

Geodiversity and nature conservation: an international perspective

Tim Badman
Director, IUCN Nature Culture Initiative
IUCN World Heritage Programme



IUCN



- (1) **Members** more than 1,400 Government, Nongovernment and Indigenous Peoples' Organisation Members in more than 160 countries. Membership provides a "neutral forum" for addressing environmental issues.
- (2) Commissions 17,000 of the world's leading experts organised in 6 Commissions. These cover fields such as protected areas, environmental law and species conservation. They deliver key products such as the Red List of Threatened Species and the IUCN Standards for Protected and Conserved Areas.
- (3) **Secretariat** c.900 staff in over 60 countries. HQ in Switzerland. US office based in DC.

www.iucn.org

Resolutions and Recommendations

World Conservation Congress, Barcelona, 5-14 October 2008





4.040 Conservation of geodiversity and geological heritage

NOTING that the United Nations General Assembly proclaimed 2008 to be the International Year of Planet Earth, initiated jointly by the International Union of Geological Sciences (IUGS) and the United Nations Educational, Scientific and Cultural Organization (UN-ESCO) in order to increase awareness of the importance of Earth sciences in achieving sustainable development and promoting local, national, regional and international action;

AWARE of the rapidly growing interest and commitment of States, NGOs, and communities to save, study and sustainably use their geodiversity and geological heritage;

RECALLING that geodiversity, understood to include geological and geomorphological diversity, is an important natural factor underpinning biological, cultural and landscape diversity, as well as an important parameter to

PRESS

WCC-2016-Res-083-EN Conservation of moveable geological heritage

AWARE of the need to promote proper conservation and management of the world's moveable geoheritage, which includes fossils, meteorites and rocks of special interest;

- promote and support national and international initiatives oriented towards the conservation and sustainable use of moveable geoheritage, including its proper management in protected areas;
- prepare guidelines on the protection, conservation and management of moveable geoheritage
- promote and support, in collaboration with international stakeholders (United Nations Educational, Scientific and Cultural Organization UNESCO, International Union of Geological Sciences IUGS), the discussion on the conservation and management of moveable geoheritage, in compliance with national and international regulations of its commerce.

Earth Heritage at the global level



World Heritage

Earth Heritage Conservation in Protected Areas Global Geoparks

Earth Heritage at the global level



World Heritage

Earth Heritage
Conservation
in Protected
Areas

Global Geoparks

Outstanding Universal Value



 Cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity.





Each State Party to this Convention recognizes that the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage referred to in Articles 1 and 2 and situated on its territory, belongs primarily to that State. It will do all it can to this end, to the utmost of its own resources and, where appropriate, with any international assistance and co-operation.



The World Heritage **Convention** is one of the most important global conservation instruments.

252 natural sites c.8% of protected areas globally

Summary of the 10 criteria



- (i) masterpiece of human creative genius;
- (ii) interchange of human values
- (iii) cultural tradition or to a civilization
- (iv) building, architectural or technological ensemble or landscape
- (v) traditional human settlement, land-use, or sea-use
- (vi) associated with events or living traditions, ideas, or beliefs
- (vii) superlative natural phenomena or exceptional natural beauty
- (viii) earth's history, record of life, landform processes and features
- (ix) significant ongoing ecological and biological processes;
- (x) significant natural habitats for in-situ conservation of biological diversity

Summary of the 10 criteria



- (i) masterpiece of human creative genius;
- (ii) interchange of human values

Landscapes -

Cultural

- (iii) cultural tradition or to a civilization
- (iv) building, architectural or technologicahe combined r work of nature landscape
- (v) traditional human settlement, land-use,
- (vi) associated with events or living traditions, ideas, or beliefs
- (vii) superlative natural phenomena or exceptional natural beauty
- (viii) earth's history, record of life, landform processes and features
- (ix) significant ongoing ecological and biological processes;
- (x) significant natural habitats for in-situ conservation of biological diversity





























