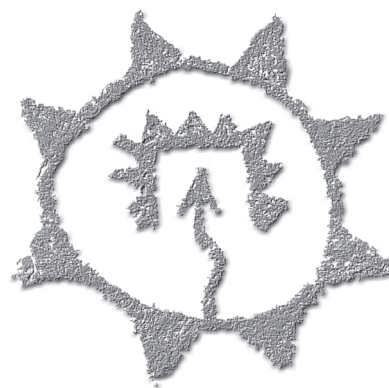


The Challenge of Long-Term Preservation: Managing Impacts to Rock Art at Hueco Tanks State Historical Park



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Hueco Tanks State Historical Park, located in far west Texas, contains some of the most significant prehistoric rock paintings in the world. Despite their importance, until recently, heavy recreational use of the park threatened their destruction. In 1998, the Texas Parks and Wildlife Department initiated a series of aggressive and innovative management actions to ensure their protection. These actions were undertaken with two purposes in mind: (1) to adequately inventory and document the rock art, and (2) to modify visitor attitudes and behavior to ensure protection. This paper discusses the problems faced by staff members and solutions that were implemented.

Hueco Tanks State Historical Park (Hueco Tanks) contains what are considered some of the most significant prehistoric rock paintings in the world. It was because of these rock paintings that the land was designated a state park in 1970, and placed under the stewardship of the Texas Parks and Wildlife Department. Despite the importance and cultural value of these pictographs, the park has historically been viewed in primarily recreational terms. Since at least the mid-nineteenth century, visitors have used the park for picnicking, hiking, climbing, and partying. However, it was in the mid-1980s that visitation and impacts to the park drastically increased, as a result of the popularization of the sport of bouldering. By the mid-1990s, it was apparent to the staff of Texas Parks and Wildlife that new management strategies would need to be instituted if the rock paintings were to be preserved. This paper discusses the events and circumstances that led to the preservation crisis that Hueco Tanks faced by the mid-1990s, and the steps that Texas Parks and Wildlife (TPW) undertook to remedy the situation.

Hueco Tanks is located in far west Texas, approximately 45 km east of the city of El Paso. The focal point of the park's 348 hectares is the three igneous hills, or low-lying "mountains," that rise above the arid Chihuahuan desert. These hills represent the

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remains of volcanic intrusions left behind after millions of years of weathering. Erosion has created innumerable cracks, overhangs, fissures, and natural depressions among these outcrops. Some of the depressions, termed *huecos*, function as natural cisterns that hold water for some or all of the year. These *huecos* not only give the park its name, but are responsible for the park's character. Because they provide reliable water sources in an otherwise largely arid desert, the *huecos* have served to attract humans to the area for more than 10,000 years.

Within the park are 273 known rock art panels, each of which may contain anywhere from one to several dozen individual images. Because of the rugged topography of the park, we believe that there exist many more panels that are as yet undiscovered. The known rock art panels include more than 200 distinct masks, thought to be the largest collection of prehistoric mask paintings in North America. Sutherland has suggested that these masks represent a masked spirit religion that was a precursor of the Pueblo kachina cult practiced by the Zuni and Hopi Indians today (Sutherland 1991:13, 1977; Sutherland and Parker 1991). Rock art images found in the park reflect the many cultures that either lived in or passed through the region, including the prehistoric Archaic and Desert Mogollon cultures, and the historic Tigua, Kiowa, Mescalero Apache, and Comanche. Sutherland has further suggested that the many Tlaloc and plumed/horned serpent motifs reflect prehistoric contact with, or influence from, Mesoamerica (Sutherland 1991:13, 1998; Sutherland and Geise 1992; Sutherland and Parker 1991).

The rock art at Hueco Tanks is significant for a number of reasons. First, the immense collection of images from such a large number of cultures provides scholars with a unique research opportunity. This research potential has been demonstrated through the successful carbon dating of some of the glyphs (Hyman and Rowe 1999; Hyman et al. 1999), and through the many publications dealing with Hueco Tanks glyphs (Davis and Tonness 1974; Kirkland 1940; Kirkland and Newcomb, Jr. 1967; Sutherland 1975, 1977, 1991, 1998;

Sutherland and Geise 1992; Sutherland and Parker 1991). In addition, many of the rock paintings hold great significance to various modern Native American groups. Finally, because vivid images provide the public with a tangible expression of Native American prehistory and history, their interpretive potential is high. In recognition of the national significance of Hueco Tank's petroglyphs and pictographs, the entire park was placed on the National Register of Historical Places in 1971.

