

ARTICLE

FOSSIL CYCAD NATIONAL MONUMENT: A HISTORY FROM DISCOVERY TO DEAUTHORIZATION

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ABSTRACT—Through the power provided in the Antiquities Act (1906), on October 21, 1922, President Warren G. Harding created Fossil Cycad National Monument in the Black Hills of South Dakota. Scientists recognized that the fossil locality preserved a significant exposure of a Cretaceous cycadeoid forest. Hundreds of fossilized cycad specimens, one of the world's greatest concentrations, were exposed at the surface of the 320 acre site during the late nineteenth and early twentieth centuries. This rare paleontological landscape would soon experience rapid and permanent change. Years of negligent management at the monument resulted in irreparable impacts on the finite and scientifically significant paleobotanical resources. Fossils exposed on the monument's surface disappeared faster than erosion could expose other specimens from beneath. The loss of the exposed petrified plant remains eventually left the site devoid of fossils and ultimately without a purpose to justify its existence as a unit of the National Park Service. On September 1, 1957, the United States Congress voted to deauthorize Fossil Cycad National Monument.

INTRODUCTION

At the turn of the twentieth century there was a growing awareness relative to American antiquities and our natural and cultural heritage. In 1906, Congress passed into law the Antiquities Act as a means to protect some of America's cultural and scientific resources. The Antiquities Act granted the President of the United States the direct authority to designate areas of significant scientific or scenic values as national monuments.

In 1916, the National Park Service was established under the Organic Act with the mission “to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” Originally the National Park Service was established to administer areas designated as national parks, monuments, and reservations. Today, the National Park System administers a wide array of natural, cultural, and historical areas, seashores, scenic riverways, recreation areas, and a variety of other federal land designations.

In 1922, President Warren G. Harding established Fossil Cycad National Monument as a unit of the National Park Service through the authority provided in the Antiquities Act (Fig. 1). Hence, the monument and its resources were entitled to the same levels of protection and management provided through the National Park Service Organic Act. In the case of Fossil Cycad National Monument, the intent was specifically stated in the Presidential Proclamation of October 21, 1922, “rich Mesozoic deposits of fossil cycads and other examples of paleobotany, which are of great scientific interest and value; ... it appears that the public interest would be promoted by reserving these deposits as a national monument”.

Fossil Cycad National Monument was located in north-

central Fall River County, southwestern South Dakota, about 18 km (11 miles) west-southwest of the town of Hot Springs. The site was within the southeastern Black Hills, adjacent to a section of the Black Hills National Forest. The monument originally consisted of 129 ha (320 acres), and was administered through Wind Cave National Park.

The namesake for the monument, Fossil Cycad, is actually a scientific misnomer. The primary fossil plants preserved at the site are the ‘cycad-like’ cycadeoids, also known as bennettitales to paleobotanists. This confusing nomenclature in no way diminishes the scientific importance of these extremely well-preserved plants which shared the Cretaceous world with dinosaurs and other prehistoric animals and plants. The preservation of the ‘Minnekahta cycads’ yields morphological details and reproductive structures that had not been documented in fossil cycadeoids from anywhere else around the world. These fossils enabled researchers to more fully understand an otherwise unknown portion of the fossil record.

In recognition of the scientific value of the ‘Minnekahta cycad’ locality, the monument's proclamation included the following language: “Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy or remove any of the fossils of this monument”. Despite this resource protection language in the proclamation, the monument's primary resource was completely removed from the surface in a ‘blink of the eye’ in geologic time.

A cooperative effort between the National Park Service and the Bureau of Land Management, is ensuring that the history, archives and photographs associated with Fossil Cycad National Monument are preserved. The lesson learned from the history of this almost forgotten monument may help to increase awareness about the fragility of non-renewable paleontological resources. ‘Lost—But Not Forgotten’ is the legacy we strive for Fossil Cycad National Monument.

