

# History E-Library



Discover History | Search

National Park Service

Home

National Park  
Service  
History

Park  
Histories

Historical  
Themes

Maritime  
History

Research  
and  
Education

Oral  
History



[Grand Canyon National Park](#)

## Environmental History The View at the Grand Canyon

*Donald Worster*  
*Professor of American History*  
*University of Kansas*

My purpose is to explore an extraordinary place on Earth, the Grand Canyon and its adjoining country, through the lens of an environmental historian. I will not try to present a single, unified interpretation of the Canyon's history, but rather present (and scrutinize) rival views of its history and of its historical implications. Environmental history is not a single way of seeing the past, but an unruly clutch of many ways of seeing and interpreting.

Those ways may not necessarily be in conflict with one another, but the conflicts are often hard to reconcile. I once tried to lay out a unified, three-point model of the field, one that I thought might help resolve some of its internal contradictions or tensions, but the ink was hardly dry before some of my colleagues began to critique it. Historians don't like models, and they certainly don't like other historians' models. Typically, they sort themselves into camps or rivalries or schools, practicing this kind or that kind of history, but not all kinds at once. So it is with environmental history.

At the risk of generating still more disputation, I will identify two rival ways of doing environmental history that characterize the field right now--one emphasizing the cultural construction of nature, and the other emphasizing nature's construction of society. The first approach tends to focus on how different cultures, or different groups within a single culture (subcultures identified by race, ethnicity, class, or gender), have perceived and shaped their environment. The second approach tends to emphasize how powerful natural forces (geography, climate, soils, biota) have influenced the development of human economy and society. The first is deeply grounded in culture studies; the second in evolutionary science. The first group of historians tends to quote people like Raymond Williams, Jacques Derrida, Michel Foucault, and other cultural theorists, most of them French. The second group tend to quote the likes of Charles Darwin, E.O. Wilson, and Jared Diamond, mostly British and American scientists.

All of this may threaten with too much abstractness, but I will try to illustrate the differences concretely by using the Grand Canyon as a case study. The Canyon works wonderfully well for this purpose, for it is emphatically a landscape of dramatic contrasts. On the one hand, there are the great plateaus stretching for miles and miles--immense plateaus across which people have been walking or riding for thousands of years, and especially over the past century. On those plateaus a lot of cultural construction of nature has been going on--not only there, but obviously and emphatically there. And then we come to the great chasm itself, which drops away from our feet into deep evolutionary and geological time. A journey down into that chasm, I will suggest, leaves one with many questions about what we mean by history and about the role that nature has played in the construction of culture and human experience. I will argue that environmental history looks very different if you stay up on the plateau, prowling around the human structures and tourist interpretations that have accreted here, than if you plunge deep within the chasm.

Environmental history should deal with both landscapes and both processes. It should think of itself as an edge field. It should put us in that complicated situation where the facts of nature and the meanings that humans attach to nature come together--interact, intermingle, conflict, contest, and influence one another. Environmental historians, in other words, should somehow manage to plant one foot on the front lawn of the El Tovar hotel and the other on a trail heading down to the bottom of the Canyon. But that's a hard position to maintain without splitting your pants.

First, the cultural construction of nature. This is where most environmental historians feel most comfortable, with that one foot, or maybe both feet, on the El Tovar lawn or even up on the hotel porch. Thus we present ourselves as students of the cultural view of nature and of changes in that view over time. From that vantage environmental historians have produced some of their best work. They have amply illustrated Raymond Williams's observation that nature is one of the most complicated words in the English language.

Culture refers to systems of meaning, rules of behavior, and views of the world. But it also has its material manifestations: culture as technology, as modes of economic production and consumption, as buildings, roads, helicopters, IMAX theaters, oil paintings, and picture post cards. All of those are produced when nature, standing there passively, gets transformed from ideas into artifacts. We do this transforming all the time; it's fun, it's creative, and it's absolutely necessary for survival. Without the cultural construction of nature, whether that construction involves giving meaning to the environment or getting a living out of it, we would not be fully human. We would be indistinguishable from the rabbitbrush or rock squirrels.

