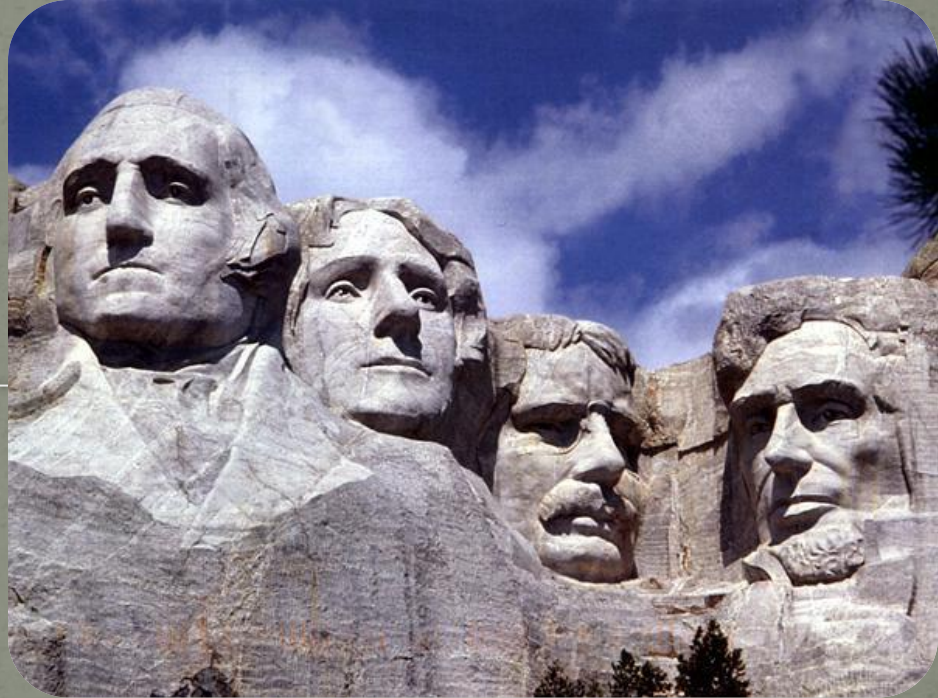


# The Faces of Mount Rushmore



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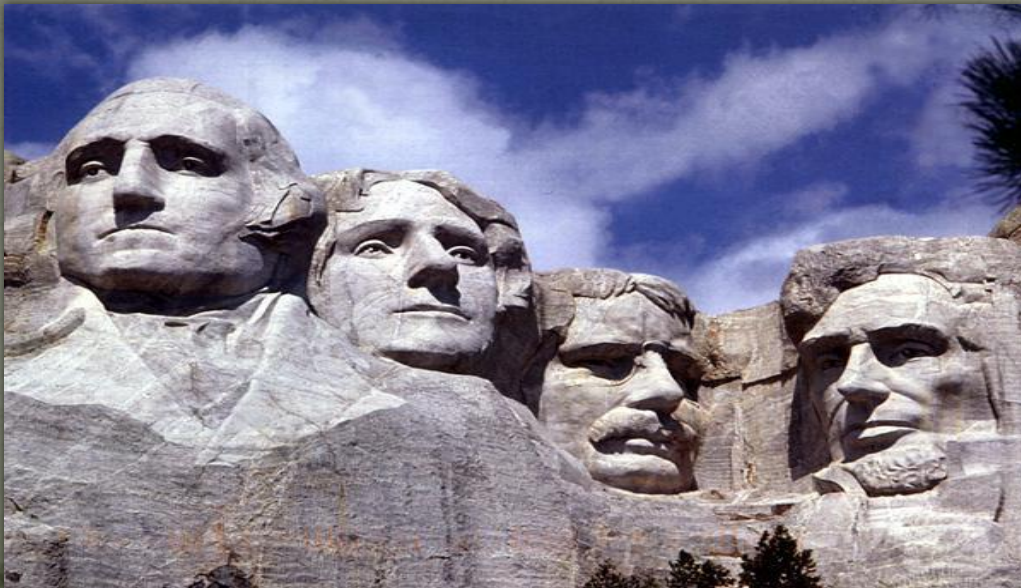
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# 1. Main information

Mount Rushmore National Memorial, near Keystone, South Dakota, is a monumental granite sculpture by Gutzon Borglum (1867–1941), located within the United States Presidential Memorial that represents the first 150 years of the history of the United States of America with 60-foot (18 m) sculptures of the heads of former United States presidents (left to right): George Washington (1732–1799), Thomas Jefferson (1743–1826), Theodore Roosevelt (1858–1919), and Abraham Lincoln (1809–1865). The entire memorial covers 1,278.45 acres (5.17 km<sup>2</sup>) and is 5,725 feet (1,745 m) above sea level. It is managed by the National Park Service, a bureau of the United States Department of the Interior. The memorial attracts approximately two million people annually.



