

general management plan

march 1980

FOSSIL BUTTE



NATIONAL MONUMENT / WYOMING

N E G A T I V E D E C L A R A T I O N

The actions proposed in this General Management Plan are not considered to be major federal actions with potential for causing significant impacts or controversy. Therefore, an environmental impact statement will not be prepared. In accordance with National Park Service planning guidelines, an Assessment of Alternatives has been prepared (U.S. Department of the Interior, National Park Service, 1977). Probable environmental impacts and mitigations for the actions recommended in this General Management Plan, as well as for the other alternatives that were considered, are discussed in the assessment. The selection of alternatives as discussed in this plan is documented in the Review of Alternatives dated June 6, 1978.

Approved:
James B. Thompson
Acting Regional Director
Rocky Mountain Regional Office
March 12, 1980

FOSSIL BUTTE NATIONAL MONUMENT

WYOMING

GENERAL MANAGEMENT PLAN

March 1980

United States Department of the Interior
National Park Service
Denver Service Center/Rocky Mountain Regional Office

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Few museums in the world, certainly none of the larger ones, are without specimens of the fossil fishes from the Green River shales of southwest Wyoming. These are prize exhibition specimens and no other fossil-bearing formation in North America has produced as many and such characteristic fossils as this great series of lake beds.

Curtis J. Hesse

Eminent 20th Century Paleontologist

INTRODUCTION

SIGNIFICANCE

Fossil Butte National Monument, which contains a small but significant part of the extensive Green River formation, contains fossil fish that represent the evolution and modernization of freshwater fishes better than those from any other site in the United States. According to the establishment act, Public Law 92-537, the purpose of the national monument is to preserve for present and future generations the outstanding paleontological sites and related geological phenomena and to provide for the display and interpretation of scientific specimens.


LOCATION

Fossil Butte National Monument is located about 10 miles west of Kemmerer, Lincoln County, Wyoming. See the map entitled "The Region." Being close to major vacation travel routes to Yellowstone and Grand Teton National Parks, the monument has the potential to become a stop on the vacation routes of visitors to these and other areas.

FUTURE VISITATION

Because past visitation data was insufficient to accurately project future visitation levels, projected annual visitation as presented in the Assessment of Alternatives was based on trends established in other areas of the National Park Service. These projected annual visitation figures optimistically placed visitation at the monument in 1985 (after development) at 47,000 annually, and in 1995 at 85,000. Two factors which were not addressed were: the potential affects of tourist traffic traveling through the area in route to Yellowstone National Park and; the consequences of the energy situation. After the above projected annual visitation figures were estimated, the Final Report of the Greater Yellowstone Cooperative Regional Transportation Study was compiled. While the transportation study was not specific to Fossil Butte it addressed regional tourist traffic and the energy situation.

Fossil Butte National Monument is only a few hours detour off of travel routes that are being used by 310,000 Yellowstone and Grand Teton National Park tourists each year. Projections in the study indicate that this use will increase from between 378,000 to 508,000 visitors seasonally by the year 1997. As stated in the study, the consequences of the energy situation on future visitation are almost impossible to predict because of the diverse estimates of energy



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POCATELLO

MONTPELIER

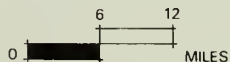
IDAHO

LOGAN

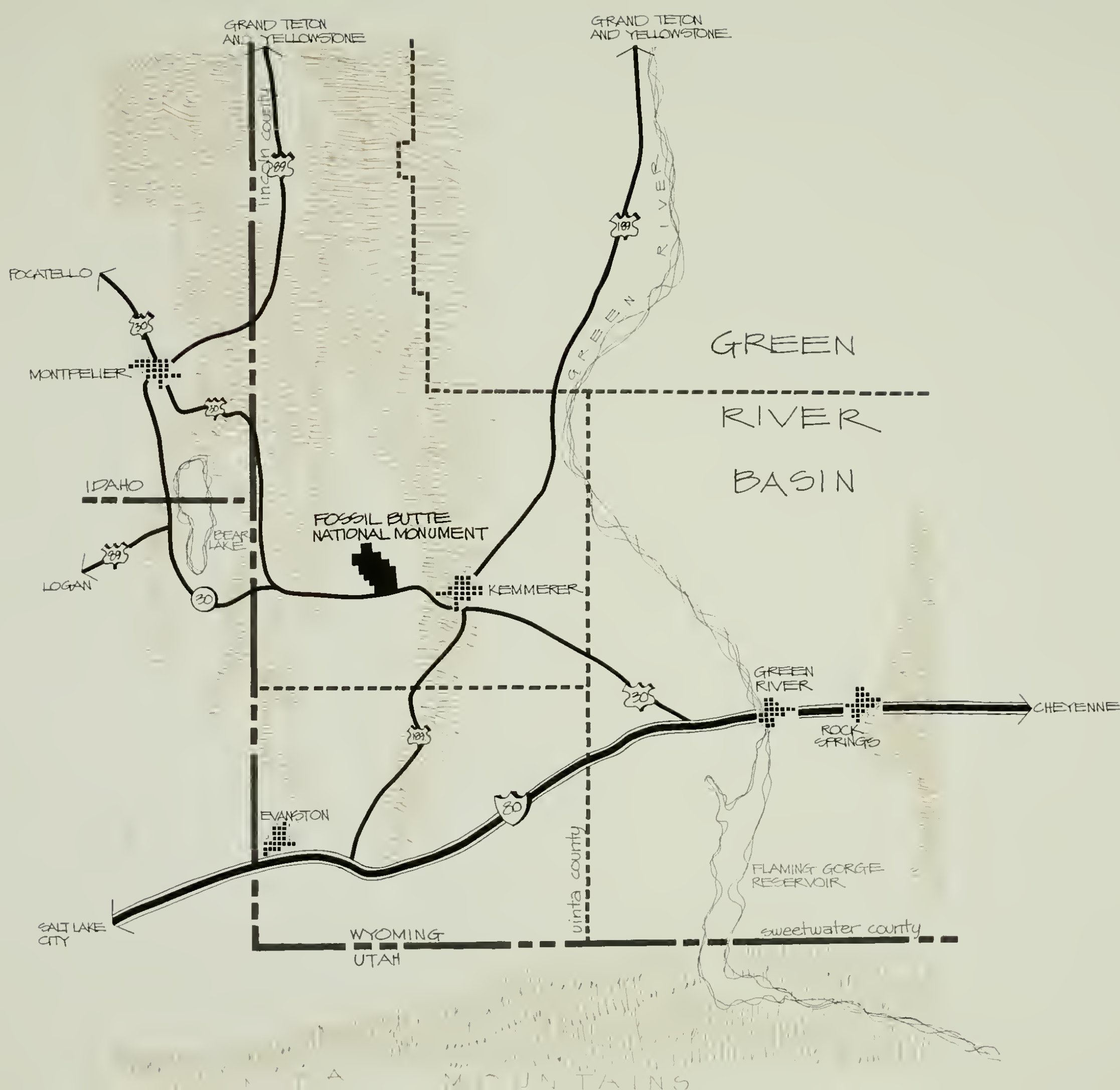
SALT LAKE
CITY

THE REGION

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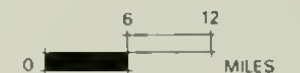


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THE REGION

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resources and reserves. A decrease in visitation, similar to the decrease that took place during the oil embargo of 1973-74, seems unlikely because population growth, especially in the Mountain and Pacific states, indicates there will be more people living nearer the attractions of the Greater Yellowstone Region. Energy shortages would affect these visitors less than visitors coming greater distances (for example, from the East Coast).

