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National Park Service  
Cultural Landscapes Inventory  
2002



Rainbow Forest Complex  
Petrified Forest National Park

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## **Inventory Unit Summary & Site Plan**

### **Inventory Summary**

#### **The Cultural Landscapes Inventory Overview:**

##### **CLI General Information:**

###### **Purpose and Goals of the CLI**

The Cultural Landscapes Inventory (CLI), a comprehensive inventory of all cultural landscapes in the national park system, is one of the most ambitious initiatives of the National Park Service (NPS) Park Cultural Landscapes Program. The CLI is an evaluated inventory of all landscapes having historical significance that are listed on or eligible for listing on the National Register of Historic Places, or are otherwise managed as cultural resources through a public planning process and in which the NPS has or plans to acquire any legal interest. The CLI identifies and documents each landscape's location, size, physical development, condition, landscape characteristics, character-defining features, as well as other valuable information useful to park management. Cultural landscapes become approved CLIs when concurrence with the findings is obtained from the park superintendent and all required data fields are entered into a national database. In addition, for landscapes that are not currently listed on the National Register and/or do not have adequate documentation, concurrence is required from the State Historic Preservation Officer or the Keeper of the National Register.

The CLI, like the List of Classified Structures, assists the NPS in its efforts to fulfill the identification and management requirements associated with Section 110(a) of the National Historic Preservation Act, National Park Service Management Policies (2006), and Director's Order #28: Cultural Resource Management. Since launching the CLI nationwide, the NPS, in response to the Government Performance and Results Act (GPRA), is required to report information that respond to NPS strategic plan accomplishments. Two GPRA goals are associated with the CLI: bringing certified cultural landscapes into good condition (Goal 1a7) and increasing the number of CLI records that have complete, accurate, and reliable information (Goal 1b2B).

###### **Scope of the CLI**

The information contained within the CLI is gathered from existing secondary sources found in park libraries and archives and at NPS regional offices and centers, as well as through on-site reconnaissance of the existing landscape. The baseline information collected provides a comprehensive look at the historical development and significance of the landscape, placing it in context of the site's overall significance. Documentation and analysis of the existing landscape identifies character-defining characteristics and features, and allows for an evaluation of the landscape's overall integrity and an assessment of the landscape's overall condition. The CLI also provides an illustrative site plan that indicates major features within the inventory unit. Unlike cultural landscape reports, the CLI does not provide management recommendations or

treatment guidelines for the cultural landscape.

**Inventory Unit Description:**

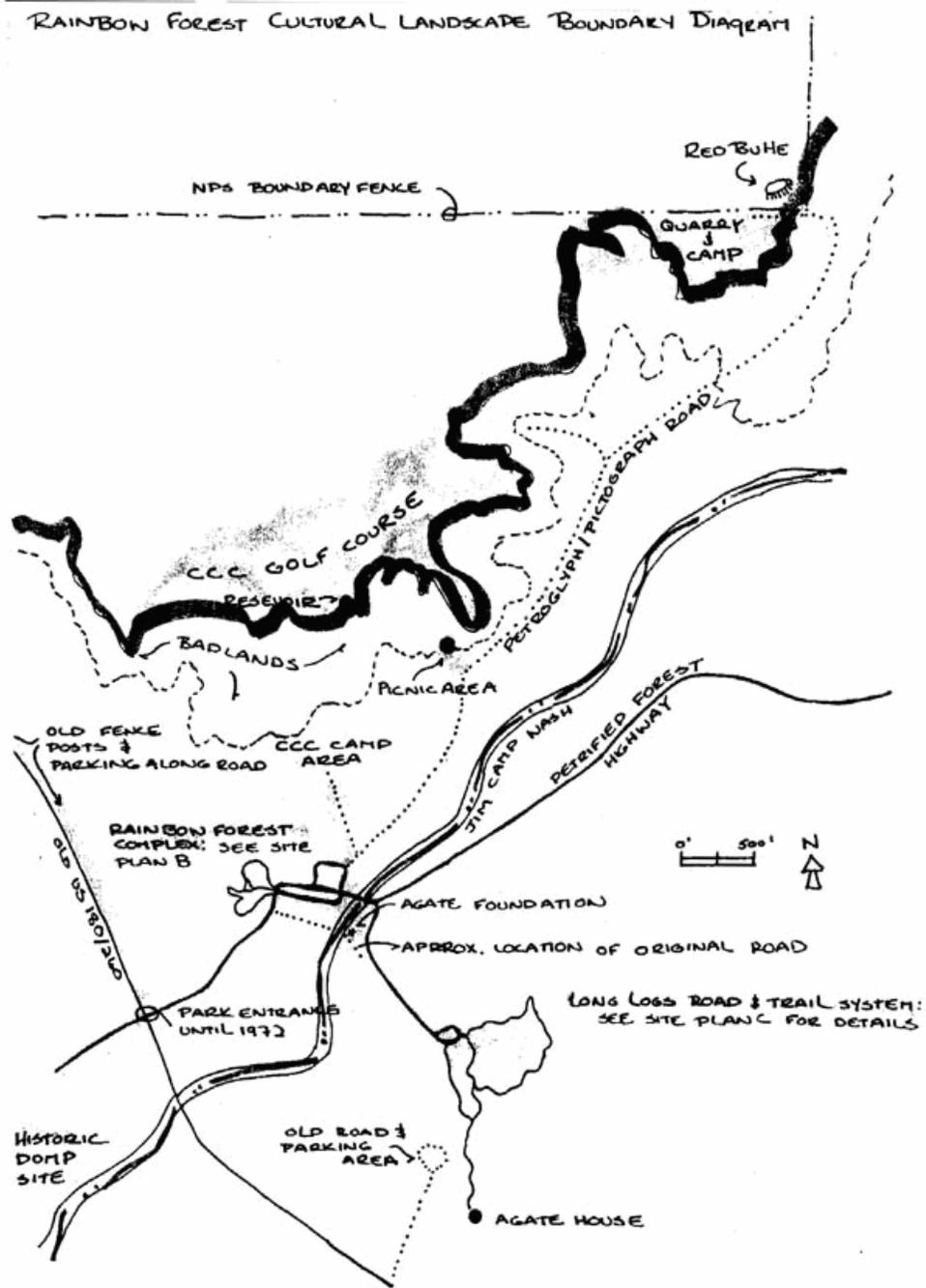
The 172-acre Rainbow Forest Complex cultural landscape is on the arid windswept plains of the Colorado Plateau. Located in the extreme south of the park, less than two miles from U.S. 180, Rainbow Forest continues to serve both visitors and park staff. As the site of the most massive and colorful petrified wood in the park, Rainbow Forest has continuously served as a place to facilitate park visitor experiences. For 39 years it served as park headquarters and as such was the most visited destination. Today the Rainbow Forest Visitor Center receives about twenty percent of the visitors to Petrified Forest National Park. It consists of interpretive trails, the visitor center and museum, a concession building, a picnic area, and residential and service areas. It has been known for hundreds of years for its great concentration of petrified wood. Long Logs road responds both to the location of the wood, and to the rolling hills. Small scale features include wrought iron fencing, the Mather memorial, and the freestanding masonry walls and curbing around the parking areas.

The spatial organization of Rainbow Forest was determined by four factors: the location of natural features, the accommodation of vehicles, the protection of petrified wood from theft, and separation of use types. The southeastern facing, gentle slope above Jim Camp Wash floodplain is a critical feature that has dictated the development of Rainbow Forest cultural landscape. The necessity to locate services near the most colorful wood in the park left designers with limited options. Unlike Painted Desert, the views and vistas in Rainbow Forest are not the primary visitor experience.

The vegetation at Rainbow Forest cultural landscape is predominantly native, undisturbed, or rehabilitated. However a large landscape project occurred during the Mission 66 campaign, and the housing area, because of access to water, has trees and exotics not found in other locations. The buildings at Rainbow Forest represent architectural styles from different NPS eras. The original buildings are in the style of Ancestral Puebloan structures, while the CCC-era structures both replicated those earlier buildings and represented slightly different styles and masonry techniques. Later development in the 1950s and 1960 was in the International Style.

Rainbow Forest is an example of both 1930s and CCC-era NPS design and planning. Layout, architectural styles, and building materials express cultural values, traditions and concerns of these time periods. Vehicular circulation patterns at Rainbow Forest and Long Logs have changed over time to accommodate different vehicle types, to control traffic flow and to limit access to residential areas. Although pedestrian circulation has changed as well, vehicular circulation, focused around the parking area, is clearly dominant. An unused 50,000 gal. water reservoir, and a smaller abandoned water tank, remain as evidence of CCC engineering and construction.

Site Plan



Site Plan A: Rainbow Forest Component Landscape, 1999. Source: NPS.

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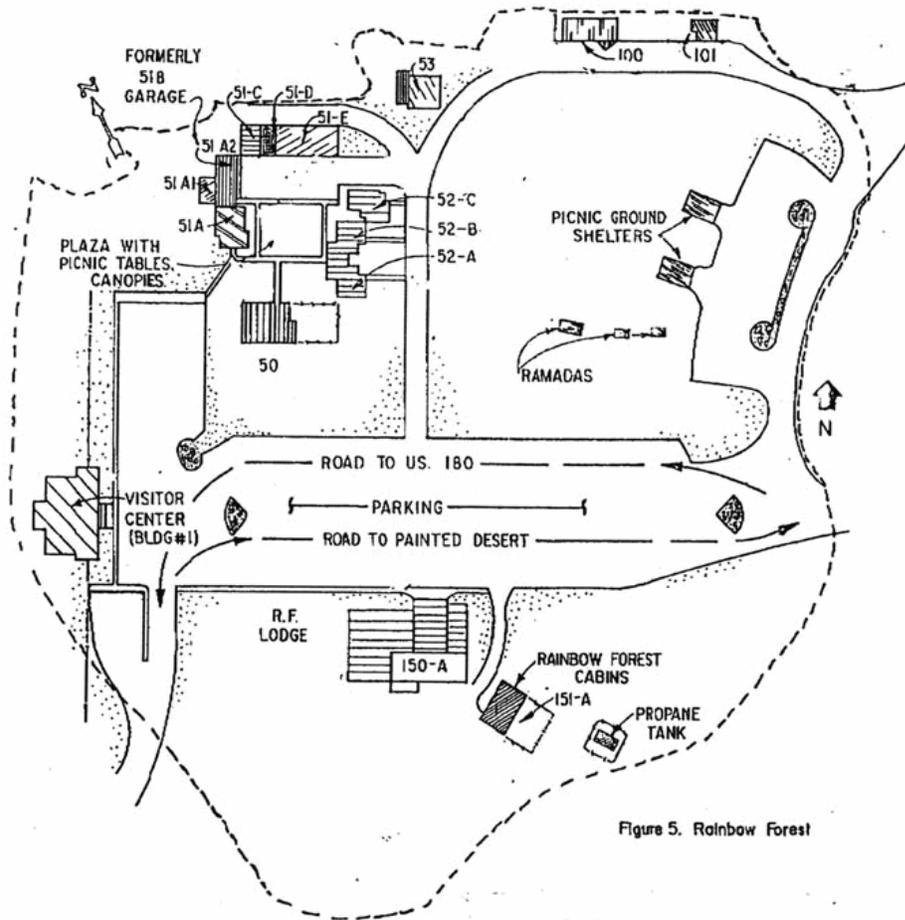
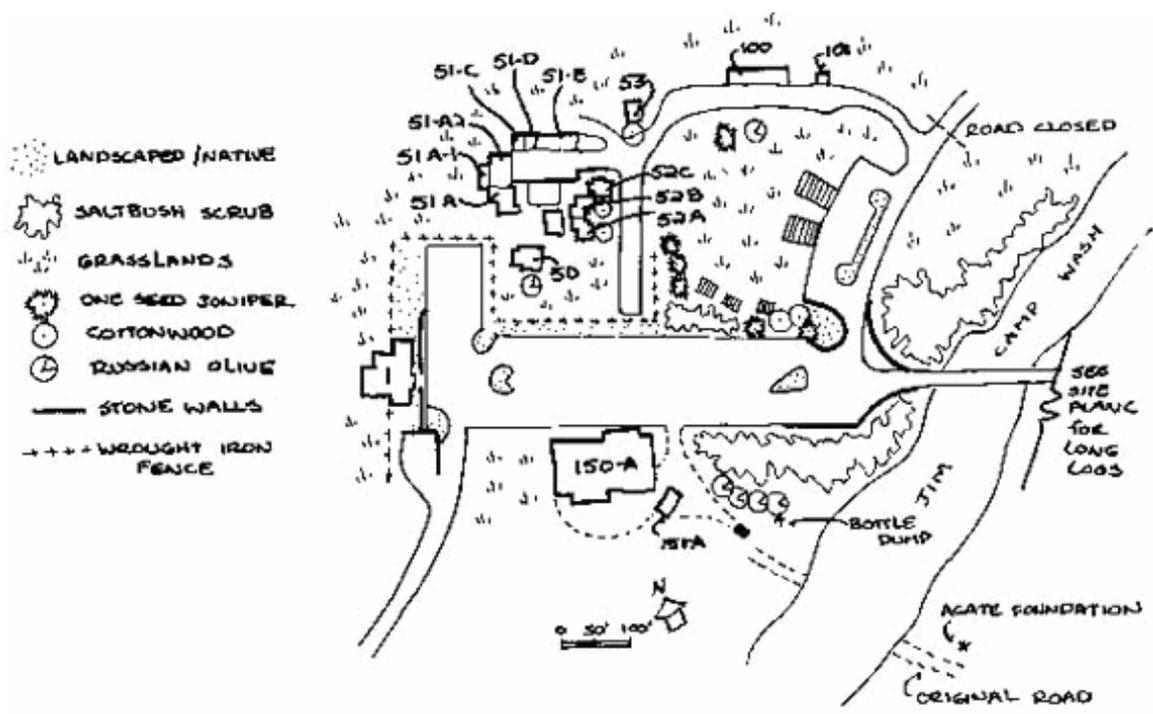
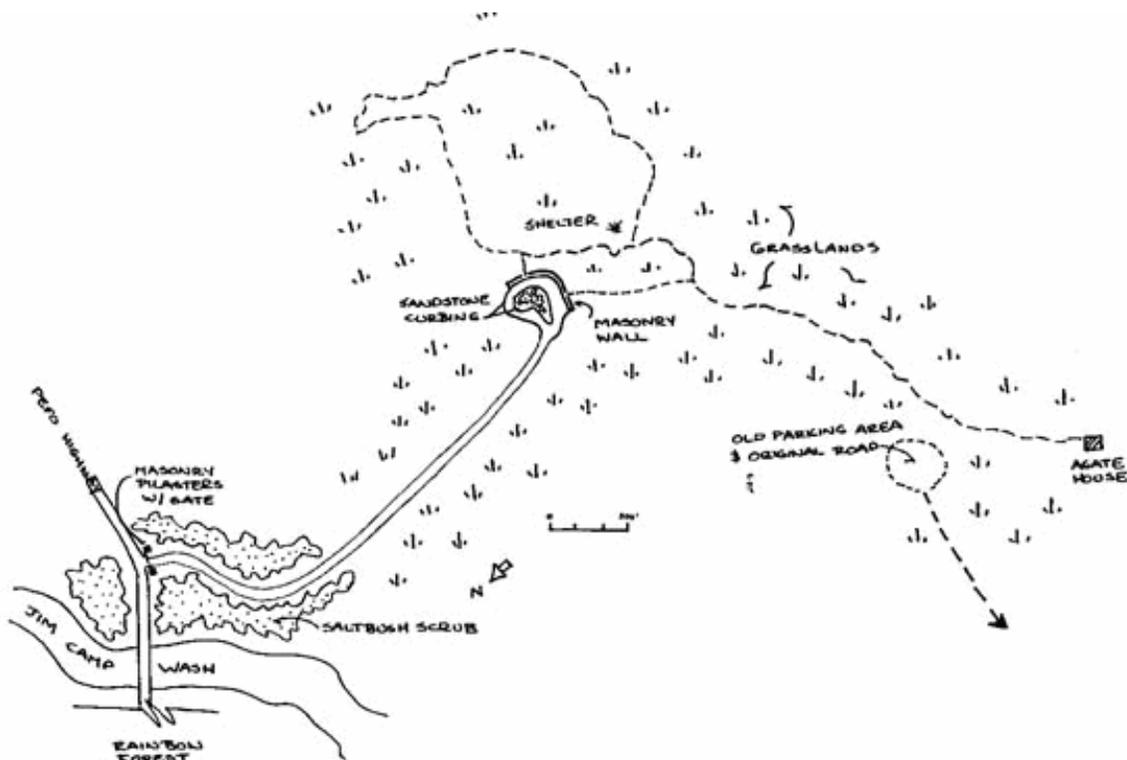


