

# *Grand Canyon National Park*



## **Glossary and Resource List**

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## Glossary of National Park Service Terms

### The National Park Service and National Park System

The National Park Service preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations. The Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

The numerous designations within the National Park System sometime confuse visitors. The names are created in the Congressional legislation authorizing the sites or by the president, who proclaims "*national monuments*" under the Antiquities Act of 1906. Many names are descriptive -- lakeshores, seashores, battlefields --but others cannot be neatly categorized because of the diversity of resources within them. In 1970, Congress elaborated on the 1916 National Park Service Organic Act, saying all units of the system have equal legal standing in a national system.

**National Battlefield:** This general title includes national battlefield, national battlefield park, national battlefield site, and national military park. In 1958, an NPS committee recommended national battlefield as the single title for all such park lands.

**National Cemetery:** There are presently 14 national cemeteries in the National Park System, all of which are administered in conjunction with an associated unit and are not accounted for separately.

**National Historical Park:** This designation generally applies to historic parks that extend beyond single properties or buildings.

**National Historic Site:** Usually, a national historic site contains a single historical feature that was directly associated with its subject. Derived from the Historic Sites Act of 1935, a number of historic sites were established by secretaries of the Interior, but most have been authorized by acts of Congress.

**National Lakeshore:** National lakeshores, all on the Great Lakes, closely parallel the seashores in character and use.

**National Memorial:** A national memorial is commemorative of a historic person or episode; it need not occupy a site historically connected with its subject.

**National Monument :** Historic landmarks, prehistoric or historic structures, and other objects of historic or scientific interest which are located on public land. The Antiquities Act of 1906 gave *the president* power to declare a national monument by public proclamation based on its scientific, historic, or archeological importance.

**National Park:** These are areas of national significance, generally large natural places having a wide variety of attributes, at times including significant historic assets. They are preserved for

recreational, educational, historical, or cultural purposes *by an act of Congress*. Hunting, mining and consumptive activities are not authorized.

**National Park System:** In an Act of August 18, 1970, the National Park System was defined in law as, "any area of land and water now or hereafter administered by the Secretary of the Interior through the National Park Service for park, monument, historic, parkway, recreational or other purposes."

**National Parkway:** The title parkway refers to a roadway and the parkland paralleling the roadway. All were intended for scenic motoring along a protected corridor and often connect cultural sites.

**National Preserve:** National preserves are areas having characteristics associated with national parks, but in which Congress has permitted continued public hunting, trapping, oil/gas exploration and extraction. Many existing national preserves, without sport hunting, would qualify for national park designation.

**National Recreation Area:** Twelve NRAs in the system are centered on large reservoirs and emphasize water-based recreation. Five other NRAs are located near major population centers. Such urban parks combine scarce open spaces with the preservation of significant historic resources and important natural areas in location that can provide outdoor recreation for large numbers of people.

**National River:** There are several variations to this category: national river and recreation area, national scenic river, wild river, etc. The first was authorized in 1964 and others were established following passage of the Wild and Scenic Rivers Act of 1968.

**National Seashore:** Ten national seashores have been established on the Atlantic, Gulf and Pacific coasts; some are developed and some relatively primitive. Hunting is allowed at many of these sites.

**National Trail:** National scenic trails and national historic trails are the titles given to these linear parklands (over 3,600 miles) authorized under the National Trails System Act of 1968.

**Affiliated Areas:** The Affiliated Areas comprise a variety of locations in the United States and Canada that preserve significant properties outside the National Park System. Some of these have been recognized by Acts of Congress, others have been designated national historic sites by the Secretary of the Interior under authority of the Historic Sites Act of 1935. All draw on technical or financial aid from the National Park Service.

**Other Designations:** Some units of the National Park System bear unique titles or combinations of titles, like the White House and Prince William Forest Park.

## Glossary of Terms Used in Lesson Plans

**Adaptation:** the way a plant or animal changes over time in response to environmental conditions.

**Ancestral Puebloan:** ancestors of today's Pueblo people. These include the Hopi, Zuni, and all New Mexico's pueblo tribes.

**Architect:** a person who designs buildings and directs their construction.

**Architecture:** a style or way of building.

**Biodiversity:** the variety and variability of living organisms in an environment as indicated by numbers of different species of plants and animals.

