



Photo by Morgan Disbrow-Monz

**Position Summary.** The Geological Society of America (GSA) supports the conservation of Geoheritage sites to meet present and future educational, scientific, aesthetic, cultural, and economic needs.

This position statement provides a communication tool that (1) summarizes the consensus views of GSA on the conservation of Geoheritage sites; (2) describes what Geoheritage sites are and why they are important; (3) encourages alignment of U.S. initiatives with international Geoheritage, geoconservation, and geodiversity programs (e.g., UNESCO Global Geoparks Network, International Union for Conservation of Nature Geoheritage Specialist Group, IUGS Commission on Geoheritage); and (4) advocates coordinated development of partnerships and strategies for creating and conserving Geoheritage sites across the United States.

## CONCLUSIONS AND RECOMMENDATIONS

- *Recognize and support designation and appropriate management of Geoheritage sites.* These sites are not only scientifically important, but also offer the potential for supporting local and regional economies through tourism and other businesses that embrace sustainable development. Governing bodies, particularly those at a local level, can play a key role in conserving Geoheritage sites for the public benefit.
- *Encourage collaboration and partnerships to identify, designate, and manage Geoheritage sites.* Collaboration among the geologic community, local and regional governments, and private interests can be most effective in promoting appropriate designations and management strategies for both existing Geoheritage sites and areas in need of Geoheritage designation and management.
- Recognizing the diversity of Geoheritage across the United States. Every region has opportunities to identify, characterize, and develop preservation and management plans according to local interests and needs. These initiatives can be developed in a coordinated manner, following established best practices in Geoheritage planning and management as outlined in the America's Geoheritage II: Identifying, Developing, and Preserving America's Natural Legacy: Proceedings of a Workshop (2021) report. All geoscientists can be encouraged to contribute; the geoscience community as a whole will realize the benefits of universal access to Geoheritage sites.

## RATIONALE

“Geoheritage” is a generic but descriptive term applied to sites or areas of geologic features with significant scientific, educational, cultural, and/or aesthetic value (<https://www.americasgeoheritage.com/geoheritage/>). Geoheritage sites are important to the long-term health of the geoscience professions, to preserve sites of geoscience importance related to Earth processes, Earth history, and history of geologic thought; to recruit and train the next generation of geoscientists; and to engage the general public by demonstrating the relevance and importance of geology to societal interests. *Scientifically and educationally significant Geoheritage sites* include those with textbook geologic features and landscapes, distinctive rock or mineral types, unique or unusual fossils, or other geologic characteristics that are significant to education and research. *Culturally significant Geoheritage sites* are places where

geologic features or landscapes played a role in cultural or historical events. *Aesthetically significant Geoheritage sites* include landscapes that are visually appealing and inspire a sense of awe and wonder.

Geoheritage sites serve the public interest. Such sites are critical to advancing knowledge about natural hazards, groundwater supplies, soil processes, climate and environmental changes, evolution of life, mineral and energy supplies, and other aspects of the nature and history of Earth. Such sites have high potential for scientific studies, use as outdoor classrooms, enhancing public understanding of science, recreational use, and economic support to local communities. Many Geoheritage sites are tourist destinations that provide local and regional economic benefits.

Geoheritage sites can be small but scientifically significant. Such sites may include a road cut or named and managed sites of a few acres. Geoheritage sites can also be extensive areas with international recognition, such as the Grand Canyon and Yellowstone National Parks. Geoheritage sites may be located on privately owned land, tribal land, on land in public ownership ranging from municipalities to the federal government, or on land of mixed ownership. Large or small, and regardless of ownership, many are vulnerable to urbanization, infrastructure development, agriculture, over-use, or erosion. Conservation strategies appropriate to the type of site and nature of ownership are important to protect and maintain Geoheritage sites for the long-term interests of both geologic and civic communities.

Geoheritage sites in the United States include officially designated landmarks and areas with a high level of distinct conservation management, such as national parks, monuments, historic landmarks, natural landmarks, and World Heritage Sites. Many of these areas were designated because of their distinct geologic features, geologic history, or combination of both. Federal land-management agencies, such as the National Park Service (NPS), Bureau of Land Management (BLM), and U.S. Forest Service (USFS), manage these sites to conserve their special features and characteristics for future generations. Geologic sites and museums without official Geoheritage designations are also included on the website of the NPS, providing Geoheritage managers the opportunity to “strengthen the connections between Geoheritage sites and encourage the sharing of best management practices nationwide” (<https://www.nps.gov/subjects/geology/unofficial-register.htm>).

Some Geoheritage sites are significant due to unique and outstanding geologic characteristics and cultural history. As such, Geoheritage sites across the United States should be identified and managed for preservation as nonrenewable resources aligned with global geoconservation initiatives. Geodiversity and biodiversity initiatives should be integrated at Geoheritage sites to ensure long-term sustainability of natural ecosystems. Because cultural heritage and history are integral to geoheritage sites, indigenous and local populations should be acknowledged and respected, and their perspectives should be accommodated in the planning, development, and management of these sites. Finally, Geoheritage sites provide opportunities for geotourism, improving public scientific literacy, connecting people to the landscape, instilling a sense of community ownership, and sustaining local economies.

