

Geoparks: Creating a Vision for North America

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Guest editors' note: At the 2009 George Wright Society Biennial Conference on Parks, Protected Areas and Cultural Sites, a panel of international experts on geoheritage presented the geoparks concept and led a discussion of how and where geoparks may be applied within the North American community of protected areas. This article presents a summary of the panel discussion. The panelists were: Robert Missotten, chief, Global Earth Observation Section, UNESCO, Paris; Tim Badman, special advisor, World Heritage Program on Protected Areas, International Union for Conservation of Nature (IUCN), Gland, Switzerland; Wesley Hill, International Secretariat, Geological Society of America, Boulder, Colorado; and Lindsay McClelland, National Park Service, Geologic Resources Division, Washington, D.C.

Introduction

THE GLOBAL GEOPARKS NETWORK (GGN) IS AN ALLIANCE of 58 parks in 18 countries, assisted by the United Nations Educational, Scientific, and Cultural Organization (UNESCO), that provides opportunities for geotourism, interprets geological heritage, assists local economies, supports research and understanding of geological processes, and connects people to the landscape.

As defined by UNESCO, “a Geopark is an area with a geological heritage of significance, with a coherent and strong management structure and where a sustainable economic development strategy is in place . . . geological heritage and geological knowledge is shared with the broad public and linked with broader aspects of the natural and cultural environment, which are often closely related or determined to geology and landscape.”

UNESCO established the GGN in 2004 to provide an elevated global platform for cooperation among geological heritage sites. The 58 members of the GGN are located in Australia, Austria, Brazil, China, Croatia, Czech Republic, France, Germany, Greece, Ireland, Italy, Iran, Malaysia, Norway, Portugal, Romania, Spain, and the United Kingdom. North America does not contain any geoparks.

UNESCO geoparks initiative (presentation by Robert Missotten)

The World Heritage program and the Man and the Biosphere (MAB) program are internationally administered by UNESCO through a convention and a statutory framework, respectively. As of 2008, the World Heritage List contained 878 sites, 7% of which are primarily geological or morphological in nature. There are 531 biosphere reserves in 105 countries. The reserves serve as environmental research and monitoring sites.

The GGN is more bottom-up than the top-down approach of the World Heritage and the MAB initiatives. The GGN has three components: conservation, sustainable development/tourism, and education. UNESCO's role in the GGN is to provide a platform for regional and international cooperation, set standards and policy advice, give visibility and global recognition, and lend UNESCO's label of excellence. UNESCO serves in an advisory role with international experts who evaluate a geopark once a nomination is submitted. Geoparks are admitted to the GGN on the decision of the International UNESCO Geopark Conference, held every two years.

The cost associated with setting up a geopark varies. The planning and application costs are different between countries because of the expertise available, the size of the project, and the partnerships involved. The costs of preparation and running a geopark also vary and can be divided among evaluation costs, member participation costs in GGN activities and meetings, site management costs handled by local organizers, and revalidation costs every four years. These costs may be paid by foundation grants, government funds, and private investors.

Most geoparks are based around an existing park or protected area. Visits to parks once they became members of the GGN have increased by as much as 25% in some countries. Other benefits of joining the GGN include jurisdiction and participation at the local level, socioeconomic stimulus to local economy, and improved awareness by decision-makers, media, public, teachers, and young people about geologic heritage and conservation.

The World Heritage Convention and geological heritage (presentation by Tim Badman)

The World Heritage Convention was established in 1972 and is amongst the most widely accepted international conservation treaties. The convention provides for the protection of those cultural and natural sites deemed to be of outstanding universal value. As of 2008, there were 878 sites on the list: 679 are cultural, 174 are natural, and 25 are a mixture of the two. In North America, there are a total of 62 sites, of which 39 are cultural and 23 are natural. The convention is governed by an elected committee of 21 nations that reviews nominations by member countries to the World Heritage List and designates World Heritage sites. As of the time of this presentation, the U.S. and Canada are on the committee (their terms end in 2009).