In conclusion, available data is insufficient to project future visitation, but well researched studies indicate visitation to the region will continue to increase, and the impact of fuel shortages will be offset by regional population increases.

MANAGEMENT OBJECTIVES

In March 1977 the Statement for Management, Fossil Butte National Monument received approval. Management objectives in the statement for management have been prepared and then updated in this effort to protect the resources and to guide decisions concerning the management, use, and development of the monument. The management objectives follow.

Limit extraction of the paleontologic resource to scientific research that may be required in connection with monument development and fill gaps in the knowledge of the resources that cannot be obtained elsewhere.

Obtain a representative collection of fossil specimens to adequately display and interpret the paleontologic resources to the public.

Protect and preserve within the constraints of the enabling legislation all elements of the natural and historic resources of Fossil Butte National Monument.

Provide an inventory and evaluation of cultural resources of the monument.

Maximize use of alternative energy sources and technology.

Develop administrative and visitor use facilities necessary for enjoyment and use of the national monument in a manner that will have minimum impact on the resources.

Develop an interpretive program and facilities that enable the visitor to understand this geological period in juxtaposition with others (well represented in the National Park System) and in context with man's moment in the immense evolvement of ecosystems during earth's existence.

Because Fossil Butte National Monument is a recent addition to the National Park System, it has not received the planning and development needed to make it a fully operable unit of the system. This document is the most recent comprehensive proposal for management and development of the monument. It will significantly influence preservation and use of the area through the remainder of this century. Specific action documents such as site development and research plans will be completed and implemented within five years.

The general management plan will be subject to periodic reevaluation and will be updated to reflect changes in management objectives or in ecological or economic conditions in the vicinity of the monument.

T H E E N V I R O N M E N T

LANDSLIDE HAZARDS

Since completion of the Assessment of Alternatives, Fossil Butte, additional studies which significantly influence the proposal have been completed.

An October 1978 study, "Geologic Evaluation of Sites for a New Visitor Center for Fossil Butte National Monument" was proposed by the U.S. Geological Survey to clarify the nature of potential landslide hazards on the monument. Particular attention was paid to susceptibility of alternative development sites to landslide damage. The following is an excerpt from that report that describes the proposed visitor facility site.

Site #5 (Sec. 25, T22N, R118W)

The proposed site is on alluvium. Although landslides are present on the slopes to the north they appear to be old and probably stable if undisturbed. A road would have to be built from the Chicken Creek Road to the site. It could probably be placed safely anywhere in the valley as long as no steep cuts are made and proper drainage is provided.

WATER RESOURCES

At the time the Assessment of Alternatives, Fossil Butte was prepared there was sufficient water resource information to exclude the possibility of developing wells to meet the minimal water demand. Spring development also was excluded because of potential damage to wetland environments. A November 1978 study "Feasibility of Developing Ground Water Supplies in Fossil Butte National Monument, Wyoming" prepared by Peter W. Huntoon, Wyoming Water Research Institute, University of Wyoming supports the earlier conclusions. Following is an excerpt from that report:

It will be shown that the feasibility of developing good quality ground water from wells on the monument is poor. It is possible to develop small, ephemeral supplies from seeps and springs in the monument, but these will require extensive site preparation, long pipelines, and will not be dependable during dry periods.

The Assessment of Alternatives that preceeded the Draft General Management Plan contains an in-depth description of the monument's environment. Only the most significant features of the environment are described below.

EXISTING DEVELOPMENT

Present development is minimal and temporary in nature. The visitor-contact facility consists of a trailer, graveled parking area, and vault-type toilets. A short trail with wayside exhibits leads to the historic fish quarries north of the visitor-contact facility. Unimproved roads leading north and ascending Cundick Ridge predate the establishment of the monument.

NATURAL ENVIRONMENT

Fossil Butte rises dramatically above the surrounding sage grasslands. Red, purple, and yellow badlands eroded in the Wasatch formation are visible along the northwest side of the butte. These rocks contain fossils of large mammals that lived here millions of years ago. Overlying the Wasatch formation and extending to the top of the butte are the much steeper buff-to-white beds of the Green River formation.

The richest fish deposits are found in thin limestone layers not far below the top of the butte. These fossils include early varieties of perch believed to have evolved into the perch now living only in the sea. The large, deep-bodied fish *Pharodus* is common in the fossil beds but is now extinct and has no known descendants.

Fossils of diverse fishes such as paddlefish, garpike, and stingray offer potential for research and interesting exhibits. Fossil plants, insects, bats, and birds reveal additional information that allows scientists to reconstruct this ancient lake, shoreline, and floodplain environment. Significant fossil materials have recently been found in the Wasatch Formation.

The present-day vegetative cover at the monument is predominantly a grass-brush type that normally grows under the semiarid to arid conditions of western Wyoming. In areas of low to moderate slope, Indian ricegrass, june grass, and wild rye are interspersed with shrubs such as big sagebrush, rabbitbrush, snowbush, greasewood, and serviceberry. Steeper slopes are usually sparsely covered to barren.

Scattered stands of limber pine grow on some of the higher north-facing slopes. Intermixed with the pine or in moister downslope areas are small stands of aspen. In autumn, the aspen appear as splashes of gold along the ravines on the southwestern face of Cundick Ridge.