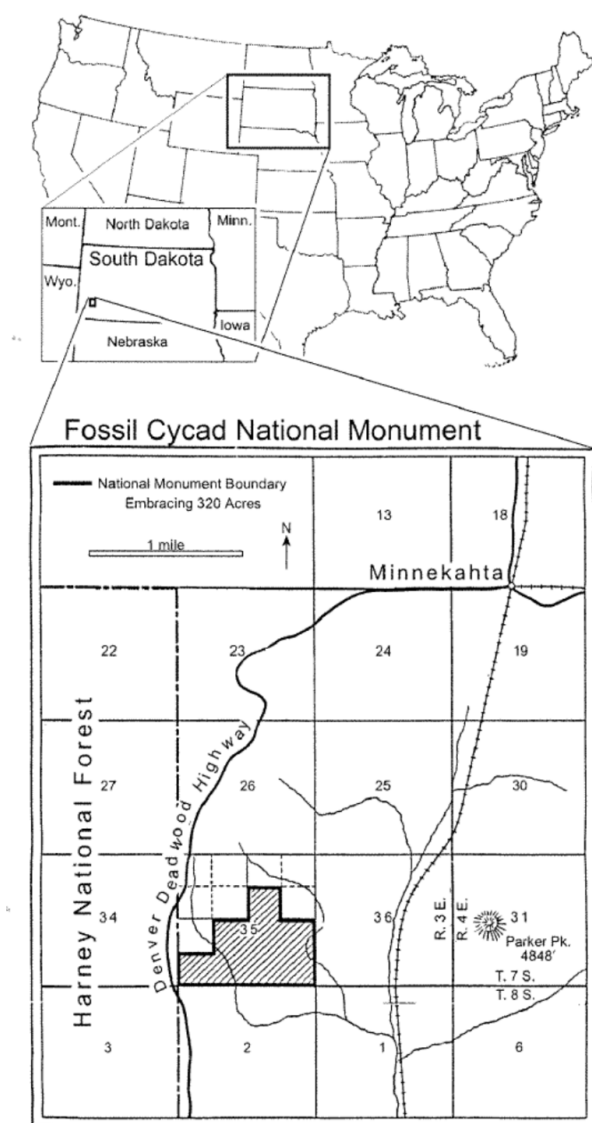


FIGURE 1. Map of Fossil Cycad National Monument, South Dakota.

DISCOVERY AND EARLY COLLECTIONS OF FOSSIL CYCADS

The early accounts involving the discovery of fossil cycadeoids in the Black Hills of the Dakota Territory remain largely unsubstantiated. Vague references to encounters with cycad fossils are associated with George Armstrong Custer's Black Hills Expedition (1874) and the Newton-Jenney Party's scientific expedition sponsored by the U.S. Geological Survey (1875).

By about 1890, around the time when South Dakota achieved statehood, local ranchers near Minnekahta and residents in the town of Hot Springs were discovering the fossil cycads. Some individuals began collecting the cycad fossils to offer for sale as curios they referred to as 'petrified pineapples'.

While visiting Hot Springs, South Dakota, in 1892,

University of Iowa professor Thomas H. Macbride purchased a cycadeoid specimen from a curio shop in Minnekahta. This specimen would be designated the holotype specimen for *Bennettites dacotensis* Macbride (1893a, 1893b). Macbride learned that two ranchers named Arnold and Payne, who homesteaded near Minnekahta, were knowledgeable about the fossil cycad localities on and near their ranch. Macbride planned to return to the Black Hills to explore the fossil localities and collect specimens for the University of Iowa, Museum of Natural History.

During 1893 Macbride returned to South Dakota to visit the fossil cycad localities and make collections (Fig. 2). Macbride was accompanied by Samuel Calvin, Iowa's State Geologist and Chair of the Geology Department at the University of Iowa. Calvin was invited to help evaluate the geology of the cycad-bearing strata and help to determine the stratigraphic position and geologic age of the cycad beds. Macbride and Calvin traveled to the Payne and Arnold 'Horse Ranch' (Fig. 3) which was situated within the cycad locality at the base of Parker's Peak. One exposure of fossil cycads, referred to 'Macbride's Lot', was located behind Arnold's house (Ward's notes, 30 November 1898).

Macbride collected 40–50 specimens of cycadeoids from the Minnekahta locality, accumulating one of the most important collections of these fossil plants in the world. This was the beginning of many years of collecting from this area by scientists such as L. F. Ward (USGS) and O. C. Marsh and G. R. Wieland of Yale University. In October 1893, Macbride published the first paper on the fossil cycadeoids from South Dakota (Macbride, 1893a, b) and in December presented along with Professor Calvin a series of papers on this subject before the Iowa Academy of Sciences. Macbride and Calvin's work helped bring scientific attention to one of the most important fossil plant localities in the country. A few of Macbride's cycad specimens were sold or donated to other scientists in the U.S. and internationally. One of the cycadeoid specimens was shipped to William Carruthers at the British Museum as a gift from Macbride in 1894.

LESTER WARD—SMITHSONIAN

In 1892, F. H. Cole of Hot Springs, South Dakota learned about the fossil cycad beds near Minnekahta from local ranchers. Cole sent photographs of the cycad fossils to Smithsonian paleobotanist Lester F. Ward (Fig. 4) which were received in Washington, D.C. in February 1893 (Ward, 1894). Ward wrote back to Cole requesting him to send one specimen back to the Smithsonian for examination. Ward was impressed with the cycadeoid specimen sent by Cole and he purchased a total of six specimens, which arrived in May of 1893. Of these six specimens, four represented new species and were designated as holotypes. In September of that same year, Ward traveled to the Minnekahta fossil locality, joined by Professor W. P. Jenney and his wife who were then in Deadwood. Ward met H. F. Cole in Hot Springs. Cole was unsuccessful



FIGURE 2. Thomas Macbride, seated on a petrified log near the Minnekahta cycad beds, was the first scientist to recognize the significance of this fossil locality (Calvin Photographic Collection, Department of Earth and Environmental Sciences, University of Iowa).



FIGURE 3. Group photo at the Payne and Arnold "Horse Ranch", Minnekahta, South Dakota, with cycadeoid fossil in foreground, c. 1893. Photo No. 1917. (Calvin Photographic Collection, Department of Earth and Environmental Sciences, University of Iowa).