BACKGROUND

Hueco Tanks has been visited since the Paleoindian period, as indicated by the recovery of two Paleoindian points from the park. Since at least the Archaic times, people have left records of their visits through etchings and paintings on the rock faces. In historic times, European visitors have continued this tradition by leaving their names and dates etched into the rocks, sometimes on top of Native American images.

The first substantial period of Anglo visitation dates to the mid-1800s, when Hueco Tanks became an important water source for gold-seekers passing through the area. (Information on the historical use of the park comes from Myers et al. [1996]). In 1858, it became a stage stop for the Butterfield Overland Mail Route, and visitation further increased. Several etchings that date to this period are present in the park. They most likely were left by goldseekers or stage coach travelers stopping for water and rest.

In the late nineteenth century, Hueco Tanks was purchased by a rancher who subsequently opened the area to public visitation, charging admission to those who wanted to enter. Despite the initial owner's attempts to control the unruly crowds and preserve the rock art, misbehavior and vandalism were common. In 1956, the rancher's heirs sold Hueco Tanks to a new owner, who constructed and opened a recreational center that provided cabins and horseback riding to paying visitors. In 1959 the land was again sold, this time to a developer who planned to construct an 82-hectare

lake, a resort hotel, and a 19-hole golf course. Although the plans were never completed, the developer expanded the facilities that were already present, and constructed an earthen dam between two of the mountains to create the planned lake.

Public outcry over damage occurring to the pictographs and archeological remains at Hueco Tanks was expressed as early as the 1910s. Numerous newspaper articles from this time and later urged that the area be declared either a county, state, or federal park (Myers et al. 1996). Amid growing concern over the condition of the rock paintings, emergency legislation was passed in 1957 that authorized the creation of a state park. However, it was not until 1969 that the lands would be transferred to state ownership and the Hueco Tanks State Historical Park would be opened.

When the gates of the state park were opened in the following year, threats to the resources from development were averted. However, threats from vandalism and recreational activities continued. The public had long viewed Hueco Tanks as a recreational resource, and standards of the time required that recreational access be continued. The park was open to all paying visitors, and hiking and picnicking were primary activities. It did not take long, however, for conflicts between recreational use and resource protection to manifest themselves to the TPW staff. As Myers et al. report:

[TPW] officials soon recognized the conflicts inherent in protecting the priceless rock art, and providing recreational opportunities for various user groups, many of whom were unaware of the delicate nature of the resources. Park officials hoped to eliminate opportunities for additional vandalism of the pictographs by eliminating parking and picnic areas near the most accessible rock art sites, and by installing thorny barrier plantings immediately below other sites (El Paso Herald Post April 19, 1978). Park staff also sandblasted some particularly obscene graffiti to remove further temptation, increased patrols of park grounds, and banned alcoholic beverages [Myers et al. 1996:116].

By the 1980s and 1990s it became apparent that these early attempts to manage resources would not be sufficient to ensure preservation of the pictographs. An increase in vandalism, much of it by gang members, caused TPW to close the park for two weeks in 1992. At the same time, visitation dramatically increased as rock climbing enthusiasts throughout the world became aware of the challenges offered by the park's weathered rock surfaces. Although early climbing activities at the park focused on *technical climbing*, by the mid-1990s *bouldering* accounted for by far most of the visitation at the park. Although damaging to resources, because technical climbing (climbing of isolated rock faces with the help of ropes) is limited to areas of sheer rock wall, its management is significantly easier than that for bouldering activities. In contrast, bouldering (or climbing without the aid of ropes) occurs wherever a handhold can be found. In bouldering the goal is not to reach great heights but to scale difficult rock faces. Bouldering routes, called "problems," are found wherever handholds can be established and occur throughout Hueco Tanks. John Sherman, author of a well-known bouldering guide to the park, suggests that there are more than one thousand bouldering problems at Hueco Tanks (Sherman 1995:25).