Figure 5. Rainbow Forest

*Detailed site plan of core area (boundary shown here is from existing National Register nomination; CLI recommended/ Keeper approved boundary is larger). Source: NPS.*



Site Plan B: Rainbow Forest Development showing buildings, roads, and vegetation, 1999.  
Source: NPS.



Site Plan C: Long Logs Road Trail and Parking Area, 1999. Source: NPS.

### Property Level and CLI Numbers

<b>Inventory Unit Name:</b>	Rainbow Forest Complex
<b>Property Level:</b>	Component Landscape
<b>CLI Identification Number:</b>	850116
<b>Parent Landscape:</b>	850113

### Park Information

<b>Park Name and Alpha Code:</b>	Petrified Forest National Park -PEFO
<b>Park Organization Code:</b>	8430
<b>Park Administrative Unit:</b>	Petrified Forest National Park

### CLI Hierarchy Description

Petrified Forest National Park is the parent landscape for the Rainbow Forest Complex.

## Concurrence Status

**Inventory Status:** Complete

**Completion Status Explanatory Narrative:**

This CLI was completed in 1999 by L. Nicholas. Concurrence was received later in 2001-2002.

**Concurrence Status:**

<b>Park Superintendent Concurrence:</b>	Yes
<b>Park Superintendent Date of Concurrence:</b>	07/10/2002
<b>National Register Concurrence:</b>	Eligible -- Keeper
<b>Date of Concurrence Determination:</b>	04/02/2001

**National Register Concurrence Narrative:**

Although the Arizona SHPO concurred that the district and its defined boundary was eligible for listing on the National Register, the SHPO disagreed with the definition of a "designed landscape" as outlined in NR Bulletin "How to Evaluate and Nominate Designed Historic Landscapes." The Keeper determined the Rainbow Forest Complex (historic designed landscape) to be eligible for the National Register.

**Concurrence Graphic Information:**



United States Department of the Interior

NATIONAL PARK SERVICE  
1849 C Street, N.W.  
Washington, D.C. 20240

IN REPLY REFER TO

**DETERMINATION OF ELIGIBILITY NOTIFICATION**

National Register of Historic Places  
National Park Service

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Name of Property: Rainbow Forest Historic Designed Landscape-Petrified Forest National Park

Location: Navajo County

State: Arizona

Request submitted by: Michele M. Hellickson, Superintendent, Petrified Forest National Park

Date received: 02/21/01

Additional information received : 3/20/01

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Opinion of the State Historic Preservation Officer:

Eligible     Not Eligible     No Response     Need More Information

Comments: The AZ SHPO agrees with the Park that this district is eligible for listing in the National Register. The SHPO also concurs with the Park on the proposed boundaries. However, the SHPO and Park disagree on the definition of a "designed landscape" as outlined in National Register bulletin, *How to Evaluate and Nominate Designed Historic Landscapes*, the contributing and noncontributing resources and the essential character-defining features of these resources.

The Secretary of the Interior has determined that this property is:

Eligible    Applicable criteria: A, C

Not Eligible

Comments: see attached sheet

  
(for) Keeper of the National Register  
Date: 4/02/01

WASO-28

Keeper Concurrence, 4/02/2001.

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**Michele Hellickson**  
07/10/02 04:15 PM MST

To: Jill Cowley/SANTAFE/NPS@NPS  
cc: Karen Beppler-Dorn/PEFO/NPS@NPS  
Subject: Re: CLI information concurrences

Jill,

I have conferred with Karen and we concur with the data items as listed below. If you need more than this e-mail for concurrence purposes, please let me know.

I am working on getting an account number for the next phase of the PDI work, for which I believe there is still Line Item money this fiscal year. Will you be able to obligate \$25,000 between now and the cut off date for contracting - or should we look at going through a CESU?

Micki

Jill Cowley

**Jill Cowley**  
07/10/2002 04:11 PM  
MDT

To: Michele Hellickson/PEFO/NPS@NPS  
cc: Karen Beppler-Dorn/PEFO/NPS@NPS  
Subject: CLI information concurrences

Micki:

As I mentioned on my voice mail message, I need to request your written concurrence on some of the data items in the completed Cultural Landscape Inventories for Rainbow Forest and Crystal Forest. This request is part of our database update for this fiscal year.

The CLI for Rainbow Forest currently states that:

- the CLI was completed July 20, 1999, with no substantial revisions
- landscape condition is fair (out of good, fair, poor)
- the landscape "Must Be Preserved and Maintained", and
- the cultural landscape resources identified within the CLI as contributing (or character-defining) add to the overall significance and eligibility of the Rainbow Forest cultural landscape.

The CLI for Crystal Forest currently states that:

- the CLI was completed August 5, 2000, with no substantial revisions
- landscape condition is good
- the landscape "Must Be Preserved and Maintained", and
- the cultural landscape resources identified within the CLI as contributing (or character-defining) add to the overall significance and eligibility of the Crystal Forest cultural landscape.

If you concur with these findings, please send a return message to this effect. Thank you for your attention to this update, and feel free to contact me if you have any questions.

jc

*Rainbow Forest Complex Superintendent Concurrence, 7/10/2002.*

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Mitzi Frank/FOLA/NPS  
03/08/2011 03:33 PM

To: Carrie Mardorf/SANTAFE/NPS@NPS  
cc: Patricia Thompson/PEFO/NPS@NPS  
bcc:  
Subject: Fw: CLI information

Carrie, I approve the following condition assessments. Thanks, Mitzi

Mitzi Frank  
Acting Superintendent  
Petrified Forest National Park  
PO Box 2217  
Petrified Forest, AZ 86028  
(928)524-6228 x225

----- Forwarded by Mitzi Frank/FOLA/NPS on 03/08/2011 03:33 PM -----



Patricia  
Thompson/PEFO/NPS  
03/07/2011 11:57 AM

To: Mitzi Frank/FOLA/NPS@NPS  
cc:  
Subject: CLI information

Mitzi would you please approved the following condition assessment for the park and send the approval to Carrie Madoff. Thank you.

**PDI: good.**  
2006 CLI condition rating was good, and it has retained good condition. The fact that the structure may still need some stabilization work is a consideration, but that hasn't been determined yet.  
*I agree even though it still has problems it is in good condition.*

**PDCC: poor**  
2008 CLI condition rating was poor. Problems with structural integrity, drainage issues, etc are still present.  
*We have actually made some headway with the drainage in some areas and we are continuing to tackle stuff but you are right it is still a problem. We also have to deal with the vegetation.*

**Rainbow Forest: good**  
2007 CLI condition rating was good. The vegetation disturbance around the picnic area is a relatively minor impact.  
*I agree and we will be working on the vegetation.*

**Crystal Forest: good**  
2006 CLI condition rating was good. While we didn't go to Crystal Forest during the recent visit, most if not all of the trail rehab work has been done, right?  
*All of the trail rehab work was done and the trail is pretty nice now.*

**Puerco: fair**  
2005 CLI condition rating was fair. This CLI addressed the CCC camp area, where the water pump house is, rather than the pueblo area, where we went during the visit, it's hard for me to say. What are your thoughts? -- I'm figuring it's about the same as 2005.  
*I think it is the same. We are working on signs this year and we will be converting the old check station/bathroom to interp use some time in the future. Nothing has been done to the old pump house in a long time. So I would agree with fair.*  
Thanks

\*\*\*\*\*

Patricia Thompson  
Chief of Resource Management  
Petrified Forest National Park  
P.O. Box 2217  
1 Park Road  
Petrified Forest, AZ 86028  
(928) 524-6228 ext. 267

*Superintendent concurrence on the updated landscape condition, 3/8/2011.*

**Revisions Impacting Change in Concurrence:**

Other

**Revision Narrative:**

Revised text to correct typos, clarify image sources, and upload CLR to Landscape Documents section, June 2012.

**Geographic Information & Location Map**

**Inventory Unit Boundary Description:**

Rainbow Forest Cultural Landscape is bounded by National Park-owned land on all sides. To the east

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of the complex lie Jim Camp and Cottonwood Washes, and the Rainbow Forest Wilderness Area. To the west of Rainbow Forest an escarpment rises 100 feet above Jim Camp Wash. The southern boundary of the park is less than 2 miles to the south of Rainbow Forest. (See Site Plan A)

**State and County:**

**State:** AZ

**County:** Navajo County

**Size (Acres):** 172.00

**Boundary UTMS:**

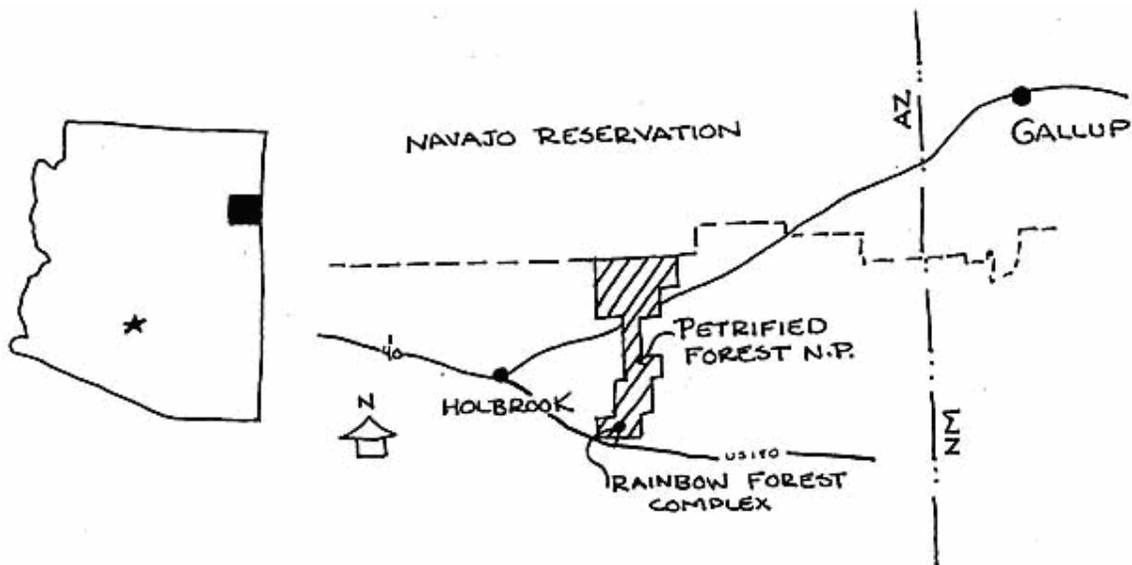
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<b>Type of Point:</b>	Point
<b>Datum:</b>	NAD 83
<b>UTM Zone:</b>	12
<b>UTM Easting:</b>	601,216
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<b>UTM Zone:</b>	12
<b>UTM Easting:</b>	604,378
<b>UTM Northing:</b>	3,854,385
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<b>Datum:</b>	NAD 83
<b>UTM Zone:</b>	12
<b>UTM Easting:</b>	604,818
<b>UTM Northing:</b>	3,855,572
<b>Source:</b>	GPS-Differentially Corrected
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<b>UTM Zone:</b>	12
<b>UTM Easting:</b>	605,601
<b>UTM Northing:</b>	3,855,599
<b>Source:</b>	GPS-Differentially Corrected

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<b>Type of Point:</b>	Point
<b>Datum:</b>	NAD 83
<b>UTM Zone:</b>	12
<b>UTM Easting:</b>	605,265
<b>UTM Northing:</b>	3,853,917
<b>Source:</b>	GPS-Differentially Corrected
<b>Type of Point:</b>	Point
<b>Datum:</b>	NAD 27
<b>UTM Zone:</b>	12
<b>UTM Easting:</b>	604,199
<b>UTM Northing:</b>	3,851,825

**Location Map:**



*Rainbow Forest is located in the southern part of Petrified Forest National Park, just off of U.S. 180 and 23 miles from Holbrook, Arizona. Source: NPS.*

**Regional Context:**

**Type of Context:** Cultural

**Description:**

The Petrified Forest area has long attracted a wide variety of people. Paleo-Indian hunters came to the area as early as 15,000 BC for its abundance of big game. Much later the area served as a cultural crossroads for the Mogollon, Anasazi and Sinagua (Stewart, 1980: 40). In the nineteenth and early twentieth centuries homesteaders set up ranches and various entrepreneurs came to the area to commercially exploit petrified wood. At the same time both tourists and scientists began to take an interest in the ancient landscape. All these activities persist today. Tourism and paleontological and archeological research comprise the predominant interests within Rainbow Forest. Mining and commercial exploitation of petrified wood still thrive immediately outside park boundaries. Ranching is practiced on adjacent lands and it was not until 1963 that a boundary fence was completed to protect the park from grazing damage. The area also retains significance to native peoples. Hopi, Zuni, Navajo, and White Mountain Apache all regard the Petrified Forest within their territorial range (Adams: 1981).