To be on the World Heritage List, sites must be of outstanding universal value and meet at least one of ten selection criteria. There are two sets of criteria that the committee applies: one for cultural sites and another for natural sites. The earth science criterion (no. viii) recognizes places that are "outstanding examples representing major stages of earth's history, including record of life, significant ongoing geological processes in the development of landforms, or significant geomorphic or physiographic features."

The World Heritage List has 74 properties that have been inscribed primarily under this criterion. A framework for the application of the earth science criterion has been established under the following 13 themes: tectonic and structural features; volcanoes/volcanic systems; mountain systems; stratigraphic sites; fossil sites; fluvial/lacustrine and deltaic sys-

tems; caves and karst systems; coastal systems; reefs, atolls, and oceanic islands; glaciers and ice caps; ice ages; arid and semi-arid desert systems; and meteorite impact sites. World Heritage sites can be part of a larger geopark.

Alternative mechanisms to complement World Heritage listings are necessary. The convention is highly selective and can only recognize a limited number of the most important global sites that are of outstanding universal value (“the best of the best”). Geoparks should be seen as a viable and effective mechanism to complement World Heritage listings and to recognize internationally important sites.

The geoparks initiative is still in its early days and experience is being gained in the concept. IUCN is fully supportive of its continued development. There needs to be clarity about the geoparks concept and the standards of both value and management expected of a UNESCO geopark. Also, regional networks are needed to complement the arrangements in Europe and China and to ensure a greater geographical spread of geoparks. Full local community involvement in geoparks is critical.

GSA perspective on UNESCO geoparks initiative (presentation by Wesley Hill)

The Geological Society of America’s (GSA’s) interest in geoparks is related to the following three components: conservation of our most significant geological features and sites, education of the visiting public and support of research, and promotion of geotourism to increase public interest in our geoheritage. Geoparks provide an international structure to link designated national geoheritage sites around the world under a common global umbrella. By participating in the geoparks initiative, U.S.–designated sites would be brought into the established family of global geoparks. This could provide increased opportunities for networking with site managers from around the world and provide global recognition and prestige for a U.S. geopark site.

The benefits of geopark sites include opportunities to highlight geoscience research and information to local residents, policy-makers, media representatives, and local schools; wider recognition of and a higher profile for the site; a public education spotlight on geoscience topics including volcanoes, earthquakes, tectonics, minerals, caves, and paleontology; and promotion of the site’s geological heritage and its role in the history of the local area. Geoparks provide the opportunity to increase geotourism in the area, exposing the public to a wide range of geoscience topics.

The International Union of Geological Sciences (IUGS) is one of the largest scientific organizations in the world with approximately 120 member countries. The IUGS partners with UNESCO on global geological programs and supports the UNESCO geoparks initiative. UNESCO provides endorsement of geoparks and a global networking platform, and does not have management control of any type over geopark sites. Ownership and site management lies completely with the host nation, host authorities, and local management bodies. No United Nations conventions apply to geoparks. UNESCO’s role can be best described as a type of quality branding.

The GSA, which is a member of the scientific geologic community, is interested in partnering with land managers, scientists, tourism industries, and educators to see increased

exposure and education for the geosciences through the Geoparks initiative. However, GSA cannot go about this alone and needs support to help develop the program in the U.S. In order to initiate the program in the U.S., the following is needed: interest and feedback from field sites, official approval of a U.S. geoparks program from the U.S. National Commission for UNESCO, development of a U.S. geoparks committee or working group, development of U.S. geopark guidelines, marketing of the program to interested sites, management of the application process, and funding to coordinate the U.S. committee.

GSA's possible role would be to provide assistance in developing a U.S. geoparks program strategy; help organize and participate in a U.S. geoparks working group or committee made up of land management agencies, representatives of the tourism industry, geoscientists, educators, etc.; provide assistance in managing the geoparks application process; and potentially provide support from GSA members who are geologists.

GSA has proposed that the best way to move forward in the U.S. is to budget from the top a grant program to sites that are successfully awarded geopark status. If a site is awarded geoparks status, grant funds could be given to projects such as building partnerships, developing a geoscience education and interpretive plan, or developing exhibits that focus on the geoheritage of the site. The geoparks program is not on a large scale like World Heritage, which puts forward multiple sites in one year for consideration. Each participating country only puts forward to UNESCO one to two sites every other year.