MANAGEMENT PROBLEMS FACED AT HUECO TANKS

By 1997, visitation to Hueco Tanks had grown to more than 65,000 persons annually. Many or most of these visitors were climbers, who came to the park for recreational purposes. As a result of this heavy, and mostly unrestricted, visitation, damage to the resources had reached unacceptable levels. Impacts were both malicious and unintentional, resulting from the following activities.

- The illegal bolting, drilling, chipping, and epoxying of rock faces by technical climbers.
- The deliberate destruction, in some cases, of vegetation and the alteration of

surfaces (i.e., moving of dirt and boulders) by some climbers to facilitate climbing activities.

- The construction of illegal campsites and fires in rockshelters, which potentially damaged pictographs and their ability to be dated.
- The placement of graffiti on or adjacent to pictograph panels.
- Placement of climber's chalk (used by climbers to maintain their grip on the rock surface) on and adjacent to pictograph images.
- Touching of the images by uninformed visitors, and
- Climbing activities conducted on or adjacent to pictograph panels.

As the impacts to Hueco Tanks increased, the TPW staff recognized that management changes were necessary if the park's pictographs, archeological deposits, and cultural landscapes were to be preserved. The staff faced several daunting challenges, however, in the implementation of these changes. First, despite decades of interest in the park's pictographs and petroglyphs, no comprehensive inventory of these images had ever been completed. Second, public support for the proposed management changes was lacking. Although most members of the public understood that greater protection was needed for the park's resources, there was no consensus on how to best achieve that protection. Visitors were accustomed to using the park for recreational access and were reluctant to give up any freedom of movement in the park. Rock climbers, in particular, opposed any restrictions on access. While most rock climbers were well intentioned and attempted to avoid climbing on top of painted rock images, the presence of climber's chalk on top and in the vicinity of images indicated that avoidance was not always accomplished. Because many images were highly faded and often not easily visible at some times of the day, much of the contact with images was probably inadvertent. A final problem was that many Native Americans felt disenfranchised, and perceived that their viewpoints had not been

adequately conveyed in the park's interpretive efforts.

ACTIONS TAKEN BY TEXAS PARKS AND WILDLIFE

To deal with the management challenges outlined above, TPW initiated a series of aggressive and innovative management actions. First, the department undertook to have a thorough inventory completed for all of the known pictograph and petroglyph panels. Second, it developed a new public use plan for the park that placed preservation of the park's resources as the paramount goal. To ensure public acceptance of this new use plan, particular emphasis was placed on education and interpretation.

Rock Art Inventory

As mentioned above, a major problem in developing any management plan for the park was that there existed no single, easy-to-use database listing the known pictographs and petroglyphs. To remedy this situation, David Ing (TPW staff archeologist) compiled a database that listed all known panels. (There are currently 273 known pictograph and petroglyph locations, 34 of which were discovered during the process of rock art inventory.) This database, compiled in the Microsoft computer program Access, pulls together in a single location everything known about the panels. For each panel the database includes such information as whether it has ever been mapped or drawn, whether there exist any published references, whether it has been dated or otherwise researched, and what its cultural affiliation is thought to be. Once this database was completed, TPW contracted with Robert Mark and Evelyn Billo of Rupestrian CyberServices to create a digital database using the ArcView program from Environmental Systems Research Institute. The latter database provides topographical views of the park showing the locations of the petroglyphs (Figure 1), photographs and drawings that can be successively layered,