Innovative approaches in conserving Geoheritage sites on public and private lands can be executed by partnerships among state agencies, tribal communities, counties, municipalities, non-governmental organizations, businesses, academic institutions, professional societies, and other private parties. Such efforts will ensure that even small Geoheritage sites, including those without official designations, can be preserved in perpetuity and managed for the use, enjoyment, and scientific advancement of future generations. Geoheritage conservation efforts may provide a source of income for communities through tourism and related uses that incorporate principles of sustainable development.

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#### ABOUT THE GEOLOGICAL SOCIETY OF AMERICA

The Geological Society of America (GSA) (<https://www.geosociety.org>) unites a diverse community of geoscientists in a common purpose to study the mysteries of our planet (and beyond) and share scientific findings. Members and friends around the world, from academia, government, and industry, participate in GSA meetings, publications, and programs at all career levels, to foster professional excellence. GSA values and supports inclusion through cooperative research, public dialogue on earth issues, science education, and the application of geoscience in the service of humankind. Inquiries about GSA or this position statement should be directed to GSA’s Director for Geoscience Policy, Kasey S. White, at +1-202-669-0466 or [kwhite@geosociety.org](mailto:kwhite@geosociety.org).

## OPPORTUNITIES FOR GSA AND ITS MEMBERS TO HELP IMPLEMENT RECOMMENDATIONS

To facilitate implementation of the goals of this position statement, The Geological Society of America recommends that its members take the following actions:

- *Seek opportunities to communicate the value of Geoheritage sites to decision makers and the public.* Legislative bodies, government agencies, private developers, economic development corporations, professional land-use planners, chambers of commerce, professional forums, town hall meetings, and community groups all provide avenues for expanding knowledge of the value of Geoheritage sites. Provide examples of how management of a Geoheritage site has added value to land-use planning, advanced understanding of geologic processes and potential for hazards, or contributed to economic growth. Explain how overlooking Geoheritage has resulted in costly and damaging land use, devastating consequences of natural disasters, or loss of tourist and tax revenues. An informed public can be a powerful force in identifying and designating Geoheritage sites and collaborating on long-term management strategies.
- *Initiate designation of or management strategies for a site in need of preservation.* Identify other parties, such as NGOs and federal agencies, that may benefit from designation of a site or enhanced management of an existing designated site. Promote collaboration and partnerships for determining appropriate designation (e.g., from local park to IUGS Geoheritage Sites), developing management objectives, and sharing costs. Identify benefits for various interests, such as the educational value for local secondary schools, research value for the geologic community, aesthetic value for outdoor enthusiasts, and economic value through tourism and local users.
- *Utilize print, electronic, social, and broadcast media in promoting the value of Geoheritage designations.* When appropriately utilized, the media are effective and efficient communication tools for addressing critical issues associated with Geoheritage conservation. If you are uncertain about how to make contact and work with the media, seek assistance and advice from other GSA members, GSA's Geology and Society Division, or the U.S. Geoheritage Advisory Group.
- *Be alert to local, state, and federal legislation and policy development relevant to Geoheritage or for designation of specific sites.* Get involved by offering expert assistance, commenting, contacting decision makers, sharing this position paper, or soliciting additional expertise. Seek advice from and share information about Geoheritage with GSA's Geology and Public Policy Committee, GSA's Geology and Society Division, and GSA's Director for Geoscience Policy in Washington, D.C.
- *Become engaged in efforts with federal and state organizations, such as NPS and Association of American State Geologists, that may be active in identifying and developing Geoheritage sites.*
- *Propose symposia, technical sessions, and workshops on Geoheritage issues at GSA annual and sectional meetings.* Sharing experiences, successes, and challenges with Geoheritage designations and management will help others in the geoscience community be more effective in their efforts to preserve Geoheritage sites for future generations.
- *Develop educational materials about Geoheritage.* Designing descriptive and explanatory documents, including drawings and pictures, would be helpful to interested parties, such as policy makers, educators, and site managers, for use in handouts, signage, websites, and field trips.

## REFERENCES

1. UNESCO Global Geoparks, <https://en.unesco.org/global-geoparks>
2. IUCN Geoheritage Specialist Group, <https://www.iucn.org/commissions/world-commission-protected-areas/our-work/geoheritage>
3. IUGS Commission on Geoheritage, <https://www.iugs.org/commissions>
4. U.S. Geoheritage Advisory Group, <http://www.americasgeoheritage.com>.
5. National Park Service Unofficial Register of Geosites, <https://www.nps.gov/subjects/geology/unofficial-register.htm>.
6. Global Geoparks Network, <http://www.globalgeopark.org/>.
7. America's Geoheritage II: Identifying, Developing, and Preserving America's Natural Legacy: Proceedings of a Workshop (2021) report; <https://www.nap.edu/catalog/26316/americas-geoheritage-ii-identifying-developing-and-preserving-americas-natural-legacy>