**Type of Context:** Physiographic

**Description:**

Petrified Forest National Park is located in the Puerco River Valley of northeastern Arizona, part of the larger Colorado Plateau system. As described by Fenneman, (1931:274) the Colorado Plateau is characterized by the horizontal orientation of its rocks, its high altitude above sea level, and its remarkable development of canyons. Visual characteristics include windswept plains, isolated buttes and barren, usually dry riverbeds (Stewart, 1980:4).

There are few flowing springs and no perennial streams in the park. The Puerco River is an ephemeral stream, a tributary of the Little Colorado River.

The study area is located in the southern section of the park, an area characterized by mesas and plains dissected by washes. Although less common than in the northern part of the park, the area also contains some small colorful badlands (Stewart, 1980: 4). Vegetation on and around the study area consists primarily of grasslands.

**Type of Context:** Political

**Description:**

Petrified Forest National Park is comprised of 93,533 acres in Apache and Navajo Counties of northeastern Arizona. Interstate 40 runs through the northern section of the park, as does the Santa Fe Railroad. The park shares its northern boundary with the Navajo Reservation. Rainbow Forest is located in the extreme south of the park in Navajo Co., less than 2 miles from the entrance station off of local 180 and about 23 miles from Holbrook AZ.

Since 1906 Rainbow Forest has been under the jurisdiction of the National Park Service.

Lands adjacent adjacent to the boundary are a patchwork of state, federally, and privately owned holdings. Because significant ethnographic and paleontological sites are located outside its boundaries, Petrified Forest National Park has a long history of expanding its holdings.

**Management Unit:** Petrified Forest National Park

## **Management Information**

### **General Management Information**

**Management Category:** Must be Preserved and Maintained

**Management Category Date:** 07/10/2002

## Agreements, Legal Interest, and Access

### Management Agreement:

**Type of Agreement:** Concession Contract/Permit

**Expiration Date:** 01/01/2000

**Management Agreement Explanatory Narrative:**

Xanterra, food service and gifts. (Year to year agreement since expiration of contract.)

**Type of Agreement:** Memorandum Of Agreement

**Expiration Date:** 10/1/2004

**Management Agreement Explanatory Narrative:**

Petrified Forest Museum Association, bookstore and interpretive services.

**Type of Agreement:** Memorandum Of Agreement

**Expiration Date:** 8/9/2004

**Management Agreement Explanatory Narrative:**

Navajo County Sheriff's Office (for emergency response)

**Type of Agreement:** Memorandum Of Agreement

**Expiration Date:** 6/27/2006

**Management Agreement Explanatory Narrative:**

Holbrook Fire Department (for emergency response)

**Type of Agreement:** Interagency Agreement

**Expiration Date:** UNKNOWN

**Management Agreement Explanatory Narrative:**

Local Operating Agreement between BLM and NPS

**Type of Agreement:** Other Agreement

**Other Agreement:** Wildland Fire Operations

**Expiration Date:** UNKNOWN

**Management Agreement Explanatory Narrative:**

White Mountain Zone Operating Plan

### NPS Legal Interest:

**Type of Interest:** Fee Simple

**Public Access:**

**Type of Access:**

Other Restrictions

**Adjacent Lands Information**

**Do Adjacent Lands Contribute?** Yes

**Adjacent Lands Description:**

Petrified Forest National Park provides the setting and context for the Rainbow Forest Complex.

## National Register Information

### Existing National Register Status

#### National Register Landscape Documentation:

Keeper Documented

#### National Register Explanatory Narrative:

The structures in the Rainbow Forest Historic District (Complex) were found eligible by NPS and SHPO (contingent upon some structure removal) in March, 1989. As of 2012, the area is not formally listed on the National Register.

### National Register Eligibility

**National Register Concurrence:** Eligible -- Keeper

**Contributing/Individual:** Individual

**National Register Classification:** District

**Significance Level:** State

**Significance Criteria:** A - Associated with events significant to broad patterns of our history

**Significance Criteria:** C - Embodies distinctive construction, work of master, or high artistic values

**Significance Criteria:** D - Has yielded, or is likely to yield, information important to prehistory or history

**Period of Significance:**

<b>Time Period:</b>	AD 1929 - 1933
<b>Historic Context Theme:</b>	Expressing Cultural Values
<b>Subtheme:</b>	Architecture
<b>Facet:</b>	Period Revivals (1870-1940)
<b>Other Facet:</b>	None
<b>Time Period:</b>	AD 1929 - 1933
<b>Historic Context Theme:</b>	Expressing Cultural Values
<b>Subtheme:</b>	Landscape Architecture
<b>Facet:</b>	Protection Of Natural And Cultural Resources
<b>Other Facet:</b>	None
<b>Time Period:</b>	AD 1934 - 1942
<b>Historic Context Theme:</b>	Expressing Cultural Values
<b>Subtheme:</b>	Landscape Architecture
<b>Facet:</b>	Protection Of Natural And Cultural Resources
<b>Other Facet:</b>	None
<b>Time Period:</b>	AD 1934 - 1942
<b>Historic Context Theme:</b>	Expressing Cultural Values
<b>Subtheme:</b>	Landscape Architecture
<b>Facet:</b>	The 1930's: Era Of Public Works
<b>Other Facet:</b>	None

**Area of Significance:**

**Area of Significance Category:** Community Planning And Deve

**Area of Significance Subcategory:** None

**Area of Significance Category:** Landscape Architecture

**Area of Significance Subcategory:** None

**Area of Significance Category:** Conservation

**Area of Significance Subcategory:** None

**Area of Significance Category:** Engineering

**Area of Significance Subcategory:** None

**Area of Significance Category:** Architecture

**Area of Significance Subcategory:** None

**Area of Significance Category:** Archeology

**Area of Significance Subcategory:** Historic-Non-Aboriginal

**Area of Significance Category:** Entertainment - Recreation

**Area of Significance Subcategory:** None

**Statement of Significance:**

For 39 years Rainbow Forest served as park headquarters. It developed around a resource base that is characterized by its extreme wealth of geological, paleontological, archeological, and biotic features and its extreme dearth of water and shelter. Patterns of development at Rainbow Forest reflect nationally

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and regionally significant historic trends; early park and CCC-era design and planning. Mission 66-era development in Rainbow Forest can be evaluated for significance after completion of the Mission 66 theme study or as the need develops. The Rainbow Forest Complex cultural landscape has two periods of significance, 1929-1933 and 1934-1942.

The Rainbow Forest Complex is significant as a cultural landscape under criteria A, C and D.

Criteria A: Event

Rainbow Forest cultural landscape reflects two broad patterns of history: 1) early national park development, and 2) the government sponsored work relief programs of the 1930s New Deal era.

Criteria C: Design/ Construction

Site planning, architectural styles and small-scale features reflect national park principles of rustic design and construction. The water pipeline is a unique example of a CCC-era engineering project.

Criteria D: Information Potential

The CCC camp at Rainbow Forest has been identified as a potentially informative archeological site. Several historic dumps are found on or very near the site.

## Chronology & Physical History

### Cultural Landscape Type and Use

<b>Cultural Landscape Type:</b>	Designed Ethnographic/Traditional
<b>Current and Historic Use/Function:</b>	
<b>Primary Historic Function:</b>	Administrative Office (HDQS)
<b>Primary Current Use:</b>	Interpretation Facility

**Other Use/Function**

Concession  
 Exhibit  
 Institutional Housing  
 Lodge (Inn, Cabin)  
 Natural Area-Other  
 Public Works  
 Scientific Landscape-Other

**Other Type of Use or Function**

Both Current And Historic  
 Both Current And Historic  
 Both Current And Historic  
 Historic  
 Both Current And Historic  
 Historic  
 Both Current And Historic

**Current and Historic Names:**

**Name**

Headquarters  
 Rainbow Forest

**Type of Name**

Historic  
 Both Current And Historic

**Ethnographic Study Conducted:**

No Survey Conducted

**Chronology:**

<b>Year</b>	<b>Event</b>	<b>Annotation</b>
AD 1 - 950	Built	Ancestral Puebloan, Mogollon and some Sinagua peoples inhabit the area. They build pit houses and refine agricultural techniques.
AD 950 - 1400	Built	Ancestral Puebloans build blocks of rooms from dressed stone or petrified wood. Agate house and Puerco Pueblo are built. They leave Puerco Pueblo in 1400.
AD 1879	Explored	A U.S. Army expedition led by Second Lieutenant Hegewald explores the petrified forest area and sends specimens of petrified wood to the National Museum (Smithsonian).
AD 1880 - 1890	Mined	Mining permits issued for the extraction of petrified wood. A growing market for petrified wood develops on the East Coast and in Europe. Charles Lummis witnesses logs being dynamited by crystal hunters.
AD 1881	Built	The Atlantic and Pacific Railroad is completed across northern Arizona, bringing tourists to the petrified forest.

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AD 1896 - 1899	Preserved	The Commissioner of the Land Office withdraws public entry into petrified wood areas. The Secretary of the Interior cancels mineral claims in all withdrawn land.
AD 1906	Established	An Act for the Preservation of American Antiquities is passed. Petrified Forest National Monument is established.
AD 1920 - 1929	Built	Three shacks are constructed to serve as a museum and park housing in Rainbow Forest. In 1929 Dick Grisby builds Rainbow Forest Lodge.
AD 1930 - 1934	Built	The National Park Service designs and builds the museum, residences 51-A1, 51-A-2, 52-A, B & C, and lays out parking lot and traffic flow pattern. The Bridge is built over Jim Camp Wash.
AD 1934	Established	First camp of CCC workers arrives and sets up camp at Puerco River.
	Moved	CCC establishes a new camp at Rainbow Forest.
AD 1934 - 1938	Built	CCC workers build employee housing, service buildings, Long Logs and Giant Logs Trails, campground and Long Logs parking area. They complete landscaping in the headquarters area, lay flagstone sidewalks and install curbing in the parking lot.
AD 1939 - 1942	Built	CCC workers build the 12-13 mile water pipeline from Puerco to Rainbow Forest.
AD 1942	Demolished	The CCC disbands, the camps are dismantled.
AD 1958	Altered	Visitor's Center is remodeled. The concessions building is remodeled. Additions are built on buildings 52-A, B, & C. All new buildings reflect a departure from the naturalistic design principles that had characterized previous architecture.
AD 1962	Established	Petrified Forest National Monument receives National Park Status.

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	Moved	Petrified Forest National Park Headquarters is moved to the newly built Painted Desert Complex ending Rainbow Forest's 39 year tenure as park headquarters.
AD 1962 - 1968	Altered	The main parking area at Rainbow Forest are altered. Islands and central walkways are removed to create pull-through spaces. The picnic area is enlarged to include and ramadas are built. Trails are improved. Long Logs parking area is altered.
AD 1968	Altered	Rainbow Forest Lodge is remodeled to its current form.
AD 1972	Moved	U.S. 260/180 is moved to the south , out of park boundaries.

### Physical History:

#### 15,000 BC – 1450 AD Early Peoples and Native American Subsistence and Migration

As early as 15,000 BC hunters roamed eastern Arizona leaving their kill and campsites dotting the landscape, though no known sites are within park boundaries. During the Archaic period (6000 BC- 300 AD) groups increased in size began to develop more permanent settlements. Archaic sites have been recorded within park boundaries.

Between 1 AD and 1400 AD Ancestral Puebloan, Mogollon and some Sinagua peoples inhabited the area. Ancestral Puebloans built pit houses and refined agricultural practices until about 950 AD. Many sites from this period are found within the park. Around 1100 AD they began building Puerco Pueblo. Excavations of the pueblo have revealed Mogollon and Sinagua influence. During the same time the site known as Agate House was built. The agate foundation adjacent to the original road is probably from this time as well. In "An Archeological Overview of Petrified Forest National Park", Yvonne Stewart refers to the area as a cultural frontier. She states "At no time was the area a cultural center from which a major tradition or sub-tradition emerged, but from the earliest to the latest known settlements within the park there was repeated inter-cultural mingling." Current documentation does not indicate sites within the Rainbow Forest cultural landscape except Agate House and the agate foundation for this time period.

Between 1200- 1400 Ancestral Puebloan left and then re-inhabited Puerco Pueblo. By 1400 it was to remain uninhabited. Around 1450 Athabascan people moved into the area.

#### 1540-1700 Spanish Exploration

Between 1540 –1700 various Spanish explorers, including Coronado, passed near the petrified forest. No mention is made of petrified wood suggesting that no expedition passed directly through the park. There is no documentation of Native American occupation within park boundaries at this time.

#### 1848-1892 Anglo American Exploration and Settlement of the West

After the Treaty of Guadalupe Hidalgo in 1848, the territory of Arizona was ceded to the United States and official U.S. exploration of the southwest began. The Little Colorado Rivers and its tributaries had long served as travel corridors (Burton: 1993) and it was along these routes that many expeditions encountered and reported petrified wood. Captain Lorenzo Sitgreaves documented petrified wood in Milky Wash, south of the future park in 1851. In 1853 Lieutenant Amiel Whipple on an expedition to explore a railroad route, describes, "masses of what appeared to be stumps of these trees, petrified into jasper, beautifully striped with bright shades of red, blue, white and yellow." It was not until 1857 that the camel expedition of Lieutenant Edward F. Beale passes through the future park.

Until the late nineteenth century most Anglo American exploration of the area had been done for the primary purpose of finding ways through to the west coast, and in particular, establishing a feasible railroad route. But as reports of its unique features began to trickle back to the East

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Coast, interest grew in exploration of the area for its own sake. In 1879 a US Army expedition was sent to report on, and send back some specimens of, petrified wood. During this expedition Second Lieutenant Hegewald collected two large log sections and sent them back to the National (Smithsonian) museum where they are still on display.

During the 1880s and early 90s commercial interest in the wood emerged and grew to such proportions that many feared the complete destruction of the landscape. Mining permits were issued for the collection of petrified wood. In 1884 the Chalcedony Mining Company issued public notice that they were the proprietors of the petrified forests. Eight years later, Charles Lummis reported that logs were being crushed and dynamited. Current documentation does not indicate sites from this period within the Rainbow Forest cultural landscape.