Left to right: George Washington  
Tomas Jefferson  
Theodore Roosevelt  
Abraham Lincoln

# 2. History

Originally known to the Lakota Sioux as Six Grandfathers, the mountain was renamed after Charles E. Rushmore, a prominent New York lawyer, during an expedition in 1885. At first, the project of carving Rushmore was undertaken to increase tourism in the Black Hills region of South Dakota. After long negotiations involving a Congressional delegation and President Calvin Coolidge, the project received Congressional approval. The carving started in 1927, and ended in 1941 with some injuries and no fatalities.

As Six Grandfathers, the mountain was part of the route that Lakota leader Black Elk took in a spiritual journey that culminated at Harney Peak. Following a series of military campaigns from 1876 to 1877, the United States asserted control over the area, a claim that is still disputed based on the 1868 Treaty of Fort Laramie (see Controversy below). Among white American settlers, the peak was known variously as Cougar Mountain, Sugarloaf Mountain, Slaughterhouse Mountain, and Keystone Cliffs. It was named Mount Rushmore during a prospecting expedition by Rushmore, David Swanzey (whose wife Carrie was the sister of author Laura Ingalls Wilder), and Bill Challis.

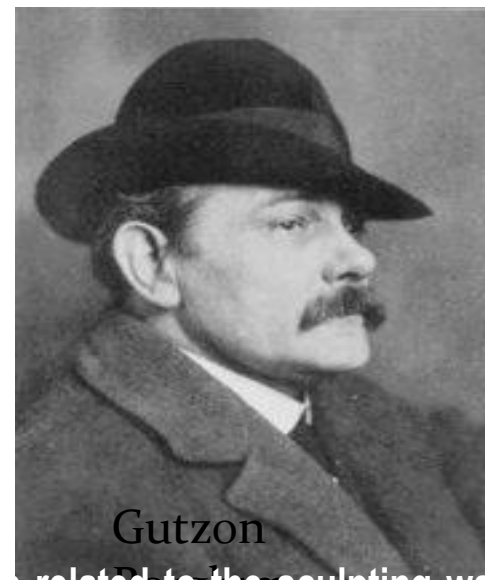
Historian Doane Robinson conceived the idea for Mount Rushmore in 1923 to promote tourism in South Dakota. In 1924, Robinson persuaded sculptor Gutzon Borglum to travel to the Black Hills region to ensure that the carving could be accomplished. Borglum had been involved in sculpting the Confederate Memorial Carving, a massive bas-relief memorial to Confederate leaders on Stone Mountain in Georgia, but was in disagreement with the officials there. The original plan was to perform the carvings in granite pillars known as the Needles. However, Borglum realized that the eroded Needles were too thin to support sculpting. He chose Mount Rushmore, a grander location, partly because it faced southeast and enjoyed maximum exposure to the sun. Borglum said upon seeing Mount Rushmore, "America will march along that skyline." Congress authorized the Mount Rushmore National Memorial Commission on March 3, 1925. President Coolidge insisted that along with Washington, two Republicans and one Democrat be portrayed.



Between October 4, 1927, and October 31, 1941, Gutzon Borglum and 400 workers sculpted the colossal 60-foot (18 m) carvings of U.S. presidents George Washington, Thomas Jefferson, Theodore Roosevelt, and Abraham Lincoln to represent the first 150 years of American history. These presidents were selected by Borglum because of their role in preserving the Republic and expanding its territory. The image of Thomas Jefferson was originally intended to appear in the area at Washington's right, but after the work there was begun, the rock was found to be unsuitable, so the work on the Jefferson figure was dynamited, and a new figure was sculpted to Washington's left.

In 1933, the National Park Service took Mount Rushmore under its jurisdiction. Engineer Julian Spotts helped with the project by improving its infrastructure. For example, he had the tram upgraded so that it could reach the top of Mount Rushmore for the ease of workers. By July 4, 1934, Washington's face had been completed and was dedicated. The face of Thomas Jefferson was dedicated in 1936, and the face of Abraham Lincoln was dedicated on September 17, 1937. In 1937, a bill was introduced in Congress to add the head of civil-rights leader Susan B. Anthony, but a rider was passed on an appropriations bill requiring that federal funds be used to finish only those heads that had already been started at that time. In 1939, the face of Theodore Roosevelt was dedicated.

