

Information for potential donors

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# Key Geoheritage Areas

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Resolution IUCN 074 (2020)

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# A new international designation

The International Union for Conservation of Nature (IUCN) has a membership of both government and non-governmental (NGO) organisations and globally leads the development of the principles and practice of nature conservation. Through this Union, a new designation is being developed for sites of international geological significance, reflecting their importance to both science and society. This designation is being developed within a concept of Key Geoheritage Areas (KGAs).

## What is a Key Geoheritage Area?

A defined area with geological or geomorphological features, such as rocks, minerals, fossils, soils, landforms and landscapes, representing past or on-going Earth processes, and which significantly contributes to a global understanding of our planet's long history and evolution – both physical and biological – and its life-support systems.

## Mission

To identify and safeguard sites and areas with geoheritage features of international significance and to communicate and promote information about such areas, and their importance to global societies, in order to ensure their conservation for future generations to learn from.

Cotopaxi volcano, one of the highest active volcanoes in the world (Ecuador)

# Geodiversity, Geoheritage, Geoconservation

**Geodiversity** is the variety of rocks, minerals, fossils, landforms, sediments and soils, together with the natural processes that form and alter them. It includes past and present geological and geomorphological features and processes that record the history of the Earth and the evolution of life forms and their habitats as recorded in the geological record as fossils. Geodiversity elements are part of natural capital and contribute to all types of ecosystem services. UNESCO's International Geodiversity Day is celebrated on the 6th October every year.

**Geoheritage** corresponds to those selected elements, features and processes of geodiversity, either singly or in combination, that are considered to have significant value for intrinsic, scientific, educational, cultural, spiritual, aesthetic, or ecological reasons and, therefore, merit safeguard. Geoheritage is often at risk due to a lack of or ineffective international and national conservation approaches.

**Geoconservation** is the practice of safeguarding Geoheritage for current and future generations through sensitive management and enhancement, including related educational and public awareness initiatives.



Crystals of amethyst quartz from a type-locality (Artigas, Uruguay)



Polished rock surface scratched by glaciers during an ancient 'Ice Age', 280 million years ago (Adelaide, Australia)



Lava flow reaching the ocean (Hawai'i Volcanoes National Park, U.S.A.)

# Context

The KGA initiative is being developed following the adoption of Resolution 074 by the IUCN membership at its last General Assembly (November 2020).

As geodiversity is part of nature, geoheritage is a part of natural heritage. It is crucial, therefore, that geoheritage is recognised as being a fundamental part of all strategies for the management, protection, conservation and sustainable use of natural heritage.

Geoheritage is at risk due to a lack of or ineffective international and national conservation approaches. Hence, KGAs will raise public awareness about geoheritage and will promote the involvement of national and local administrations and communities in its management, protection, conservation and sustainable use.

The KGA initiative aims to ensure the designation, and hence conservation, of all sites and areas globally with an international geological importance. Information on all designated sites will be made available through a new and freely accessible website, which will of



itself be a key tool for the promotion of geoconservation strategies and practices.

The selection of KGAs can provide local communities and indigenous peoples with opportunities to learn from and help conserve important sites, especially where additional values such as cultural, educational and aesthetic are shared with scientific and global heritage values.

KGAs can help a global geoscientific community more comprehensively address the United Nation's Sustainable Development Goals, or SDGs (Agenda 2030), and to advise decision-makers accordingly.

As geodiversity underpins biodiversity, KGAs will not only play a key role in preventing the loss or degradation of geodiversity, they will in turn help reduce losses of biodiversity.



# Identifying KGAs

The nomination of KGAs is founded on the scientific value of the exceptional geological features or active processes that they demonstrate. The selection of KGAs will be based on five fundamental criteria:

- Representativeness;
- Rarity;
- Integrity;
- Type or reference locality;
- Evidence and scientific knowledge.

The international significance of a KGA is justified by the exceptional value of the geological or geomorphological features present within the regional geographical and/or geological context within which the KGA is located.

The nomination of KGAs will be independent of any conservation or other protection mechanisms already in place. It is expected, however, that the designation of a KGA will help to promote an appropriate level of legal protection and effective management to guarantee the conservation of its features of geoheritage importance for current and future generations.

The KGA designation will be granted following approval by a coordinating KGA Committee, based on recommendations from thematic geoscientific committees comprised of internationally recognised experts. A partnership of international geoscientific organisations will be responsible for the initiation and maintenance of this initiative.

