National Park Service
Cultural Landscapes Inventory

2024

Tuweep Ranger Station Complex

Grand Canyon National Park

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Introduction

The Cultural Landscape Inventory (CLI)

The Cultural Landscape Inventory (CLI) is a comprehensive inventory of all cultural landscapes in the National Park System. Landscapes that are listed, or eligible for listing, on the National Register of Historic Places, or are otherwise managed as cultural resources and in which the National Park Service has, or plans to acquire, legal interest are included in the inventory. The CLI identifies and documents each landscape's location, size, physical development, landscape characteristics, character-defining features, and condition. Cultural landscapes have approved CLIs when concurrence with the findings is obtained from the park superintendent and all required data fields are entered into the Cultural Resources Information System (CRIS-CL) database. In addition, for landscapes not currently listed on the National Register and/or without adequate documentation, concurrence is required from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or the Keeper of the National Register.

Scope of the CLI

The information contained within the CLI is compiled from primary and secondary sources and through on-site surveys of the landscape. The level of investigation is dependent upon scoping the need for information. The baseline information collected provides a comprehensive look at the historical development and significance of the landscape. Documentation and analysis of the existing landscape identifies character-defining characteristics and features and allows for an evaluation of the landscape's integrity and an assessment of the landscape's condition. The CLI also includes historic maps, drawings, and images; photographs of existing conditions; and a site plan that indicates major features. The CLI documents the existing condition of park landscape resources and identifies impacts, threats, and measures to stabilize condition. This information can be used to develop strategies for improved stewardship. Unlike a Cultural Landscape Report (CLR), the CLI does not provide management recommendations or treatment guidelines for the cultural landscape, but it may identify stabilization measures.

The Cultural Resources Information System (CRIS)

CRIS is the National Park Service's database of cultural resources on its lands, consisting of archeological sites, historic structures, ethnographic resources, and cultural landscapes. Cultural Resources Inventory System (CRIS) replaces three legacy inventory systems: ASMIS (archeology), CLI (cultural landscapes), and LCS (historic structures); and it reinstates the former ERI (ethnographic resources). This Cultural Landscape Inventory document reflects the information in a corresponding CRIS Cultural Landscape record.

Statutory and Regulatory Foundation

The legislative, regulatory, and policy directives for conducting and maintaining the CLI within CRIS are:

- National Historic Preservation Act (NHPA) of 1966 (16 USC 470h-2(a)(1)) Sec. 110
- Executive Order 13287: Preserve America, 2003. Sec. 3 (a and c)
- Secretary of the Interior's Standards and Guidelines for Federal Agency Historic Preservation Programs
- Pursuant to the National Historic Preservation Act, 1998. Std. 2
- Cultural Resource Management Guideline, 1997, Release No. 5, page 22; issued pursuant to Director's Order #28 (DO-28)

The NHPA requires the identification, evaluation, and nomination of historic properties to the National Register of Historic Places and the maintenance and expansion of an inventory of cultural resources. DO-28 requires a cyclic assessment of the current condition of cultural landscapes based on an assessment interval, with a default of six years.

Use

Beyond fulfilling legal and policy requirements, park staff can use the Cultural Landscape Inventory in the following ways:

- To learn about park cultural landscapes (all staff)
- To inform management decisions (park managers)
- To inform project planning and development (park managers, facility managers, project managers, compliance specialists)
- To monitor the condition of the cultural landscape and take measures to protect its significance and integrity (cultural resource managers, facility managers)
- To recognize the stabilization and treatment needs of landscape features and plan work within cultural landscapes to address the needs (facility managers, cultural resource managers)
- To understand the cultural value of natural systems in a cultural landscape (natural resource managers)
- To create programming and educational materials based on site history (interpretation and education specialists)
- To recognize impacts within cultural landscapes and enforce protection measures (visitor and resources protection staff)

General Information

Property Level and CLI Numbers

Inventory Unit Name: Tuweep Ranger Station Complex

Resource Classification: Component Landscape

CLI Identification Number: 850130

Parent Landscape: 850111

Inventory Status: Complete

Park Information

Park Name: Grand Canyon National Park

Alpha Code: GRCA

Park Organization Code: 8210

Park District: GRCA

Region: Intermountain

Restricted: Yes

Landscape Description:

The 380-acre Tuweep Ranger Station Historic District in Grand Canyon National Park recognizes the majority of historic park-area management developments for what the National Park Service (NPS) calls its “Tuweep Area” in today’s central-north extent of the park. Hosted by the otherwise sparsely developed 18-mile long and 3-mile-wide Toroweap Valley—actually a side canyon on the North Rim of the Grand Canyon of the Colorado River—these developments between 1933 and 1952 are the subject of this Cultural Landscape Inventory (CLI) and appended Cultural Landscape Report (CLR).