Several species of wildlife live in or pass through this rugged area. Mule deer, moose, and pronghorn antelope are common. In autumn, elk drift into the vicinity from higher elevations. Coyotes and bobcats find ample food supply in an abundant rodent and rabbit

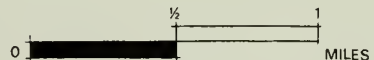


EXISTING CONDITIONS


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NORTH



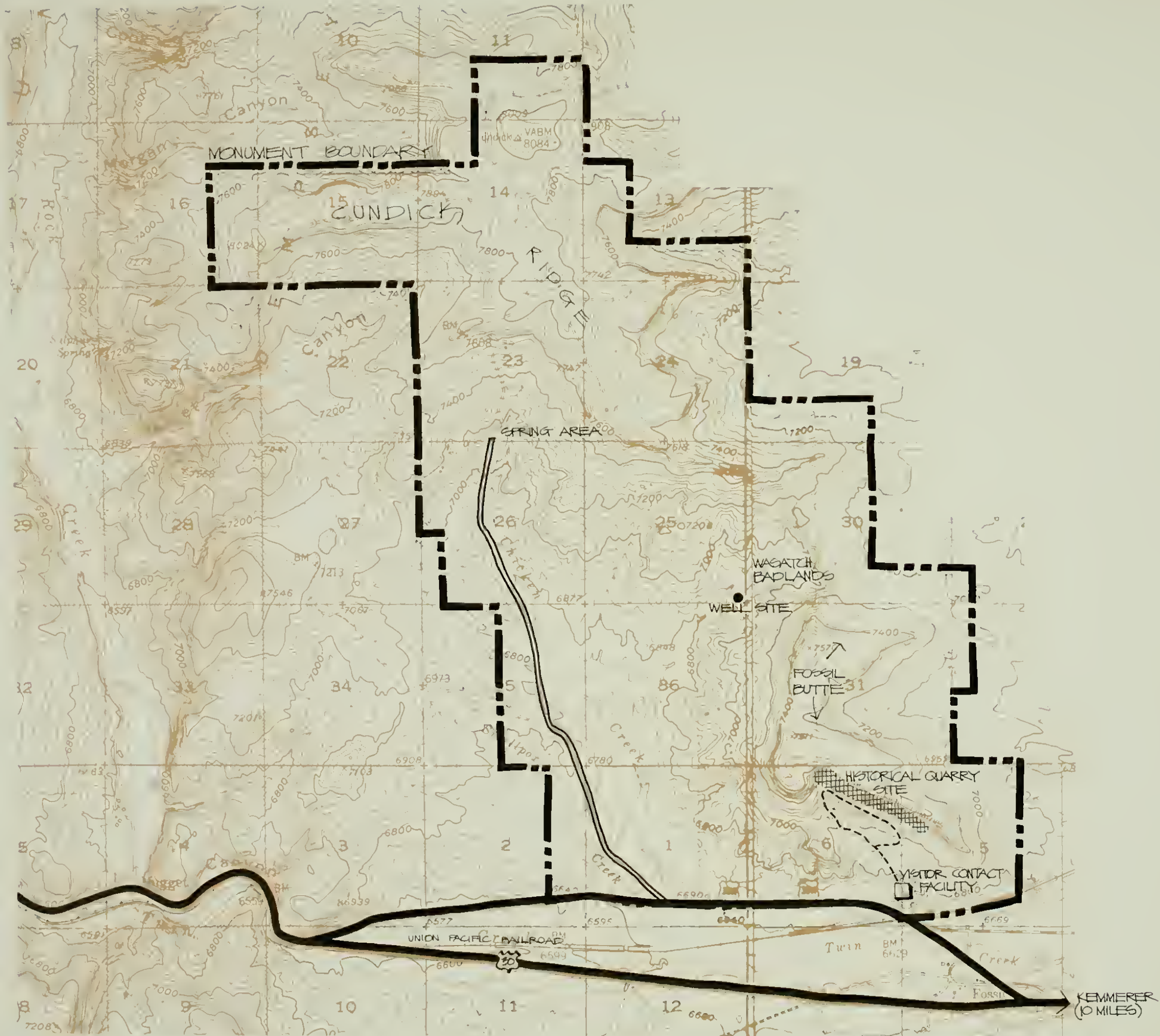
ROADS:

 SURFACED

 NON-SURFACED (PASSENGER VEHICLES)

 ADMINISTRATIVE

 FOOT TRAIL



EXISTING CONDITIONS

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- ROADS.
- SURFACED
 - NON-SURFACED (PASSENGER VEHICLES)
 - ADMINISTRATIVE
 - FOOT TRAIL

population. West of Chicken Creek is a small colony of prairie dogs. Birdlife is abundant, including golden eagles, sage grouse, and red-tailed hawks.

CULTURAL ENVIRONMENT

Fossil Butte was first publicized widely in the 1870s by Professor Ferdinand V. Hayden, an eminent scientist commissioned by the federal government to conduct a geological survey in the Rocky Mountains. Since then the fossil fish have attained worldwide fame. During the past 80 years, local fossil collectors have removed and skillfully prepared fossil specimens of such significance that they often go to museums and galleries.

As part of an ongoing effort to locate, inventory, and evaluate for significance the cultural resources of the monument, George M. Zeimens of the Department of Anthropology, University of Wyoming conducted an assessment of the archeological resources. One of the sites located (48 LN 326) has the potential to contribute significantly to the archeological record. This site may be eligible for nomination to the National Register of Historic Places.

In 1975 the National Park Service prepared a "Historic Plan, Fossil Butte National Monument," which identified several early fossil quarries as well as an A-frame cabin used by early fossil hunters.

Both of these properties are potentially eligible for nomination to the National Register of Historic Places. As a result of contact with the Wyoming State Historic Preservation Officer, no other national register sites or potentially eligible sites were determined to be in or near the monument.

T H E P L A N

The major planning concepts and the rationale for their selection are presented in this document. Details of the concepts as well as their alternatives are contained in the Assessment of Alternatives.

MANAGEMENT ZONING

Three management zones are proposed for Fossil Butte National Monument to differentiate basic types of resources and to show the locations of principal development.

No wilderness areas are proposed mainly because of the potential requirement for motorized excavating equipment at fossil deposits and the lack of information on where permanent in-place fossil exhibits will be established. Much of the roadless area units also have views beyond the monument some of which would detract from a wilderness experience. Other roadless units are unsuitable due to their small size. A more detailed discussion is contained in the Assessment of Alternatives under "Land Classification". (Pages 26-27)

Natural Zone

These lands will be managed to ensure that natural resources and processes remain largely unaltered by human activity; development here will be limited to dispersed facilities such as picnic areas and interpretive signs along roads and trails.

Historic Zone

Historic zone lands will be managed to protect and interpret cultural resources and their settings.

Park Development Zone

These lands will be managed to provide and maintain major facilities needed to serve monument managerial and visitor needs.