Geoparks and the National Park Service (presentation by Lindsay McClelland)

The National Park Service (NPS) is currently assessing its possible participation in a U.S. geoparks program. The agency is coordinating the effort through its Geologic Resources Division and Office of International Affairs. Briefings have taken place at the associate director's level, and NPS is working with the GSA and the U.S. Geological Survey (USGS).

NPS managers have expressed concerns about geoparks, including: the need for geoparks if NPS is already participating in the World Heritage program; the amount of work entailed, including administrative burden required for the process; possible adverse public opinion; actual benefits of geoparks designation; and demonstration of socioeconomic impacts, such as increased visitation.

Most of the World Heritage sites in the U.S. are iconic parks that are well known to the public and have high visitation. The sites generally include the entire park or are contained within the park. Examples include: Yellowstone, Everglades, Grand Canyon, Hawaii Volcanoes, Great Smoky Mountains, and others. Potential U.S. World Heritage nominations, for as long as the next decade, will be from the 2008 Tentative List, which contains mostly cultural sites but also includes two geology-focused parks (White Sands and Petrified Forest) and the Papahānaumokuākea Marine National Monument.

There may be opportunities where a geopark can complement a World Heritage site. For instance, currently many sites with great geologic significance are larger than a single park. Also, NPS may manage only a small part of the geologically significant area and other multiple-use agencies such as the Bureau of Land Management (BLM) and U.S. Forest Service (USFS) often manage much of the remaining geologic area. The World Heritage

Convention has strict protection standards that are a poor fit with multiple-use agencies. The geoparks concept is a better fit with sites that have multiple managers, will accept certain economic uses, and does not require demonstration of global significance.

The next steps for the NPS are to work with GSA to draft U.S. geoparks criteria; assess park interest based on these draft criteria; seek information on geoparks program benefits from other nations; coordinate with other agencies such as USGS, BLM, and USFS; clarify the role of GSA and the geologic community; brief the NPS directorate and Department of the Interior officials; seek interest and support from other organizations such as the Association of American State Geologists; and prepare a multi-agency proposal for the U.S. National Commission on UNESCO and the State Department's international organizations bureau.

Given the small number of nominations that will go forward for selection, setting the criteria may be critical to determine who will apply. NPS is working with GSA on developing a set of U.S. guidelines. GSA has volunteered to host a national geoparks working group—with USGS, BLM, NPS, USFS, state geologists, and the tourism industry—to look at applications and determine which ones to forward to UNESCO for selection.

Comments by attendees

A number of comments were offered by those attending the GWS2009 session:

- Non-traditional management approaches may work for geoparks. For instance, one agency may manage a geologically significant area but then other, multiple-use agencies may manage the broader remaining geologic area.
- There may be opposition to the term “geoparks” in the U.S. by some land management agencies.
- Some of the sites, which are designated as U.S. national monuments, would be good candidates for geoparks designation, as would areas of historic mineral extraction that have the involvement of local mining communities. This could increase visitation and raise visibility for these areas.
- NPS already has a huge management structure in place and may not be able to contribute large amounts of money on an annual basis that is outside of the regular budget.
- The point of increased visitation may be a double-edged sword and may lead to problems with site management. Overuse and visitation is a problem at some national park units and nominations of these sites could potentially create greater visitation and management issues. We need to keep this in mind as we develop the process.

Conclusion

The purpose of this panel session was to introduce the new concept of geoparks to land managers in North America. Geoparks have been warmly received by communities and national governments around the world. The panel members agree that both the United States and the growing geoparks network would benefit from U.S. participation in the program. The benefits of membership in the Global Geoparks Network include increases in economic development through tourism, awareness of the earth sciences, and appreciation for the role of geology in forming our environment. The panel organizers hope that one long-

term benefit will be the stimulation of interest from students who will become the scientists and political leaders of tomorrow.

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