Based on the CLI effort, a boundary is drawn around the resources identified in this report (see attached maps and site plans), defining the “inventory unit” that is also the Tuweep Ranger Station Historic District. The latter title acknowledges that the identified resources are eligible for listing in the National Register of Historic Places (NRHP) as a district property type. The 380-acre inventory unit is subdivided into four contiguous “character areas”—Toroweap Valley Road (96 acres), Tuweep Ranger Station Administrative Area (10 acres), Toroweap Lake (260 acres), and Toroweap Overlook (13 acres)—each composed of individual resources—sites, structures, and buildings—contributing to the NRHP eligibility of the historic district (see attached maps and site plans).

In this report, the contributing resources are typically capitalized—Residence, Barn-Garage, Overlook—to highlight their significance in the historic district/inventory unit—occasionally shortened to district/unit. Descriptions of these resources, and other section narratives such as Access and Circulation, are generally presented in the north-to-south sequential order encountered by virtually all visitors and staff entering Toroweap Valley from the north.

The two versions of the place name—Tuweep and Toroweap—reflect the multiple layers of human interaction in and around the valley. Toroweap is the early Anglicized interpretation and spelling of the indigenous Southern Paiute name for this landscape and its features, meaning “dry or barren valley” (NPS 2019). Tuweep could also be a Paiute word (Tu-Veep) for “the earth” (NPS 2019, Seliga 2020), and is generally considered to be the Mormon settlement-period simplification of Toroweap and the two-syllable place name and spelling approved in 1929 for an official address by the U.S. Post Office Department (Luttrell 2007:40). Although literature and maps throughout the 20th century interchanged both place names, the current general understanding—and application in this report—attaches

Toroweap to the geographic features while honoring their Paiute associations, and Tuweep also honors the Paiute while distinguishing the historic-period improvements of Mormon settlers and National Park Service management. As noted above, the NPS most often describes its management location as the Tuweep Area.

The NPS improvements in Toroweap Valley after 1932 helped the bureau gain conservation control of the newly proclaimed 273,145-acre Grand Canyon National Monument, which included lands on the South Rim of the Grand Canyon around Havasu Creek. Unlike all other national monuments in the region managed by the NPS Southwestern National Monuments Office from Coolidge, Arizona, the NPS directorate in 1933 assigned this new monument's responsibility to the adjacent Grand Canyon National Park. While the national park had also once been a national monument between 1908 and 1919, that potential for name confusion in this report is slight because the Tuweep Ranger Station Historic District's period of significance begins in 1933, long after the first-iteration national monument became the national park.

In this report, "the park" is an abbreviation for Grand Canyon National Park in quick and obvious references. Likewise, "the monument" is an abbreviation for the 1932–1975 Grand Canyon National Monument in appropriate references. And while some historic—pre-1956—reports officially abbreviate the park as GCNP, the official "alpha code" applied beginning with the NPS nationwide Mission 66 program is GRCA. "GRCA" appears in this report as an occasional abbreviation for the park, but only in references to associated events after 1956. Interestingly, Grand Canyon National Monument appears not to have had a distinct alpha code prior to its Congressional merger into the park in 1975, indicating that GRCA fully managed and budgeted for the monument during the Mission 66 era and until the merger.

Another adjustment in perception and description of place and location resulted from the park expansion in 1975: thereafter the Toroweap Valley no longer adjoined the park at the park's northwest corner. The 1975 legislation merged the valley and extended the park west-southwest along the North Rim many miles past Toroweap Overlook to Pearce Ferry, adjoining Lake Mead National Recreation Area (page 3). With the other 1975 additions to the park, the Toroweap Valley, and thus the Tuweep Ranger Station Historic District, now are in the central-north area of Grand Canyon National Park. Therefore, references in this report to the park's northwest corner, including during the district/unit's 1933–1952 period of significance, describe the park's pre-1975 boundaries.

Character Areas

The Tuweep Ranger Station Historic District/cultural landscape inventory unit is in the central-north area of Grand Canyon National Park, Mohave County, Arizona. The district/unit includes character areas of 1) Toroweap Valley Road south through the valley to the canyon's Inner Gorge North Rim, 2) Tuweep Ranger Station Administrative Area and immediate environs, 3) Toroweap Lake and environs, and 4) Toroweap Overlook at the rim.