NATURAL RESOURCE MANAGEMENT

Grazing




Grazing and stock watering will be permitted at least until 1982, but could be extended for not more than 10 years to 1992 by the



MANAGEMENT ZONING

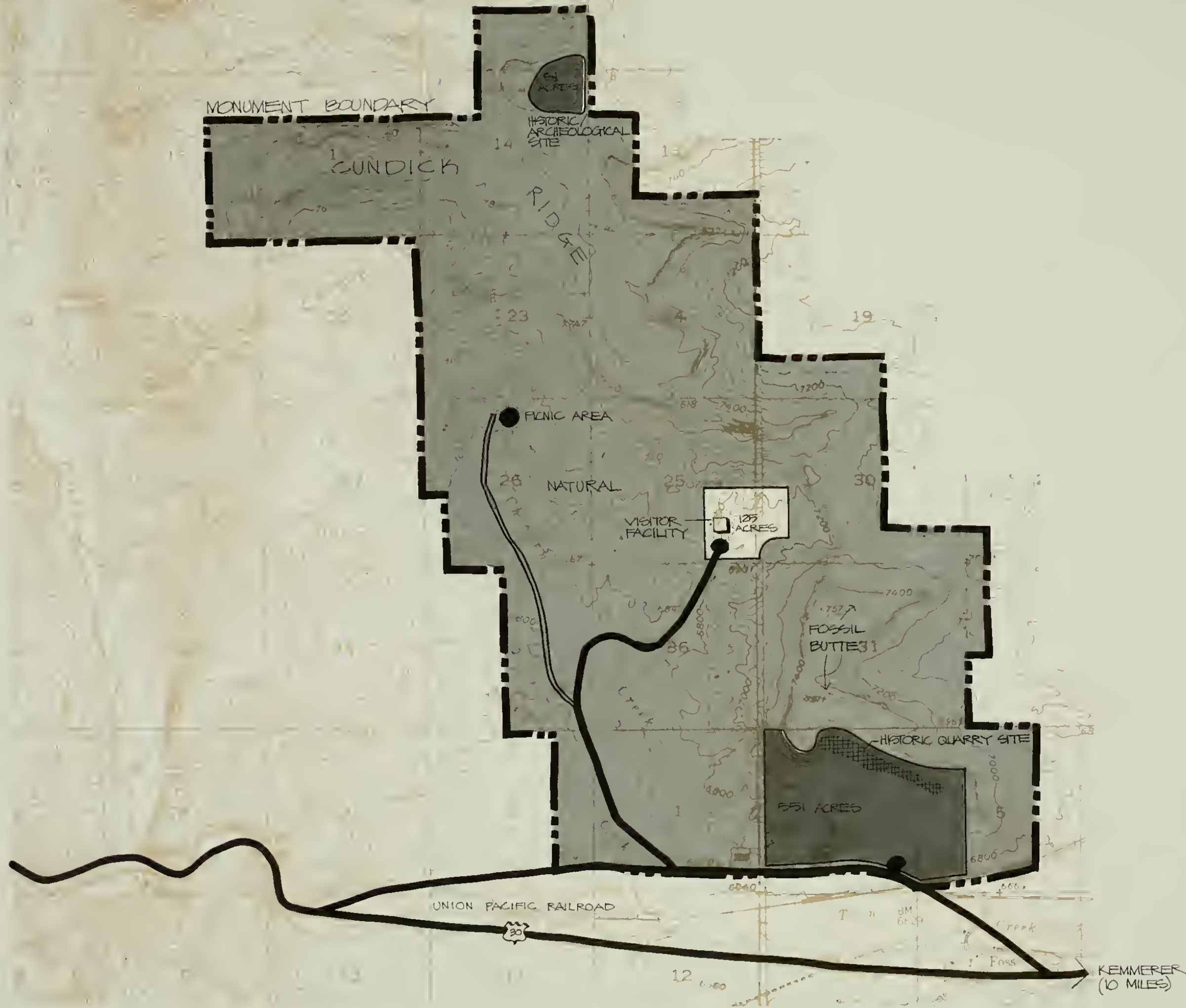
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	ACRES	% TOTAL MONUMENT
 NATURAL ZONE	7418	90.7%
 HISTORIC ZONE	635	7.7%
 PARK DEVELOPMENT ZONE	125	1.5%
	8178	100%

NOTE: Boundaries of Historic Zone areas are tentative pending National Register determination.

The Park Development Zone will be reduced once site planning for the visitor facility has been completed.



MANAGEMENT ZONING

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Secretary of the Interior if such uses will not conflict with public use, interpretation, or administration of the monument. The monument boundary will be fenced in a practicable manner. Additional fencing and cattle guards will be used to keep livestock away from areas used by visitors.

Transects will be established to monitor changes in the vegetation. Qualified and quantified observations by an interagency team will be made to test suspected wildlife/ livestock conflicts and the effects of fencing on wildlife. Recommendations as to the termination or continuation of grazing will be made after managers have an opportunity to assess the results of the above studies. Initial steps have been started in 1979 by establishing one acre enclosures (3).

Scenic Values

Within the monument public access by vehicle will be restricted to improved roads, whether paved or unpaved. Within the Cundick Ridge area, administrative vehicles will be restricted to unimproved existing roads. Roads will take advantage of existing alignments to preserve the scenic values within the monument. The National Park Service and Bureau of Land Management will maintain a dialogue on protection of scenic values of lands adjacent to the monument.

Exotic Plant Species

The distribution of exotics will be monitored to assess the effects of grazing, fencing, and competition between livestock and wildlife. Until such species are determined to be detrimental to the natural ecosystem, no action will be taken.

Wildlife

Wildlife populations will be monitored to assess the effects of grazing, fencing, and competition between livestock and wildlife. Trails and roads will provide opportunities for visitors to view wildlife. These visitor activities will be monitored, and they will be controlled or terminated if they adversely affect wildlife. All intensive development will avoid recognized wildlife habitat.

Fossil Resources

A paleontological survey (Podorsky-Ft. Hayes State Univ.) of the Wasatch Formation was accomplished during the summer of 1979. Other research is in progress and will be encouraged and conducted

on a continual basis. The basic knowledge of the fossils and formation of the monument were derived as a result of observations and research, from early explorations by Fremont and others to the more recent work of Oriel, Tracey, McGrew, and Casilliano in the 1970s.

Despite the massive volume of fossil deposits within the monument, the fossils are a nonrenewable resource. Their extraction will be restricted solely to National Park Service needs (display and interpretation of scientific specimens) and to extraction by scientific institutions for display and interpretation in a manner approved by the National Park Service. A survey of the entire monument will be conducted to identify areas with the most potential for discovering significant fossil deposits and to identify which of these deposits can be excavated with minimal disturbance of the monument resources. Fossil deposits not selected for extraction will be allowed to remain undisturbed and to weather naturally. This survey should be initiated and conducted prior to any major construction.

The greatest concentration of fossils exposed by historic quarrying is along the south side of Fossil Butte. These exposed fossils are in fact the tailings of early fossil quarrying, which resulted mostly in debris and small pieces of broken fossils. The historic quarries should remain undisturbed and protected but yet available for interpretation. In accordance with National Park Service policies and guidelines, visitors will be encouraged to "look but not remove." Scientifically insignificant fossils will be available in a monitored situation so that visitors can participate in a "hands on" preparation experience.