# What we need from donors

- Following the approval of IUCN Resolution No. 74 in 2020, ProGEO and its partners have collaborated in the development of the KGA initiative. After extensive public consultation, the KGA Guidelines are now ready for implementation.
- It is now necessary to fully develop the structure of the KGA initiative for presentation at the next World Conservation Congress (WCC), scheduled to take place in Abu Dhabi in 2025, where full approval from IUCN is expected.
- In order to adopt the new designation, the IUCN General Assembly at the WCC will require evidence of financial support to ensure the long-term continuity of the initiative.
- Our goal is to assemble a list of donors willing to contribute to the KGA project once it receives full approval from IUCN's General Assembly.



Perito Moreno glacier, a popular tourist attraction in Patagonia (Argentina)

**Your financial assistance will play a crucial role** in helping achieve these goals and hence establishing a recognition of geological and geomorphological sites as being of fundamental importance to nature conservation through a new designation.

**This support is needed for:**

- Staff: One part-time Project Manager responsible for the administrative coordination of the KGA initiative. This role would include managing submitted KGA applications, including assessment panels, maintaining contacts with proponents and coordinating workflows between various governing bodies, as well as ensuring that the KGA website is regularly updated.

**Indicative cost: €35,000 per year**

- Website: Design and maintenance of a website intended to offer data and information, including an online submission system for new KGA applications and an online database.

**Indicative cost: €20,000** for the first-year development and design and **€1,000** in the following years for maintenance.

- Communication: Dissemination of the KGA initiative worldwide, including seminars, workshops, lectures, etc.

**Indicative cost: €10,000 per year**

- General expenses: **€2,000 per year**

**Total budget: €67,000 for the first year and €48,000 in subsequent years**

# Categories for donations



Everest (8848m, Nepal/China)

€50,000

€5,000



Damavand (5610m, Iran)



Aconcagua (6959m, Argentina)

€25,000

€2,000



Mont Blanc (4809m, France/Italy)



Kilimanjaro (5895m, Tanzania)

€10,000

€1,000



Fuji (3776m, Japan)

**Please, contact us for further information.**

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# What will be the benefits for your organisation?



By **supporting the implementation of the KGA initiative** you can help demonstrate how geology and the geosciences can make material contributions to the **UN's Sustainable Development Goals**, especially for the following:



Geotourism as a catalyst for rural economic development;



Geodiversity contributing to human well-being;



Geoheritage as a valuable resource for education and research;



Geodiversity as a source of clean water and for sanitation;



Cities and communities in harmony with geodiversity;



Geoheritage providing insights into past climates and offering tools to adapt to climate change;



Fluvial and marine geological processes support aquatic life;



Geodiversity as a foundation for biodiversity and ecosystems whilst providing a history of the origins and diversification of life on Earth;

**Help transform the way geosciences and geoscientists are perceived and join a new era of nature conservation, where the importance of geoheritage to all global societies is at last fully recognized!**

# Frequently Asked Questions

## What is a Key Ge heritage Area (KGA)?

A KGA is an area with well-defined boundaries where significant geological features (rocks, minerals, fossils, sediments, soils, landforms and landscapes) represent past or on-going Earth processes contributing substantially to the global understanding of the planet's history and its life-support systems.

## What is the main aim of this international initiative?

The main aim is to recognise and maintain ge heritage values of international significance and to communicate and promote this information in order to foster their conservation, and advance geoconservation worldwide.

## What are geological features and processes?

In the context of KGAs, any reference to geological features and processes encompasses all types of rocks, including their minerals and structures, fossils, soils, sediments, as well as landforms and landscapes formed through physical, chemical, and biological processes. These elements and processes are typically studied within the scope of Earth Sciences.

## Why do we need a new international designation for ge heritage?

The absence of international conventions or agreements on geodiversity and ge heritage significantly contributes to society's limited awareness of the importance of these topics. The KGA initiative aims to

communicate and promote information on ge heritage to enhance its conservation and management. It has the potential to address several limitations in existing designations, including:

- ▶ Current designations do not comprehensively cover all ge heritage of international significance;
- ▶ Information on ge heritage of global importance is dispersed and challenging to access, hindering the promotion of geoconservation strategies;
- ▶ National and local authorities responsible for nature conservation do not feel compelled to develop geoconservation actions due to a lack of an official IUCN ge heritage label.

## Is the KGA initiative in agreement with national and international sustainability policies and principles?

The KGA initiative aims to globally promote nature conservation, with a particular emphasis on non-living elements of nature. These elements not only possess inherent conservation values but also serve as the foundation for all ecosystems. The conservation of KGAs will contribute to the objectives of nature restoration and to foster healthy ecosystems.

## Does the KGA designation threaten in any way current ecosystem and biodiversity management actions?

No, a KGA designation poses no threat to ecosystems and biodiversity. In fact, a holistic approach to nature conservation, integrating both abiotic and biotic components, has been proven to be much more effective.