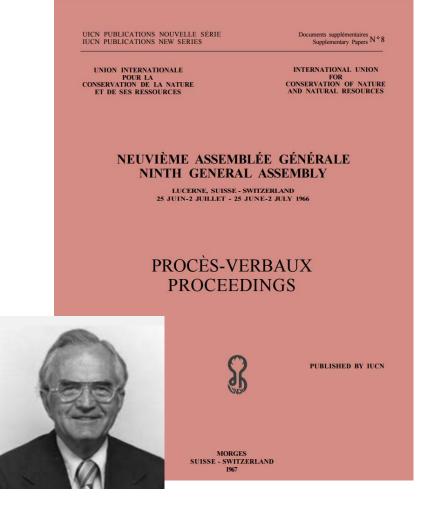






The founding of World Heritage – USA and IUCN

"I now propose that there be established a Trust for the World Heritage that would be responsible to the world community for the stimulation of international cooperative efforts to identify, establish, develop, and manage the world's superb natural and scenic areas and historic sites for the present and future benefit of the entire world citizenry. Here is another magnificent opportunity for IUCN to lead the way." Joseph L Fisher



The first five signatory countries?

- 1) USA ('73)
- 2) Egypt ('74)
- 3) Iraq ('74)
- 4) Bulgaria ('74)
- 5) Sudan('74)

Also ratified later in 1974: Algeria, Australia, Democratic Republic of the Congo, Nigeria, Niger



The first five listed natural sites?

- 1) Galapagos (Ecuador)
- 2) Nahanni National Park (Canada)
- 3) Yellowstone National Park (USA)
- 4) Ngorongoro National Park (Tanzania)
- 5) Simien National Park (Ethiopia) (all in 1978)



Result	Views						
24	2	O	1	11	12	1	1
Properties	Transboundary	Delisted	In Danger	Cultural	Natural	Mixed	States Parties

1970s (6)

United States of America

- Mesa Verde National Park Everglades National Park
 - **Grand Canyon National Park**
 - Independence Hall

Yellowstone National Park

- Kluane / Wrangell-St. Elias / Glacier Bay / Tatshenshini-Alsek
- 1980s (11)
- Redwood National and State Parks Mammoth Cave National Park
- Olympic National Park
- Cahokia Mounds State Historic Site
- Great Smoky Mountains National Park
- La Fortaleza and San Juan National
- Historic Site in Puerto Rico Statue of Liberty
- Yosemite National Park #
- Chaco Culture

in Charlottesville

Hawaii Volcanoes National Park # Monticello and the University of Virginia Carlsbad Caverns National Park Waterton Glacier International

Peace Park

Taos Pueblo

1990s (3)

- 2000s (0)
- 2010s (4)
- Papahānaumokuākea Monumental Earthworks of Poverty
 - **Point**
- San Antonio Missions
 - The 20th-Century Architecture of Frank Lloyd Wright
- 2020s

Summary of the 10 criteria



- (i) masterpiece of human creative genius;
- (ii) interchange of human values
- (iii) cultural tradition or to a civilization
- (iv) building, architectural or technological ensemble or landscape
- (v) traditional human settlement, land-use, or sea-use
- (vi) associated with events or living traditions, ideas, or beliefs
- (vii) superlative natural phenomena or exceptional natural beauty
- (viii) earth's history, record of life, landform processes and features
- (ix) significant ongoing ecological and biological processes;
- (x) significant natural habitats for in-situ conservation of biological diversity

Criterion viii



 to be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;



The World Heritage **Convention** is doing a good job of paying attention to Earth Heritage.

252 natural sites

93 sites are recognised for Earth Heritage, in 51 countries.



But World Heritage Convention coverage of **Earth Heritage** is still very uneven.

Africa: 8 **Arab States: 2** Asia Pacific: 26 **Europe and North** America: 51 **Latin America and** Caribbean: 12

2013

El Pinacate and Gran Desierto de Altar Biosphere Reserve (Mexico) Mount Etna (Italy)



Namib Sand Sea (Namibia)

Tajik National Park (Mountains of the Pamirs) (Tajikistan)

2014

Stevns Klint (Denmark)
Trang An Landscape Complex (Viet Nam)

2016

Lut Desert (Iran)
Mistaken Point (Canada)

2018

Barberton Makhonjwa Mountains (South Africa) Chaîne des Puys - Limagne fault tectonic arena (France)