#### 1881-1906 Threatened Resources and Concern for Preservation

In 1881 the Atlantic and Pacific Railroad was completed across northern Arizona. This opened the petrified forest to a larger number of tourists who were received at Adamana. Although both locals and tourists avidly collected wood, they both also objected to what they saw as the wholesale destruction of the landscape and the potential loss of its unique resources. Locals from surrounding towns were particularly interested in the preservation of the petrified forest. They saw that the economic benefit of tourism both kept control in local hands and also had the potential for long-term revenues, two things that continued mining by eastern companies did not offer.

Concern for the preservation of the petrified forests reached its apex when the Armstrong Abrasive Company set up shop in Adamana in late 1896. They held mineral claims and intended to explore the potential of crushing logs to make abrasives. Official intervention on behalf of the preservation of the petrified forests happened between 1896-99. First the Commissioner of the Land Office withdrew public entry into petrified wood areas, effectively halting further development. Secondly, the Secretary of the Interior cancelled mineral claims in all withdrawn land, including those of the Armstrong Abrasive Company.

Although these first steps had been taken, it would still be another seven years before the petrified forests were protected as a national monument in 1906. From 1899 to 1906 tourism continued to thrive and scientific research became a focus. In 1906 the naturalist John Muir spent time in Adamana, explored various sites, and named Blue Forest. The same year An Act for the Preservation of American Antiquities was passed, which allowed national monuments to be established out of federal lands. On December 8th, 1906 Petrified Forest National Monument was established.

#### 1906-1934 Early Park Development

During the earliest years of park development tourism boomed despite inadequate facilities, often-impassible roads, and minimal park staff. Various custodians were appointed and most were stationed at Adamana. In 1919 the first visitation records kept indicate a total of three thousand visitors, a large number for such a remote location.

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In the early 1920s Route 66 was completed opening the park to more automobile tourists. In 1922 the first paid ranger was appointed, he was paid \$12 per year to monitor the park for theft. The following year Headquarters was established at Rainbow Forest above the floodplain of Jim Camp Wash. The complex of buildings that developed at Headquarters, although much needed, was still woefully inadequate. An early inspector of the park states that “the museum was nothing more than a small, dilapidated shack, as was the custodian’s residence. A third served as a bachelors quarters for a ranger and a last shack stood close to the spring at Agate Bridge” (Tilloson, 1929).

In 1928 the first stone building was built in Rainbow Forest. Bob Miles, under the direction of Dick Grisby, built the store and lunchroom that would become Rainbow Forest Lodge. During early development the spatial organization was weak. Aside from proximity there was little relationship between the new lodge and the shacks. At this time there was no bridge over Jim Camp Wash. When the wash was passable, tourists drove across it about 50 yards down stream of the current bridge. Visitors coming from the railroad or Highway 180 both arrived at the entrance of Dick Grisby's store which then faced southwest. The museum and housing complex sat above the store and faced northeast (see Rainbow Forest Site Plan, 1929).

Park mythology holds that the visit from Albert and Elsa Einstein in early 1931 and the park’s subsequent embarrassment at the facilities precipitated the intense development that was to define the layout and use of the Rainbow Forest area until the present day. Plans for the new development, however, were already well underway at the time of the Einsteins’ visit. In the summer of 1931 the superintendent reports that the “road and building projects are moving right along in a very satisfactory manner” and by November of the same year that the buildings are ready for inspection. Under the direction of Herbert Kreenkemp, assistant to the Chief of Landscape Architecture, the Rainbow Forest complex began to take its current form.

During 1931-2 major development affected Rainbow Forest. By this time the road through the park had been improved and a bridge carried visitors over Jim Camp Wash. Parking and buildings were oriented to receive visitors from the railroads, including those on tour with the Santa Fe Transportation Company. A large rectangular parking area was constructed that ran east-west, beginning at the bridge and ending at the new museum/administration building. A long, narrow walk ran through the center of the parking area to the front entrance of the museum. Busses parked parallel to the walk and deposited visitors. With this new arrangement the backside of Grisby’s store and shop was located along the south side of the parking lot. Grisby modified the building, changing the entrance to face the parking lot and adding guest cabins in the back.

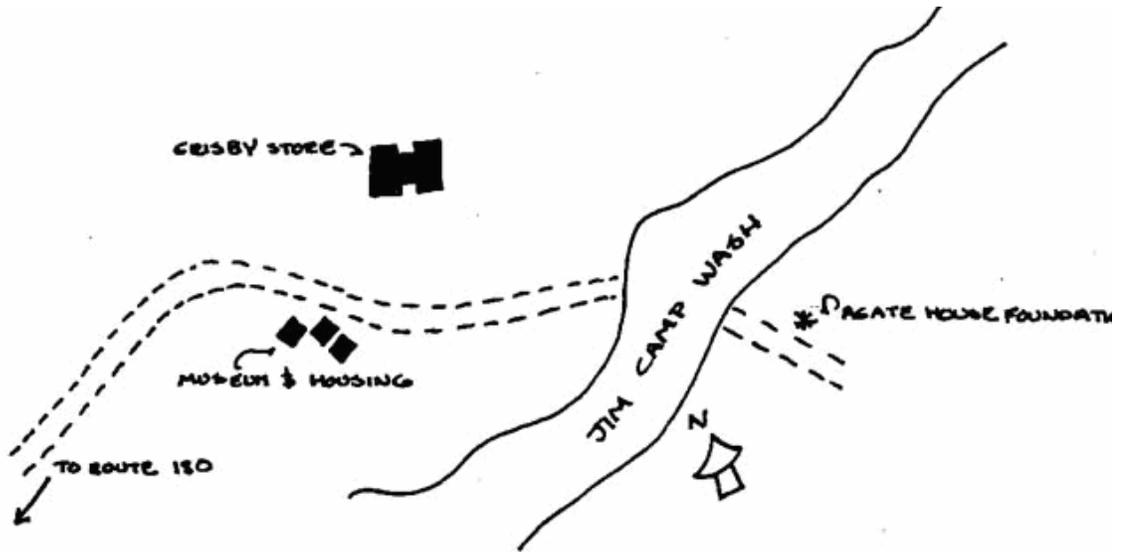
In addition to the museum, the rustic, stone, residential complex was built on a slope above Jim Camp Wash. All buildings (#52-A, 52-B, 52-C, 51-A, and 52-A2) faced east over the wash like the museum. In 1932 comfort stations were added to the rear of the museum and work began on retaining walls and steps in front. Rustic ramadas were added to the backs of residences (see Rainbow Forest Site Plan, 1932).

With the major development of park infrastructure that had taken place, officials began to focus

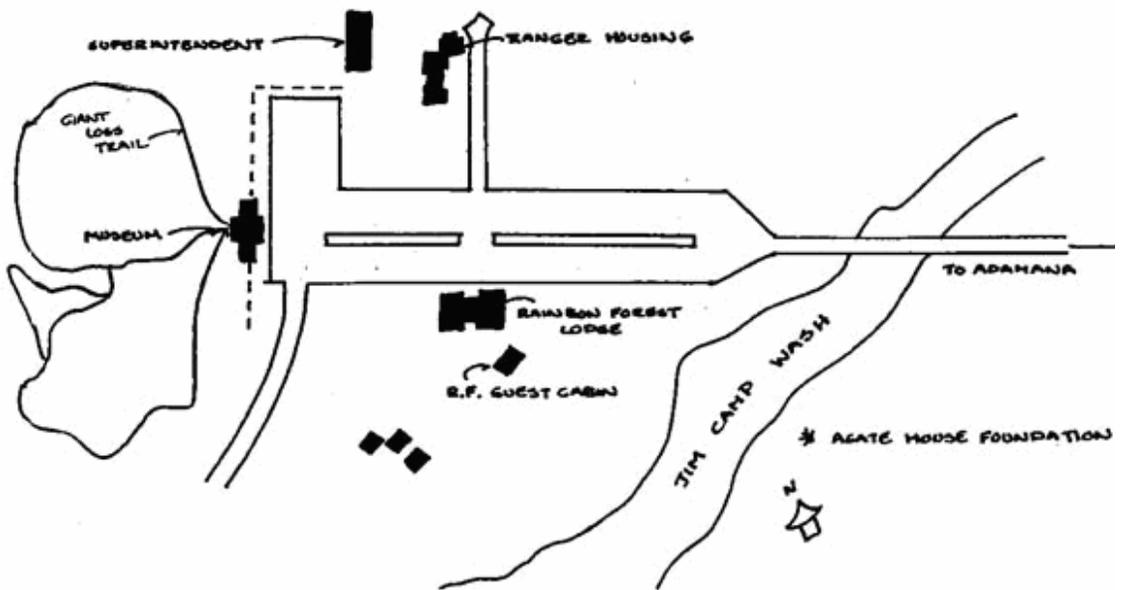
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on development of tourists' access to park sites. The last project to be completed before the arrival of the CCC was the planning of a road running north of headquarters to an area that contained a concentration of petroglyphs (when the road was constructed it was known as the Pictograph Road).



*Rainbow Forest Complex Site Plan, 1928. Source: NPS.*



*Rainbow Forest Complex Site Plan, 1933: Early park development. Source: NPS.*

1934-1942 CCC Park Development

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In his January 1934 monthly report, the park superintendent stated that “ the most important event in this monument was the inauguration of the Civil Works Project.” Although the monument had seen major development in the previous five years, it continued to lack infrastructure. An adequate water supply had never been developed for headquarters, roads were still in marginal condition and tourist facilities were already cramped in some areas and underdeveloped in others. After years of struggling to maintain the most basic services, allocation of government monies to do Emergency Conservation Work was a cash infusion that was previously unimaginable in the monument. In addition, CCC workers provided a large and mostly eager workforce.

Between 1934 and 1942 the CCC undertook major improvements that included:

- Digging the Puerco Well and a well at Headquarters (Rainbow Forest)
- Renovating and improving the Painted Desert Inn
- Completing a water pipeline running from Puerco pump house to both Rainbow Forest Headquarters. This may be one of the longest pipeline constructed by the CCC in any national park.
- Cleaning and improving roads within the park.
- Developing foot trails for viewing petrified forests
- Landscaping in Rainbow Forest
- Development of road and trails at Long Logs

The first CCC camp was located near the Puerco River but in November 1934 it was moved to Rainbow Forest for the winter and remained there until June 1938 (Burton, 1993). The Rainbow Forest camp was located off the new road to the petroglyphs, near the escarpment. A 1935 photograph of Old Faithful on the Giant Logs trail shows the camp visible to the southwest. The camp was typical. It contained barracks, service buildings, a mess hall and classrooms.

The CCC made significant improvements to the Rainbow Forest area (see Rainbow Forest Site Plan, 1943). By the end of the first enrollment period in April 1934 workers had completed headquarters area landscaping which included laying flagstone sidewalk around the perimeter of the parking lot and along the residential spur. They had also begun campground development, and surveyed and staked the road to the petroglyphs (until the 1950's this road was also called the Pictograph Road). CCC workers built residences #53, the coal shed and warehouse (#101 and 100), added a storage unit onto the garage (#51-A1), and completed the fire cache (#51 C). Though not as clearly documented, it is likely that buildings 50, 51-D, 51-E and 100 were also built by the CCC. They reflect the same style and workmanship as the other buildings and were built during the years of CCC occupation.

During the CCC era workers developed the Long Logs area. Previously visitors had arrived at a parking area near Agate House on a road that cut over from U.S. 180/260. CCC workers constructed a new spur road from Petrified Forest Highway, built a parking area, and graded the Logs Trail and Agate House spur trail. Construction of the Log Logs trail required the installation of stone steps and retaining walls to reach the viewpoint then called Panorama

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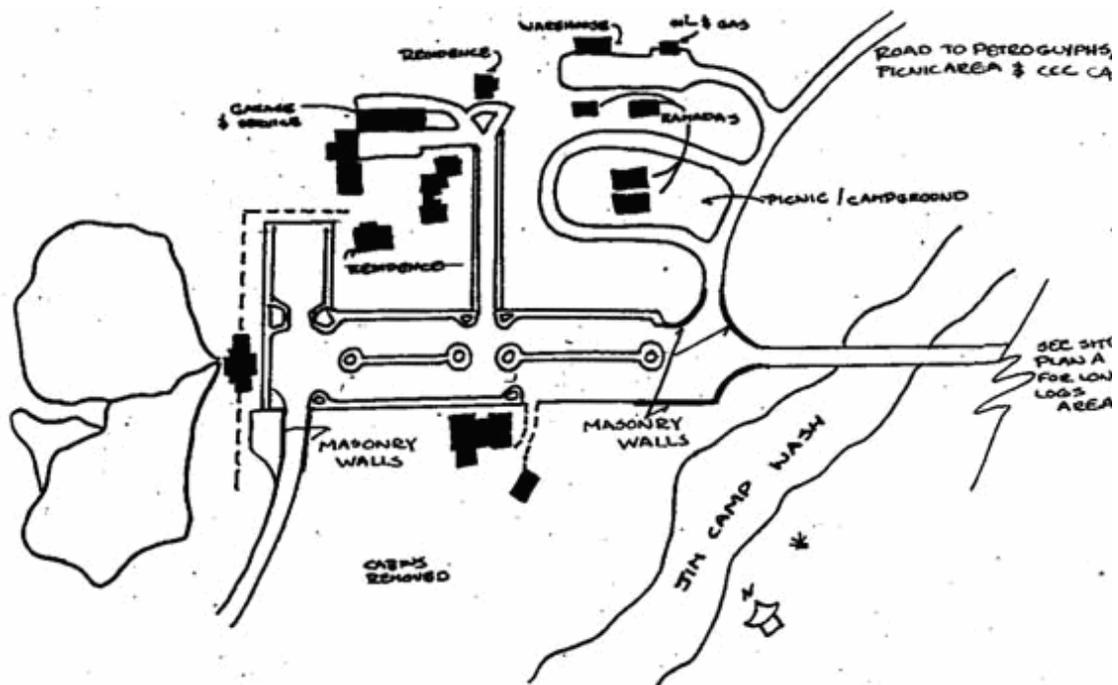
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Knoll. Agate house was reconstructed during this time, and although the accuracy of its reconstruction is questionable, it remains a symbol of the Park Service's dedication to historic preservation (see Long Logs Site Plan, 1942, Hard Copy, IMSF).

The changes made to the residential and service complex during this time altered its spatial organization and circulation pattern. Most notably, structures built by the CCC tended to be oriented towards the parking lot rather than the Jim Camp Wash. Previously, the residential area buildings described two parallel rows with no developed roads or paths to connect them. CCC construction added buildings, enclosing the two ends of the complex and creating a courtyard arrangement. Service buildings that were necessary to the residents were incorporated into the courtyard, while the warehouse and the gas building formed a service area, separate from housing but connected by a road. It is likely that the CCC also developed the low walls, flagstone patios and garden areas of the courtyard. The CCC also built the original service station next to the concession building and the entrance stations for both Rainbow Forest and Painted Desert.

