheongsong is located in the central eastern area of the Republic of Korea. The administrative district is located in Gyeongsangbuk-do and is comprised of eight small towns. The administrative boundary of the region also marks the boundary of the Geopark. Cheongsong-gun is divided into eight administrative districts, each with distinct geological and other attractions. Cheongsong belongs to the Kyongsang Basin, the largest sedimentary basin in the Republic of Korea. The area presents igneous, metamorphic and sedimentary rocks, formed from the Precambrian period to the Cenozoic period. From the bottom, the geological layers of Cheongsong comprise Precambrian metamorphic rocks; Triassic plutonic rocks; Cretaceous sedimentary and volcanic rocks; Tertiary intrusive, plutonic, and other rocks; and alluvial layers from the Quaternary period. Distinctive features show interaction between rhyolitic volcanic activity and water which have formed the Cheongsong spherulitic rhyolite and the Dalgi Mineral Spring Site, two representative geosites of the area. Three positive reviews of the internationally significant geological heritage were received from the IUGS.

8. **Comarca Minera, Hidalgo, Mexico:** The area is located in the centre of Mexico, in the State of Hidalgo, characterized by world-famous argentiferous ore deposits of low-sulfide epithermal origin that have been exploited since the fifteenth century, modifying the natural environment and creating a geological, cultural and social legacy. It covers nine of the 84 municipalities that define the State, representing 9% of its total surface. The physiographic province named Eje Neovolcanico Transmexicano, characterized by the presence of volcanic terrains and landforms whose ages vary

between Eocene and Pleistocene covers 97% of the area. The remaining 3% is located within the Sierra Madre Oriental physiographic province, which shows terrigenous and carbonated sequences from the Cretaceous. The zone presents relief with altitudes in the range of 1,300 to 3,200 m above sea level; it is fundamentally composed of hills, plateaux, canyons and plains. The area's oldest rocks date from the Albian, when a transgressive event occurred and a carbonate platform developed. In the Turonian a clastic platform environment formed and evolved to deeper conditions during the Santonian. By the Cretaceous-Palaeogene boundary, the rocks were folded as a consequence of the Laramidic Orogeny, caused by the convergence between the Farallon and North American plates. During the Oligocene-Late Miocene, the subduction of the Cocos Plate originated calc-alkaline volcanism, producing an andesitic to rhyolitic volcanic sequence, with dacites and trachytes in the Pliocene-Pleistocene. Two positive reviews of the internationally significant geological heritage were received from the IUGS.

9. **Keketouhai, China:** The area is located in Xinjiang Uygur Autonomous Region, in Altay Prefecture, in Central Asia with an altitude between 1,072 and 3,234 m, with many incised valleys. The areas along Fuyun Seismic Fault Zone are characterized by bead-like basins or lake basins. It has a rich geomorphology, especially the granite gorges and basins distributed at the source of the Irtysh River, which are of touristic as well as scientific value. Located on the south slope in the middle section of the Altay Mountains, Keketouhai plays an important role in interpreting the geological evolution of the Altay Prefecture including several successive sea-land changes, the Longmenshan orogenic belt and magma intrusion. The site contains granites of different periods forming the Altay granitic geomorphologic landscape, including the world-renowned granite-pegmatite rare-metal ore deposit of Keketouhai. The rare earth mineralised pegmatite veins are considered world class. The granite landforms are spectacular and the area is now a Geological National Park referred to as "China's Yosemite". Two positive reviews of the internationally significant geological heritage were received from the IUGS.

10. **Las Loras, Spain:** The area is located in the northern Iberian Peninsula, and belongs to the most southern sector of the Basque Cantabrian Basin. It is located in the north of Castilla and León Autonomous Community, occupying a part of the northwest of the Burgos Province and part of the northeast of the Palencia Province. The area provides important information about the stratigraphy and sedimentary evolution of southwestern Europe and enables improved understanding of paleoclimatic and phytogeographic features of this region. There is an almost complete record from the Triassic to Palaeogene with exceptional outcrop conditions. The territory is of high value for structural studies since it permits detailed reconstruction of the rift process that occurred during the Lower Cretaceous and of the building of structures during the Alpine orogeny. Palaeontology and geomorphology are other highlights of the geological heritage of the territory. There are many important paleontological sites and the magnificent examples of morphogenetic systems are among the most spectacular karst forms and deposits. Three positive reviews of the internationally significant geological heritage were received from the IUGS.