2019

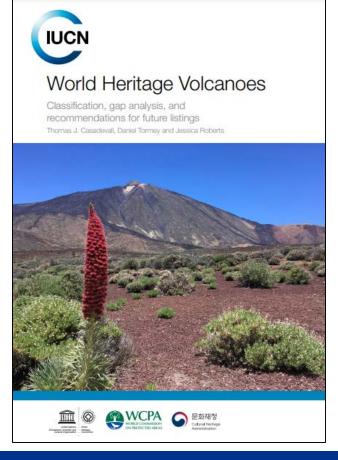
Vatnajökull National Park - Dynamic Nature of Fire and Ice (Iceland)

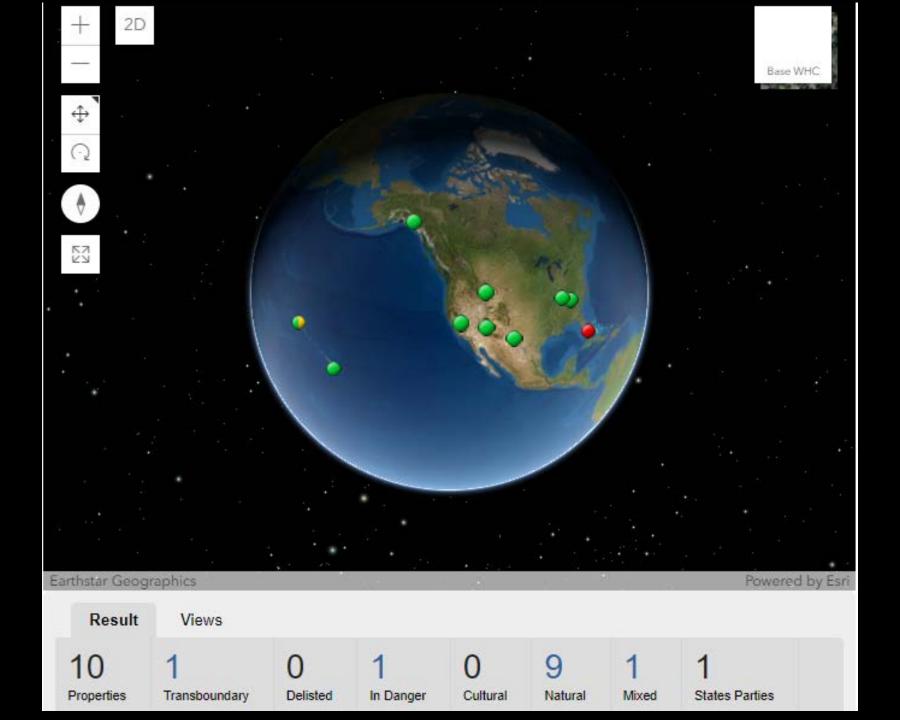
Thematic framework to guide future listings



- Theme 1 History of Planet Earth and the Evolution of Life #
- Theme 2 Tectonic Systems
- Theme 3 Erosional Systems
- Theme 4 Volcanic Systems #
- Theme 5 River, Lake and Delta Systems
- Theme 6 Cave and Karst Systems #
- Theme 7 Coastal Systems
- Theme 8 Marine Systems
- Theme 9 Glacial and Periglacial Systems
- Theme 10 Desert and Semi-Desert Systems #
- Theme 11 Meteorite Impacts

#= themes with additional detailed advice





US geological World Heritage listings



- 1978 Yellowstone National Park
- 1979 Everglades National Park
- 1979 Grand Canyon National Park
- 1979 Kluane / Wrangell-St. Elias / Glacier Bay / Tatshenshini-Alsek
- 1981 Mammoth Cave National Park
- 1983 Great Smoky Mountains National Park
- 1984 Yosemite National Park
- 1987 Hawaii Volcanoes National Park
- 1995 Carlsbad Caverns National Park
- 2010 Papahānaumokuākea

US geological World Heritage proposals on the Tentative List



Big Bend National Park (12/04/2017)
California Current Conservation Com

California Current Conservation Complex (12/04/2017)

Marianas Trench Marine National Monument (12/04/2017)

Okefenokee National Wildlife Refuge (30/01/2008)

Pacific Remote Islands Marine National Monument (12/04/2017)

Petrified Forest National Park (30/01/2008)

White Sands National Monument (30/01/2008)

And other options are identified in IUCN thematic guidance...