The Sculptor's Studio - a display of unique plaster models and tools related to the sculpting was built in 1939 under the direction of Borglum. Borglum died from an embolism in March 1941. His son, Lincoln Borglum, continued the project. Originally, it was planned that the figures would be carved from head to waist, but insufficient funding forced the carving to end. Borglum had also planned a massive panel in the shape of the Louisiana Purchase commemorating in eight-foot-tall gilded letters the Declaration of Independence, U.S. Constitution, Louisiana Purchase, and seven other territorial acquisitions from Alaska to Texas to the Panama Canal Zone. The entire project cost US\$989,992.32. Notably for a project of such size, no workers died during the carving.



Gutzon  
Borglum

On October 15, 1966, Mount Rushmore was listed on the National Register of Historic Places. An essay from Nebraska student William Andrew Burkett, selected as the winner for the college-age group in 1934, was placed on the Entablature on a bronze plate in 1973. In 1991, President George H. W. Bush officially dedicated Mount Rushmore.

In a canyon behind the carved faces is a chamber, cut only 70 feet (21 m) into the rock, containing a vault with sixteen porcelain enamel panels. The panels include the text of the Declaration of Independence and the Constitution, biographies of the four presidents and Borglum, and the history of the U.S. The chamber was created as the entranceway to a planned "Hall of Records"; the vault was installed in 1998.

Ten years of redevelopment work culminated with the completion of extensive visitor facilities and sidewalks in 1998, such as a Visitor Center, Museum, and the Presidential Trail. Maintenance of the memorial annually requires mountain climbers to monitor and seal cracks. The memorial is not cleaned to remove lichens. It has been cleaned only once. On July 8, 2005, Kärcher GmbH, a German manufacturer of cleaning machines, conducted a free cleanup operation; the washing used pressurized water at over 200 °F (93 °C).



The carving of Mount Rushmore involved the use of dynamite



# 3. Controversy

Mount Rushmore is controversial among Native Americans because the United States seized the area from the Lakota tribe after the Great Sioux War of 1876-77. The Treaty of Fort Laramie from 1868 had previously granted the Black Hills to the Lakota in perpetuity. The Lakota consider the hills sacred, although historians believe the Lakota also gained control of the hills by force, displacing the Cheyenne in 1776. Members of the American Indian Movement led an occupation of the monument in 1971, naming it "Mount Crazy Horse". Among the participants were young activists, grandparents, children and Lakota holy man John Fire Lame Deer, who planted a prayer staff atop the mountain. Lame Deer said the staff formed a symbolic shroud over the presidents' faces "which shall remain dirty until the treaties concerning the Black Hills are fulfilled."

In 2004, the first Native American superintendent of the park was appointed. Gerard Baker has stated that he will open up more "avenues of interpretation", and that the four presidents are "only one avenue and only one focus."

The Crazy Horse Memorial is being constructed elsewhere in the Black Hills to commemorate a famous Native American leader and as a response to Mount Rushmore. It is intended to be larger than Mount Rushmore and has the support of Lakota chiefs; the Crazy Horse Memorial Foundation has rejected offers of federal funds. However, this memorial is likewise the subject of controversy, even within the Native American community.



A model at the site depicting Mount Rushmore's intended final design. Insufficient funding forced the carving to end in October 1941

# 4. Ecology

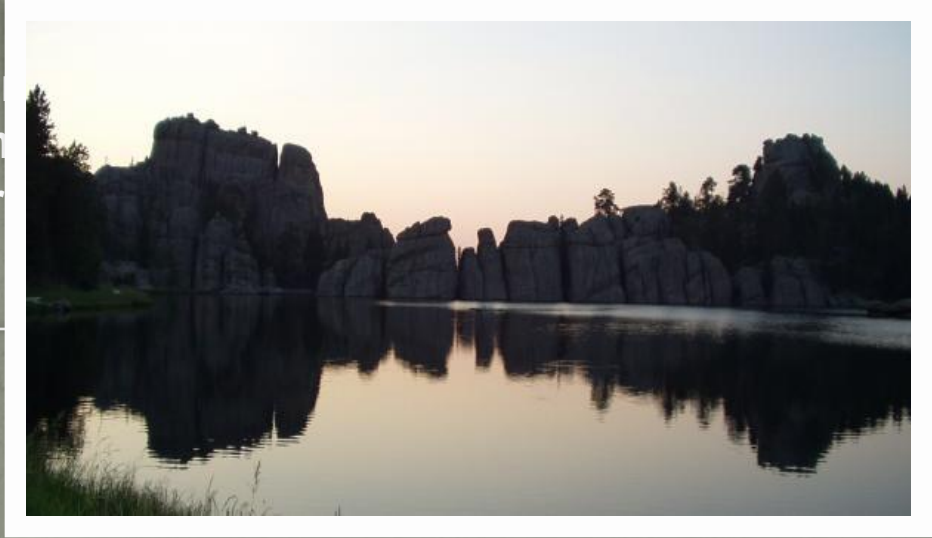
The flora and fauna of Mount Rushmore are similar to those of the rest of the Black Hills region of South Dakota. Birds including the turkey vulture, bald eagle, hawk, and meadowlark fly around Mount Rushmore, occasionally making nesting spots in the ledges of the mountain. Smaller birds, including songbirds, nuthatches, and woodpeckers, inhabit the surrounding pine forests. Terrestrial mammals include the mouse, chipmunk, squirrel, skunk, porcupine, raccoon, beaver, badger, coyote, bighorn sheep, and bobcat. In addition, several species of frogs and snakes inhabit the region. The two brooks in the memorial, the Grizzly Bear and Starling Basin brooks, support fish such as the longnose dace and the brook trout. Some endemic animals are not indigenous to the area; the mountain goats are descended from goats which were a gift from Canada to Custer State Park in 1924 but later escaped.