By training and tradition historians commonly prefer to work with those constructions of nature that we find inscribed in written records--constructions found in diaries and letters, statistical data, novels, federal reports, and transcribed interviews. We are not usually trained in archaeology, so a split-twig figurine from a limestone cave we pass over and leave to other specialists. But whenever we find the Grand Canyon beginning to show up on paper, we fall to work.

The first written records of this place go back four and a half centuries, to the year AD 1540 when the Spanish conquistador Garcia Lopez de Cardenas and his small band of men came suddenly to the edge of the greatest natural wonder in the world. What those tired and thirsty travelers actually said to each another at first sight of the Grand Canyon is, unfortunately, scarcely recorded. We really don't know much about their reactions or thoughts. Regrettably, they did not bring along a Cervantes or El Greco, who might have risen to the occasion and produced an extraordinary work of art. The soldiers, to be sure, did not need writers or artists to tell them how to react to the scene, but we can wish they had them along to record the moment and leave us an account.

Their silence is perfectly understandable. Very few of us ever leave any written record of our visits to this place. Yet despite that very common feeling of being at a loss for words, plenty of words, pictures, and stories of the Canyon have accumulated since that first entrada. By now the shock of encounter has even become ritualized. Since Cardenas's day, and particularly since the late nineteenth century, the place has acquired many complicated meanings that historians have turned over and over in analysis.

Former Secretary of the Interior Bruce Babbitt, a descendant of early Arizona pioneers, has, for example, pointed out that "this canyon has come, more than any other national park, to symbolize the West, the out-of-doors, the national park system, what it is the United States is about." But that is not all it has come to mean. A massive fact of nature has been transformed into literally thousands of public and private meanings--into a bewildering array of symbols, until sometimes the symbols and meanings can seem more important than the physical reality.



A Grand Canyon visitor in 1914.

Those mental constructions have not just floated around in people's head; they have been impressed on the physical landscape. Even before it was established as a national park, the Canyon counted a scattering of private buildings--hotels for railroad tourists, mining shacks, tollbooths for the trails. Eventually that number grew into what the Park Service has come to call Grand Canyon Village, a settlement populated by nearly a thousand man-made structures on the North and South Rims, including train depots, churches, schools, barns, banks, gift shops, and employee housing. Most of those buildings have, in turn, artifacts to sell: a gourmet meal, a hot shower, a helicopter ride over the Canyon, a Navajo blanket. You can buy a copy of Marguerite Henry's juvenile novel about a charming little feral burro, Brighty of the Canyon, and curl up with it on a sofa, never going outdoors. Or buy a spectacular video of white-water rafting and, watching it on a VCR, never get wet.

Each year adds more constructions, mental as well as physical, than we can ever hope to keep track of. The first railroad passengers arrived at the Canyon in September 1901, the first automobile passengers just four months later. That was almost 99 years ago. Today, five million people visit the Grand Canyon Village in a single year, arriving by several modes of transportation, most of them staying only a short while. On a peak day they may number 30,000. They choke the asphalt roads with their automobiles and tour buses and pollute the desert air with oxides of sulfur and nitrogen. And they choke our minds with their sheer multiplicity of symbols, meanings, and ecological impact. The overall environmental impact of those numbers has grown to substantial proportions. The Village annually buys 37,000 megawatt hours of electricity, generates over 4,000 tons of solid waste, and uses 160 million gallons of water, taken from a spring across the chasm and pumped uphill to the South Rim. The environmental historian will note from these facts that America's consumer habits and urban problems have been brought even to this remote location

That explosive development of many sorts has been the subject of several books, which together provide a good introduction to one large aspect of environmental history in this place. For broad overviews, I recommend two short but comprehensive, and handsomely illustrated, books: Donald Hughes's In the House of Stone and Light and Michael Anderson's Living at the Edge. But let me pass on from those useful introductions to more recent books that focus specifically on the cultural construction of nature that has been going on at the Grand Canyon: Stephen Pyne's How the Canyon Became Grand (published in 1998) and Mark

Neumann's [On the Rim: Looking for the Grand Canyon](#) (1999). Pyne is a celebrated environmental historian at Arizona State University's West campus. Neuman is a professor of communications in Florida, but his book is loaded with questions and preoccupations that many environmental historians share. It is a good example of what we call "culture studies," that interdisciplinary and eclectic body of ideas about culture and its generation and expression, a body of ideas that often mixes the personal observations of the author with academic theory.