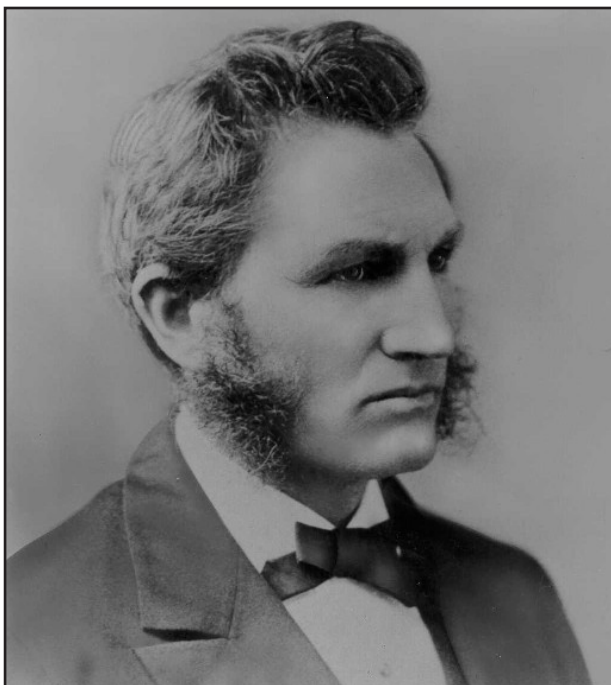


FIGURE 4. Smithsonian paleobotanist Lester Ward (Smithsonian photo).



FIGURE 5. Yale University paleobotanist George R. Wieland (Yale University photo).

in guiding Ward and the others to the fossil cycad locality, and so Mr. Payne from whom Cole had secured the original specimens was located, and he guided the group directly to the fossil locality.

By 1896, Professor O. C. Marsh of Yale had developed interest in the Minnekahta cycads and wished to secure a collection for Yale. Marsh contacted Ward in 1896 and gained useful information as to the “best means of securing them, including the names and addresses of dealers who had them for sale” (Ward, 1899). During the next few years Marsh obtained a collection of 126 cycad trunks from a South Dakota collector named H. F. Wells. Marsh invited Ward to come to New Haven during March and again in June of 1898 to study, photograph, and describe the specimens in the Yale collection. Ward would describe the Yale and Smithsonian collections in two publications (Ward, 1898, 1899).

Ward commented in later years that during “both of my visits to the Black Hills in 1893 and 1895 I saw large numbers of fossil cycads at various places, mostly in the hands of dealers, who held them for sale...” (Ward, 1899). Ward further stated that a number of local ranchers collected fragmentary cycad specimens and offered them for sale. One resident of the town of Hot Springs, named Homer Moore, was a self-proclaimed (fossil) ‘dealer’.

GEORGE R. WIELAND

In 1897, a young paleontology student at Yale named George Reber Wieland (Fig. 5) began a life-long interest in fossil cycadeoids. While assisting O. C. Marsh, Professor of Paleontology at Yale University, Wieland traveled to South Dakota and met Ward. Through the encouragement of Ward and Marsh, Wieland’s scientific interest in the Minnekahta cycads grew and he changed his focus from vertebrate paleontology to paleobotany. Wieland returned to Yale and the Peabody Museum and continued to study the cycadeoids. He later had two volumes titled *American Fossil Cycads* published by the Carnegie Institution of Washington (Wieland, 1906, 1916). In a 1900 letter from Ward to Professor John M. Coulter at the University of Chicago, Ward describes how he had strongly impressed upon Marsh the need that the study of these cycads “be taken up at Yale... [and] it ought to be a young man fully equipped in the study of modern botany” (Ward, 31 October 1900). Marsh had been impressed by the work and enthusiasm of a young assistant (G. R. Wieland) who had been helping him with some vertebrate paleontology projects, and so redirected him towards studying cycads. Ward was not aware of Marsh’s decision to put young George Wieland to the task, and in the same 1900 letter expressed some apprehension as to the qualifications of Wieland, concerns that would later be proved unfounded.

Wieland’s early research reevaluated Macbride’s specimens which are figured in Wieland’s *American Fossil Cycads* treatise (Wieland 1906, 1916). Wieland noted uncertainty over the taxonomic status of several specimens because Macbride refused to section the *C. dacotensis* ho-



FIGURE 6. George Wieland supervises CCC during an excavation at Fossil Cycad National Monument in 1935 (NPS photo).

lotype.

In 1920, Wieland applied to obtain the fossil cycad-rich land under the Extended Homestead Act “in order that the cycads might not fall into unworthy hands” (Hot Springs Star, 1938). Two years later, he offered to return the land to the federal government, so that a national monument could be established to further protect the petrified plants.

The 320-acre site, located in the Lakota Formation (previously referred to by some as the Dakota Sandstone), contained immense quantities of the fossilized cycadeoids. “The area is probably one of the most interesting fossil plant localities and is known amongst scientific men the world over,” wrote E. C. Finney to President Warren G. Harding before the establishment of the monument (Finney, 18 October 1922). Many of the fossil cycad specimens exhibited branching features that were not previously observed. The fossil cycads held the promise of helping to explain the origin of flowering plants.

ESTABLISHMENT OF FOSSIL CYCAD NATIONAL MONUMENT

With Wieland’s offer to give the homesteaded land back to the government for the creation of a monument, the government sought insight from scientists. Charles D. Walcott of the U. S. Geological Survey and the Smithsonian Institution was asked to visit the site and assess its value.