At lower elevations, coniferous trees, mainly the Ponderosa pine, surround most of the monument, providing shade from the sun. Other trees include the bur oak, the Black Hills spruce, and the cottonwood. Nine species of shrubs live near Mount Rushmore. There is also a wide variety of wildflowers, including especially the snapdragon, sunflower, and violet. Towards higher elevations, plant life becomes sparser. However, only approximately five percent of the plant species found in the Black Hills are indigenous to the region.

Though the area receives about 18 inches (460 mm) of precipitation on average per year, alone it is not enough to support the abundant animal and plant life. Trees and other plants help to control surface runoff. Dikes, seeps, and springs help to dam up water that is flowing downhill, providing watering spots for animals. In addition, stones like sandstone and limestone help to hold groundwater, creating aquifers.



Forest fires in the Ponderosa  
every 27 years are determined from  
forests burned from the ground. Large  
past



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Black Hills opposite Mount Rushmore

Sylvan Lake in Black Hills, South Dakota

# 5. Geology

Mount Rushmore is largely composed of granite. The memorial is carved on the northwest margin of the Harney Peak granite batholiths in the Black Hills of South Dakota, so the geologic formations of the heart of the Black Hills region are also evident at Mount Rushmore. The batholiths magma intruded into the pre-existing mica schist rocks during the Precambrian period about 1.6 billion years ago. However, the uneven cooling of the molten rock caused the formation of both fine and coarse-grained minerals, including quartz, feldspar, muscovite, and biotite. Fractures in the granite were sealed by pegmatite dikes. The light-colored streaks in the presidents' foreheads are due to these dikes.

The Black Hills granites were exposed to erosion during the late Precambrian, but were buried by sandstones and other sediments during the Cambrian Period. The area remained buried throughout the Paleozoic Era, but was exposed again to erosion during the tectonic uplift about 70 million years ago. The Black Hills area was uplifted as an elongated geologic dome which towered some 20,000 feet (6,100 m) above sea level, but erosion wore the area down to only 4,000 feet (1,200 m). The subsequent natural erosion of this mountain range allowed the carvings by stripping the granite of the overlying sediments and the softer adjacent schist. The contact between the granite and darker schist is viewable just below the sculpture of Washington.

Borglum selected Mount Rushmore as the site for several reasons. The rock of the mountain is composed of smooth, fine-grained granite. The durable granite erodes only 1 inch (25 mm) every 10,000 years, indicating that it was sturdy enough to support sculpting. In addition, it was the tallest mountain in the region, looming to a height of 5,725 feet (1,745 m) above sea level. Because the mountain faces the southeast, the workers also had the advantage of sunlight for most of the day.



# 6. Tourism

Tourism is South Dakota's second-largest industry, with Mount Rushmore being its number one tourist attraction. In 2004, over two million visitors traveled to the memorial. The site is also home to the final concerts of Rushmore Music Camp and attracts many visitors over the week of the Sturgis Motorcycle Rally.

The Lincoln Borglum Museum is located in the memorial. It features two 125-seat theaters that show a 13-minute movie about Mount Rushmore. One of the best viewpoints is located at Grandview Terrace, above the Museum. The Presidential Trail, a walking trail and boardwalk, starts at Grandview Terrace and winds through the Ponderosa pine forests to the Sculptor's Studio, providing close-up views of the memorial. The Sculptor's studio was built by Gutzon Borglum, and features discussion about the construction of the monument as well as the tools used. The amphitheater also has a 30-minute program at dusk that describes the construction of the memorial. Following that, the mountain is illuminated for two hours.



The entrance to the site