Construction of the twelve-mile water pipeline from the Rio Puerco to Rainbow Forest Headquarters was one of the CCC's most significant works. Although the CCC had already dug a well at Rainbow Forest, its water was of such poor quality that it was undrinkable. Completion of the pipeline finally provided a reliable source of water. CCC workers not only dug the trench and laid the pipe, but some were also trained in the more skilled tasks. In a 1938 letter to the Regional Director, the Assistant Engineer reports that "the CCC boys are good helpers, I have one that can run the level and one that is learning the transit."

Note on Building 50: Documentation on building 50 (Rainbow Forest Employee Residence) is contradictory. Building documents state the construction was done by the CCC yet the construction date is 1943, a year after the CCC left Rainbow Forest. Despite the contradictory documentation, and since it is highly probable that the CCC began construction on the building before they left the park, building 50 is treated as a CCC-era building throughout this document.



*Rainbow Forest Complex, 1943: CCC Development. Source: NPS.*

#### 1943-to present

The last residence (#50) was built in 1943 (see note above). By 1950 the National Park Service had razed the last of any remaining CCC camp structures in the Rainbow Forest area. Between 1942 and the mid-50's there were only minor developments in the Rainbow Forest. Due to lack of use and changes in management attitudes, the campground was discontinued, though the area was still used by picnickers. Landscaping, fencing, and grading were done around the residential complex. By the late 50's development began to increase. The biggest projects were the redesign of the concessions building and a large addition to the visitor's center. Room additions were also added to residences 52-A, B & C and building 53-A was re-roofed with a gabled, aluminum roof. All new structures and changes to structures reflected a departure from the naturalistic design principles that characterized earlier architecture. Instead of native sandstone, the favored materials were concrete block with stucco. The museum addition, although one story like the museum itself, rises several feet above the original building in an attempt to provide more interior space and natural light.

In 1962 Petrified Forest received National Park status. The same year headquarters was moved to the new Painted Desert complex, ending Rainbow Forest's 39-year history as park headquarters. Despite this move Rainbow Forest continued to develop during the mid-late sixties and building use remained fairly consistent. The park did not hesitate to duplicate functions as duplication was viewed as the opportunity for increased revenue. By this time infrastructure in the park was complete and development focused on improving visitors' experiences. Central walkways in the parking lot were removed and parking spaces were

arranged at a continuous angle to allow pull-through parking for trailers. The two islands at each end of the parking lot were re-shaped to better facilitate traffic flow. The new picnic area was configured with its own parking spaces. The now-deteriorated flagstone sidewalks and museum steps were replaced with concrete and original curbs were re-set. Additional stone curbing was added to narrow the entrance to the picnic area and to delineate a parking area. Both individual ramadas and large shade structures were built for the picnic tables. The picnic shelter in the residential area was probably built at this time.

A large-scale landscape project was completed at Rainbow Forest in 1964. Records reveal that eighty-five trees and hundreds of native shrubs were planted. The work order for this project states that the junipers came from Sequoia. No additional species of tree or shrub were mentioned, however, it is likely that the arborvitae and the Russian olive were part of this project.

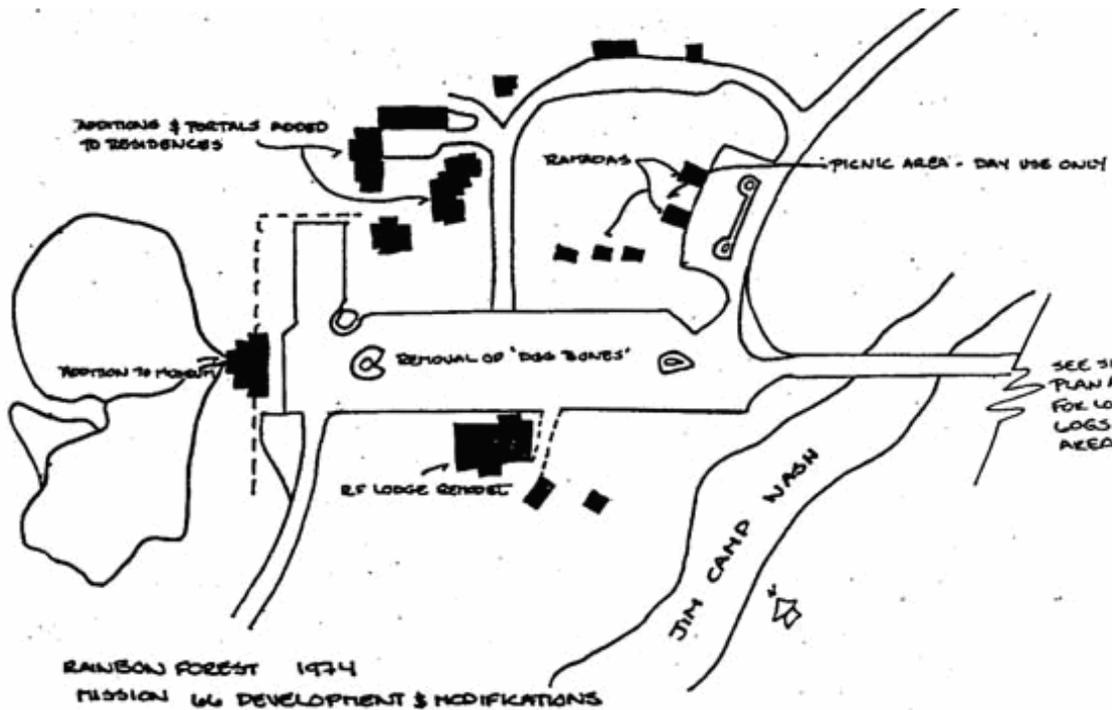
Extensive improvements were also made to the Long Logs and Giant Logs trails. This included paving surfaces, installing concrete steps, stabilizing “Old Faithful” and building the shelter at Panorama Knoll(see Rainbow Forest Site Plan, 1974).

Long Logs parking area also changed during this time. Additional parking was added by widening the south and east side of the loop road and re-configuring the central island. Fencing was removed and a stone wall was built which ran along the south and east side of the loop in front of the new parking spaces. Workers installed a sidewalk along the length of the wall. With the introduction of the wall, came an additional trailhead, which provided direct access to the Agate House trail. The entrance to Long Logs road was changed to allow for the installation of a gate (see Long Logs Site Plan, 1999).

In 1968 the concessions building went through its final and most drastic renovation taking the form that it has today. The gas station was also remodeled in a similar style. In 1972 US 180 was moved south taking it out of the park and a new, modern entrance station was installed. During the 80's and 90's Rainbow Forest saw a conversion of building uses; some buildings have been converted to residences and the gas and oil building has long been abandoned. Currently the residential complex is mostly empty. The road to the petroglyphs (also called Pictograph Road until the 1950's) and its trail were closed to park visitors in the 90's due to its deteriorated conditions of the road and trail and concern about safety.



Cover photo, Rainbow Forest Complex, post-1958. Source: NPS.



Rainbow Forest Site Plan, 1974: Mission 66 Development. Source: NPS.

## Analysis & Evaluation of Integrity

### Analysis and Evaluation of Integrity Narrative Summary:

The Rainbow Forest cultural landscape represents a unique marriage between design philosophy, adaptation to the natural environment, and management concerns. Many characteristics of Rainbow Forest cultural landscape illustrate National Park design principles of the 1920s and 30s. The layout of Rainbow Forest is an example of park village planning, while its rustic architecture and small-scale features show a concern both for adapting regional architectural traditions as well as creating a sense of aesthetic unity. At the same time, natural features, topography and climate have influenced site selection and building arrangement and have limited build-able area. In addition, managing for petrified wood theft reduction has dictated both pedestrian circulation and building patterns.

Rainbow Forest cultural landscape has retained its integrity. Modification to buildings, alteration of site plan and change of use were considered in this rating.

**LOCATION:** Integrity of location has been retained. All buildings, structures, trails and roads are in the same location as during the period of significance. This includes both Rainbow Forest Complex and Long Logs trail and parking area.

**SETTING:** The integrity of setting has been retained at both Rainbow Forest and Long Logs. Views in all directions remain largely unchanged since the period of significance and no development has taken place in the vicinity of either area.

**DESIGN:** The integrity of overall layout and design has been retained, but changes have occurred in traffic pattern in the parking lots, the removal of curvilinear road in picnic area, and closure of road to pictographs. The integrity of Long Logs parking area is compromised to some extent. The essential layout remains the same but modifications have been made to accommodate more parking and restrict trail access.

In the Residential Complex, additions and modifications made during the sixties and seventies employed contemporary architectural styles, which has compromised there integrity to some extent. Conversion of service buildings to residential units also compromises integrity.

Although the 1963 addition to the museum is a departure from its previous style, the façade is still intact and the overall building communicates the original design intention.

An addition to Building # 100 required the removal of structural elements, and Building 101 is intact but not used. These two buildings have compromised integrity.

Although the walls in the Rainbow Forest Complex are intact, the curbing has been modified to accommodate traffic flow.

The integrity of plant species has been retained. There is little sign of historic disturbance. Vegetative

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patterns do not appear to have changed significantly since 1931.

**MATERIALS:** Although the original materials still exist, the layering of design principles and objectives during the Mission 66 era have lessened integrity.

**WORKMANSHIP:** Integrity of workmanship is high. The masonry of the buildings, wall and curbing all reflect a high level of skill and design philosophies typical of the 1930's. At Long Logs, walls have been added and curbing has been changed to accommodate increased visitation.

**FEELING:** The integrity of feeling has been retained, but has been compromised. When Rainbow Forest served as park headquarters it functioned as the ultimate destination in the park. Since the removal of the headquarters to the Painted Desert, its importance, and consequently, the feelings associated with the complex have lessened. Although all the historic buildings remain, many have changed function and some are abandoned. Integrity of feeling for Long Logs has been retained.

**ASSOCIATION:** The integrity of association has been retained. Evidence of 1930s and CCC-era park development remains prominent. The general layout of the site plan has been weakened by modifications during the sixties and seventies. The integrity of association at Long Logs has been retained. The layout continues to illustrate CCC-era park development, however, the parking area has been substantially modified to accommodate more parking and control visitor access to the trail.

Note: The Landscape Features have been updated to reflect the Keeper's determination of eligibility on contributing features and also with the completed LCS survey (3/29/2007).

**Landscape Characteristic:**

**Archeological Sites**

N/A

**Buildings and Structures**

The buildings at Rainbow Forest represent several architectural styles from different National Park Service eras. Made of native dressed sandstone and built in a style that recalls Ancestral Puebloan masonry, the original buildings of Rainbow Forest strongly exhibit the principles of rustic, vaguely vernacular architecture that dictated park design from the 1920s through the 1940s. Some of the CCC-era buildings (the oil and gas building and the warehouse) replicate the earlier structures, while others (# 53 & 50: see note in history section) use slightly different styles and masonry techniques. Both, however, are consistent with the original intent. Later development during the 50s and 60s show a departure from naturalistic design and construction principles. During this time, additions and modifications were made in the international style from concrete block and stucco, aluminum, and wood.

Examples of the mechanical engineering structures at Rainbow Forest include the water pipeline as well as the system of culverts along roads and trails. Construction of the water pipeline from the Puerco River to Rainbow Forest Headquarters was a significant and unique feat of engineering. The twelve-mile pipeline to Rainbow Forest along with its spur to the

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Painted Desert Inn was the longest pipeline built by the CCC in a National Park. Completion of the pipeline in 1942 finally provided Rainbow Forest with a reliable source of water. The highly corrosive nature of the soils in Petrified Forest along with budgetary concerns led engineers to specify asbestos-coated pipe for the pipeline's construction.

During the CCC-era workers installed a system of culverts along trails and roads, which remain an example of the rustic design and construction principles, favored at that time. During the 1920s and 30s the principle of stylistic unity extended beyond architecture to other structures. The facades of the culvert, made from stacked native sandstone in a concrete mortar, mimic the construction and materials of the buildings and serve as a thematic continuum. They are found on both the Long Logs and the Giant Logs Trails. The best examples of this type of construction, however, are found along the road to the petroglyphs (formally pictograph road). Here the importance of aesthetic unity is emphasized by the culverts' isolation from other structures. Lack of maintenance on this road is currently a direct threat to the preservation of the culverts.

Structural engineering systems at Rainbow Forest consist of retaining walls built along trails, in the courtyard of the residential complex, and in front of the museum. Like the culverts, all walls built before 1942 are built from native material and echo the rustic architectural style. Retaining walls on the trails serve to stabilize the slopes on which logs rest. One major retaining wall was constructed in the early sixties to stabilize Old Faithful Log, which had been struck by lightning and threatened to slide from its steep perch. Like modifications to buildings done during this time, the slick and angular concrete retaining wall reflects a departure from naturalistic design principles.

Note: The Concession building is not listed below. It is considered a 'supporting' structure. This means that although it is not contributing, aspects of it do add to the overall integrity of Rainbow Forest. Plans to modify or remove the building should take this into consideration.