Without visiting the locality, Walcott concluded that although there were reports that all surficial cycads had been removed, “in the future, more specimens will be exposed by erosion, and at that time it would be well for the area to be under the jurisdiction of the Government” (Walcott, 15 April 1922).

After reviewing the scientific reports, the Department of Interior endorsed the establishment of a monument to

protect the fossil cycad locality. On June 30, 1920, President Woodrow Wilson issued Executive Order 3297 withdrawing the specified land for examination as a national monument.

President Warren G. Harding signed a proclamation on October 21, 1922, establishing the site as Fossil Cycad National Monument: “Whereas, there are located in section thirty-five, township seven south, range three east of Black Hills Meridian, South Dakota, rich Mesozoic deposits of fossil cycads and other characteristic examples of paleobotany, which are of great scientific interest and value “ (Presidential Proclamation 1641).

ADMINISTRATION OF FOSSIL CYCAD

Although the responsibility for the care and management of Fossil Cycad National Monument was assigned to the Superintendent of Wind Cave National Park, the day-to-day surveillance of monument was entrusted to local ranchers. There were only sporadic and brief visits to the site by the National Park Service during the 1920s and references to Fossil Cycad do not appear in any of the superintendent’s annual reports until 1933. There was no dedicated staff or development of facilities at the monument.

The first official visit to the monument was conducted in 1929 by Roger Toll, the Superintendent at Yellowstone National Park. Toll served during the off-season as the National Park Service Director’s field assistant to visit and evaluate some of the undeveloped or proposed parks and monuments in the western states. Under the direction of Horace Albright, the NPS Director, Toll conducted a site visit to Fossil Cycad National Monument on October 20, 1929 (nearly seven years to the day the monument was proclaimed). Toll met with rancher D. H. Knight, who accompanied him on his visit to the monument. Toll’s No-

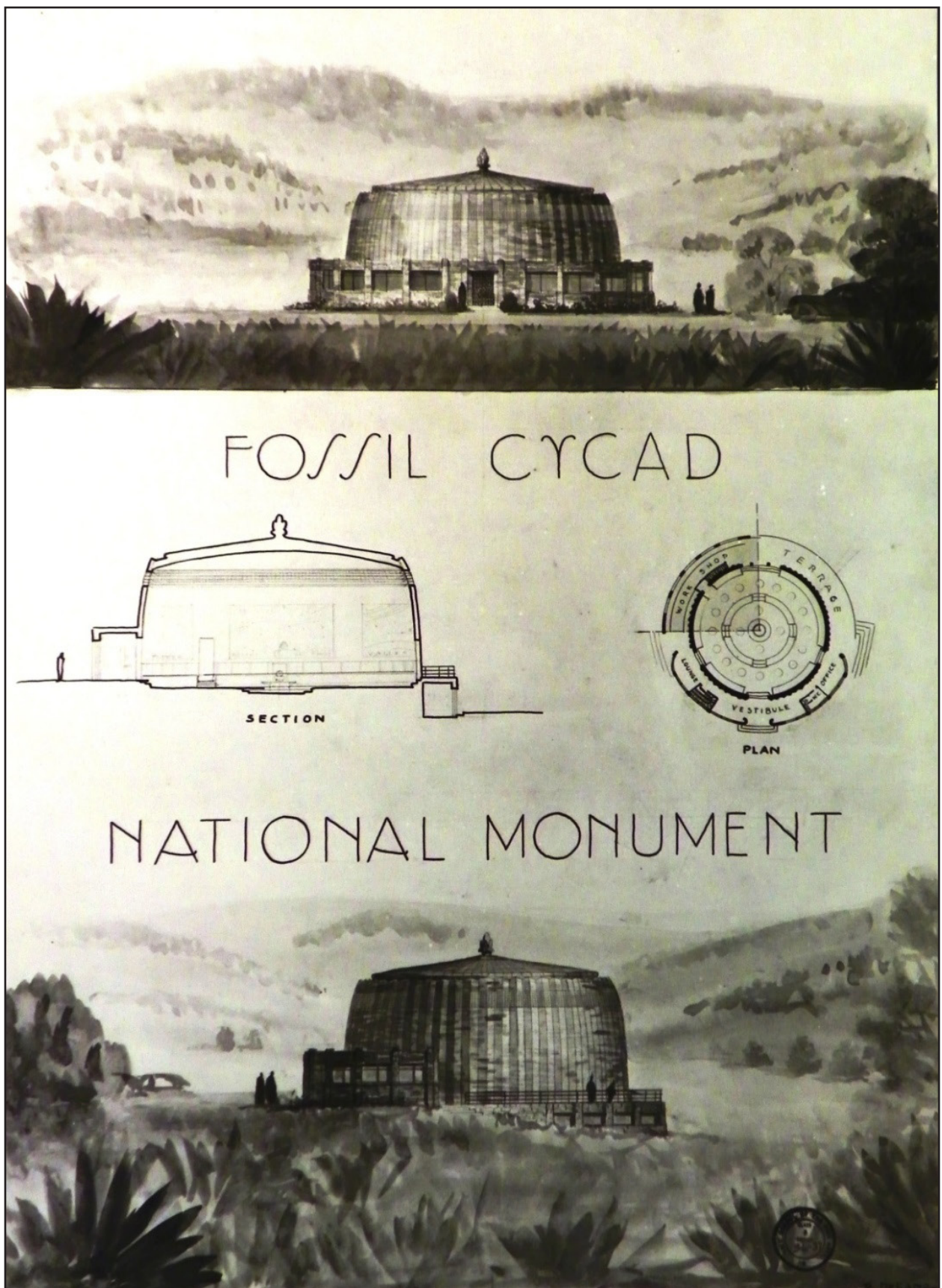


FIGURE 7. Architectural concept drawings for a visitor center at Fossil Cycad National Monument (NPS photo).

