

# Geoheritage: Geology of the Community, for the Community, by the Community

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Geoheritage identifies and seeks to protect our geodiversity through geoconservation. Through a three-pronged approach, Geoheritage (1) acknowledges the *scientific* value of the geodiversity in global localities; (2) addresses *economic* sustainable development in geotourism; and (3) facilitates the *educational* impact of geoscience in both informal and K–16 classroom settings. Geoheritage makes explicit connections between our natural and cultural heritage.

In 2012 (revised in 2017), the Geological Society of America released its position statement on Geoheritage, supporting the Geoheritage designation and the appropriate, respectful management of scientifically, culturally, educationally, and/or aesthetically significant Geoheritage sites. Currently, many GSA members engage with sites of unique geodiversity—scientifically, economically, and/or educationally—and participate in Geoheritage efforts, often without an awareness of existing networks, resources, and opportunities to integrate and optimize their impact. We endeavor to change this: A Pardee Keynote Symposium (P3: Geoheritage: Celebrating Our Past, Protecting Our Future) at the upcoming GSA Connects 2021 in Portland, Oregon, USA, explores a spectrum of opportunities for geoscientists and educators to professionally participate and integrate within this exciting and bold enterprise (Fig. 1).



**Figure 1.** Kentucky Geological Survey geologists lead field education and professional development in the Red River Gorge Geological Area in eastern Kentucky, USA. Photograph provided by the Kentucky Geological Survey.

## WHAT QUALIFIES AS A GEOHERITAGE SITE?

Geoheritage sites are locations where geology can be well illustrated and relevant interpretations can be communicated to the

public. The hope is to facilitate a deeper understanding of landscapes, resources, hazards, history, and culture. The U.S. National Park Service (NPS) is an obvious leader in preserving and managing Geoheritage sites (see NPS Geologic Resources Division and American Geosciences Institute, 2015), but innumerable other agencies also contribute to this critical effort. Geoheritage sites can exist on widely different scales and sizes, ranging from international geoparks (McKeever et al., 2010) to state parks and local nature preserves or even single outcrops. These sites can be



**Figure 2.** Geoheritage sites range from federally protected National Park sites to smaller sites of which many local citizens are often unaware. **Left:** Students on a field course to Yellowstone National Park enjoy Old Faithful Geyser. **Right:** The Principles of Paleocology course partnered with Friends of the Black Belt Prairie and the local school board for research and community-engaged learning within Osborn Prairie, a remnant of the Black Belt Prairie found in Oktibbeha County, Mississippi, USA, that hosts marine Cretaceous fossils eroding from chalk outcrops, as well as modern biodiversity in the form of disjunct and endemic species. Photographs by Renee Clary.

administered by either public or private entities at individual, local, state, federal, or international levels (Fig. 2).

Geoheritage sites serve as valuable public resources. They provide opportunities for public recreation or tourism and can have a major impact on local economies. They also can provide a critical educational resource through opportunities for informal and formal teaching in geology, biology, ecology, and other environmental sciences, and they have the potential to increase public understanding and geoliteracy in critical climate and sustainability issues facing our planet (Clary, 2021). Entire classes and curricula can be, and have been, developed using the features and processes visible at Geoheritage sites.

Geoheritage sites rely heavily on geologic research, both as a foundation for interpretation and as a basis for responsible site management (Chan and Kamola, 2017). Also, Geoheritage sites can provide spectacular platforms for research, using the marquee illustrations of geologic features and phenomena often displayed at these sites. When protected and well managed, these sites can



**Figure 3.** Washington 100 is a new geotourism website from the Department of Natural Resources, Washington State, USA, that features 100 great places to view geology in the state (<https://wa100.dnr.wa.gov>). Image from the Washington Geological Survey (Washington Department of Natural Resources).

provide a relatively secure location for longitudinal research, through well-documented site management and sustainable use.

Importantly, Geoheritage sites provide a needed and highly visible platform for demonstrating inclusivity, respect, and accessibility (Semken, 2005). The identification and development of culturally sensitive and respectful interpretation of Geoheritage sites necessitates the active engagement of multiple voices and stakeholders, and inclusion of the widest possible spectrum of those communities with connections to the site. Multiple voices, especially those of local Indigenous peoples and local landholders, contribute to the conversation that navigates toward a public awareness about such sites. Compromise and careful adaptation of initial ideas or draft protection plans are often necessary. Making these critical and enlightening sites as accessible as possible, while still respecting and preserving the often-fragile nature of these sites, is an ongoing challenge.

### AN INVITATION TO SHOWCASE YOUR GEOHERITAGE

The 2021 Geoheritage Pardee Keynote Symposium celebrates Geoheritage by highlighting successes, opportunities, best practices, and available informational resources. We also showcase geodiversity—at GSA Portland and beyond—through archived short video contributions, StoryMaps®, and virtual field trips that can be explored online (Fig. 3). We seek all input, feedback, and concerns through a moderated town-hall conversation to strengthen an integrated, multivocal Geoheritage initiative.

**Our Geoheritage Challenge:** Do you want YOUR favorite Geoheritage site to be considered for the Geoheritage Pardee showcase of geodiversity? We invite you to submit a short video celebrating your favorite Geoheritage site or share a virtual field trip or StoryMap® you find particularly useful or informative. We welcome both established, protected sites as well as new Geoheritage opportunities. Even if you are unable to attend GSA Connects 2021, you may share your Geoheritage site video and join our Geoheritage efforts! Register your interest at

<https://forms.gle/KwgjDGMdA3f5cPUq9> by 15 Sept. to receive guidelines on how to record and submit your 3–5 min mp4 video. The Geoscientists’ Choice Geoheritage Video Awards—as determined by the GSA Connects 2021 participants—will be named in Portland. If you need additional information, please do not hesitate to contact the authors.

### SUMMARY

Undoubtedly, Geoheritage positively influences our professional, public, and personal lives. It encompasses the intersection of geologic research, site preservation, formal education, public outreach, landscape management, recreation, tourism, and personal inspiration—and it is most successful when a wide spectrum of community voices are engaged and acknowledged. We invite you to participate and ensure that your voice is heard.

### ACKNOWLEDGMENTS

We thank Nelia Dunbar, New Mexico Bureau of Geology and Mineral Resources; Marjorie Chan, University of Utah; Kennard Bork, Dennison University; and Eric Pyle, James Madison University, for their suggestions that improved this manuscript.

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