What unites these writers is a conviction that nature is first and foremost a cultural construction. As Pyne writes, "The Grand Canyon was not so much revealed as created." Pyne opens his book with a chapter on why Spain paid so little attention to the Canyon following that 1540 encounter. Spain, he argues, was unprepared to see and value the place, for the Canyon offered neither gold treasure nor religious converts. The Spanish regarded the place as a useless freak of nature. Their indifference persisted down to the late eighteenth century, as Spain remained a culture mired in intellectual conservatism --a nation resistant to the Enlightenment, to Romanticism, and to modernity in general. That may seem like a huge generalization to deduce from the fact of a skimpy written record, but undoubtedly Pyne is right: the Spanish did not find the Canyon meaningful or interesting for reasons that had to do with their cultural attitudes toward nature, and more generally their attitudes toward science and progress, at home.

Euro-American discovery, Pyne argues, awaited the triumphant arrival of the more science-friendly, progress-minded Anglo Americans, particularly an intellectual elite who came in the 19th century prepared to see, celebrate, and interpret the place. And this is the core of Pyne's approach and argument. Nature lies incoherent and meaningless. It has no intrinsic value or purpose. Only after humans come along and begin to ask questions, form theories, and develop concepts of beauty, order, and process does nature begin to "become real" or become grand." Again, not just any group of humans can achieve this "creation." Anglo fur trappers may have traipsed through this area in the first half of the nineteenth century, following Indian trails, but it was not they who made the Canyon grand. The transformation of the place into one of the world's greatest natural wonders awaited the arrival of a scientific and artistic elite who began showing up in the late 1850s. They included Lt. Joseph Ives and geologist John Newberry, John Wesley Powell and Grove Karl Gilbert, Thomas Moran and William Henry Holmes.

"Almost alone," Pyne writes, "an educated elite had seen merit in the Canyon's bizarre land sculpture, recognized that the river intersected important intellectual questions, and sought out the run in defiance of popular taste, Gilded Age mores, and laissez-fair politics. The High Plateaus were an overlook for high culture." In other words, discovery was the work of an intelligentsia--heroic minds who metaphorically cut a gorge that everyone else has followed ever since.

There are several questions that one can raise about this approach to environmental history. Do elites always perform so pivotal a role in defining a culture's view of nature? What do they owe to their times and fellow citizens? Do they construct nature "almost alone," or does their society guide and help make possible their heroic discoveries and new ideas? Most historians tend to reject any simplistic or overheroicized model in which new ideas trickle down from the best and brightest of a society. They argue that intellectuals tend to reflect their times as much as lead them, that shifts in cultural values and perception are actually more broadly based and more diffuse. Great men and women are, to some extent, made by their times.

If the Grand Canyon had to wait four centuries to be more fully discovered and appreciated, there were reasons other than the purely philosophical. A powerful nation state must first emerge on the continent, accumulating the capital, wealth, and ambition necessary to sponsor the likes of Ives and Powell. There also had to be a broad westward movement by ordinary people, traveling by covered wagons

and handcars, and later there had to be railroads and automobiles, in order for the Canyon to become grand. Only when all those technological, economic, political, and social factors were in place could intellectuals begin to explore--forming bold scientific theories and painting stunning works of art.

For a less elite approach to the cultural construction of nature we can turn to Mark Neumann's book On the Rim. Neumann asks us to look to the masses of ordinary people who have come to the Canyon and made individual and collective constructions of nature. Although He has talked to lots of ordinary folks, sat in bars with them, stood at overlooks and watched how they behave, listened to their stories and admired their family snapshots. Compared to Pyne, he is an egalitarian when it comes to explaining how our views of nature are generated and elaborated.