vember 20, 1929 site report to the Director Albright stated “all available specimens have been picked up, and there is nothing left that is of interest to visitors.”

Toll’s report poignantly concluded, “The present reputation of the national parks and monuments, as places worthy of a considerable journey, is well worth maintaining. So far as I can find out, the Fossil Cycad National Monument has nothing to protect, and perhaps no bed of fossils. If it has no value, present or future, it is a liability, not an asset, to the rest of the system. Unless Professor Wieland, or someone, can furnish information indicating some purpose to be served by the area, it would seem to be desirable to discontinue it as a national monument.”

CCC AND FOCY EXCAVATION

Research on the land resumed in October 1935, when Wieland and a crew of thirteen Civilian Conservation Corps workers opened six to eight excavation pits, according to the superintendent of Wind Cave National Park Edward D. Freeland (Fig. 6). In addition to Wieland, Carroll H. Wegemann (acting chief geologist), Roy A. Wilson, National Park Service representative, and Earl A. Trager, Chief of the Naturalist Division of the Park Service were present. Wieland reported that the excavation was a brilliant success with over a ton of uneroded specimens collected. Freeland stated that the excavation had “unquestionably proven that numerous cycads still remain on the monument and excellent specimens have been found.” The excavated material was moved and stored at Wind Cave National Park.

Development of the monument was not seriously discussed until around 1936, when Wieland started pressing the issue. The Park Service felt that for any development to proceed, written reports indicating the value of this site were needed. Regional Geologist Carrol Wegemann mapped the stratigraphy of the monument (Wegemann, 1936). He concluded that the cycad sand, which was six to eight feet thick, was either of the Dakota or possibly Morrison Formation. He commented that the lack of good exposures around the monument limited the view of the stratigraphic section. He also reported that the cycads occurred in stream deposits.

Trager met with Wieland at the Geological Society of America convention in New York during December 1935 with the purpose of pressuring Wieland to write up his report. Wieland indicated that his ‘price’ for continuing work was a black granite museum on the site to house the cycad collection (Trager, 19 February 1936). The value of the monument was already being questioned. In 1929, Acting Director of the National Park Service Arno B. Cammerer wrote to J. Volney Lewis and discussed the validity of the monument: “It was considered worth conserving at the time, and the situation surely cannot have changed. It is similar to Dinosaur [National Monument], where there is nothing on the surface to show its scientific importance, but nevertheless it is there” (Cammerer, 11 December 1929).

A letter reached Wieland in February 1936 first in-

dicating that a proposal for abandonment had been suggested for the monument, sending Wieland into a frenzy of letter-writing to officials of the Park Service and congressmen. In the spring of 1936, following the success of the excavations during the previous fall, Wieland began to promote the need for further field work in the early summer (Wieland, 9 April 1936). His efforts at this failed due to cuts in the federal budget. Wieland’s persistence eventually resulted in a visit between he and Secretary Ickes in Washington, D.C. Perhaps sensing a slowing of enthusiasm for the development of the monument, Wieland engaged in aggressive letter-writing to members of Congress during the early summer of 1936 and eventually traveled to Washington, D.C. to personally discuss the matter with Secretary Ickes. Wieland was disappointed to learn from Bryant and Ickes “that no immediate action be taken toward a development program at the Fossil Cycad National Monument” (Bryant, 15 July 1936). Wieland was advised to seek private funding to support development of the monument.

A dispute between Wieland and Wegemann started in 1935 when Wegemann accused Wieland of stealing fossils collected during the November 1935 excavation. Wegemann stated that Wieland had removed all of the original surficial specimens and taken them to Yale University before donating the land to the government. Wieland later in 1939 apparently admitted to Trager that over 1,000 specimens were removed from Minnekahta prior to the acquisition by the National Park Service (Trager, 18 March 1939). This feud escalated when Wegemann shut down the 1935 excavation at Fossil Cycad. The issue culminated when Superintendent Freeland defended Wieland and at the same time criticized Wegemann. Ironically, Wieland would later accuse Freeland of trimming the collection excavated during 1935, which was for a time stored at Wind Cave before being sent on to Yale. Freeland stated “Wegemann has an unfortunate manner with other people, and he has been tactless enough to offend Dr. Wieland, by continual rudeness.” (Freeland, 18 November 35). At that point Wegemann engaged in direct communication with Harold C. Bryant, the Assistant Director of the National Park Service, regarding Fossil Cycad without the permission of Superintendent Freeland. In a letter to Wegemann, Bryant wrote that “Doctor Wilson has resigned and Doctor Wieland feels that your treatment of him was discourteous.” Bryant also mentioned that Wegemann “should first have communicated with Mr. Freeland so that orders for stopping the work of excavation could have been given by him” (Bryant, 22 November 1935).