11. **Leiqiong, China** (extension of an existing UNESCO Global Geopark): The territory is located in Guangdong Province and Heinan Province. It comprises different scenic districts: Zhanjiang, Haikou, and Qiongzhou Strait. The Leiqiong volcanic belt comprises 39 volcanoes and is an important and typical representation of the Quaternary volcanoes in China. It has various types of volcanoes formed by magmatic as well as Maar volcanoes formed by phreatomagmatic eruption. It has important scientific and aesthetic value and is often referred to as a "volcano museum". The area was awarded Global Geopark status in 2006. Based the revalidation in 2014, it was recommended to increase the size of the territory and to restructure in order to obtain a unified single area under strong central management. To comply with all the requirements of a UNESCO Global Geopark, the area was increased from 379 km² to 3,050 km² which made a new application process and evaluation necessary. Two positive reviews of the internationally significant geological heritage were received from the IUGS.

12. **Mixteca Alta, Mexico:** The topography of Mixteca Alta results from the broad contact of the Sierra Madre del Sur and the Sierra Madre Oriental, two of the main Mexican mountain ranges. Dominant altitudes range between 2,000 and 2,500 m, with the highest altitude being Cerro Verde, or Nudo Mixteco (2,892 m). Soils are heavily eroded and original vegetation is restricted to small patches of oak-pine forest at higher elevations. Agriculture takes place in valley plains and hilly areas, but soil productivity is limited, partially resulting from the severe erosion and the lack of labour, due to intense emigration. The region holds the most complex geology in Mexico. According to the main themes of the site (erosion, culture and geoheritage), many of the selected geosites are related to erosional-depositional processes and landforms associated with the intensive use of land for farming purposes. A number of geosites were selected to explain these links, including: gullies and badlands, mass wasting features, and palaeosols. Other geosites include geological contacts, plutonic and tectonic structures (dikes and sills, faults) and spheroidal weathering in outcrops. Two positive reviews of the internationally significant geological heritage were received from the IUGS.

13. **Qeshm Island, Islamic Republic of Iran:** Qeshm is the largest island of the Persian Gulf. The area forms part of south and eastern extreme foreland of the Zagros geological and structural Province, expressed in the NW-SE trending Zagros Mountain ranges. The more southerly part of the Zagros Fold Belt faces but is separated from the Oman Region while the Makran geological and structural Province lies to the east, beyond the Minab-Oman fracture zone. The highest mountain peak on Qeshm Island is related to the Kish Kuh Anticline structures that have increased in height in part as an effect of diapirism tectonics, related to the Namakdan Salt Plug. In addition to the salt formation and complex, some of normal sedimentary formations are exposed in the different anticline structures on the island. In general, mountainous or high ranges nearly coincide with the folds having anticline structure, or in part as salt dome diapirs, and the relative lowlands are mainly within or based on intermediate forms or synclines. Three positive reviews of the internationally significant geological heritage were received from the IUGS.

14. **Zigong, China** (extension of an existing UNESCO Global Geopark): The area is located in the territory of Zigong City Sichuan Province, with an altitude between 241 and 901 m. It is about 200 km away from Chengdu. After the demise of the Paleotethys Ocean, the area became a limited saltwater sea with enriched evaporated salts. After the Mesotethys Ocean ceased to exist during the end of the Triassic, the Sichuan Foreland Basin was formed due to isostasy of Longmen Mountain Orogenic Belt. During the middle-late Jurassic, dinosaurs were common in the basin where plains, rivers and lakes were distributed. The important fossil sites for dinosaurs and petrified woods show that large numbers of dinosaurs and trees died and were rapidly buried under sediment due to intense tectonic activities. Since the first century, the splendid Salt civilization has been created based on mining the salt deposits that formed by the Paleotethys residual sea. Zigong Geopark enjoys an extremely broad and deep geoscientific reputation, particularly for the spectacular vertebrate fossils, especially the dinosaur fossils, the typical Jurassic stratigraphic section and the complete well and rock salt sites, which all present important scientific value. Zigong first became a Global Geopark in 2008 and has submitted a new application due to an increase in size.

Additional details complementing the above information are available on the Earth sciences website at <http://www.unesco.org/new/en/natural-sciences/environment/earth-sciences/>