Visitors at Mather Point on the South Rim of the Grand Canyon.

But then, unlike Pyne, he wraps all those nonelite constructions in very elite, abstract theoretical formulations. He declares that he will examine "the Grand Canyon as an emergent and residual site for the production of the zones of a social imaginary that reflect and contain the geographical and temporal dislocations of contemporary life." What that pompous sentence suggests, I suppose, is that the park's visitors do not come here as happy automatons, programmed to jump out of a tour bus, snap a few glamorous pictures, and rush away with a cheerfully mass-produced set of impressions. On the contrary, he finds the average tourists capable of finding and making a complex geography of fantasies and mythologies. They bring to the place their experiences of a society

undergoing considerable change and dislocation, and when they see the Canyon they see their society anew.

Above all, the Canyon has come to represent for the late twentieth century popular mind the contrast between "Civilization" and "Nature," those powerful polarities that have long been part of our national dialogue. It offers what remains to us of "the edge"--the frontier experience that we continue to seek and need. Along the rim, civilization now seems in full command, improving the accommodations and interpreting the scene. Below the rim, on the other hand, nature continues to stretch away at the tourist's feet, wild and dangerous, an unmarred and beguiling "other world." Standing at the rim, a modern man or woman can feel that he or she is standing on the cusp that separates the ordering energies of culture from the disordering forces of nature. Or the chaos of contemporary life from the clean, rational order of nature. Both views exist, and both can be heard expressed by strollers on the path that runs along the South Rim.

Not only do Americans find such a place of elemental confrontation a thrill to visit; so do other those of other nationalities. Forty percent of the tourists come these days from foreign countries; the strollers are almost as likely to speak German, French, or Japanese as English, and they bring their own diverse meanings to the place. For Neuman those human multitudes offer an endlessly fascinating window into the making and remaking of small "c" culture. He organizes what he sees and hears according to the theories he has read, until finally, near the end of the book, he admits that he runs the risk of losing the Canyon itself in that babble of popular reactions mixed with academic theories.

In an airline magazine, Neumann reads an article on the painter Mark Tansley, whose works include one entitled Constructing the Grand Canyon (1990). According to Neumann,, it shows a Grand Canyon whose walls are made only of text. The painting shows lines and lines of sentences, piled one on top of the other. Workers

with jackhammers, shovels, and chisels smash off big blocks of text, split them open, and let them fall into piles of scattered words and phrases. At the bottom of the canyon, a group pulverizes pieces of sentences into dust. A man loads ore into a mining cart sitting on railroad tracks. "Behind him, someone takes a measure to see how deep they've gone with their work. Off to one side, an athletic climber scales the face of a rock made from texts; he can only climb it because he is too close to read it.... At the opposite end of the canyon, there is the smoke of an explosion. Workers are blasting rock. Cranes, with ropes and pulleys, are mounted on one rim. On the other rim, two bison peer down. Everyone is breaking into a sweat as they hammer away on sentences, phrases, and words. Perhaps the most surprising aspect of the painting are the people Tansey has painted in the center of the scene. Harold Bloom, Paul de Man, and Geoffery Hartman stand there, overseeing all of the busy workers. Jacques Derrida is nearby. Off to the left, Michel Foucault sits alone on a big block of text." (Those names are the reigning kings of literary and cultural studies, the theorists of postmodernism and deconstruction, the proponents of the view that everything is text.) As Neumann realizes, and seems somewhat to rue, such is what the Canyon becomes when scholars become too exclusively fixated on the idea of cultural construction.