The lack of surficial in situ specimens emerged as an obstacle when Wieland insisted on the construction of a visitor center at the monument. Wieland’s persistence resulted in the Director of the Park Service recommending the development of a display about fossil cycads at the Wind Cave visitor center. Wieland’s response to this idea was negative. He wrote repeatedly on the value of an in situ display:



FIGURE 8. Original wooden sign from Fossil Cycad National Monument (NPS photo).

“Fossil Cycad Monument more than all others of its series is as we now see dependent on an absolutely in situ development and display. Without this it can mean but little, as a mere blurred shadow, all but lost again in the shuffle of time” (Wieland, 1937).

The desire to have a cycad display at Wind Cave by Freeland and Wieland’s almost obsessive objection to it resulted in many years of conflict between the two men. Wieland, known for his colorful language in letters, referred to Freeland and Wind Cave as “Black Hills Patriots”, “Hill billies”, “Black Hills gravy train”, and “Windy Cave” while Freeland was reprimanded on at least one occasion by Bryant for apparently making disparaging remarks about Wieland to the press.

In order to expedite the creation of a visitor center, Wieland asked architecture students at Yale to submit proposals for a building design. These draft plans were sent to the Department of the Interior for review (Fig. 7). The response from Washington was that the cost for construction of a building at the Minnekahta site was too expensive. In addition to the construction of the visitor center and the building maintenance, there would be a need to build roads into the monument. There was also the fact that the distinct value of Fossil Cycad National Monument eluded many people in the government:

“Developments of additional areas cannot be undertaken unless their justification is unimpeachable and their future maintenance is assured. The Fossil Cycad National Monument does not satisfy either of these requirements. It is realized that the area is of outstanding paleobotanical interest. But it is also realized that the subject of fossil cycads does not have a broad appeal and, therefore, extensive development of the monument would benefit only a limited group of people. This is particularly true since

the area does not possess other outstanding attractions. The scenery is neither impressive nor is it unusual; the geological interest, other than its paleobotanic relations, is not phenomenal; the area is too small for wildlife preservation; the terrain does not lend itself well to recreational development, and there is little historic interest” (Slattery, 23 July 1937).

Wieland would reply the next day by telegram to Slattery that “a viewpoint of Fossil Cycad National Monument is utterly inadmissible to tie up with windy cave is a plan with too much bat dung to it” (Wieland, 24 July 1937).

Wieland’s insistence continued. His next step was to urge senators and congressmen to contact the Secretary of the Interior regarding the developmental plans for Fossil Cycad National Monument. When these supplications failed, Wieland asked the senators and congressmen from South Dakota and Connecticut to introduce an appropriations bill that would provide funding for a visitor center at Fossil Cycad. The Department of the Interior contended that they did not have the funds to develop the monument, nor did they have a strong enough reason to seek funds:

“Naturally, the development of any exhibit of this type is dependent upon an allotment of funds and these funds can be obtained only if the proposal justified the expense and those making the allotment are convinced that the exhibit is equal to, or better than, many others now waiting development in the various national parks and monuments” (Slattery, 28 May 1937).

The constant rebuffs at development took their toll on Wieland. On August 27, 1937, in a letter to Demaray, Wieland writes “that your department has shown little practical understanding of FOSSIL CYCAD” and “You have stood my good plans off for fifteen years”. Even with all this, Wieland would continue for another 15 years un-

