

Interpreting a Billion-Year Record of Life Preserved Throughout the National Park System

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A billion years of time is nearly unimaginable. The remains of ancient animals and plants preserved in rocks spanning more than a billion years reveal a complex and interesting story of evolving life on a dynamic planet. The fossil record of North America is well represented by paleontological discoveries throughout the National Park System of the United States. Fossils are non-renewable resources and have been documented in at least 230 National Park Service (NPS) areas ranging from the most primitive microscopic life forms to the giants of the ice age. Fossils connect us to past worlds on our own planet and present excellent interpretive opportunities.

Petrified bones, teeth, shells, leaves, wood, and footprints uncovered in parks yield information about prehistoric biodiversity, past climatic changes and continuously evolving paleoecosystems. Millions of fossil fish are preserved in 50-million-year-old lake sediments within and surrounding Fossil Butte National Monument in Wyoming. Marine reptiles, sharks, and other sea life inhabited a shallow inland sea bisecting North America during the time of the dinosaurs. Their fossils are known from several national parks extending from Texas to the tundra. Fossilized sloth dung from caves in Guadalupe Mountains



The National Park Service's Junior Paleontology Program activity book was created in 2010.

National Park and Grand Canyon National Park yields information on diet and climate. Fossil termite nests in petrified logs, leaf impressions with evidence of insect chewing, or predator bite marks in ancient bones demonstrate interactions between organisms of the past.

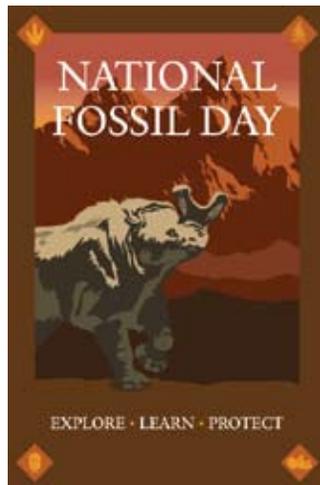
Long before the footsteps of Union and Confederate soldiers marched across the fields of Gettysburg,

dinosaurs left their footprints in mud. Today these tracks are preserved in blocks of stone used in the construction of a bridge on the battlefield. These tracks are one example of fossils preserved in a cultural resource context throughout the National Park System. Others include projectile points made of agatized petrified wood, ornamental objects incorporating fossils recovered from

archeological sites, and historic structures with fossiliferous building stones.

Museums around the world enable the public to view fossils in displays and exhibits, sometimes including complete skeletons, which have been cleaned, repaired, and put back together. The national parks provide wonderful outdoor opportunities for visitors to encounter fossils in their natural state—literally “in the wild” within rocks. The personal discovery of a fossil in the field, regardless of whether the remains are common or rare, is exciting for the visitor and typically presents an educational moment. Such moments of discovery frequently generate discussions and questions about the science and methods of paleontology, including, “What is a fossil?,” “How are fossils formed?,” and “What is the relationship between a fossil and the rock it is preserved?”

In March 2009, President Obama signed into law the Paleontological



National Fossil Day logo

Resources Preservation Act. The legislation mandates federal agencies, including the NPS, to establish education programs to increase public awareness about the significance of paleontological resources. In support of this mandate, the NPS and over 130 partners hosted the first annual National Fossil Day on

October 13, 2010. National Fossil Day was a nationwide event celebrating the scientific and educational values of fossils (<http://nature.nps.gov/geology/nationalfossilday>).

From fossil localities and caves deep within the Grand Canyon to remote sites high in the mountains of Glacier National Park, scientists have carefully documented non-renewable paleontological resources. Collectively, National Park Service fossils span more than a billion years of Earth’s history and yield important scientific information related to the history of life. Through careful management and stewardship, future fossil discoveries in the national parks will continue to expand our understanding of the prehistoric world and our evolving planet.

Vincent L. Santucci is chief ranger at George Washington Memorial Parkway in McLean, Virginia.

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