Air Quality

The quality of air at Fossil Butte National Monument plays a vital role in both visitor enjoyment and the perpetuation of natural and cultural resources. Therefore, National Park Service managers will cooperate with regional air authorities, state authorities, and agencies having jurisdiction over adjacent lands. This cooperation will be based on compliance with the Clean Air Act of 1970 as amended, directives, and other pertinent regulations.

Monitoring of air quality at the monument began in 1979 and will continue indefinitely to provide baseline information for compliance with the Clean Air Act of 1970 as amended.

CULTURAL RESOURCE MANAGEMENT

The historic quarry sites will be allowed to weather naturally, eventually becoming indiscernible from their surroundings. The

spoils from these quarries will be treated as part of the fossil resource discussed above.

The A-frame cabin used by early fossil collectors will be protected until its future is prescribed, following determination of its national register status. A determination also will be made as to the archeological significance and national register status of the site in section 14. If either site fails to meet the criteria for historic significance, its classification as historic may be changed to natural. Until a determination is made about the national register status of the two properties, they will be protected by the procedures of the Advisory Council on Historic Preservation (36 CFR Part 800), National Park Service Activity Standards, and National Park Service Management Policies.

National Park Service managers will continue to review and update information on the cultural resources of the monument.

USE BY VISITORS AND INTERPRETATION

The relatively small size of the monument limits the activities that will be available to visitors. Moreover, climatic extremes, lack of water, and few viewpoints that are not affected by the sight of outside land uses all combine to make this an area suitable for daytime use. The monument's primary programs for visitors will concentrate on seeing and understanding the significance of the fossils and on enjoying the monument's terrain by means of trails and roads. Signs along U.S. Highway 30 will tell passing motorists where to enter the monument and how to get to the visitor facility. This facility will be the principal reception point, serving both visitors with limited time and those who want to stay longer to walk the trails. Announcements of conducted tours and locations of self-guiding trails will be available at the facility.

Visitors will be encouraged by building design, as well as by inside interpretive programs, to see the resources firsthand.

The following approaches will be used to guide the development and presentation of interpretive programs for all visitors, regardless of their individual interests and length of stay:

- Point out by direct visual reference that the top of Fossil Butte is a remnant of an ancient lakebed and present a vivid image of Fossil Lake and the subsequent land erosion and formation processes

- Demonstrate to visitors the techniques used in preparing fossils

Show the teeming variety of life that existed in the Fossil Lake environment by arraying fossils in visually exciting exhibits

Show by interpreting fossil specimens that fossils reveal not only the beauty of ancient lifeforms, but also scientifically significant patterns

Help visitors understand the sweeping environmental changes that have occurred here during the past 70 million years by portraying changes in lifeforms that occurred before, during, and after the existence of Fossil Lake.

The media needed to interpret these concepts will be designed into the visitor facility. Audiovisual devices, interior and exterior exhibits, publications, relieving demonstrations, and personally conducted talks and tours will be considered. Onsite interpretation beyond the facility and along roads and trails will provide a first-hand view of monument resources.

Views and interpretation of monument resources will be provided for the following:

Quarrying sites in the Green River formation

Views of the colorfully eroded Wasatch formation and its fossils

Historic quarries

Significant vegetative communities and areas of wildlife habitat

Viewpoints that lend an overall scenic perspective to the monument

GENERAL DEVELOPMENT

Development at the Monument

Visitor/Administrative Facility. A single, 6,000-square-foot building will be located in a basin on a south-facing hillside in the southeast corner of section 25. The facility will contain a visitor services area, administrative offices, and curatorial space. Clustering all monument development in a single building at the basin site will enhance administrative effectiveness, promote a close relationship between research and visitor activities, and help conserve energy.

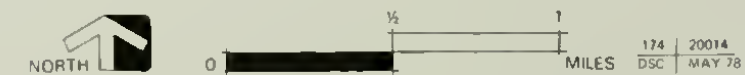
Fossil Butte National Monument is in an area where there is only a 10 percent probability that a level of seismic ground motion capable of creating limited cracks in building foundations will be exceeded in 50 years. Soils of the monument are such that in steep areas





GENERAL DEVELOPMENT

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- ROADS:
- SURFACED
 - GRAVEL
 - ADMINISTRATIVE
 - AREA FOR POTENTIAL TRAIL DEVELOPMENT

there is limited potential for renewed earthflows, probably slow and intermittent. Because of these seismic and soil characteristics, an engineer or engineering geologist will be consulted for input on building design.

If technically feasible, it is recommended that the visitor facility be designed and constructed using underground architectural techniques. In this harsh, semiarid climate, an underground building can be more efficiently heated, cooled, and maintained than an aboveground conventional structure. This will reduce long-term energy-related costs.

A 50-car parking area will be the most significant visual intrusion at the site. The parking area and parts of the building will be visible from approximately 10 percent of the monument.

Through proper placement of the building, visitors will be able to view the most significant areas of the monument, free from visual and auditory intrusions. This site is close to the Wasatch Badlands formation, the north end of Fossil Butte, and the extreme southeast portion of Cundick Ridge, and visitors will be within convenient walking distance of most of the primary resources. Both short-term visitors, who will not venture beyond the visitor facility, and long-term visitors, who will walk to these interesting areas, will benefit from a facility at this location.

The area required for visitor services will include a lobby with an information/orientation/reception desk, an area where visitors can see fossils and the techniques of their preparation, and a small audiovisual alcove. At any one time the visitor facility portion of the building will comfortably accommodate 50 visitors.

Offices, a seasonal employee apartment, a garage, a light-maintenance shop, a first-aid area, and utility space will serve administrative needs. The building will contain specialized laboratories for use by personnel of the National Park Service and scientists from cooperating institutions for fossil preparation, study, and storage.

Concentrating monument operations at one location will enable a small staff to share responsibilities and assignments, and to communicate easily with one another (see appendix E for staff positions that will be required). A small seasonal apartment within the building will allow staff personnel to be on site most of the time. This will ensure protection of National Park Service property and of borrowed property, such as fossil specimens.

The rationale for recommending development of facilities at Fossil Butte National Monument is based on the direction put forth in Public Law 92-537 which established the monument and stated its

purpose. Preserving for present and future generations the outstanding paleontological sites and related geological phenomena and providing for the display and interpretation of scientific specimens are the purposes of the national monument. To display the fossils effectively, they should be exhibited in a building within the national monument so that their actual source can be seen and interpreted at the same time. To preserve the monument's resources, a small staff should be present with curatorial facilities readily available that will enhance not only their own studies but will also encourage further studies of the monument's resources by the science community.