Toroweap Valley Road
At the park's north boundary marked by a cattle guard and flanked by the east-west Drift Fence, the motorist's view first takes in the Tuweep Ranger Station's Residence, Barn, and Water Catchment system (see page 22). Nearly all valley floor and horizon features of the Tuweep Ranger Station Historic District can be seen to the south from this point. Longtime Ranger (1942–1980) John Riffey's retirement home is immediately to the east of the entry at the base of the Toroweap Cliffs, and his aircraft landing strip is down a two-track lane to the west, outside the park. The former Tuweep Post Office, 1929–1950, was for some of those years at the "Lower" Kent Ranch farther west of this point on the west side of the valley. Remnants can still be seen of the Kent homestead at the base of the valley's western foothills, outside the park. (See Figure 8)

At the park boundary, Mohave County Road 115 becomes Toroweap Valley Road and continues south where the thoroughfare is maintained at a more primitive level with only periodic maintenance. Local signs and NPS information about the area warn of variable conditions and the need to have 4-wheel-drive, since the road outside the park is impassable, capable of mud "up to my windows" (Seliga 2020), when wet. The Toroweap Road surfaces, when wet from winter snow or seasonal rains, are "the slickest, gummiest, and deepest in the world," according to local residents (Luttrell 2007).

The Road is generally straight and clearly visible as a two-track lane through the valley. Views are unobstructed, with the South Rim now looming larger as the southern horizon line. The valley edges become more sharply defined by the Toroweap Cliffs/Kanab Plateau escarpment to the east and the Unikaret Mountains to the west. As the Road approaches the Administrative Area, it climbs slightly upward. This variation in grade makes it a natural stopping point, effective at slowing visitors and as a logical stop for NPS ranger and official volunteers' interaction with visitors.

A sign stating that you've arrived at the "Tuweep Metropolitan Area" greets visitors. This key point along the road allows the ranger or his representative to confirm camping plans, permits, and visit intentions, and to convey road conditions and other park information. The buildings at the Administrative Area blend well with the landscape, which is largely natural with the exception of the Water Catchment structures. (See Figure 9)

Once past this Administrative Area stop, the road continues south, and turns down and around a point to return to the valley floor for 3 miles to an intersection with the Toroweap Lake Spur Road. The Toroweap Lake spur road is a small dirt double-track that turns southwest across the valley to just north of Vulcan's Throne. (See Toroweap Lake discussion below).

Back at the intersection with the Toroweap Lake spur road, signs indicate the need for a high-clearance vehicle beyond this point. Here begins a rough high-clearance segment of the main Road that climbs up and around the south end of the Toroweap Cliffs. Toroweap Point—the thin peninsular southwestern extension of the Kanab Plateau—towers above, as the Road travels past the Tuckup Trailhead and then the more recent Tuweep Campground and onward to the Overlook. (See Figure 10)

During the 1940s and 1950s, Ranger Riffey oversaw and personally made improvements to the often impassable 6 miles of Toroweap Valley Road from the Adm. Area to the Overlook. He also continued to add fences to the then-national monument boundaries to keep stray cattle off NPS lands, so the land could be better managed and restored after decades of overgrazing.

Today the Toroweap Valley's natural landscape is virtually intact except for these roads and some erosion control structures in the lowest parts of the valley about 1 mile west of the Administrative Area. Vulcan's Throne is dark red with sparse vegetation, a standout feature at the Inner Gorge edge of the Rim and part of a "ceremonial landscape" for the Southern Paiute people. In spring, the mound is a light green with new grasses. Another cone can be seen across Grand Canyon at Prospect Creek on the south side of the Colorado River. With such low and sparse vegetation, the geology is easily read: limestone and sandstone cliffs, red shale slopes, exposed lava flows, and cinder cones, all abruptly ending at the canyon's Inner Gorge edge.

Administrative Area
On approach looking south into the Toroweap Valley from the park's north boundary, the prominent Toroweap Cliffs escarpment suddenly turns west and juts into the valley (page 22). Nestled into this cove of rock outcrops is the Ranger Station Administrative Area and its outbuildings. Two large rocks that fell untold years ago from the top of the escarpment rest amid sagebrush to the east of the road like sentries. Above the buildings is a long linear structure, three stages of water collection panels, in contrast to the otherwise natural setting. Most of these Ranger Station buildings are of native stone, blending with the natural environment.