Earth Heritage at the global level



World Heritage

Earth Heritage Conservation in Protected Areas Global Geoparks







- On 17 November 2015, the 195 Member States of UNESCO ratified the creation of a new label, the UNESCO Global Geoparks. This expresses governmental recognition of the importance of managing outstanding geological sites and landscapes in a holistic manner.
- The Organization supports Member States' efforts to establish UNESCO Global Geoparks all around the world, in close collaboration with the Global Geoparks Network.
- Approved standards and guidelines for Geoparks.

What is a UNESCO Global Geopark?



- single, unified geographical areas
- international geological significance, with resources protected
- managed with a holistic concept of protection, education and sustainable development.
- A UNESCO Global Geopark uses its geological heritage, in connection with all other aspects of the area's natural and cultural heritage, to enhance awareness and understanding of key issues facing society
- A sense of pride.
- Creation of innovative local enterprises, new sources of revenue are generated through geotourism.

A bottom-up approach



- empower local communities and give them the opportunity to develop cohesive partnerships
- common goal of promoting the area's significant geological processes, features, themes linked to geology, or outstanding geological beauty.
- involving all relevant local and regional stakeholders and authorities in the area (e.g. land owners, community groups, tourism providers, indigenous people, and local organizations).
- firm commitment by the local communities, strong local partnership with long-term public and political support
- a comprehensive strategy community goals while showcasing and protecting the area's geological heritage.

Only about geology?



- No!
- While a UNESCO Global Geopark must demonstrate geological heritage of international significance, the purpose of a UNESCO Global Geopark is to explore, develop and celebrate the links between that geological heritage and all other aspects of the area's natural, cultural and intangible heritage.
- It is about reconnecting human society at all levels to the planet we all call home and to celebrate how our planet and its 4,600 million year long history has shaped every aspect of our lives and our societies.

Legal status



- "UNESCO Global Geopark" is not a legislative designation – though the defining geological heritage sites within a UNESCO Global Geopark must be protected under indigenous, local, regional or national legislation as appropriate.
- UNESCO Global Geopark status does not imply restrictions on any economic activity inside a UNESCO Global Geopark where that activity complies with indigenous, local, regional and/or national legislation.

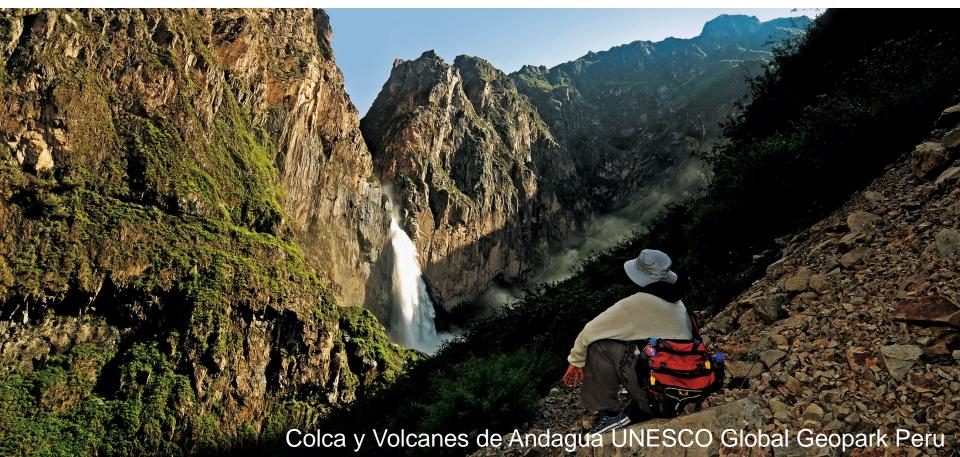
Forever?



- No, a UNESCO Global Geopark is given this designation for a period of four years after which the functioning and quality of each UNESCO Global Geopark is thoroughly re-examined during a revalidation process.
- If the UNESCO Global Geopark continues to fulfil the criteria the area will continue as a UNESCO Global Geopark for a further four-year period ("green card").
- If the area no longer fulfils the criteria: take appropriate steps within a two-year period ("yellow card").
- Should the UNESCO Global Geopark not fulfil the criteria within two years after receiving a "yellow card", the area will lose its status ("red card").