Specific details about the exact size and layout of the building and its energy-conserving features will be determined later by designers and engineers. Designing the building in a cost effective manner, designing for function and need, will be the guiding criteria for the designers and engineers.

Utilities. Electrical service for all monument facilities will be provided commercially from Kemmerer. From the point where electrical service enters the monument, all lines will be placed underground.

Because well water at the monument is of unacceptable drinking quality and because developing nearby springs would adversely impact the only significant wet area in the monument, drinking water will be trucked from Kemmerer by the monument staff. By utilizing a waterless sewage system (such as oil flush toilets), by placing limited output faucets in the restrooms, and by encouraging strict water conservation by the staff, hauling water from Kemmerer will be feasible. During the heaviest use season, a 3,000-gallon-tank truck will make approximately two trips per week.

A feasibility study will be conducted prior to designing and constructing the sewage system to determine the most appropriate treatment method. Solid waste collected at the monument will be removed from the park to an accepted disposal area or facility.

The location of the visitor/administrative facility offers opportunities for alternative energy systems. By utilizing underground architecture and some form of solar heating, the amount of commercial energy used will be minimal. Alternative energy systems such as generating electricity with the wind or cooling with solar energy could also be utilized. Temperature, wind speed, and solar radiation have been monitored at this site, and data indicate the potential for alternative energy systems. As with the sewage treatment system, a feasibility study will be conducted prior to design and construction of the building. The systems used will be based on proven technology and of such a nature that highly specialized maintenance personnel will not be needed on the staff.

Trails. Unique fossil deposits, wildlife habitat, badlands formation, and high viewpoints will all be within a comfortable walk for a majority of visitors. Foot trails will be developed to provide access to the above-mentioned features, the picnic area, and the historic quarry site. The area for potential trail development, as shown on the General Development map, could accommodate 12 miles of trails, allowing approximately 500 people to use the trail system at any given time.

Access to the historic quarry site will be by trail. The parking area and trailhead immediately off old U.S. Highway 30 will be retained.

A second parking area and trailhead will be developed for the small picnic area east of Chicken Ranch Road in the north half of section 26. This picnic area will consist of approximately eight to ten sites and will have primitive accommodations, such as picnic tables, trash receptacles, grills, and portable toilets; there will not be any drinking water provided at this site.

Roads. A 50-car paved parking area and trailhead will serve the visitor facility in section 25. The access route will follow Chicken Ranch Road for 1.2 miles, then branch to the northeast 1.6 miles to the visitor facility. Constructing this 2.8-mile paved road will cost approximately \$700,000. Another road segment, the 1.7-mile remainder of Chicken Ranch Road leading to the picnic area, will be improved with gravel, costing \$128,000.

Of the 4.5 miles of access road, only 1.2 miles will follow a new alignment. The other 3.3 miles will follow the existing Chicken Ranch Road. The entire road alignment and the parking area at the visitor facility will be visible from approximately 30 percent of the monument.

Construction of the 1.6-mile segment of access road between Chicken Ranch Road and the proposed visitor facility must await the transfer of ownership of intervening land (section 36) from the state of Wyoming to the National Park Service. Negotiations for this exchange was accomplished by the Bureau of Land Management.

Seasonal Employee Dormitory in Kemmerer

Because it is exceedingly difficult for seasonal employees to compete with the local labor force for available housing, a dormitory type facility will be constructed in the vicinity of Kemmerer. This facility should be able to accommodate up to 30 persons and it will be constructed by the National Park Service with the possibility of it being shared with the Bureau of Land Management and the U.S. Forest Service. Both of these agencies have similar problems with

their seasonal employees being unable to find affordable, appropriate housing.

The location of this facility in the vicinity of Kemmerer needs to be determined on a cooperative effort by the appropriate personnel.

It is exceedingly difficult for seasonal employees, who would need to find housing for three to ten months, to compete with the local labor force for available housing. During the summer months, there is an influx of relatively highly paid construction workers, and the majority of permanent residents are employed at relatively high wages by the mining industry. Because of the high competitive wages, the scarcity of temporary housing, and the high housing and living costs it is difficult to attract qualified persons for seasonal positions. Without housing, it is unlikely experienced seasonals will return. Providing a dormitory may help reduce the effort and expense of training new seasonals, since the National Park Service will probably be able to depend more on experienced returning staff.

FOSSIL BUTTE NATIONAL MONUMENT - WYOMING

PROPOSED DEVELOPMENT SCHEDULE SUMMARY
FOR ATTRIBUTABLE COSTS

	<u>FIRST YEAR</u>	<u>SECOND YEAR</u>	<u>THIRD YEAR</u>	<u>FOURTH YEAR</u>	<u>FIFTH YEAR</u>	<u>FIVE YEAR TOTAL</u>	<u>FUTURE YEARS</u>	<u>TOTAL</u>
SUBTOTAL - ROADS, TRAILS PARKWAYS	\$131,000	\$1,197,000	\$ 24,000	\$74,000	\$74,000	\$1,500,000	\$548,000	\$2,048,000
SUBTOTAL - BUILDINGS, UTIL- ITIES, ETC.	<u>305,000</u>	<u>2,679,000</u>	<u>172,000</u>	<u>--</u>	<u>--</u>	<u>3,156,000</u>	<u>15,000</u>	<u>3,171,000</u>
GRAND TOTAL	\$436,000	\$3,876,000	\$196,000	\$74,000	\$74,000	\$4,656,000	\$563,000	\$5,219,000

Cost estimates are based on cost indices of March 1980.
Project planning money has been added in year prior to construction year.
Project supervision and contingencies are added in year of construction.

Ramon Barajas
Chief, Branch of Estimating, Denver Service Center

Prepared by:

Date

3.3.80

Robert Mullins
Asst. Manager, Midwest/Rocky Mountain Team, Denver Service Center
Actg.

Recommended by:

Date

3.4.80

[Signature]
Manager, Denver Service Center

Approved by:

Date

3.5.80

FOSSIL BUTTE NATIONAL MONUMENT - WYOMING
PROPOSED DEVELOPMENT SCHEDULE SUMMARY
FOR ATTRIBUTABLE COSTS

	First Year	Second Year	Third Year	Fourth Year	Fifth Year	Five Year Total	Future Years	Total
<u>Roads, Trails, Parkways</u>								
Visitor/Admin. Facility, Paved parking area (50 cars, 2 buses), concrete curb, 6' wide concrete walks, and entry pad to garage and shop	\$ 12,000	\$ 104,000	--	--	--	\$ 116,000	--	\$ 116,000
Paved service road, 12' wide to water tank (approx. 500 LF)	2,000	24,000	--	--	--	26,000	--	26,000
Gravel service road, 12' wide to septic system (approx. 500 LF)	1,000	12,000	--	--	--	13,000	--	13,000
Gravel foot trails, 4' wide (approx. 12 miles)	--	--	\$24,000	\$74,000	\$74,000	172,000	\$ 74,000	246,000
Entrance road, paved, 22' wide, 2.8 miles (1.2 existing gravel, 1.6 new alignment) (from county road along boundary to visitor/admin. facility)	110,000	1,009,000	--	--	--	1,119,000	--	1,119,000
Spur road to picnic area, paved, 20' wide, 1.7 miles (existing gravel)	--	--	--	--	--	--	434,000	434,000
Picnic area parking (10 cras, 1 bus)	--	--	--	--	--	--	25,000	25,000