The Canyon, I want to suggest, beckons us to put aside for a while our tendency to measure everything in human terms, to reduce the world to a succession of cultural ideas, to frame everything as a confrontation between rival abstractions, or to insist on the triumph of the human imagination over the natural world. To explore that other dimension, let us turn to what Neuman calls, with condescension, the "official story"-- official because it is the story that has dominated the Park Service's interpretative programs here since the 1920s. That story attempts "to solve the mystery of the Canyon by quantifying its dimensions and presenting its landscape as a textbook that tells the story of time on earth." That is, it is a story told by geological and evolutionary science. By retelling that story, by insisting on it over the babble of cultures and voices that come here in increasing numbers, the Park Service, Neumann says, hopes to get people out of their cars, away from the overlooks and restaurants, even get them off the Rim and get them to immerse themselves in the Canyon in and for itself.

As an environmental historian who is not always pleased by the cultural constructionists' steamroller, I support that Park Service intention. I cannot agree with that it is merely another story, no better or more important than any other that can be told here. The story told by natural science is *more* true, more buttressed by veritable facts, more worthy of believing than any set of popular mythologies or private musings. Natural science makes claims to truth that we have to take seriously, though not slavishly or uncritically. Pursuing that truth may also lead us to consider the ways in which nature sets the terms for human settlement and success on the earth.

Cardenas and his troop had a great deal of trouble getting down the steep walls of the Grand Canyon. That steepness, as much as any intellectual baggage they brought from Spain, was a cause of their discouragement and departure. The modern tourist is more fortunate. In the 1930s the Park Service put dynamite and pickaxe to work carving improved trails down the rock face, making easier gradients, tunnels, downslides, retaining walls, and water breaks all the way to the river. Henceforth the hiker or mule rider has enjoyed a wide path --a highly instructive one if the hiker or rider looks at the towering rock walls that she passes and not at the yawning abyss. Let us now set foot on that path and follow it to the bottom, reviewing along the way the story told by natural science. And then, when we have reached the bottom, let us reflect on the significance for environmental history of what has been revealed to us.

Begin with the rock that defines the rim: a long, creamy-white ledge intricately carved by rain and sun, where Utah junipers and Gambel oaks thrust their roots into narrow cracks. This Kaibab limestone, named for the high plateau on the north

side of the Canyon, speaks of a past that is older than North America. It dates back 225 million years and more. Limestone is made of sediments from shells and fine-grained calcium carbonate derived from plants and animals that lived in tropical waters. Limestone indicates that once there was no canyon here; this was a warm, shallow lake. Fossilized brachiopods and crinoids, found abundantly in this formation, testify to that past. Grand Canyon Village sits directly--and often unwittingly--on those chalky fossils, on the hard, solidified remains of that ancient lakebed.

But when this place was a large, warm, shallow lake, it was not exactly here--near the 36th latitude north. It was located much closer to the Equator and was part of a small continent (or large island) that was drifting toward collision with other land masses to form, eventually, the supercontinent Pangea. Think on that fact for a few moments and the mind begins to reel, not over today's dizzying vista but over a past that defies our imagination.

The rim, I have said, is 225 million years old. Where are the missing 225 million years that have transpired since the Kaibab limestone was laid down--the natural archives that might link the present-day American life to that pre-North American past? They have been washed away by rain, deposited by the Colorado River at its delta. Gone from this place are some of the most amazing stones ever recorded: chapters entitled "Triassic," "Jurassic," and "Cretaceous." Gone is the entire Mesozoic era when reptiles became dinosaurs and dinosaurs may have become birds, when mammals first appeared in the underbrush. Gone, too, are the 65 million years of the most recent Cenozoic era. Those stories can be found recorded in the Vermilion Cliffs that run along the northern Arizona border, or higher up on the great staircase of plateaus that constitute southern Utah, but they are no longer in this place.

Missing as well is the whole human era on earth. No time of the Industrial Revolution is recorded here, nor of the High Middle Ages, nor of China's Min Dynasty. This history has other names: Toroweap Formation, Cocinino Sandstone, Hermit Shale. Then, descending deeper into the canyon, one enters into the Pennsylvanian period, which has nothing to do with the politics or settlement of Pennsylvania, and the Supai Group, a thousand-foot- thick series of reddish cliffs and slopes dating back 270 to 320 million years ago.