**Character-defining Features:**

Feature:	Rainbow Forest Cabins
Feature Identification Number:	116276
Type of Feature Contribution:	Contributing
IDLCS Number:	56685
LCS Structure Name:	Rainbow Forest Cabins
LCS Structure Number:	RF151
Feature:	Rainbow Forest Fire Cache
Feature Identification Number:	116278
Type of Feature Contribution:	Contributing
IDLCS Number:	56673

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LCS Structure Name: Rainbow Forest Fitness Center #51-C

LCS Structure Number: RF051C

Feature: Rainbow Forest Lodge

Feature Identification Number: 116280

Type of Feature Contribution: Non Contributing

IDLCS Number: 296095

LCS Structure Name: Rainbow Forest Lodge

LCS Structure Number: RF150

Feature: CCC -era masonry retaining walls in front of musuem, in residential area and along trails

Feature Identification Number: 100296

Type of Feature Contribution: Contributing

IDLCS Number: 56684

LCS Structure Name: Rainbow Forest Connecting Walls and Fencing

LCS Structure Number: RF066

Feature: Rainbow Forest Employee Garage

Feature Identification Number: 100299

Type of Feature Contribution: Contributing

IDLCS Number: 56675

LCS Structure Name: Rainbow Forest Employee Garage #51-E

LCS Structure Number: RF051E

Feature: Rainbow Forest Employee Residence #53

Feature Identification Number: 100300

Type of Feature Contribution: Contributing

IDLCS Number: 56690

LCS Structure Name: Rainbow Forest Employee Residence #53

LCS Structure Number: RF053

Feature: Rainbow Forest Employee Residence 50

Feature Identification Number: 100301

Type of Feature Contribution: Contributing

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IDLCS Number: 217273  
LCS Structure Name: Rainbow Forest Employee Residence #50  
LCS Structure Number: RF050

Feature: Rainbow Forest Employee Residence 51-A  
Feature Identification Number: 100302  
Type of Feature Contribution: Contributing  
IDLCS Number: 56678  
LCS Structure Name: Rainbow Forest Employee Residence #51-A  
LCS Structure Number: RF051A

Feature: Rainbow Forest Employee Residence 51-A1  
Feature Identification Number: 100303  
Type of Feature Contribution: Contributing  
IDLCS Number: 56679  
LCS Structure Name: Rainbow Forest Employee Residence #51-A1  
LCS Structure Number: BLDG #051-A1

Feature: Rainbow Forest Employee Residence 51-A2  
Feature Identification Number: 100304  
Type of Feature Contribution: Contributing  
IDLCS Number: 56680  
LCS Structure Name: Rainbow Forest Employee Residence #51-B  
LCS Structure Number: RF051B

Feature: Rainbow Forest Employee Residence 52-A  
Feature Identification Number: 100305  
Type of Feature Contribution: Contributing  
IDLCS Number: 56681  
LCS Structure Name: Rainbow Forest Employee Residence #52-A  
LCS Structure Number: RF052A

Feature: Rainbow Forest Employee Residence 52-B  
Feature Identification Number: 100306

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Type of Feature Contribution: Contributing  
IDLCS Number: 56682  
LCS Structure Name: Rainbow Forest Employee Residence #52-B  
LCS Structure Number: RF052B

Feature: Rainbow Forest Employee Residence 52-C

Feature Identification Number: 100307  
Type of Feature Contribution: Contributing  
IDLCS Number: 56683  
LCS Structure Name: Rainbow Forest Employee Residence #52-C  
LCS Structure Number: RF052C

Feature: Rainbow Forest Oil and Gas Building

Feature Identification Number: 100309  
Type of Feature Contribution: Contributing  
IDLCS Number: 56677  
LCS Structure Name: Rainbow Forest Gas and Oil Building #101  
LCS Structure Number: RF101

Feature: Rainbow Forest Storeroom

Feature Identification Number: 100310  
Type of Feature Contribution: Contributing  
IDLCS Number: 56674  
LCS Structure Name: Rainbow Forest Storeroom #51-D  
LCS Structure Number: RF051D

Feature: Rainbow Forest Visitor's Center/ Museum

Feature Identification Number: 100311  
Type of Feature Contribution: Contributing  
IDLCS Number: 56672  
LCS Structure Name: Rainbow Forest Visitor Center/Museum  
LCS Structure Number: RF001

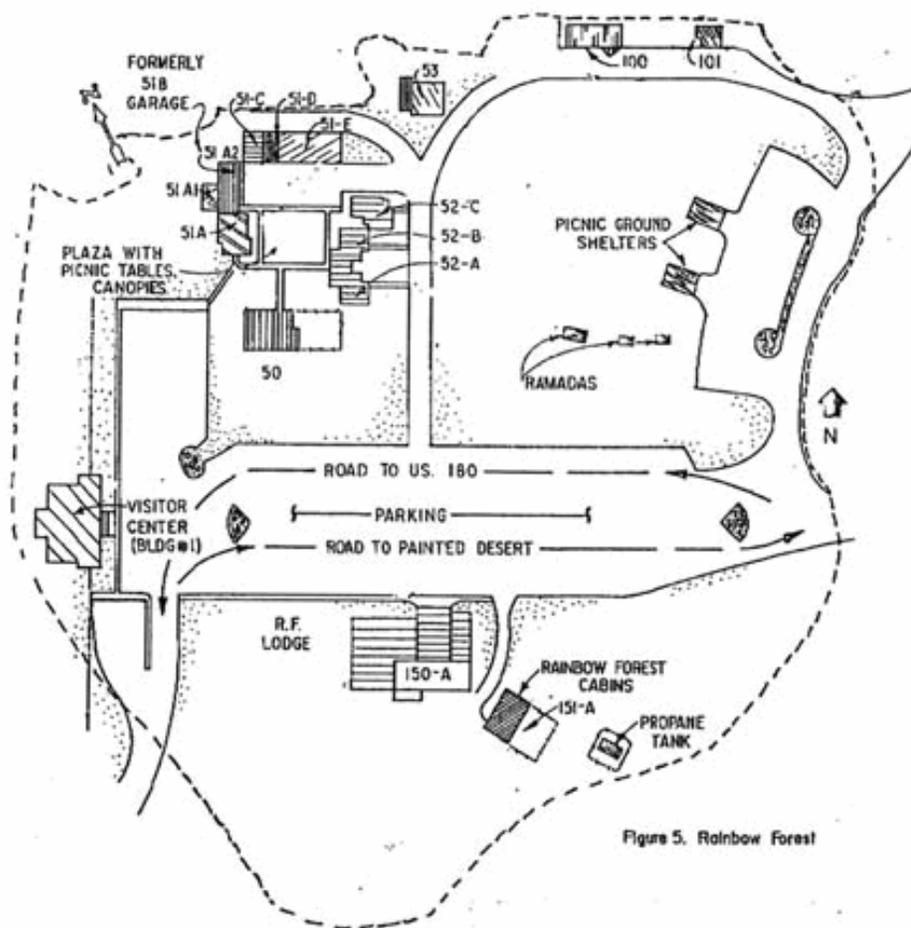
Feature: Rainbow Forest Warehouse and Shop

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Feature Identification Number: 100312  
Type of Feature Contribution: Contributing  
IDLCS Number: 56676  
LCS Structure Name: Rainbow Forest Warehouse and Shop #100  
LCS Structure Number: RF100

**Landscape Characteristic Graphics:**



*Site plan detail of the Rainbow Forest Complex, 1989. Source: NPS.*

Building Numbers and Names

#1	Rainbow Forest Visitor Center
#50	Rainbow Forest Residence
51-A	Rainbow Forest Residence
51-A1	Rainbow Forest Employee Residence
51-A2	Rainbow Forest Employee Residence
52-A	Rainbow Forest Employee Residence
52-B	Rainbow Forest Employee Residence
52-C	Rainbow Forest Fire Cache
51-D	General Storage
51-E	Rainbow Forest Employee Garage
53	Rainbow Forest Employee Residence
100	Rainbow Forest Warehouse & Shop Rainbow Forest Fire House
101	Rainbow Forest Gas & Oil Building
150-A	Rainbow Forest Concession Building Rainbow Forest Lodge
151-A	Rainbow Forest Guest Cabins

*Key to the detail of the Rainbow Forest site plan, 1989. Source: NPS.*



*Rainbow Forest, between 1930-1932. Source NPS.*



*Museum building at Rainbow Forest, 2011. Source: C. Mardorf, NPS.*

### **Circulation**

Vehicular circulation patterns at Rainbow Forest have changed over time to accommodate vehicle type, to control traffic flow and to limit access to residential areas. Although pedestrian circulation has changed as well, vehicular circulation, focused around the parking area, is clearly dominant.

In the original parking area plan, circulation was one-way. The parking area was bisected by a narrow flagstone walkway, to which buses pulled up and deposited visitors. A mid-way break in

the walkway allowed vehicles to turn around. Parking spaces for private cars were probably restricted to the arm of the parking area in front and to the right of the museum. There were two spurs off the parking lot; one led to the picnic area and another to the residential area. During the CCC-era slight changes were made to the circulation pattern. Due most likely to an increase in private vehicles visiting the park, the number of small parking places was increased. This was done by removing the two flagstone walks and replacing them with two dog bone-shaped structures. Parking stalls were aligned on a continuous diagonal. Circulation remained strictly one-way and buses now parked along the edges of the parking lot. In addition, roads were extended to connect residential to service areas.

Since the 60s, changes made to the circulation pattern of the Rainbow Forest Complex have been in response to vehicle types, concern for limiting access and concern for regulating traffic flow. A 1961 plan shows removal of the dog bones, reshaping of the two islands on the far ends of the parking lot, narrowing the entrance to the picnic area, adding parking spaces to the picnic area, and introducing a two-way traffic flow. The dog bones were removed to create pull-through parking spaces for visitors pulling trailers or driving larger campers. The islands on both ends were left but the one on the east was reshaped to direct entering traffic to the left. The essential difference in circulation patterns between the original layout and the 1961 revision is the fact that the parking lot was divided into two types of traffic. Although the size of the parking lot was not changed, it was bisected into two sections: a parking area and a road for through traffic. Integrating the road into the parking area altered the meaning of the Rainbow Forest Complex from that of being the ultimate destination in the park to that of being a possible or optional destination. The road to residences was also blocked off. This circulation pattern persists to the present.

Vehicular circulation patterns at Long Logs evolved in a similar pattern to Rainbow Forest in which control and limited access were key design considerations. Originally the access road to Long Logs joined Petrified Forest Highway in a wye intersection with a triangular island in its center. The terminus of the road described a loop in which traffic moved one-way. The east side of the loop widened to accommodate several parking spaces. (see Long Logs Site Plan, 1942 & Long Logs Parking Area, 1942, Hard Copy) During Mission 66 development changes were made to increase security and provide more parking spaces. The Intersection of Long Logs road and Petrified Forest Highway was modified from a wye to a T-shape. This allowed for the installation of a security gate which could be closed a night as the rangers did their final rounds to clear the park. Additional parking spaces were added in the loop both by extending the widened area to the south and by re-configuring the central island to create parallel parking spaces for larger vehicles (see Long Logs Parking Area, 1999, Hard Copy).

#### Pedestrian Circulation

Although patterns of pedestrian circulation have remained linear within the Rainbow Forest landscape, they also have changed significantly. Within parking areas, concerns for pedestrian circulation gradually gave way to the overwhelming concern for comfort and safety of drivers,

leaving foot traffic to fend for itself. On trails and other places designed for pedestrians, efforts have been made to increase comfort and tightly control access.

The original parking lot included a narrow flagstone walkway running through its center. Buses and cars parked parallel to the walk where visitors descended and approached the museum. This was admittedly a barren walk, built with no concern for sheltering visitors from the intense climate. It did, however direct them clearly to their destination where they could presumably find shelter. This approach mimicked the automobile approach that was arranged to funnel in traffic. Sidewalks also traced the perimeter of the parking area. These were most likely used frequently as vehicles also pulled up to the sides of the parking area.

Mission 66 development removed the central walkway from the parking area. This arrangement persists today. Because the spatial relationship to the location of the parking stalls, the attractions, and the sidewalks is weak, most visitors use the parking lot to circulate.

Pedestrian circulation in the Long Logs area varies significantly from that in Rainbow Forest. At Long Logs, parking stalls are arranged in a circular pattern with a central island. The sidewalk that traces the edge of the parking area is the most convenient way to approach the trailheads and is used almost exclusively.

An attempt to restrict and control pedestrian access characterizes some areas of the Rainbow Forest landscape. Access to the Giant Logs trail has been tightly controlled since the construction of the museum in 1932. Passing through the museum accesses the primary entrance to the trail. The other entrance, through a gate next to the museum, is reserved for wheelchair access. This arrangement was not only an attempt to control theft but also serves as a precursor to a much later National Park Service visitor center design objective; that of requiring visitors to pass through an educational exhibit before gaining access to the attraction (Ethan Carr, personal communication, July 1999). Visitor circulation is also controlled to the residential area. Although there is nothing to stop visitors from entering the residential area, the extension of the existing wrought iron fence around the residential complex sends a clear message that it is a restricted area.

Restricted access also characterizes Log Logs pedestrian circulation. The original CCC constructed parking lot and trail system was designed to tightly control visitors' movement. The original layout had only one entrance to the trailhead. Fencing around the perimeter of the trail area assured that the entrance was used exclusively. Although it was never built, CCC plans called for a ranger station at the trailhead. This would have conveyed a strong official presence much like that at Rainbow Forest. During Mission 66 development pedestrian circulation was modified. A sidewalk was installed along the new parking area and a low masonry wall edged the sidewalk.

Layout of trails in both the Long Logs and Giant Logs area has not changed significantly in the evolution of the landscape, however a spur was added to Long Logs to connect to Agate House

trail and an additional trail and trailhead were added on the south side to connect more directly with Agate House trail. Access to the trailheads is gained through openings in the wall. This arrangement persists today (see long Logs Parking Area Shcematic, 1999 and 1942 hard copy).

NOTE: The Jim Camp Wash Bridge has been replaced. The road alignment and approach to the Rainbow Complex remains the same.