FOSSIL BUTTE NATIONAL MONUMENT - WYOMING

PROPOSED DEVELOPMENT SCHEDULE SUMMARY
FOR ATTRIBUTABLE COSTS

	First Year	Second Year	Third Year	Fourth Year	Fifth Year	Five Year Total	Future Years	Total
<u>Roads, Trails, Parkways cont.</u>								
Dormitory parking, 30 cars, curbing, 6' wide walks	\$ 6,000	\$ 48,000	--	--	--	\$ 54,000	--	\$ 54,000
Stabilize gravel parking area for quarry	--	--	--	--	--	--	\$ 15,000	15,000
Subtotal - R&T	\$131,000	\$1,197,000	\$24,000	\$74,000	\$74,000	\$1,500,000	\$548,000	\$2,048,000

February 1980

FOSSIL BUTTE NATIONAL MONUMENT - WYOMING

PROPOSED DEVELOPMENT SCHEDULE SUMMARY
FOR ATTRIBUTABLE COSTS

	First Year	Second Year	Third Year	Fourth Year	Fifth Year	Five Year Total	Future Years	Total
<u>Buildings & Utilities, Etc.</u>								
Visitor/Admin. facility, 6,000 SF for lobby, audio exhibit area, curatorial area, offices, garage, apartment, utility space, passive architecture \$126,000	\$126,000	\$1,100,000	--	--	--	\$1,226,000	--	\$1,226,000
<u>Dormitory in vicinity of Kemmerer (30 employees) 10 units furnished w/water, sewer, power, tel.</u>	24,000	210,000	--	--	--	234,000	--	234,000
<u>Visitor/Admin. facility utilities: waterless sewage system reservoir 20,000 gals. water lines commercial power 15 miles to Kemmerer 2.8 miles to go under- ground backup solar/wind telephone underground 2.8 miles</u>	140,000	1,218,000	--	--	--	1,358,000	--	1,358,000
<u>Picnic area, 10 sites tables, grills, trash cans, portable toilet</u>	--	--	--	--	--	--	\$15,000	15,000

FOSSIL BUTTE NATIONAL MONUMENT - WYOMING
PROPOSED DEVELOPMENT SCHEDULE SUMMARY
FOR ATTRIBUTABLE COSTS

	First Year	Second Year	Third Year	Fourth Year	Fifth Year	Five Year Total	Future Years	Total
<u>Buildings & Utilities cont.</u>								
Visitor/Admin, dorm, and picnic area landscaping and finish site work	--	\$ 17,000	\$150,000	--	--	\$ 167,000	--	\$ 167,000
Entrance signs (2)	--	2,000	15,000	--	--	17,000	--	17,000
Park signs, exhibits	--	1,000	7,000	--	--	8,000	--	8,000
Visitor/Admin. furnishings	\$ 15,000	131,000	--	--	--	146,000	--	146,000
Subtotal - B&U	\$305,000	\$2,679,000	\$172,000	--	--	\$3,156,000	\$15,000	\$3,171,000

APPENDIX B

STUDY PRIORITIES

The following studies are listed in priority with respect to implementing the general management plan for Fossil Butte National Monument:

Survey paleontologic resources--This survey will be conducted by National Park Service professional paleontologists or by a professional consultant. Areas with the highest potential for further research should be identified. Through information generated by the survey, management zoning, interpretive programs, and monument research could be based on more complete knowledge of the resource. This survey will be conducted prior to any construction activity.

Monitor vegetation and wildlife--Drawing on the knowledge of range management specialists, wildlife biologists, and professional managers, the effects of grazing, fencing, and development should be monitored. The National Park Service would then formulate a specific recommendation as to the termination or continuation of domestic livestock grazing. The recommendation would be forwarded to the Secretary of the Interior prior to 1982.

Determine the national register significance of historic and archeological sites--The historic quarry site and archeological site 48 LN 326 are recognized as potentially eligible for nomination to the National Register of Historic Places. A formal determination is needed to establish the significance and to detail management of cultural resources in the monument.

Monitor wet areas and springs--Monitoring should be conducted to determine actual availability, quantity and quality of surface water within the monument as critical baseline data from which to reasonably address any future water demands and needs.

APPENDIX C

LEGISLATION

An Act to establish the Fossil Butte National Monument in the State of Wyoming, and for other purposes. (36 Stat. 1039)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in order to preserve for the benefit and enjoyment of present and future generations outstanding paleontological sites and related geological phenomena, and to provide for the display and interpretation of scientific specimens, the Fossil Butte National Monument (hereinafter referred to as the "monument") is hereby established, to consist of lands, waters, and interests therein within the boundaries as generally depicted on the drawing entitled "A Proposed Fossil Butte National Monument, Wyoming." Numbered FBNM-7200, dated April 1963, revised July 1964, and totaling approximately eight thousand one hundred and eighty acres. The Secretary of the Interior (hereinafter referred to as the "Secretary") may revise the boundaries of the monument from time to time by publication of a notice to that effect in the Federal Register, except that at no time shall the boundaries encompass more than eight thousand two hundred acres.

SEC. 2. The Secretary shall administer the monument pursuant to the Act approved August 25, 1916 (39 Stat. 535; 16 U.S.C. 1, 2-4), as amended and supplemented.

SEC. 3. Within the boundaries of the monument the Secretary may acquire lands and interests in lands by donation, purchase, or exchange, except that lands or interests therein owned by the State of Wyoming or a political subdivision thereof may be acquired only by donation or exchange.

SEC. 4. (a) For a period of ten years, and for not more than ten years thereafter if extended by the Secretary, the continuation of existing uses of Federal lands and waters within the monument for grazing and stock watering may be permitted if the Secretary finds that such uses will not conflict with public use, interpretation, or administration of the monument; *Provided*, That the use of lands within the monument for stock driveways shall continue in perpetuity at such places where this use will not conflict with administration of the monument.

(b) Upon termination of the uses set forth in subsection (a) of this section, the Secretary of the Interior is authorized to provide for the disposition and use of water surplus to the needs of the monument, to a point or points outside the boundaries of the monument.