Then looms the Redwall Limestone, whose pale white rock has been stained rusty red by the overlying sediments seeping over its sharply vertical face. We are now trailing through a time of marine, not fresh, waters, thickly inhabited by small aquatic animals, a condition that also created the Temple Butte Formation with its marine sediments. From there one descends across the broad, gradual slopes of the Tonto Platform before plunging down its serrated sides, marking off greenish layers of Muav Limestone, Bright Angel Shale, Tapeats Sandstone. The names speak of long-lasting periods when this place was the slowly receding shoreline of a continent; sand beaches gave way to mud flats which gave way to a shallow sea invading the land from the west. Picture the Pacific Ocean covering all of California and much of Arizona. But realize that there was no Pacific Ocean 400 to 500 hundred million years ago. We are hiking through a period when this place lay over in the Eastern Hemisphere close to where the center of Africa now sprawls.

Scientists have termed all those thick sedimentary layers, from the Kaibab down to the Tapeats, made up of the remnants of hot deserts and warm seas, the Paleozoic Era--the time of ancient life. Mainly what one sees from high on the canyon rims, or passes through on the way to the bottom, is the Paleozoic on display. Spectacularly carved and richly colored, it was formerly populated by invertebrate organisms (trilobites and dragon-flies) or strange green forests or powerfully toothed sharks. Then, 300 million years down, it abruptly ends at the Great Unconformity, where the rocks change drastically. It is here that here that the Paleozoic begins, and we have arrived at the ancient period when life began.

At this point 12,000 linear feet of records, the Grand Canyon Supergroup, are nearly all missing from the center of the park--a huge gap in the files. After that gap we are into the Precambrian rocks, the oldest archives on earth, dating back 1.75 billion years and more. Exposed to sunlight, they look like well-aged slabs of beef marbled with fat. They bear the name Vishnu Schist, and the pale streaks across their grain are granite--one rock metamorphic, the other igneous. Like all the superseding layers the schist began as sediments, but in this case they were bent, folded, and compressed into immense mountain ranges, soaring higher than the Rockies, as crustal plates collided. Incredibly, all those soaring pinnacles of schist were worn down to a low peneplain well before the Paleozoic commenced and covered them over.



View of the Grand Canyon

We have journeyed back in time nearly to the point where life itself first emerged on this planet, to the dark brown of the inner Granite Gorge. The rock in the walls looks fully its age, but the Canyon is actually a young river valley, only some 3 to 5 million years old. The entire chasm, with its side-canyons, buttes, towers, and buttresses, is a comparatively recent feature on the face of the earth. It was created by the Colorado River, which at last can be heard rumbling through its narrow channel. Once the river followed a different course than it does today, up the channel of the Little Colorado into a closed basin in what is now eastern Arizona. But one momentous day it broke across the divide and, with astonishing speed, began to slice through the land like a razor-sharp knife cutting through layers of soft and then more resistant muffin.

The distance from the South Rim down to the river's banks by the Bright Angel Trail is about eight miles. In that distance the trail passes through one and a half billion years of earth history. Each dusty mile down the trail covers about 187,500,000 years. A single linear foot of twelve inches covers 35,000 years. A mere fraction of that foot covers more time than railroads; nation-states, the printing press, Catholicism, Taoism, written languages, cities, iron tools, and agriculture have existed. A vigorous walker can, in a single stride, pass through a 100,000 years--more time than transpired during the last glacial period, which saw the rise and fall of Neanderthal man. In less than a minute even a plodder can pass through more years than any kind of hominid or proto-hominid has lived on earth.