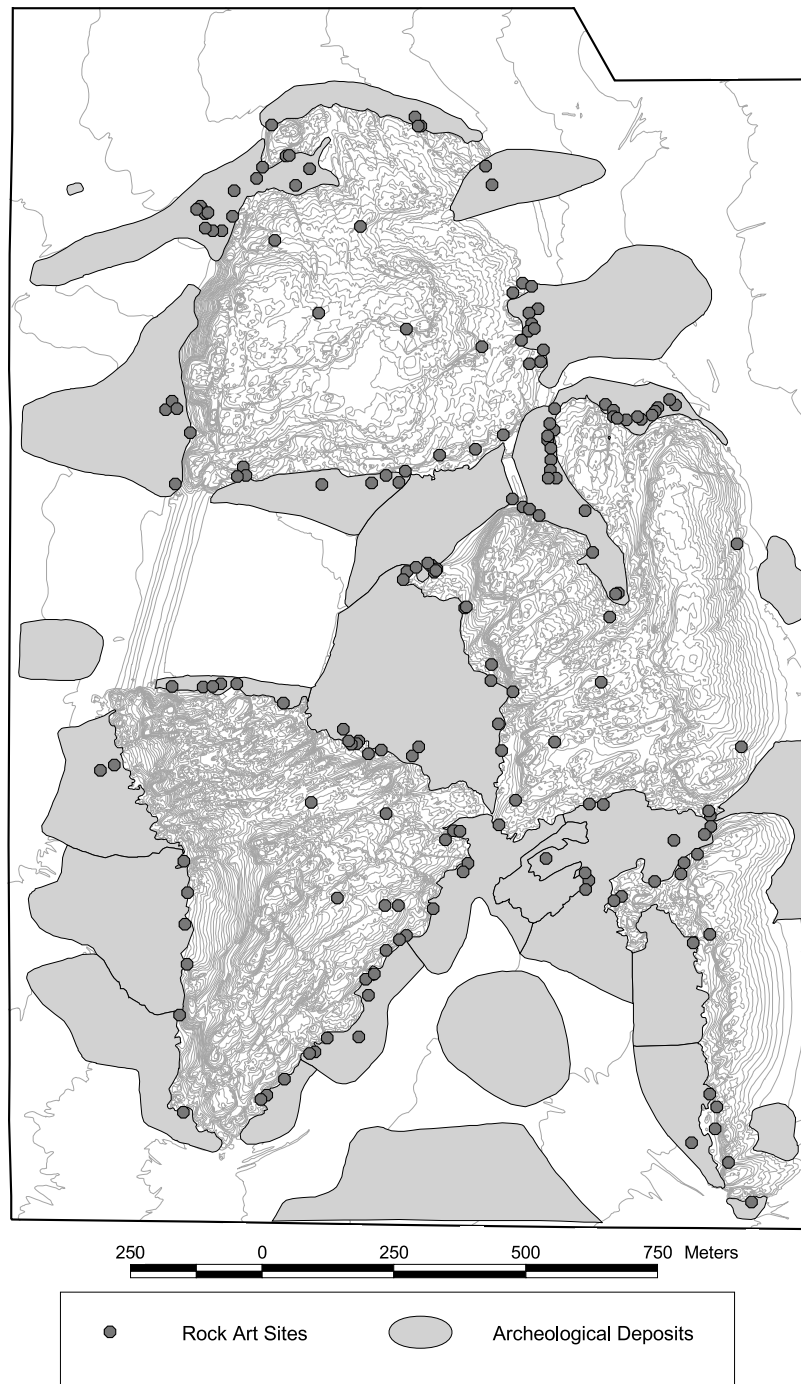


Figure 1. Locations of pictograph and petroglyph images and archeological deposits recorded to date.

and texts of data accumulated about the glyphs. Additionally, for some glyphs, photographs taken from earlier decades have been scanned into the database, to illustrate changes in the condition of the glyphs. Where drawing of the glyphs are available, they

have also been scanned. Finally, some glyphs were digitally filtered in the Photoshop computer program. This filtering was necessary to retrieve and document images that have faded due to natural weathering processes and human impact. The filtering process