SEC. 5. There are hereby authorized to be appropriated \$378,000 for land acquisition and not to exceed \$4,469,000 (June 1971 prices) for development, plus or minus such

accounts, if any, as may be justified by reason of ordinary fluctuations in construction costs as indicated by engineering cost indices applicable to the type of construction involved herein.

Approved October 23, 1972.

Legislative History

House Reports: No. 92-1219 accompanying H.R. 1553 (Committee on Interior and Insular Affairs) and No. 92-1588 (Comm. of Conference). Senate Report No. 92-711 (Committee on Interior and Insular Affairs). Congressional Record, Vol. 118 (1972);

Mar. 24, considered and passed Senate.

Aug. 14, considered and passed House, amended, in lieu of H.R. 1533.

Oct. 13, House agreed to conference report.

Oct. 14, Senate agreed to conference report.

Weekly Compilation of Presidential Documents, Vol. 8, No. 44: Oct. 28, Presidential statement.

APPENDIX D
REVIEW OF ALTERNATIVES

General Management Plan
Fossil Butte National Monument
Wyoming

I. INTRODUCTION

Development of a general management plan for Fossil Butte National Monument involved decisionmaking on four levels, each set of decisions growing out of those made in the level preceding. Level One involved the scope of development and functional requirements; Level Two, water and sanitation; Level Three, site selection, and Level Four, access and circulation.

Consideration was also given to influences of activities outside the park's boundaries on the park. Use of lands outside the boundary influences the scenic integrity of the monument. Most of the critical visual setting is administered by the Bureau of Land Management. The National Park Service will participate in future planning with the Bureau in establishing land uses which will protect the view from Fossil Butte National Monument. In addition the Service will plan with State, county, and private entities to the fullest extent possible to mitigate adverse visual impacts of future development near the monument.

II. DESCRIPTION OF THE PROPOSAL

Level One - The plan proposes that all major development be placed in one building at the monument, and a seasonal dormitory located in Kemmerer. Resources would be interpreted onsite.

The visitor facility, designed to accommodate approximately 500 people per eight hour day, will be the principal reception point for most visitors. Interpretive exhibits will be located here as well as an information/orientation display for those who wish to experience the monument's resources first hand.

Use of alternative energy sources for heat and electricity will be diligently pursued.

Level Two - All drinking water needed by the monument visitors, researchers, and personnel will be trucked in from an outside source. Kemmerer's municipal water supply would be the "outside source." Since maximum demand is anticipated to be 362 gallons per day during the peak use season, no problems are expected in drawing on Kemmerer's municipal water supply. The sewage system will employ a water conservation or no water process.

Level Three - Facilities are to be sited approximately in the middle of the monument near the fossil resources. This places the site in an advantageous location for use of solar installations and away from any potential landslide hazard.

Level Four - A 2.6 mile paved road is to be constructed following the Chicken Ranch Road for approximately a mile, then cut diagonally across Section 26. The balance of the Chicken Ranch Road would be improved but not paved providing access to a primitive picnic area in the NW $\frac{1}{4}$ SE $\frac{1}{4}$, Section 26. A trail system is to be developed to complement the circulation system along with additional picnic areas serving the trails.

III. AREAS OF ENVIRONMENTAL IMPACT

Level One - Because this level of alternatives does not deal with site selection impacts on natural resources it cannot be assessed. With all facilities located in the monument it would be easier to direct visitors to the resources which they could experience onsite. Interpretation would be greatly enhanced by having paleontological research facilities onsite. With staff living in Kemmerer facilities, resources will be subject to vandalism approximately 16 hours each day. Additionally, energy will be used transporting staff to and from work daily. There will be some noise and dust impact during construction activities and a permanent visual intrusion from the development.

Level Two - Approximately 1,000 cubic feet of dirt would be excavated in placing the water storage tank underground with an unmeasurable impact on flora and fauna. However, ground and surface water resources will remain unaltered and dependent vegetation would remain unaffected. Some energy will be expended in dealing with water generated from Kemmerer or any other outside source.

Level Three - 1.5 to 2.5 acres of clay loam soil would be disturbed during construction with an unknown impact on fauna and permanent loss of 1.5 to 2.5 acres of sagebrush. There would be local, long term increase in air pollution due to increased visitor traffic after construction and a local, short term decrease in air quality during construction. Since the area has been surveyed for cultural resources there is no likelihood that known resources would be disturbed. If in the construction process unknown cultural resources are uncovered, work will be terminated at the site until the find has been evaluated and properly disposed of by competent authority.

Level Four - Some erosion may occur during construction since some 3.5 acres of land will be disturbed. Existing surface drainage patterns will be disturbed and some 3.5 acres of sagebrush complex

seriously disturbed. Seven tenths mile of roadway will displace .85 acre of prairie dog colony habitat and 1.7 miles of the road bed will displace 2 acres of pronghorn sage grouse habitat. There will be local, long term decrease in air quality due to increased traffic and a local, short term decrease in air quality resulting from construction activities.

IV. MAGNITUDE OF THE PROJECT

Major Federal Action, Significant Effects	No
Federal	Yes
Substantive Adverse Impacts	No
Cumulative or Secondary Effects	No
Highly Controversial	No
First Time, Precedent Setting	No
Commits Service to Future Actions	Yes, Operation Maintenance

V. RECOMMENDATIONS

The proposed action is not considered a major Federal action with potential for causing significant impact or controversy. Therefore, an environmental impact statement will not be required. The planning process also requires that all new actions be preceded by an assessment to further substantiate and evaluate environmental impacts and mitigation.

Recommended: James L. Hunt 5/1/78
Superintendent, Fossil Butte NM Date

Approved: Glen T. Bean 6/6/78
Action Regional Director, Rocky Mountain Region Date

APPENDIX E

Phase Schedule for Manpower

<u>Staff</u>	<u>Phase I</u>	<u>Phase II</u>	<u>Phase III</u>
Superintendent (GS-11)	X		
Ranger/Interpreter (GS-9)	X		
Resident Paleontologist (GS-9)	X		
Administrative Assistant (GS-6)	X		
Maintenance Supervisor (WS-7)	X		
Maintenance Worker (WG-8)		X	
Park Technicians (1.6 MY, GS-5)	X		
Receptionist (GS-4)		X	

NOTE: Staff positions will be retained beyond phase indicated.

PLANNING TEAM

Allen Hagood	Geologist/Team Captain Denver Service Center
Roy Slatkavitz	Chief, Division of Park Planning Rocky Mountain Region
Roger Martin	Superintendent Fossil Butte National Monument
Dave Solder	Resource/Recreation Planner Denver Service Center
John Reed	Interpretive Planner Rocky Mountain Region
Jim Madson (Consultant)	Utah State Paleontologist

As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, and parks and recreation areas, and to ensure the wise use of all these resources. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

Publication services were provided by the graphics and editorial staffs of the Denver Service Center, NPS 1424A