Have we headed down a path that leaves environmental history behind? Certainly, we have left far behind the history of our own kind of creature, the species that has a penchant for crafting legislation and holy scriptures, that invents alphabets and domesticates livestock. But we have not left behind the history of the millions of other species that have inhabited this earth nor the history of tectonic plates, falling and receding seas, uplifting plateaus, tumultuous orogenies, lava flows, fissures and faults, climate, or erosion. Scientists sometimes call this stuff "history" too and themselves "earth historians." I cannot find any reason to deny that they indeed historians, engaged like me in the study of change over time. A full sense of history, the Canyon teaches, must include more than the literate human civilizations, which have occupied only a couple of inches in the record books of nature. It must reach back to the preliterate societies that once lived near and within the Canyon, and on all the continents except Antarctica. It must extend before humans emerged as a branch on the primate tree, and before animals with backbones or the flowering plants or blue green algae emerged.

To the dismay of the creationists (and the more anthropocentric historians, whose unwillingness to see humans as part of the natural world is akin to creationism), this broader view of history has been gathering force for more than a century. It offers

an official, well-established, though constantly revised, story for our whole modern world. Charles Lyell, the British geologist, and his contemporary Charles Darwin were the first great historians in the broadest sense. The sciences they founded--historical geology, evolutionary biology, ecology, and biogeography--have furnished the intellectual base on which much of modern thought stands.

The names of those pioneering scientific-minded historians are attached to prominent features in the Grand Canyon-- fittingly, for the Canyon may be the single best place anywhere to take in the earth's history that they told. Unfortunately, those features are not easily accessible to the casual visitor. Darwin Plateau, along with the adjoining Evolutionary Amphitheater and Spencer and Huxley Terraces, are located along the south side of the Canyon far from the hotels and shuttles. Likewise, LeConte Plateau, Shaler Plateau, Geikie Peak, Marsh Butte, and Cope Butte (all named after prominent British and American geologists and paleontologists of the late nineteenth century) take more than ordinary effort to see. Lyell Butte is situated midway between the parking lots at Yaki and Grandview Points, but it is too far from either to get much notice.

The most famous figure in Canyon exploration was John Wesley Powell, who in 1869 led the first expedition down the Colorado River, from its tributary waters in Wyoming through the Canyon and beyond. It was he who named this place, as he named many of its prominent features. Although celebrated as a heroic feat of adventure, the Powell expedition was conceived as a scientific exploration, a journey into unknown time as well as unknown space. Powell's government report of 1875, Exploration of the Colorado River of the West and Its Tributaries, has become a classic work in popular scientific and outdoor nature writing. Directly across the river from the Darwin Plateau stands the Powell Plateau--and this is fitting too, for it was Powell who first brought the full force of the new earth history to bear on this place.

Extending from the Powell Plateau is a small appendage, Dutton Point, named after the man who Powell encouraged to write a more complete narrative of the place, Capt. Clarence Dutton of the U.S. Army. Dutton too was a historian, as testified in the title of the magnificent book he published in 1882, The Tertiary History of the Grand Canyon District. Never mind that much of the science in that document has since been revised; Dutton, like Powell, understood the essential fact that one could see deeper into time here than anywhere else. One needed to develop a much larger sense of the past, with more years in it than either old-time religion or old-time science had allowed, in order to create what Dutton called "the sublimest thing on earth."

We have been trudging down a long trail in search of a deeper environmental history. It is late afternoon when we sit down to rest on the sandbar where Bright Angel Creek meets the Colorado River. Powell encamped here on August 15, 1869. A few things have changed since then. We notice two small footbridges nearby, the only ones within the full length of the Canyon. Behind us is a campground and the rustic cabins of Phantom Ranch where hikers may stay overnight. It is not difficult to find even here the handiwork of humans or the ironies of a civilization seeking comfort in the wild. The river current, light brown and smoothly rippling at our feet, seems to flow unchanged. But since Powell's expedition it has been altered by modern engineering; where once it carried 400,000 tons of sediment a day, it now carries only 40,000 tons, the rest are left behind Glen Canyon Dam, which sits less than a hundred miles upstream.