A fast growing network

- IUCN
- From 90 to 161 Geoparks since 2012
- 44 countries with Geoparks in 2019
- 16 new nominees in 2020







NEWLY DESIGNATED UNESCO GLOBAL GEOPARKS



Kütralkura UNESCO Global Geopark, Chile



Yimengshan UNESCO Global Geopark, China



Jiuhuashan UNESCO Global Geopark, China



Vis Archipelago UNESCO Global Geopark, Croatia



Imbabura UNESCO Global Geopark, Ecuador



Trollfjell UNESCO Global Geopark, Norway



Colca y Volcanes de Andagua UNESCO Global Geopark, Peru



Courel Mountains UNESCO Global Geopark, Spain

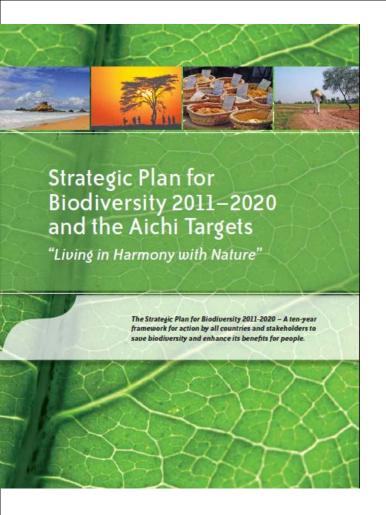


Earth Heritage at the global level



World Heritage

Earth Heritage Conservation in Protected Areas Global Geoparks



Protected Areas

Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective areabased conservation measures, and integrated into the wider landscape and seascapes.

Protected Area Categories: recognising Earth Heritage

"In this context nature always refers to biodiversity, at genetic, species and ecosystem level, and often also refers to geodiversity, landform and broader natural values."



Guidelines for Applying Protected Area Management Categories Edited by Nigel Dudley





A protected area is: "A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values".

In applying the categories system, the first step is to determine whether or not the site meets this definition and the second step is to decide on the most suitable category.

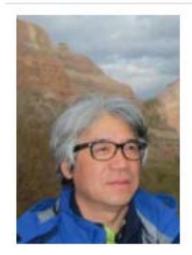
IUCN Geoheritage Specialist Group





Specialist Group Leaders

Kyung Sik WOO



Wesley HILL







New IUCN best practice guidance to launch soon!



GUIDELINES FOR GEOCONSERVATION IN PROTECTED AREAS

Roger Crofts, José Brilha, John E. Gordon, Murray Gray, John Gunn, Jonathan Larwood, Vincent L. Santucci, Dan Tormey and Graeme L. Worboys

Craig Groves, Series Editor



Section 1: Purpose, content and use of the guidelines

Section 2: Defining the context of geoconservation in protected areas

Section 3: Applying general principles of geoconservation in protected areas management

Section 4: Establishing geoconservation protected areas Section 5: Managing geoheritage

in protected areas

Section 6: Dealing with threats

Section 7: Geoconservation management in selected

situations

Section 8: Communicating geoheritage conservation and education

Positioning Geodiversity?



- A connected part of nature conservation, part of an integrated approach to conservation and sustainable development. Linked with biodiversity.
- Cultural significance of geological features.
- Reach beyond protected areas: part of restoration and mining landscapes.
- Leading models of conservation linking to benefits and development.
- Connection to the major stakeholders in extractive industries.
- Leading practice on the ground in Global Geoparks.

USA Leadership



- Current excellence to share, and opportunity to deliver new leading practice.
- Show how geodiversity links to biodiversity and cultural heritage and cultural diversity.
- Promote and support international initiatives, not only a domestic agenda: engage with UNESCO, IUCN and IUGS to seek a more ambitious approach to global geodiversity conservation and management.

Opportunities



- Communicate US geoheritage practice globally
- Build a national initiative for potential Geoparks, matching fully current international guidance and standards
- Engage with the potential nomination of new USA World Heritage Sites
- Support the places you work internationally to participate in international geoheritage conservation efforts
- Build international connections. IUCN keen to help.