**Biology:** the study of life.

**Birding:** the popular hobby of observing birds in the wild.

**Botany:** the study of plants.

**Civilian Conservation Corps:** unemployed young men could work for the government building trails, roads, campgrounds, and buildings on public lands to earn money for their struggling families between 1933 and 1942.

**Classification:** the grouping or ordering of objects or organisms into categories based on shared or common characteristics.

**Colorado Plateau:** a large geologic area uplifted thousands of feet in elevation covering parts of Arizona, Colorado, New Mexico and Utah.

**Colorado River:** a major river of the southwestern United States, flowing 1450 miles from its headwaters in the Rocky Mountains of Colorado, through the Grand Canyon, and ending in the Gulf of California.

**Community:** an interacting population of plants or animals living in the same habitat.

**Conservation:** the careful use of a resource, thus ensuring its availability over time.

**Deposit:** anything that is laid down, especially the settling of matter by a natural process.

**Desert:** a region with a mean annual precipitation of 10 inches or less; thus capable of supporting only a limited population of plants and animals.

**Diurnal:** animals that are active during the day.

**Dune:** a mound, hill or ridge of windblown sand.

**Ecology:** the study of relationships between living things and their environment.

**Economy:** the way a certain place uses and distributes its money.

**Ecosystem:** a community of living things together with their nonliving environment.

**Entrepreneur:** a person who owns and operates a business.

**Environment:** the total of all of the surroundings - air, water, vegetation, human element, wildlife, climate, location - that has influence on something's existence.

**Erosion:** the slow wearing away of rocks or soil by natural processes, such as rain, wind, ice and snow.

**Fault:** a fracture in the earth's surface where tectonic plate movement has occurred.

**Fossil:** the hardened remains or imprints of plants or animals preserved in stone or other material.

**Geography:** the study of the earth's surface features, and the distribution of life, including human life and the relationship of humans to their environment.

**Geology:** the study of the origin, history and structure of the earth.

**Gneiss:** a common metamorphic rock similar in composition to granite but in which the mineral grains are aligned in distinct bands.

**Granite:** a common intrusive igneous rock that is hard, coarse grained, light colored, rock, and is composed primarily of quartz and feldspar or mica.

**Great Depression:** a time in United States History when many people were out of work.

**Habitat:** the arrangement of food, water, shelter or cover and space suitable to an animal's needs.

**Igneous Rock:** rock formed from hot magma which then cools and hardens. Ex: granite

**Inner Gorge:** the steep-walled gorge at the bottom of the Grand Canyon where the Colorado River flows.

**Lava:** the general term for molten rock that erupts and cools at the Earth's surface.

**Law of Superposition:** states that in a sequence of rock layers, lying one on top of the other in the order they were originally deposited, the first layer deposited is the one on the bottom, thus the bottom layer is the oldest, and the top layer is the youngest.

**Limestone:** a sedimentary rock consisting chiefly of the mineral calcite (calcium carbonate), often containing marine fossils.

**Life Zones:** bands of vegetation resulting from particular topography and climatic conditions; also called biotic zones.

**Metamorphic Rock:** rock that has been subjected to high heat and pressure, causing it to change chemically or physically from its original form (unlike igneous rocks, metamorphic rocks never melted).  
Ex: Sedimentary limestone changes into metamorphic marble; Vishnu Schist is the dark-colored, metamorphic rock found at the bottom of the canyon.

**Mineral:** a naturally occurring inorganic substance with a definite chemical and physical properties and a definite crystal structure.

**Natural History:** the story of nature's past; the conditions in nature's past that have led to its current state.

**Naturalist:** one who studies nature and the relationships in nature.

**Natural Resources:** materials that are found in Nature and that can be used by people in many ways. Fresh water, soil, coal, and forests are all examples of Natural Resources.

**Nocturnal:** animals that are active at night.

**North Rim:** the top of the north side of Grand Canyon, a less visited part of the park that is closed from mid-October through mid-May due to snow. The North Rim is approximately 8000 feet in elevation, which is 1000 feet higher than the South Rim.

**Paleontology:** the study of fossils and ancient life forms.

**Petroglyph:** an image pecked or scratched into rock, creating a negative rock surface and revealing the lighter rock underneath.

**Pictograph:** an image created by applying pigment to rock, leaving a positive color image on the surface.

**Plate Tectonics:** the theory that the surface of the earth is made up of moving plates which are responsible for geologic activity, such as earthquakes, mountain ranges, and uplifts.