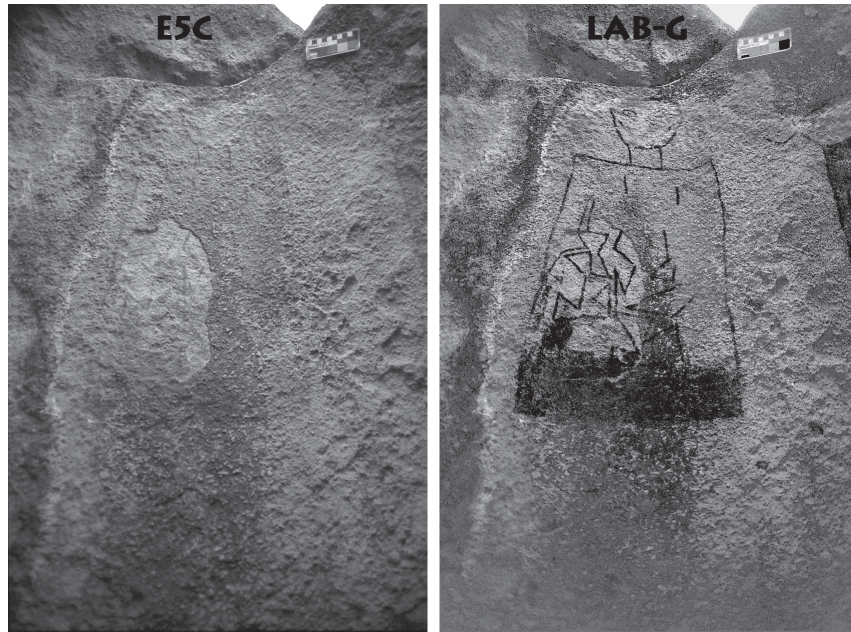


Figure 2. Digitally filtered pictograph image, showing effects of the computer enhancement on the visibility of the image. Image on the left is unfiltered; image on the right is filtered.

consisted of screening various colors of the spectrum until the glyph was most visible. For some images, the contrast between the original and filtered images was quite dramatic (Figures 2 and 3).

The ArcView database has several functions. First, the database ensures that each pictograph and petroglyph panel can be relocated by future staff members or researchers, who otherwise might not know how to find the panels. Because of the rugged topography of the park, it can be difficult or impossible to locate rock art panels from maps or photographs alone. To date, park staff and archeologists have relied on personal knowledge and contacts to find previously recorded sites. With the ArcView database, there now exists, in a single location, the GPS locations and detailed maps and directions indicating how to relocate each panel. Second, the ArcView database can be used by managers to track changes in the condition of the images, and to determine when new images are found. As new images are identified, they can easily be added to the existing ArcView database. Finally, the database aids researchers wishing to study the images, by providing information about what images are found in the park,

where they are located, and what information already exists regarding the glyphs.

Public Use Plan

The second action taken by TPW involved the development of a new public use plan for the park. The process of developing a new plan was initiated in the fall of 1997, when proposed changes were distributed for public review. After a lengthy period of public input, the initial public use plan was instituted in the fall of 1997. After being in place for more than a year, TPW began a review of the plan to determine what aspects should be retained and what modifications, if any, were appropriate. After several months of additional public input, the final Public Use Plan was implemented in June 2000 (Texas Parks and Wildlife Department 2000).

At the initiation of the public use plan process, TPW planners recognized that public support of any changes were essential to the success of that plan. Accordingly, the department spent more than 2 1/2 years obtaining public input into its proposed policies. Public input was obtained as a result of numerous public meetings, mail outs, and solicitations

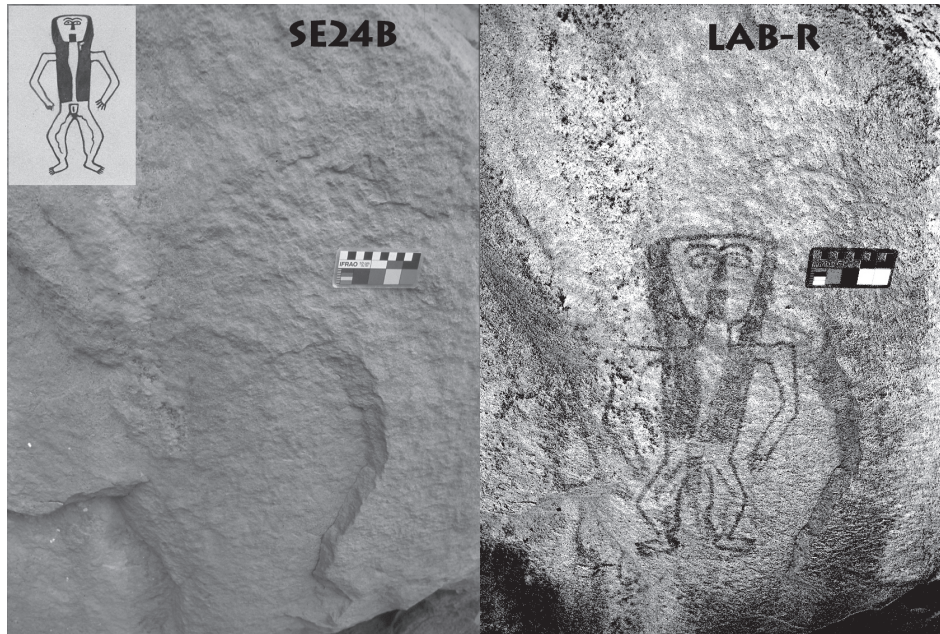


Figure 3. Digitally filtered pictograph image, showing effects of the computer enhancement on the visibility of the image. Image on the left is unfiltered; image on the right is filtered. Inset picture is the drawing made by Forest Kirkland in the 1930s (Kirkland 1940).

of comments. Comments and input were especially sought from constituent groups such as climbers and Native Americans.