## **W**ill an eventual KGA designation jeopardise in any way biodiversity international goals already set for a certain area/country?

No, the international recognition of the geoheritage value of a certain site as a KGA has no negative consequences for ongoing or future biodiversity strategies. Healthy ecosystems necessitate proper management of both geodiversity and biodiversity components.

## **W**hat distinguishes a KGA from a UNESCO World Heritage site?

The designation of a geological site as UNESCO World Heritage is based on the fulfilment of three conditions: to meet criteria (vii) and/or (viii); to satisfy the conditions of integrity (integrity is a measure of the wholeness and intactness of the natural heritage and its attributes); and to have the guarantee of its protection and management given by the state party. These three conditions make the nomination of geological sites exceptionally challenging, resulting in only a very limited number of extraordinary geological occurrences having the opportunity to attain World Heritage status. In contrast, although the KGA nomination is grounded in a rigorous scientific assessment, it is anticipated that the KGA initiative will broaden the scope to recognise numerous geological sites that may not meet the stringent criteria for inclusion in the World Heritage List. It is noteworthy that a KGA site may partially or completely overlap with a UNESCO World Heritage Site.

## **W**hat distinguishes a KGA from a UNESCO Global Geopark?

UNESCO Global Geoparks (UGGp) are single, unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection,

education, and sustainable development. UNESCO Global Geoparks are established through a bottom-up process that requires firm commitment by the local communities, a strong local multiple partnership with long-term public and political support, and the development of a comprehensive strategy that will meet all of the communities' goals while showcasing and protecting the area's geological heritage. The criteria for achieving UGGp status mean that internationally significant geological sites located in regions lacking communities or where these communities choose not to participate in a geopark strategy will not be eligible for UGGp nomination. The KGA initiative, however, offers the opportunity to acknowledge these geological sites that may not meet the requirements for UGGp designation. It is important to note that a KGA may partially or entirely coincide with a UGGp.

## **W**hat distinguishes a KGA from a UNESCO Biosphere Reserve?

UNESCO Biosphere Reserves are interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity. Some UNESCO BRs work in geoconservation and have inventoried their geological sites. While Biosphere Reserves and KGAs have distinct yet complementary focuses, both areas can coexist within the same territory without giving rise to conservation or management conflicts. It is noteworthy that a KGA may partially or entirely overlap with a UNESCO Biosphere Reserve.

## **W**hat distinguishes a KGA from a Ramsar site?

The designation of a Ramsar site is grounded in the international Convention of the same name, with a primary focus on recognising the importance of wetlands, which include all lakes and

rivers, aquifers, swamps and marshes, wet grasslands, peatlands, oases, estuaries, deltas and tidal flats, mangroves and other coastal areas, coral reefs, and all human-made sites such as fish ponds, rice paddies, reservoirs and salt pans. While Ramsar sites and KGAs have distinct yet complementary focuses, both areas can coexist within the same territory without giving rise to conservation or management conflicts. Notably, a KGA may partially or entirely overlap with a Ramsar Site.

## **W**hat distinguishes a KGA from a IUGS Geological Heritage Site?

A IUGS Geological Heritage site presents extraordinary geological elements and/or processes of the highest scientific international relevance, used as a global reference, and/or with a substantial contribution to the development of geological sciences through history. The site should be one of the best examples of its kind globally and its scientific knowledge / relevance must be well demonstrated with scientific publications. While both the IUGS and KGA initiatives focus on geoheritage of international scientific significance, KGAs are designed as instruments for actively promoting geoconservation, aligning with IUCN's policies and best practices. It is important to note that a KGA may partially or entirely overlap with a IUGS Geological Heritage Site.

## **W**hat distinguishes a KGA from a IUGS Global Boundary Stratotype Sections and Points?

IUGS Global Boundary Stratotype Sections and Points (GSSPs) are reference points on stratigraphic sections of rock which define the lower boundaries of stages on the International Chronostratigraphic Chart. While GSSPs exclusively concern sites with international

stratigraphic significance, a KGA designation can be conferred upon areas with diverse geological interests (palaeontological, geomorphological, mineralogical, etc.). It is noteworthy that a KGA may partially or entirely overlap with a GSSP.

## **W**hat distinguishes a KGA from a Key Biodiversity Area (KBA)?

KBAs are sites contributing significantly to the global persistence of biodiversity. This contribution depends on the global distribution and the abundance of the biodiversity elements for which the site is important. Despite having distinct yet complementary focuses, KBAs and KGAs can coexist within the same territory without giving rise to conservation or management conflicts. It is important to note that a KGA may partially or entirely overlap with a KBA.