The Ranger Station Residence-Office and Barn-Garage were built in 1935 as the single outpost for management of then Grand Canyon National Monument on the north side of the Colorado River's Grand Canyon. The siting of these resources is slightly uphill from the main road at the base of the Toroweap Cliffs, 0.5 mile from the north park boundary. Both the Barn-Garage and Residence-Office take advantage of this superior view outward, with unobstructed views from west to northeast. This position is ideal for surveillance of activities in the valley and of all visitors entering the Park. The road also climbs up to this point, creating a natural stopping point before traveling on to Toroweap Overlook. The slope above the Administrative Area facilitates collection of rainwater, delivering a natural supply from corrugated metal panels to a large concrete cistern. This is the only potable water available in the valley. Nixon Spring is on the south side of Mount Trumbull about 12 miles northwest, and Saddle Horse Spring is below the Rim near the Overlook. (See Figure 11)

The older buildings—Residence-Office and Barn-Garage, along with the root cellar—are made of native sandstone, limestone, and large wood components. Newer structures are generally wood paneled without the native stonework, or concrete panels (2002 Toilet Building). The Barn-Garage doorways, and Residence-Office windows and screened porch, provide natural surveillance over the park entry. To enhance animal and bird visitation, a shallow basin of concrete for a bird bath was built in 1943 by Riffey and his wife. Laura Riffey made notations of bird and mammal species from this location beginning in 1947, from what they called The Magic Window.

The 1935 Barn-Garage with its interior shop, the 1977 Fire Cache (later office, now Volunteer Cabin), and 2002 Toilet Building are adjacent to a small vehicle turnaround where Toroweap Road bends to meet the Ranger Station Adm. Area compound. Off the turnaround is a separate drive that continues up the slope to the south side of the Residence.

All Residence-Office visitors must pass under a simple wood frame entry portal resembling a traditional ranch-entry feature. This simple structure delineates the private space from the public activities at the Ranger Station. A central removable post below the entry portal keeps vehicles from the front yard. A small patio of flagstone extends from the front of a screened porch at the front entry of the Residence-Office to the drive. The yard is sparsely landscaped with grass along with native and introduced plants such as iris, completely surrounded by a recent two-rail wood fence. The small native-stone Root Cellar was built about 1946 east of the Residence. Rainwater has been traditionally captured in barrels from gutters off the Residence and Barn roofs at several stands, but the barrels are slated (in 2020) for removal to mitigate settlement and flood damage by moving runoff farther away from the buildings. (Figure 12)

The site of this NPS headquarters facility is out of the main views and winds of the southern part of the valley yet allows for administrative surveillance and management in a natural setting. The siting of facilities in the cove of the cliff confines the human development away from the vast openness of the valley floor. The setting is a bit problematic as runoff and debris from heavy monsoon rains come down from the cliff face and slope above. Drainage swales must be seasonally rebuilt to keep debris from accumulating near the buildings. The potential for rockfall as a hazard to buildings and people is evidenced by boulders lying on the slope above and in the sagebrush foothills. The two boulders sitting like sentinels have landed near the north entry to the compound, having come to rest on the slope in odd upright angles in the soil. (Figure 13)

For the most part, these facilities blend with the surrounding environment, allowing the setting to remain the dominant impression. The arrangement of outbuildings in the compound has grown over time, as needs increased for lodging of visiting staff and volunteers, restrooms, and utilities.

The Residence-Office is the highest building in the compound, giving it the most prominence among the collection of buildings and structures. The surrounding rail fence and frame entry gate help to reinforce the impression that this is a home and private. Modern solar panels are discreetly placed beyond frontal views of the main buildings and behind a juniper tree. One noncontributing shed for utilities stands south of the Residence. The Water Catchment system is located for function, on a slope that is best for capturing rainfall, but is the most visible indication of development in the valley, seen from miles away. The materials for the catchment—long corrugated metal panels and concrete underground cistern—indicate their basic function. The panels are currently painted a slate-gray color to mimic the original oxidized steel, but the form of three distinct flat and rectangular forms on the landscape contrasts sharply with the red slope to which they are attached.

Toroweap Lake
The Toroweap Valley at the south end near Vulcan's Throne flattens enough to capture drainage and sediment, enhanced by an earthen Dam armored with volcanic stones, enhancing the natural playa that is, during wet years, covered in a shallow pond of water. Known as Toroweap Lake, this playa, or ephemeral lake, is typically dry by June but could enlarge with late summer monsoons. In dry times the lake surface becomes a mud-cracked plain of fine silt, sparsely vegetated with low bunch grass and saltbush.

Access to the "lake" is via a two-track road, totally impassable if wet. An entry sign reads "If your Foot Squishes, Don't Drive," fair warning of the conditions ahead. Three manmade structures exist at low points on the playa, from a considerable 1935 attempt to permanently capture the water for a lake. The rubble Dam built of basalt boulders on the east side of the playa apparently failed early on after construction, was rebuilt occasionally, but then abandoned. Two earthen dikes to the southwest have revegetated sufficiently that the straight line of these structures is only just visible after studying the terrain and walking it.