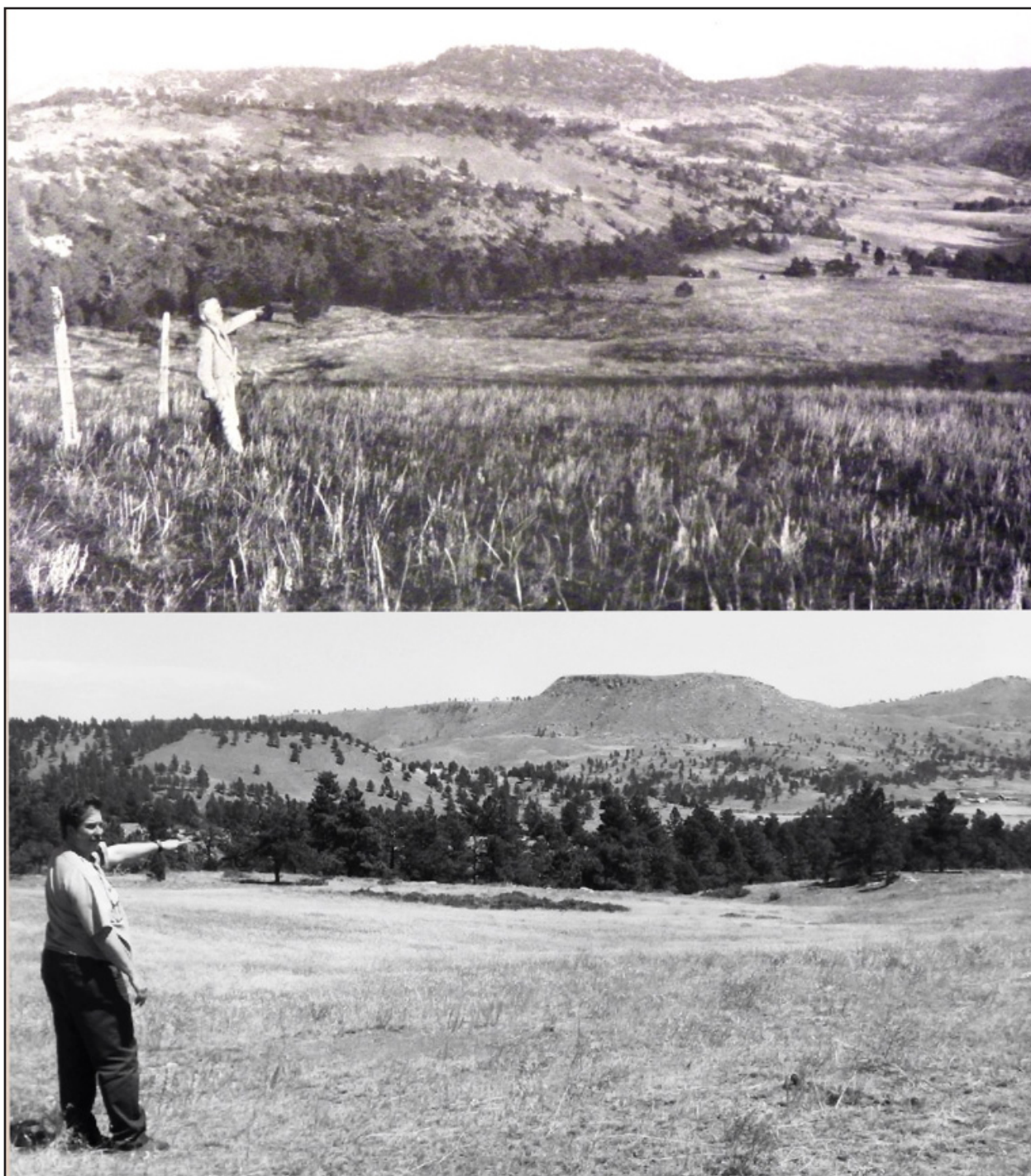


FIGURE 9. Historic and modern photos looking east towards the area once administered as Fossil Cycad National Monument with Parker's Peak in the distance (NPS photographs). Rod Horrocks from the National Park Service helps recreate the historic image.

til his death to push for development of the Fossil Cycad National Monument and the realization of his dream (Wieland. 1944).

THE LOST SPECIMEN

In 1933, just before the opening of the 'Century of Progress' Exposition at the World's Fair in Chicago, the National Park Service Director's Office wrote to Wind

Cave requesting a specimen of fossil cycad to be used in a display at the Fair.

Wind Cave did not have a specimen and contacted Mr. W. E. Parks of Lincoln, Nebraska. Parks agreed to loan his cycad specimen to be placed on display at the Chicago World's Fair. The National Park Service later lost the fossilized cycad specimen loaned by Parks. Mr. Parks requested that the National Park Service either replace

the specimen or provide some compensation for the lost specimen.

The National Park Service effectively avoided the issue for years. Since a receipt of property was never produced at the time the specimen was received on loan, Parks' persistent claims regarding the lost specimen did not receive appropriate attention. Parks' requests for \$75 as compensation for the lost specimen were challenged by the Regional Naturalist, who recommended that only \$50 compensation be paid instead of the \$75 requested.

In a letter dated October 5, 1945, Mr. Trager, Regional Chief Naturalist described the lost specimen as, "a crushed cycad stump about 6 or 7 inches wide by 10 or 12 inches long. It was a very poor specimen and consequently was not exhibited at Chicago" (Trager, 5 October 1945). Because of a misunderstanding, this specimen was thought to be worthless and discarded.

Wieland suggested to Parks and the National Park Service that a specimen could be made available to replace the lost specimen. In June 1946, National Park Service staff traveled to Fossil Cycad National Monument to see if they could find a cycad to replace Parks' lost specimen. A replacement specimen could not be located.

The Interior Solicitor presented his opinion in a memo dated July 16, 1946:

"Unless settlement can be made under the act of December 28, 1922 (42 Stat 1066, 31 US Code Sec 215) the only financial relief for Mr. Parks would be by Act of Congress on a Bill for his relief." (Interior Solicitor, 16 July 1946).

On January 27, 1947, the Solicitor wrote "We realize that the settlement of Mr. Park's claim has been unduly drawn out. As yet, however, no logical solution has presented itself. A monetary settlement is not possible now since the statutory limitation of one year from presenting the claim has passed long since." (Interior Solicitor, 27 January 1947).

Parks responded to the National Park Service in a letter dated April 5, 1947, "From the past it looks as if I am a victim of government red tape" (Parks, 5 April 1947). By the fall of 1947, Parks decided that his only option was to write to his congressman (Parks, 28 October 1947).

On July 6, 1949, H.R. 3010 "A Bill for the Relief of Walter E. Parks" was passed by the House of Representatives. The Bill awarded Parks a settlement of \$125.