**Character-defining Features:**

Feature: Approach to Rainbow Forest Complex over Jim Camp Wash

Feature Identification Number: 100313

Type of Feature Contribution: Contributing

IDLCS Number: 216008

LCS Structure Name: Rainbow Forest Plaza and Features

LCS Structure Number: RF010

Feature: Configuration of parking stalls and traffic flow through Rainbow Forest parking lot

Feature Identification Number: 100314

Type of Feature Contribution: Contributing

IDLCS Number: 216008

LCS Structure Name: Rainbow Forest Plaza and Features

LCS Structure Number: RF010

Feature: Jim Camp Wash Bridge has been replaced

Feature Identification Number: 100315

Feature: Long Logs Road, general parking orientation, and original trailhead

Feature Identification Number: 100316

Type of Feature Contribution: Contributing

IDLCS Number: 217319

LCS Structure Name: Long Logs Parking Area

LCS Structure Number: RF012

Feature: Long Logs trail connecting Agate House to parking area

Feature Identification Number: 100317

Type of Feature Contribution: Non Contributing

Rainbow Forest Complex  
Petrified Forest National Park

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Feature: Pedestrian circulation areas at Long Logs

Feature Identification Number: 100318

Type of Feature Contribution: Contributing

IDLCS Number: 217319

LCS Structure Name: Long Logs Parking Area

LCS Structure Number: RF012

Feature: Pedestrian circulation on periphery of parking area at Rainbow Forest

Feature Identification Number: 101091

Type of Feature Contribution: Contributing

IDLCS Number: 216008

LCS Structure Name: Rainbow Forest Plaza and Features

LCS Structure Number: RF010

Feature: Picnic area parking

Feature Identification Number: 101123

Type of Feature Contribution: Non Contributing

Feature: Roads in residential area

Feature Identification Number: 101124

Type of Feature Contribution: Contributing

IDLCS Number: 216008

LCS Structure Name: Rainbow Forest Plaza and Features

LCS Structure Number: RF010

Feature: Shape, size and alignment of Rainbow Forest parking area

Feature Identification Number: 101125

Type of Feature Contribution: Contributing

IDLCS Number: 216008

LCS Structure Name: Rainbow Forest Plaza and Features

LCS Structure Number: RF010

Feature: Spur road to CCC camp, old picnic area and petroglyph / pictograph trail

Feature Identification Number: 101126

Type of Feature Contribution:           Contributing

Feature:       Trail system layout at Giant Logs and Long Logs

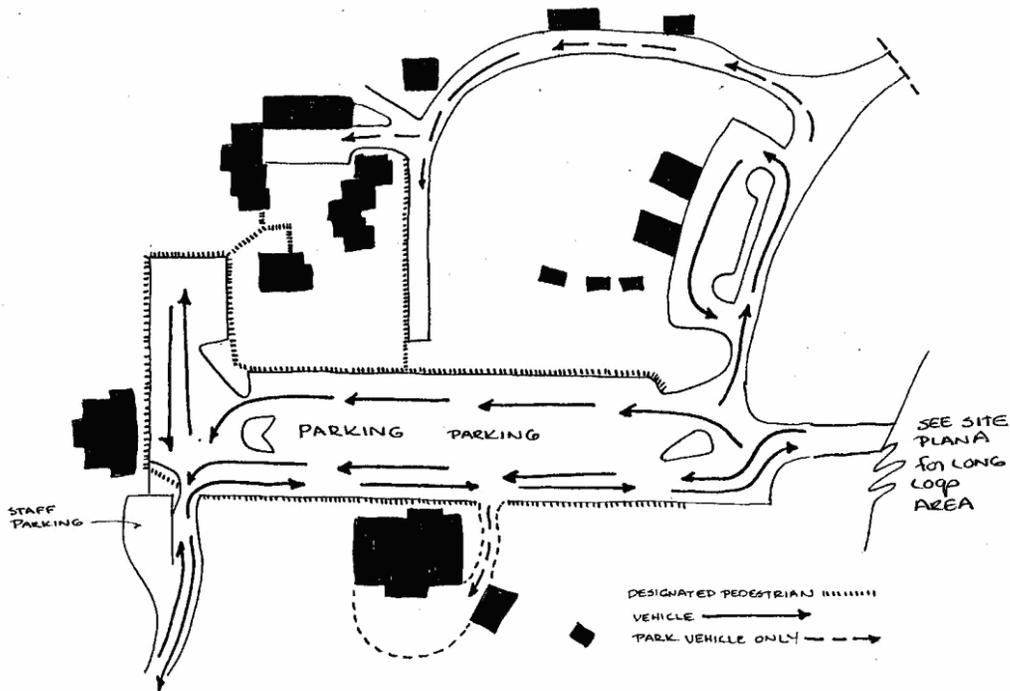
Feature Identification Number:       101127

Type of Feature Contribution:           Contributing

**Landscape Characteristic Graphics:**



*Giant Logs loop trail from museum through the field of petrified logs, 2011. Source: C. Mardorf, NPS.*



*Rainbow Forest Circulation, 1999. Source: NPS.*

### Cluster Arrangement

N/A

### Constructed Water Features

The 50,000-gal reservoir on the mesa above the Rainbow Forest complex was built to complete the water system started by the construction of the pipeline (which ran between Puerco and Rainbow Forest). It held the water for the gravity fed plumbing system of Rainbow Forest development. It is no longer in use but serves as an example of CCC engineering and construction. Another abandoned water tank is sited on a knoll above the residential complex. This was probably used as part of the early CCC developed system built in which a well supplied water for non-consumptive use.

### Character-defining Features:

- Feature: CCC-constructed water pipeline
- Feature Identification Number: 101128
- Type of Feature Contribution: Contributing
- Feature: Water tank
- Feature Identification Number: 101129

Type of Feature Contribution:                      Contributing

### **Cultural Traditions**

Rainbow Forest is an example of both 1930s and CCC-era National Park design and planning. Layout, architectural styles, and building materials express cultural values, traditions and concerns of these time periods.

The original layout of Rainbow Forest reflects a long-held design intention in which “visitors arrive in open plazas, defined in part by the facades of the most important public buildings” (Carr, 1995:124). Here the parking area serves as the plaza. Both the museum and the concession building face the parking area. This original design concept is completely intact today.

Arrangement of buildings and other structures expresses one of the park’s most pressing management issues: protection of the wood from theft. The placement of the museum and development of trail system behind it inform visitors that they are in a tightly controlled and monitored environment. The siting of the residences reinforces the feeling of control. Overlooking the wash, facing visitors arriving from the north, and in close proximity to the interpretive trail, the residential complex originally expressed a strong, official presence on the site. This feeling exists to a lesser extent today due to minor changes (such as fencing and tree planting) which have aimed to create a stronger sense of privacy in the residential area.

Architectural style and building materials also reveal the values of the time period. During the 1920s and 30s park designers strove to develop building styles that were modeled after vernacular or regional architectural traditions. Designers also followed a rustic aesthetic deemed appropriate to the national park setting. Made of native dressed sandstone and built in a style that recalls Ancestral Puebloan masonry the original buildings of Rainbow Forest strongly exhibit these principles. Some of the CCC-era buildings (# 100 & # 101) replicate the earlier structures, while others (# 53 & # 50 ) use slightly different styles and masonry techniques. Both, however, are consistent with the original intention. Later development during the 50s and 60s show a change in design and planning principles. During this time, additions and modifications were made in the international style from concrete block and stucco, aluminum, and wood.

### **Land Use**

As the site of the most massive and colorful petrified wood in the park, Rainbow Forest has continuously served as a place to facilitate park visitors’ experiences. Throughout the history of the park, this task has involved two distinct operations; 1) improving visitors experiences by offering services, interpretation, and access to the wood and 2) protecting the wood from visitor theft by controlling access and allowing for surveillance. Although opinions on how to best achieve these goals have changed over time, the goals themselves have remained constant and have affected land use decisions.

During the first phase of early park development tourist facilities consisted of a small museum and Dick Grisby’s store and lunch counter. The main responsibility of early park custodians

was to protect the wood from theft. To this end custodians began taking up residence at Rainbow Forest and other sites with high concentrations of petrified wood. Proximity provided the opportunity for constant surveillance.

As the park developed, both tourist facilities and residential use increased. During Rainbow Forest's tenure as park headquarters, administration and service were also important functions of buildings and landscape.

Until the mid-1950s overnight tourist accommodation (camping and lodging at Rainbow Forest Lodge) had been a significant use in Rainbow Forest. In the mid 1950s, however, both lack of use and park policy that began to favor day use as yet another way to control theft led to the decision to close the campground. By 1961 the campground had been converted to a picnic area and no overnight guests were allowed in the lodge.

Today Rainbow Forest continues to serve as a day use visitors area with a museum, lunch counter, shop, trail system and picnic area. Most administrative and service use has been moved to the park Headquarters at the Painted Desert Complex. This change of use can be seen in the conversion of service buildings to storage and residences and the abandonment of the oil and gas building. Currently, and for the first time in the history of Rainbow Forest, a decline in residential use has left many of the buildings unoccupied. Proposed plans to convert the Long Logs access road to footpath also represents a significant departure in historic use.

### **Natural Systems and Features**

Rainbow Forest is set on the windswept plains of the arid Colorado Plateau. Rainfall is about eight inches per year and vegetation is sparse, sometimes giving way to the barren clay hills of the badlands. There is no year-round water source on the site, but Jim Camp Wash, a large ephemeral stream, cuts a wide swath across the eastern section of the landscape. An escarpment rises dramatically, 100 feet above the site to the west. The Rainbow Forest Complex developed in response to its environment. It developed on the relatively flat and sandy plain above the wash, in close proximity to the petrified wood that was the reason for its existence.

The most important natural feature in the Rainbow Forest landscape is the abundance, quality and location of its petrified wood. Before Spanish exploration of the southwest, ancestral Puebloans used the broken pieces of petrified wood to build blocks of rooms such as the one across Jim Camp Wash adjacent to the original road. Rainbow Forest contains a concentration of the most colorful and massive specimens in the park. It has attracted great numbers of miners, tourists, scientists, and naturalists long before the development of a reliable source of water.

Although historic development of Rainbow Forest has been based upon proximity to wood, the wash is also significant. Jim Camp Wash, which runs north-south across the eastern edge of the site, strongly defines the space and the gentle slope to its west serves as the only build-able area close to the wood.

The rolling hills and mesa to the west of Rainbow Forest also played a part in its development. Designers of water supply systems used the natural topography of the site to their advantage. An old, concrete, water tank located on a knoll behind the residential complex is evidence that even before the pipeline was constructed, the development of water system relied on gravity. When the pipeline was completed, the 50,000-gallon reservoir was built on top of the mesa, 100 feet above Rainbow Forest development. This allowed for a gravity fed plumbing system.

The Long Logs road and parking lot responds both to the location of wood and the rolling hills. The approach road conforms to the topography by gently curving to follow the contours of the hills. The parking lot is sited at the base of the most prominent hill and adjacent to a high concentration of petrified wood.

**Landscape Characteristic Graphics:**



*Old Faithful," one of the largest and most colorful logs at Rainbow Forest, 2011. Source: C. Mardorf, NPS.*

**Small Scale Features**

Many small-scale features contribute to the character of Rainbow Forest. These include the wrought iron fencing, the Mather memorial and the freestanding masonry walls and curbing around the parking areas.

The wrought iron fencing around the museum was installed just after completion of the building. Its placement created a physical barrier and reinforced the impression that Giant Logs trail was a controlled area under surveillance. The reason behind the choice of materials and style for the

fence are undocumented, however, one possible explanation is a practical one. Although the Victorian style of the fence is at odds with the rustic style of the architecture, this departure likely illustrates practical concerns conflicting with the resource limitations of the site. No building materials other than stone are available in a significant quantity on the site. A stone wall would have been impractical, and a wooden fence short-lived. Wrought iron was a reasonable choice. The original fence ran parallel to the parking area on both sides of the museum and terminated in the northeast corner of the L-shaped segment of the parking area. The fence was extended in the sixties to enclose the residential area.

The Mather Memorial terminates a cul-de-sac off the Giant Logs Trail. Inaugurated on July 4th, 1932, it follows the rustic design principles of that time. The memorial consists of a cast bronze plaque mounted on a large granite boulder. Despite the general vastness of the landscape, a sense of intimacy was created around the memorial through the use of boulder curbing, a curvilinear approach and the installation of a culvert, which gives the impression of a bridge and separates the space from the trail.

The sandstone curbing and freestanding masonry walls of the Rainbow Forest parking are strong character defining features. The serpentine walls are made from native sandstone and reflect design principles of the CCC-era in which the importance of stylistic unity extended beyond architecture to other structures. At Long Logs the walls define the edge of the parking area and serve to direct visitors to the trailheads. Although they are compatible with CCC design, the wall and curbing in Long Logs parking area are not historic and therefore not contributing. At Rainbow Forest the walls reinforce the traffic flow pattern at the entrance over Jim Camp Wash Bridge and at the entrance of the picnic area. In both parking areas the sandstone curbing defines edges of sidewalks and traffic islands. Curbing was added and removed at Rainbow Forest in the early sixties. The central traffic islands were removed to construct pull-through parking spaces, and curbing was added to create parking spaces for the picnic area and to narrow its entrance.

Ramadas have been a feature of the picnic area since the early 1930s. The original ramadas were rustic structures consisting of a wood frame supporting a roof of thickly piled brush. The current ramadas were built in the early sixties. There are three freestanding single table ramadas and two multiple table ramadas. The multiple table ramadas are oriented towards the parking area and the others are oriented northeast to maximize shade. There is no clear relationship between the structures.

Chain link fencing installed around the residential complex serves to separate the units from each other to give residents more privacy.

**Character-defining Features:**

- Feature: CCC-constructed Sandstone Curbing in Rainbow Forest Area (see Rainbow Forest Historic Walls and Curbing Diagram in hard copy, IMSF)
- Feature Identification Number: 101130
- Type of Feature Contribution: Contributing

Feature: Chain-link Fencing in Residential Area

Feature Identification Number: 101131

Type of Feature Contribution: Non Contributing

Feature: Long Logs Wall and Sandstone Curbing

Feature Identification Number: 101132

Type of Feature Contribution: Non Contributing

Feature: Mather Memorial

Feature Identification Number: 101133

Type of Feature Contribution: Contributing

IDLCS Number: 56689

LCS Structure Name: Mather Plaque

LCS Structure Number: RF065

Feature: Picnic Shelters and Ramadas

Feature Identification Number: 101134

Type of Feature Contribution: Non Contributing

Feature: Rainbow Forest Connecting Walls and Fencing

Feature Identification Number: 101135

Type of Feature Contribution: Contributing

IDLCS Number: 56684

LCS Structure Name: Rainbow Forest Connecting Walls and Fencing

LCS Structure Number: RF066

### **Spatial Organization**

The overwhelming factors dictating the spatial organization of Rainbow Forest throughout its history are: 1) location of natural features, 2) accommodation of vehicles, 3) protection of petrified wood from theft, and 4) separation of use types.

The placement of development was based on the locations of the petrified wood and Jim Camp Wash. The highest concentration of petrified wood is on the rolling hills, about 100 yards above Jim Camp Wash. Early planners laid out the complex to avoid the floodplain of Jim Camp Wash and to be accessible to, but not within, high concentrations of petrified wood.

The parking area is the most prominent space-defining feature in the Rainbow Forest Complex.

It serves as the central plaza around which all other activities and buildings cluster. During much of park history the majority of visitors arrived from the east. Early visitors (1890s to 1940s) arrived by railroad to Adamana and came to the park in Harvey cars or private auto tours. For the past several decades, most visitors have taken a scenic drive through the park starting at Interstate 40 (Route 66) and ending at Highway 180. To accommodate this pattern, the parking area is in the form of an axis, aligned with the approach road. It begins at Jim Camp Wash Bridge and terminates at the museum. Early plans for the parking area bear a remarkable resemblance to a funnel. Although the parking area has been altered and now contains various spurs, it retains its original intent, although the feeling of dramatic approach is somewhat reduced.

The Museum terminates the parking area serving as a strong visual and physical boundary between all other visitor activities and viewing petrified wood on the Giant Logs Trail. A wrought iron fence, installed in 1932, runs parallel to the parking lot and re-enforces the boundary. This spatial arrangement allows for controlled visitor access to the wood and theft surveillance.