**Plateau:** an elevated area of flat land.

**Preservation:** action that maintains an area intact for the protection of cultures, wildlife and plants, or other natural resources.

**Pueblo:** a house made of Adobe or stone built by Native Americans in the southwestern United States. Pueblos are shared by the community and usually several stories high.

**Radiocarbon Dating:** a way to determine the age of various materials by watching the rate at which chemicals in the material break down.

**Sandstone:** rock made mostly of sand-like quartz grains, often cemented in calcite or silica.

**Schist:** a metamorphic rock with distinct parallel layering.

**Sedimentary Rock:** rock that is formed when deposits of loose materials are cemented together, usually by lime or silica, to form layers. Ex: limestone, sandstone, and shale - the upper 4000 feet of visible rock at the Grand Canyon are sedimentary.

**Shale:** a sedimentary rock composed primarily of fine-grained materials such as silt and clay; also called mudstone.

**Silica:** quartz (silicon dioxide,  $\text{SiO}_2$ ), one of the most common rock-forming minerals.

**South Rim:** the top of Grand Canyon on the south side where most people visit; open year-round. The elevation at the South Rim averages 7000 feet.

**Split-twig Figurine:** small animal figures made by ancient North Americans from twigs. The figures may have been used in hunting rituals.

**Wildlife:** all animals that are not domesticated.

**Zoology:** the study of animals.

## Resource List

The Grand Canyon Association (GCA), a non-profit organization established in 1932 to provide services and funding for Grand Canyon National Park, offers many resources which may be helpful to you in preparing your class. Net proceeds from sales and other operations are returned to the park to support research, educational programs, and visitor information services. **Teachers receive a 15% discount on all purchases.** To order or request a comprehensive, illustrated catalog showing all of GCA's offerings, call 1-800-858-2808, or visit their website at [www.grandcanyon.org](http://www.grandcanyon.org).

### *Children's Books:*

I See Something Grand, by Mitzi Chandler. (Ages 3-6)

A child and her grandfather discover together the secrets of the Grand Canyon. Richly illustrated with full-page watercolors by Barbara Epstein-Eagle. This book is an excellent introduction to the Grand Canyon for young children.

Exploring the Grand Canyon by Lynne Foster. (Ages 9-Adult)

An introduction to the geology, history, and biology of Grand Canyon. Illustrated with photographs, drawings, and activities. This is a great teacher resource.

Condor's Egg, by Jonathon London. Illustrated by James Chaffe. (Ages 3 - 7)

"The drama inherent in the emergence and survivable of the young guarantees that this story will hold the interest of young children, older readers who understand the plight of the species will appreciate the book on a deeper level. "A valuable addition for libraries of any size". - *School Library Journal*.

### *Natural History:*

An Introduction to Grand Canyon Ecology, by Rose Houk.

Explore the astounding ecological diversity of the Grand Canyon through an entertaining and educational journey with an author who knows it intimately. Using illustrations, photographs, and clear illuminating text, this book helps you and your students understand the dynamic nature of ecosystems everywhere.

Grand Canyon National Park: A Natural History Guide, by Jeremy Schmidt.

Beginning with the park's most conspicuous theme, geology, the author explains how the shape of the land, elevation, exposure to the sun, soil types, moisture, and slope determine the relationship between the canyon and its plant and animal inhabitants.

A Field Guide to the Grand Canyon, by Stephen R. Whitney.

This comprehensive Field Guide includes plants and animals found in the park, plus some background information on the natural history of the park. Many plants and animals detailed in this book have a wide range and are found throughout the Four Corners area. This book can be helpful to teachers outside of the park as well.

Audubon's Field Guide to the Southwestern States, by Peter Alden and Peter Friederici.



***Geology:***

An Introduction to Grand Canyon Geology, by L. Greer Price.

This book provides an excellent overview of Grand Canyon geology. It discusses the geologic record, the geology of the region, plate tectonics, and the Colorado River. Geologic principles are explained for a wide range of audiences.

Roadside Geology of Arizona, by Halka Chronic.

Along the highways of Arizona, evidence of geologic activity is abundant. This book identifies and describes the geology that can be seen from each highway in the state. It also teaches the basics of geology so that the reader has a greater understanding of what s/he is seeing. This book can be used as an excellent source for pre-visit or en-route activities based on the route taken to the canyon.