DEAUTHORIZATION OF THE MONUMENT

By the early 1950s, the principal advocates for Fossil Cycad National Monument, George Wieland and South Dakota Senator Peter Norbeck, had died. "The National Park Service thinks Fossil Cycad National Monument is a white elephant and wants to get it off its paper", according to Secretary Will G. Robinson of the South Dakota Historical Society (Robinson, 18 January 55). Representative E. Y. Berry from South Dakota introduced legislation in January 1955 to abolish Fossil Cycad National Monument. The bill was introduced at the request of the National Park

Service.

Robinson suggested that the site be transferred to the South Dakota Historical Society with the intent to preserve the fossil locality from any exploitation by private individuals. Robinson traveled to Fossil Cycad National Monument on May 28, 1956 with the Superintendent of Wind Cave. There was no evidence of fossil cycad material on the surface during their visit.

According to James Bump, a professor at the South Dakota School of Mines, there are other cycads found in the Black Hills. Bump indicated, though, that other than a few specimens in the collections at his institution, Wieland apparently took all the cycads from the monument and set them up in a museum at Yale.

During the 84th Congress, Senate Bill 1161 was introduced to abolish Fossil Cycad National Monument as a unit of the National Park Service. The bill was supported by the Department of Interior and the National Parks Association. The bill was signed into law on August 1, 1956 and became effective September 1, 1957. On December 6, 1957, Assistant Secretary of Interior Royce A. Hardy issued Public Order 1562 to carry out the directive of the public law. The land was turned over to the Bureau of Land Management.

Ironically, George Wieland played a role in both the creation and abolishment of Fossil Cycad National Monument.

POST-MONUMENT HISTORY

Between 1957 and 1998, the Bureau of Land Management (BLM) has maintained the 320 acre site previously designated as Fossil Cycad National Monument within the South Dakota Resource Area. In 1980, construction within a 300 foot highway right-of-way occurred within the boundaries of the revoked monument. During construction activities, fossil cycad material was unearthed.

In 1997, the BLM published an environmental assessment (EA) that analyzed the Fossil Cycad area relative to meeting the Area of Critical Environmental Concern (ACEC) criteria. The ACEC designation highlights areas where special management attention is needed to protect and prevent irreparable damage to resources. Members of the public nominated the Fossil Cycad area for ACEC designation.

The Draft Amendment to the South Dakota Resource Management Plan prepared by the BLM states that "BLM management objectives should involve the long-term conservation of the area's geologic, and paleontologic values for future generations to study and enjoy." The preferred alternative (Alternative C) indicates the following determinations: 1) retaining the area in public ownership would help make the scientific information available to the public; 2) restricting activity would help protect the area; 3) by allowing rights-of-way, important scientific information may be uncovered during surface disturbance; and 4) this information would be recovered by the BLM and made available to the scientific community.

Fossil Cycad National Monument was never officially open to the public and never had a visitor center or public programs. According to paleontologist Theodore White, “No present areas of the National Park Service contain fossil cycads. Therefore it could be concluded that the area should have been retained in the system based on its merits in relation to the thematic evaluation.” The legislation abolishing the monument contains the following statement: “That if any excavations on such lands for the recovery of fissionable materials or any other minerals should be undertaken, such fossils remains discovered shall become property of the Federal government” (S. 1161).

PRESERVING THE MEMORY OF FOSSIL CYCAD NATIONAL MONUMENT

In an effort to preserve the history of the forgotten fossil locality and abolished national monument, the senior author began to compile the archives, records, photographs and other information related to Fossil Cycad National Monument beginning in 1991 (Santucci and Hughes, 1998). The lessons learned through the history of the monument clearly illustrate the challenges associated with the management and protection of non-renewable paleontological resources. Archives associated with Fossil Cycad National Monument continue to be discovered, helping to further understand the events which resulted in the loss of a National Park Service unit.

During 2011, two original wooden routed signs from Fossil Cycad National Monument were discovered beneath other items at the Museum of Geology, South Dakota School of Mines & Technology (Fig. 8). One of these signs was donated to the National Park Service by Sally Shelton and is now curated into the collections at the Harpers Ferry Center in West Virginia. The signs represent one of the few tangible remains of the monument from the period it was administered by the National Park Service.

During 2012, National Park Service staff developed the first digital geologic map for the area previously administered as Fossil Cycad National Monument (Connors and O'Meara, 2012). This map was based upon the preliminary geologic map of the southwest part of the Minnekahta Quadrangle, Fall River County, South Dakota (Wilmarth and Smith, 1957).

In 2012, the authors of this article began to scan and organize the thousands of documents, photos and other archives associated with Fossil Cycad National Monument into a web-based database. This information is being shared with the Bureau of Land Management, the National Archives and Records Administration, several academic institutions, and the media. Through this effort the hope is to preserve the important story involving the loss of a significant fossil locality and the abolishment of a unit of the National Park Service, and to increase awareness about the fragility of non-renewable paleontological resources. Perhaps the lessons learned may be used to deter visitors to places like Petrified Forest National Park from engaging in souvenir hunting of petrified wood. Ultimately, this

effort will ensure that the legacy of Fossil Cycad National Monument is ‘Lost—But Not Forgotten’ (Fig. 9).

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