Yet it is not humankind's triumphant construction of nature that seems most obvious at this bottom of the world but rather the transience of what we humans have accomplished. Almost none of the constructs put here by our kind is older than a century, and the dam has been standing for a mere thirty-six years. The oldest structure in this place is an Indian ruin consisting of the floorplan of a rock-walled house, indicating that a few hundred years ago people tried to live and raise a

garden here. They left only the barest trace of their existence. Humans have come and gone from this place. So have other organisms--the giant Shasta ground sloth, the early horse, the camel, a mountain goat. Impermanence of any achievement, any construct, is the insistent, and humbling, message.

With a historical narrative so big and complex, all of us historians have to settle on some division of labor. Some of us must focus on telling the Precambrian part of the story, others the Tertiary, still others that little sliver of events labeled American history. But division of labor should not bring isolation or ignorance of what other historians are finding. Even those who choose to write about 19<sup>th</sup>- or 20<sup>th</sup>-century cultural constructions should be aware that, in the end, the earth has only one history. In that history humans have played a sometimes significant, but more often an insignificant, role, or none at all.



Desert View Watchtower.

Even from an incorrigibly anthropocentric view this place suggests that what humans have done to the earth may be less important than what the earth has done to us. Powerful forces have long been setting the terms of our existence. They have influenced what we have done and what we have been able to do. If we acknowledge that nature is not a passive or unchanging fixture in our lives that we can take for granted, that it is ever active and filled with extraordinary change, we may better

grasp that lesson of the Canyon. Shift the environment ever so slightly this way or that, and immense consequences must ramify throughout all forms of life. Prolong a drought, move a shoreline, change the soil, stir up a storm, eliminate a key species, drop a rock on an unsuspecting victim, and the fate of individuals and societies may be profoundly affected.

What if the Colorado Plateau still happened to be under water, as it has been so often in the past? What if this place was still a coastal beach facing a wide ocean? What difference would that have made in the westward movement of Americans across the continent? In the construction of railroads, the search for mineral wealth, the placement of industry and towns, the growth of tourism, the power relations between nations, or the cultural construction of nature? What if this place were better favored by rainfall than it is at the moment, so that it supported a lush green forest or grassland, preventing erosion on anything like the scale that has occurred? What if the Colorado River coursed through a broad, gentle valley like that of the Ohio or Missouri, rich in agricultural possibilities? Or what if this place were even drier than it is? What if it were a veritable Sahara Desert swept by unrelenting winds, heaping up dunes to the horizon and covering over the roads and hotels with sand? Or what if imposing mountains still stood here, deflecting the flow of the prevailing wind currents, creating a rain shadow to the east? How would those alternative environments affect the lives of humans in this place, on this continent, and over the whole planet?

Those are not the fantasies of science fiction but real possibilities derived from the real history of the earth. They point us toward asking not only what could have been different in human terms had the earth been different, but why societies have taken the path they have. Culture alone can never account for all historical changes, perhaps not even the largest and most significant of them. Nature also must be reckoned with, and human history must share the vision and insight that has animated all those other historians--the geologists, evolutionists, geographers, geneticists who have come to this place and tried to fathom the past. A human

history of Arizona or the United States that is not animated by that vision, or is scientifically illiterate, is no longer defensible.

The way back-to the Canyon rim, where civilization and its cultural constructions so overwhelm the senses and dominate our perspective, is long and arduous, always harder on the body than the way down. I suggest that we sit by the river a little longer and reflect with J. W. Powell on the formidable power of nature demonstrated in the historical record. I suggest this not only to the general public but also and perhaps more pointedly, to my fellow environmental historians. It is time for us to acknowledge that culture is neither sufficient nor omnipotent unto itself. Culture is a late, often glorious, but highly precarious and ephemeral moment in earth history. We historians will never fully understand our own little moment in time until we acknowledge that fact of ephemerality, until we acknowledge all that has come before.

return to [History of the National Park Service page](#)

---

[Historian's Directory](#) | [Ask a Question/Contact](#)

[Home](#) | [NPS History](#) | [Online Books](#) | [Historical Themes](#)  
[Maritime](#) | [Research and Education](#) | [Oral History](#)

[Privacy & Disclaimer](#)

Last Modified: Thurs, Jan 16 2003 10:52:46 pm PST