***Human History and Culture:***

Living at the Edge; Explorers, Exploiters and Settlers of the Grand Canyon Region, by Michael G. Anderson.

A comprehensive look at the pioneer history of the Grand Canyon region, from its earliest residents to the creation of the national park. Detailed in scope, yet popular in its approach, this book will appeal to both historians and the general reader.

In the House of Stone and Light, by J. Donald Hughes.

This popular approach to human history of Grand Canyon provides an excellent overview from the earliest Native Americans through the development of Grand Canyon National Park. Dozens of historic photographs combine with a lively narrative to provide the perfect introduction to all those interested in the Grand Canyon.

Spider Woman Stories, by G. M. Mullett.

Collection of legends from the Hopi Indians.

Turtle Dream, by Gerald Hausman. Illustrated by Sid Hausman.

Collected stories from the Hopi, Navajo, Pueblo and Havasupai people.

Ghost Walk, by Gerald Hausman. Illustrated by Sid Hausman.

Collection of Native American tales of the spirit.

Messages on Stone, by William Michael Stokes. Illustrated by William Lee Stokes.

Selections of Native Western rock art. Includes examples and explanations of different types of rock art found in the American Southwest.

***General:***

Grand Canyon: The Vault of Heaven, by Susan Lamb.

Grand Canyon is one of the most compelling landscapes on Earth. Each of us is drawn to it for our own reasons—for its unique beauty, its untrammelled wilderness, or for the lessons it offers on the subjects of geology, biology, and human history. This book tells the canyon's story in terms both familiar and reverent. Richly illustrated with contemporary and historic photographs, drawings, and maps.

Along the Rim, by Nancy Loving.

This easy-reading text contains 47 color photographs, maps, and panoramas from overlooks on the South Rim.

The Colorado River in Grand Canyon, by Larry Stevens.

A map and guide to 283 miles of the Colorado River through Grand Canyon National Park. Weather, climate, geology, human history, ecology, and index included. This is an excellent overview and can be used to simulate a river trip in the classroom.

Grand Canyon River Guide, by Buzz Belknap.

A map and guide to 279 miles of the Colorado River through Grand Canyon National Park. Geology, history, archaeology, natural history, and photo workshop included. Another excellent overview and can be used to simulate a river trip in the classroom.

***Hiking:***

Official Guide to Hiking the Grand Canyon, by Scott Thybony.

Provides profiles and maps of major trails, beautiful photographs, and detailed information for hiking and backpacking in the Grand Canyon.

***Videos:***

Canyon Song

Journey into the Grand Canyon with this award-winning video as your guide. Canyon Song will take you below the rim to explore, from the hiker's perspective, a wealth of history, geology, botany and something more—the emotional connection between people and this spectacular canyon. 33 minutes

River Song

The Colorado River is the lifeblood of the Grand Canyon. It is one of the world's most challenging rivers because of its remoteness, violent rapids, and unpredictability. This film explores both the beauty and the danger of this river, its animals, plants, and geology. 40 minutes

***Maps:***

Indian Country Map

Produced by AAA, this is the best road map available for journeying through the Four Corners area of the Southwest. Extremely detailed and accurate, this map also includes descriptions of a wide variety of attractions throughout the area.

*Geologic Map, by Breed, Huntoon and Billingsley*

Recently revised, this authoritative map was compiled in cooperation with the U.S. Geological Survey. Each of the canyon's many layers is represented in a different color on a topographic base map. 60" x 42"

***Miscellaneous:***

*Grand Canyon Panoramic Poster*

36" x 20"

*Ten Thousand Cathedrals Rolled into One - Grand Canyon Poster*

14" x 11"

*Tonto Platform and Canyon Rim Posters*

Illustrated showing plants, animals, and terrain

37" x 26"

*Canyon Rim Nature Poster*

Your students will be challenged to find and identify the plants and animals found at Grand Canyon in this full-color poster by distinguished artist Lawrence Ormsby.

*Grand Canyon CD ROM*

Experience the sights and sounds of the Grand Canyon on the Colorado River with whitewater rapids, waterfalls, remote side canyons, and much more. This easy-to-navigate CD-ROM includes interactive maps, 360-degree panoramas, and information on geology, natural history, early explorers, and ancient peoples.

*Arizona Academic Standards*

<http://www.ade.state.az.us/standards/contentstandards.asp>