## **W**hat is the added value of a KGA designation compared with the variety of other national designations (national park, natural reserve, natural monument, national monument, etc.)?

The international recognition conferred by the KGA designation serves as a means to raise local/and national awareness on the significance of the natural values in a specific area. This recognition contributes to the implementation or strengthening of protection and management mechanisms by local and national administrations.

## **I**s it possible for a KGA to have other international and/or national designations?

Yes, the KGA designation may overlap other local, national, or international designations.

### **Is it necessary that a KGA nomination has a national /local designation?**

No, it is not mandatory for a KGA nomination to have a prior local or national designation. However, it is anticipated that local and national authorities will commit to ensuring the conservation of geoh heritage values in every KGA.

### **Who runs the KGA initiative?**

A partnership of international organisations will be responsible to initiate and maintain this initiative. Organisations such as UNESCO, International Union for Conservation of Nature (IUCN), International Union of Geological Sciences (IUGS), Global Geoparks Network (GGN), International Geographical Union (IGU), International Association for the Conservation of Geological Heritage (ProGEO), International Association of Geomorphologists (IAG), Union Internationale de Spéléologie (UIS), and Eurogeosurveys were invited to be part of this partnership.

### **How is the KGA designation given?**

The KGA designation will be granted following approval by the KGA Committee, which relies on a recommendation put forth by a scientific committee comprising international experts.

### **Is it necessary to renew a KGA designation?**

No, a KGA retains its designation unless the geoh heritage values that led to its international recognition are seriously compromised or lost. The intention is not to implement systematic monitoring of KGAs once they are recognised. However, the KGA Committee and/or the KGA

Council may express concern and liaise with relevant authorities in response to reported damage or threats to a designated KGA.

### **Who can submit a KGA nomination?**

Proposals for the nomination of new KGAs should be submitted to the KGA Secretariat by an international scientific organisation, either as an independent proposal or as an endorsement of a proposal received from a national scientific or professional organisation, or from individuals, communities, or NGOs. Likewise, a national scientific or professional organisation has the option to submit its own nomination or endorse a proposal received from individuals or NGOs. Indigenous Peoples and Local Communities are encouraged to play an active role in proposing KGAs, and if needed, they should seek support and guidance from a national or international scientific organisation.

### **How large / small can a KGA be?**

The size of KGAs is directly linked to the type and specific characteristics of the geological features with international significance. All principal geological elements justifying KGA status should be encompassed within its boundaries. Furthermore, the size of KGAs should be aligned with their operational management requirements, whether it be a small outcrop spanning a few square metres or a larger area.

### **Is it necessary to pay to submit a KGA nomination?**

No, the submission of a KGA nomination is free of charge.

## **W**hat does a KGA designation imply to a park manager or to the national/local authority responsible for nature conservation?

A KGA designation does not impose an obligation on protected area managers or national/local authorities to implement specific actions. However, there is an expectation that PA managers and local/national authorities will ensure the conservation of geoheritage values in every KGA. If these values face threats, whether natural or human-made, leading to degradation and requiring immediate protection and/or management, the site can be labelled as a "KGA at risk." If the geoheritage values in a KGA are definitely lost, the KGA designation is removed.

## **A**re KGAs necessarily protected areas?

No, it is not compulsory that a KGA nomination has a previous local/national designation. However, it is expected that local/national authorities guarantee the conservation of geoheritage values in every KGA.

## **D**oes a KGA designation necessarily implies a specific budget to the country/local administration?

No. While a KGA designation cannot compel a park manager or national/local authorities to implement specific actions, it is also challenging to anticipate its costs. The required management for a particular site is highly variable and depends on factors such as size, type of threat, site vulnerability, and more.

## **D**oes a KGA require periodic monitoring and reporting?

No, the intention of the KGA initiative is not to mandate or establish systematic monitoring of KGAs once recognised. However, the KGA Committee and/or the KGA Council may express concern and liaise with relevant authorities in response to reported damage or threats to designated KGAs.

## **D**oes the nomination and management of a KGA necessarily imply geoscientific expertise?

Yes, the identification and justification of the type of geoheritage values can only be carried out by geoscientists. Additionally, the management of geological sites, known as geoconservation, requires specific expertise.



Fossilised stromatolites, structures formed by bacteria 600 million years old (Ouarzazate, Morocco)



IUCN members promoters of  
Resolution 074

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**International Association  
for the Conservation of  
Geological Heritage  
(ProGEO)**

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**Geological Society of  
Spain**

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**Spanish Society for the  
Protection of Geological  
and Mining Heritage**

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