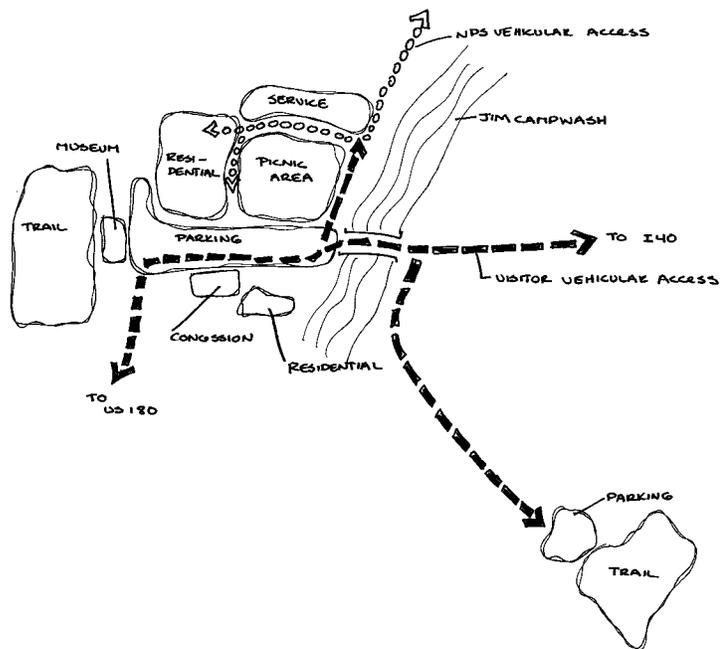
Spatial organization is also characterized by a separation of use-types that has become more prominent throughout the evolution of the cultural landscape. During very early development of the park (pre-1930) the shacks which defined development were largely undifferentiated and their spatial relationship both to each other and to Grisby's store was weak. They appear to be scattered over the landscape. During the first phase of park development (1930-34) visitor use and park staff residential use were spatially separated with housing located to the northeast of the museum. This arrangement was reinforced by the layout of access roads; although the picnic/camping area was located adjacent to staff housing, a separate road led to each.

Previous to CCC development the residential buildings had been arranged in two parallel rows, with all buildings facing east over Jim Camp Wash. Service buildings were incorporated into the residential complex. CCC development further separated the residential complex and created a distinct service area. An additional residence was built between the two rows on the south end and housing-related service buildings were built above the complex on the north end. The new additions served to enclose the residential area around a central courtyard, adding a measure of privacy and more clearly distinguishing it from other types of buildings. By placing the oil & gas building and the warehouse to the north of the picnic area, designers of the CCC-era created a separate maintenance service area. Spatial organization has remained consistent from the CCC-era to the present.

**Landscape Characteristic Graphics:**

Rainbow Forest Complex  
Petrified Forest National Park

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*Rainbow Forest Spatial Organization, 1999. Source: NPS.*

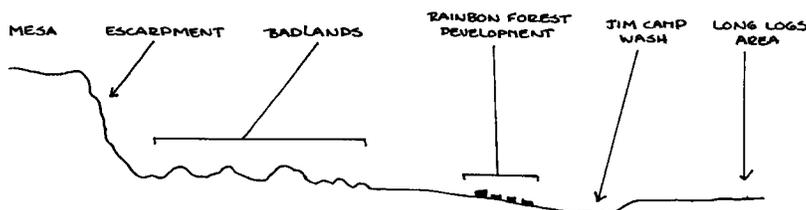


*The presence and protection of petrified wood has affected the spatial organization at Rainbow Forest, 2011. Source: C. Mardorf, NPS.*

### Topography

The southeastern facing, gentle slope above Jim Camp Wash floodplain is a critical feature that has dictated the development of Rainbow Forest cultural landscape. The necessity to locate services near the most colorful wood in the park left designers with limited options. The rolling hills and rock outcroppings surrounding the area to the north and west would not have been suitable for building and the relatively flat plains between the wash and the escarpment were too far from the attraction to be convenient to visitors. Since building any closer to the wash would have been imprudent, Rainbow Forest complex has, from its earliest history as a national monument, developed in this one, suitable, location.

### Landscape Characteristic Graphics:



*Cross-section of topography at Rainbow Forest and surrounding landscape, 1999. Source: NPS.*

### Vegetation

The vegetation at Rainbow Forest cultural landscape is predominantly native, undisturbed or rehabilitated. Soils are mostly sandy with some areas of clay in the northeast part of the district toward the Petroglyph (formally pictograph) trail. Native vegetation is of two types and distributions: Salt-sagebrush tracing Jim Camp Wash and Sacaton-Ricegrass grassland covering the remaining vegetated areas. The dominant species composing salt-sagebrush are four-winged saltbush (*Atriplex* spp.) and sand sage (*Artemisia filifolia*) while those in Sacaton-Ricegrass are Dropseed (*Sporobolus* spp) and Indian ricegrass (*Oryopsis hymenoides*). There are no native trees in these two biomes.

Choice of species for ornamental use was dictated by lack of water until completion of the CCC –constructed water pipeline in 1942. Although there is no documentation of specific species used for landscaping in Rainbow Forest during the CCC-era, it is reasonable to assume that the predominate species were native. Much like its architectural design philosophy, the National Park Service favored landscape designs and plant materials that blended with the natural environment.

During Mission 66 development the park undertook a large landscape project at Rainbow Forest. Work orders for the project document the planting of eighty-five trees, hundreds of

native shrubs and two acres of lawn grass. The two arborvitae, the junipers and cottonwoods in the picnic area, and the scattered Russian olives are remnants of this project as are the densely vegetated islands in the parking and picnic areas. Much of the grass must have been planted in and around the residential area. The work order specifically states that native plants are to be used in areas adjacent to heavy visitor use. The areas in front of the museum and residential complex, although sparse now, appear to have been landscaped during this time.

Vegetation is quite different in the residential areas where fencing and access to water allows residents to plant exotic species and trees. Occupied buildings have lawns and border plantings. Two cottonwoods in front of buildings 52-A & B appear, by their size, to have been planted in the 40s. A 1956 improvement plan for the residential area shows existing trees, flower beds and a lawn area in the courtyard. There is no evidence of these today.

**Character-defining Features:**

Feature: Arborvitae in front of museum

Feature Identification Number: 101136

Type of Feature Contribution: Non-Contributing

Feature: Areas landscaped with native species

Feature Identification Number: 101137

Type of Feature Contribution: Contributing

Feature: Cottonwoods in front of residences

Feature Identification Number: 101138

Type of Feature Contribution: Contributing

Feature: Natural or rehabilitated areas

Feature Identification Number: 101139

Type of Feature Contribution: Contributing

Feature: Trees in picnic area

Feature Identification Number: 101140

Type of Feature Contribution: Non-Contributing

**Views and Vistas**

Unlike the Painted Desert, views and vistas in Rainbow Forest are not the primary visitor experience. Nevertheless, there are several vistas of particular significance. The first is the view of the Rainbow Forest complex from the approach road, looking over Jim Camp Wash. 1920s and 30s designers tightly controlled the approach to both create a sense of drama as well as to communicate an official presence. The second important vista is the view from the shelter

on the Long Logs Trail. This vista was developed for visitors in the earliest phase of park design before the arrival of the CCC. It continues to be an important feature of the Long Logs trail. In addition the views from Long Logs Trail to Agate House and the view from the highest point of Giant Logs trail are important.

**Character-defining Features:**

Feature: View from highest point of Giant Logs Trail

Feature Identification Number: 101141

Type of Feature Contribution: Contributing

Feature: View from Long Logs Trail to Agate House

Feature Identification Number: 101142

Type of Feature Contribution: Contributing

Feature: View from the shelter at Long Logs Trail

Feature Identification Number: 101143

Type of Feature Contribution: Contributing

Feature: View of Rainbow Forest Complex from Approach Road

Feature Identification Number: 101144

Type of Feature Contribution: Contributing

## Condition

### Condition Assessment and Impacts

**Condition Assessment:** Fair

**Assessment Date:** 07/20/1999

**Condition Assessment Explanatory Narrative:**

The landscape of Rainbow Forest was assessed in fair condition.

**Condition Assessment:** Fair

**Assessment Date:** 06/01/2002

**Condition Assessment Explanatory Narrative:**

The landscape of Rainbow Forest continues to be in fair condition.

**Condition Assessment:** Good

**Assessment Date:** 07/19/2007

**Condition Assessment Explanatory Narrative:**

The landscape condition has been improved and has been upgraded to "good." Superintendent concurred on 7/18/2007.

**Condition Assessment:** Good

**Assessment Date:** 03/08/2011

**Condition Assessment Explanatory Narrative:**

The landscape continues to be in good condition. There is some vegetation disturbance around the picnic area, which is a minor impact. The park will be working to improve the vegetation in the near term. Superintendent concurred on 3/8/2011.

### Impacts

**Type of Impact:** Deferred Maintenance

**External or Internal:** Internal

**Impact Description:** Unoccupied buildings showing deterioration. Headwalls and culverts along Petroglyph Road are in immediate danger of deterioration from lack of maintenance to road.(2002).

### **Stabilization Costs**

**Landscape Stabilization Cost:** 632,000.00

**Cost Date:** 09/22/2004

**Level of Estimate:** C - Similar Facilities

**Cost Estimator:** Park/FMSS

#### **Landscape Stabilization Cost Explanatory Description:**

This stabilization cost estimate includes four projects: rehabilitation of Giant Logs Trail; rehabilitation of Long Logs Trail; modifying the Rainbow Forest Museum parking lot to provide accessibility; and rehabilitating the Rainbow Forest sewage lagoons.

### **Treatment**

#### **Treatment**

**Approved Treatment:** Rehabilitation

**Approved Treatment Document:** Cultural Landscape Report

**Document Date:** 01/01/2011

#### **Approved Treatment Document Explanatory Narrative:**

A Cultural Landscape Report (CLR) was completed for the Rainbow Forest Complex by Belt Collins in 2011. The CLR identifies long-term management and rehabilitation strategies for the landscape. The document provides both comprehensive, district-wide treatment recommendations in addition to some very specific recommendations that apply to specific character areas within the district.

#### **Approved Treatment Costs**

**Cost Date:** 01/01/2011

#### **Landscape Approved Treatment Cost Explanatory Description:**

Landscape treatment costs are not specified within the CLR.

### **Bibliography and Supplemental Information**

## Bibliography

- Citation Author:** Stewart, Yvonne G  
**Citation Title:** An Archeological Overview of Petrified Forest National Park  
**Year of Publication:** 1980  
**Source Name:** CRBIB  
**Citation Number:** 550302
- Citation Author:** Staff  
**Citation Title:** Resources Management Plan, Petrified Forest National Park  
**Year of Publication:** 1994  
**Source Name:** CRBIB  
**Citation Number:** 016890  
**Citation Type:** Both Graphic And Narrative  
**Citation Location:** U.S. Department of the Interior, National Park Service
- Citation Author:** Linda Flint McClelland  
**Citation Title:** Building the National Parks  
**Year of Publication:** 1998  
**Source Name:** Library Of Congress/Dewey Decimal
- Citation Author:** Ethan Carr  
**Citation Title:** Wilderness By Design  
Landscape Architecture and the  
National Park System  
**Year of Publication:** 1998  
**Source Name:** Library Of Congress/Dewey Decimal  
**Citation Title:** Plan for Dressing Slopes and Ditches, and Obliterating Old Roads  
Along Monument Highway  
**Year of Publication:** 1934  
**Source Name:** Other  
**Citation Type:** Graphic  
**Citation Location:** Denver Field Office

**Citation Title:** PEFO General Development Plan  
**Year of Publication:** 1941  
**Source Name:** Other  
**Citation Type:** Graphic  
**Citation Location:** Denver Field Office

**Citation Author:** Rhodes, Diane, Lee  
**Citation Title:** National Register Nomination Form for Petrified Forest Historic District  
**Year of Publication:** 1989  
**Source Name:** Other  
**Citation Type:** Narrative  
**Citation Location:** National Parks Service, Denver Office

**Citation Title:** Layout of Utilities Site Plan, 1953  
**Year of Publication:** 1953  
**Source Name:** Other  
**Citation Type:** Graphic  
**Citation Location:** Denver Field Office

**Citation Title:** Superintendent's Monthly Reports January - April  
**Year of Publication:** 1934  
**Source Name:** Other  
**Citation Type:** Narrative  
**Citation Location:** PEFO

**Citation Title:** Site Plan  
**Year of Publication:** 1964  
**Source Name:** Other  
**Citation Type:** Graphic  
**Citation Location:** Denver Field Office

**Citation Author:** Terry Maze  
**Citation Title:** Most Everything You Wanted to Know About Petrified Forest National Park  
**Year of Publication:** 1996  
**Source Name:** Other  
**Citation Type:** Narrative  
**Citation Location:** PEFO

**Citation Author:** Jeffrey F. Burton  
**Citation Title:** Days in the Painted Desert and Petrified Forests of Northern Arizona; Contributions to the Archeology of Petrified Forest National Park 1988-1992  
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**Citation Location:** PEFO

### Supplemental Information

**Title:** Building Numbers and Names

**Description:**

#1	Rainbow Forest Visitor Center
#50	Rainbow Forest Residence
51-A	Rainbow Forest Residence
51-A1	Rainbow Forest Employee Residence
51-A2	Rainbow Forest Employee Residence
52-A	Rainbow Forest Employee Residence
52-B	Rainbow Forest Employee Residence
52-C	Rainbow Forest Fire Cache
51-D	General Storage
51-E	Rainbow Forest Employee Garage
53	Rainbow Forest Employee Residence
100	Rainbow Forest Warehouse & Shop Rainbow Forest Fire House
101	Rainbow Forest Gas & Oil Building
150-A	Rainbow Forest Concession Building Rainbow Forest Lodge
151-A	Rainbow Forest Guest Cabins

**Title:** List of Additional resources Not Included in CLI Database

**Description:** The following resources are attached in the hard copy and are located at the Santa Fe Support Office with the original of the Rainbow Forest CLI. (NOTE: This document was not found in June 2012 when revisions were made to the CLI).

1. Long Logs Site Plan, 1942, CCC-development: shows original road intersection and trailhead.
2. Rainbow Forest Cultural Landscape Boundary Diagram: Site Plan A with gray

shading to demarcate boundary acreage.

3. Long Logs Parking Area & Trailhead, 1942, CCC-development

4. Long Logs Parking Area & Trailheads, 1999: Shows modifications including wall, curbing and additional trailhead.

5. Contributing and Non-Contributing Walls & Curbing in Rainbow Forest, 1999

6. Rainbow Forest Building Numbers, Names, Functions, Occupancy, and Date of Construction