From the outset of this process, opposition to the proposed changes was high. Many constituents, particularly climbers, resented losing their freedom of access. Public meetings were frequently hostile in nature, and early press coverage was negative. As a result, it became apparent that most visitors to Hueco Tanks did not really understand the significance of the park's cultural resources. Subsequent efforts focused on explaining the importance of these resources, and demonstrating how widespread they were throughout the park. The results of the rock art inventory were pivotal to these efforts. In particular, the map shown in Figure 1 had a substantial impact in public meetings. After viewing that map, most constituents admitted they were unaware that the panels were so widespread throughout the park. Digitally enhanced figures, such as those shown in Figures 2 and 3, helped convey the idea that even the most well meaning of visitors could inadvertently damage rock art that was barely visible.

As a result of these education efforts, support to the public use changes has increased.

In June 2000, the final public use plan was released (Texas Parks and Wildlife Department 2000). This plan called for the following changes in public access:

- It set limits on the number of persons allowed in the park at any one time
- It required that all park visitors undergo an orientation program before entering the park
- It established a guide program, whereby certain areas of the park could be accessed only in the presence of a certified tour guide
- It allowed overnight camping in the park only in the presence of camp hosts
- It recognized the importance of the park to certain Native American groups, and provided a mechanism whereby those groups could access the park for ceremonial purposes without having to either pay an entrance fee or be accompanied by an external guide
- It called for improvements to be made to the park's interpretation, including efforts to incorporate Native American perspectives into the messages conveyed.

CONCLUSIONS

Protection of the Hueco Tanks pictographs has come about only as a result of a long and arduous, and often painful, effort. Initially, public opinion was substantially weighted toward those opposed to the public use changes. As a result of outreach efforts, public support for the changes has greatly increased, although there are some constituents who remain disenfranchised. In particular, many members of the climbing community continue to resent their loss of freedom. It should be noted, however, that not all climbers share this viewpoint. For example, in a recent interview climbing author John Sherman has applauded the changes (Jackson 2000).

TPW's experience at Hueco Tanks offers many lessons in rock art management. Perhaps the most important lesson is that resource concerns must be given priority at the outset of park planning. Although Hueco Tanks was acquired for its cultural resources, inappropriate planning resulted in the park being viewed and utilized for decades as a recreational resource. As a result, the public had little appreciation and understanding of its cultural importance. Second, the Hueco Tanks experience indicates the importance of interpretation and outreach. Once interpretation efforts were improved, public support for the preservation efforts also increased. Third, the experience demonstrates the importance of including the viewpoints of Native Americans, especially when—as in the case of Hueco Tanks—their ties to the resource are both direct and significant. Finally, the process of protecting the Hueco Tanks images demonstrates that it may not always be possible to accommodate all user groups. Although some climbers remain disenfranchised, the commitment to resource protection requires that some restrictions be placed on where and under what conditions climbers may use the park.

The process of resource protection is by no means complete. If the new public use policies are to succeed, it is essential that Hueco Tanks

be completely “re-packaged” to emphasize its resource mission. As the department has done for the past five years (Dean 1997, 2001), Texas Parks and Wildlife will continue to hire a professional conservator to remove graffiti from pictograph panels. This work is necessary not only to protect and restore vandalized images, but to discourage further graffiti at the park. As discussed above, it is also essential that interpretation at the park be improved further, so that every visitor has the opportunity to learn about the significance of the park's glyphs. To ensure that Native American perspectives are included, ethnographic studies have been initiated that will document the concerns and viewpoints of affiliated tribes. Finally, it is clear that many as yet undiscovered images exist in the park. Additional studies are needed to identify these panels. With these efforts, we believe that the priceless images found at Hueco Tanks can be preserved for future generations to see and enjoy.

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