Vulcan's Throne is the dominant feature at the south end of Toroweap Valley and looming 1,000 feet above the playa. Situated on the edge of the Grand Canyon Inner Gorge Rim, the seemingly smooth and concentric mound of dark red volcanic cinders has two high points, the highest at 5,102 feet elevation. Formed by explosive lava at a vent during an eruption estimated to have been 74,000 years ago, the surface is loose and lightly vegetated with low shrubs and grasses and is too delicate to allow visitor intrusions. A similar mound can be seen on the opposite side of the river and Grand Canyon at Prospect Creek, perched on the edge of the Esplanade Platform.

Toroweap Overlook
The Toroweap Overlook, elevation 4,552 feet, is a long-famous viewpoint from which to see the Colorado River 3,000 feet below and several miles upstream and downstream. This point is considered by some to be one of the "most remote, breathtaking and spectacular vistas in North America" (NPS 1999). John Karl "Jack" Hillers photographed this view in 1872 (Billywade17 2014). Upon seeing the lava flows that project into the canyon downstream from the

Overlook near Lava Falls Rapid, geologist John Wesley Powell in 1869, making his first descent through the river canyon, wrote in his journal, “What a conflict of water and fire there must have been here!” (NPS 1999). The inner canyon is also at its narrowest in the park here, slightly more than one mile from canyon esplanade North Rim to canyon esplanade South Rim (Seliga 2020).

The Overlook is the only place in the park from which to see the river from the Rim, straight down and both upstream and downstream. This is physically possible here due to the erosion back from the Rim of a much deeper Hermit Shale than elsewhere in the park. Hermit Shale, much softer than the surrounding sandstone, has eroded back from the Rim of the canyon so as to expose the sheer cliffs of the sandstone and other formations below it. Elsewhere in the park, this formation is much shallower, creating the more familiar stair-stepping away from the canyon bottom. The slim layer of Coconino Sandstone that forms the base of the Toroweap Cliffs is about 1,000 feet above this point, but almost a mile away. This erosion has formed a bench known as the Esplanade Platform, often seen elsewhere in the western areas of the park.

While prolifically seen in many photographs, relatively few have actually seen the Overlook and its vistas in person. Lava Falls Rapid, the largest rapid on the Colorado River, can be seen below, as well as river campsites and boats moored to the shore 3,000 feet down. Prospect Creek canyon is just southwest across on the South Rim within Hualapai Nation lands. Views from the Overlook are not just down to the river below, but southwest down the canyon toward Mollies Nipple and Parashant Wash, and northeast up canyon to Mount Sinyella at Havasu Canyon. The sheer depth of the canyon is both inspiring and frightening, to visitor and photographer alike.

The Overlook is famous for its views, but also for its remote location. As the road leaves the Toroweap Valley, access to the point becomes a 4WD lurch over sandstone rock to the rim. Until the late 1990s the end of the road was the original campground. Today, the c. 1965 and only campground is away from the Rim, and the Overlook is a day-use area. Weathered piñon pine and juniper grow among the boulders here, along with agave, bear grass, and prickly pear. When the area was a campground starting in the 1940s, it was severely trampled and is only now recovering. Two picnic tables are spaced under trees here today, allowing day users comfortable places to rest and contemplate the stunning scenery. A relatively new composting toilet is sited at the edge of a wash on the southwest edges of the Overlook. A cinder path lined with native rocks keeps visitors from straying onto the fragile micro-biotic soil crusts in order to reach the toilet.

The landscape of Esplanade Sandstone is predominantly bare rock, often referred to as slickrock. Though not usually slick, the sandstone has good grip for traversing to find the best view or photo point. No railings or other cautions exist at the Rim, just unobstructed views of the canyon. Small water pockets in the sandstone are sometimes full of lifeforms including shrimp that live in the fine sand at the bottom when water is present. The various rock outcrops invite contemplation and study of the place. The vast landscape with all its variety, color, and scale can be overwhelming. Weather and sunlight changes make this a spectacular place at dawn and dusk, or when thunderstorms and lightning can be seen miles away.

Landscape Hierarchy Description:

The Tuweep Ranger Station Historic District/cultural landscape inventory unit is one of many component landscapes of Grand Canyon National Park. The district/unit includes character areas of 1) Toroweap Valley Road south through the valley to the canyon’s Inner Gorge North Rim, 2) Tuweep Ranger Station Administrative Area and immediate environs, 3) Toroweap Lake and environs, and 4) Toroweap Overlook at the rim.

Landscape Type:

Historic Vernacular Landscape

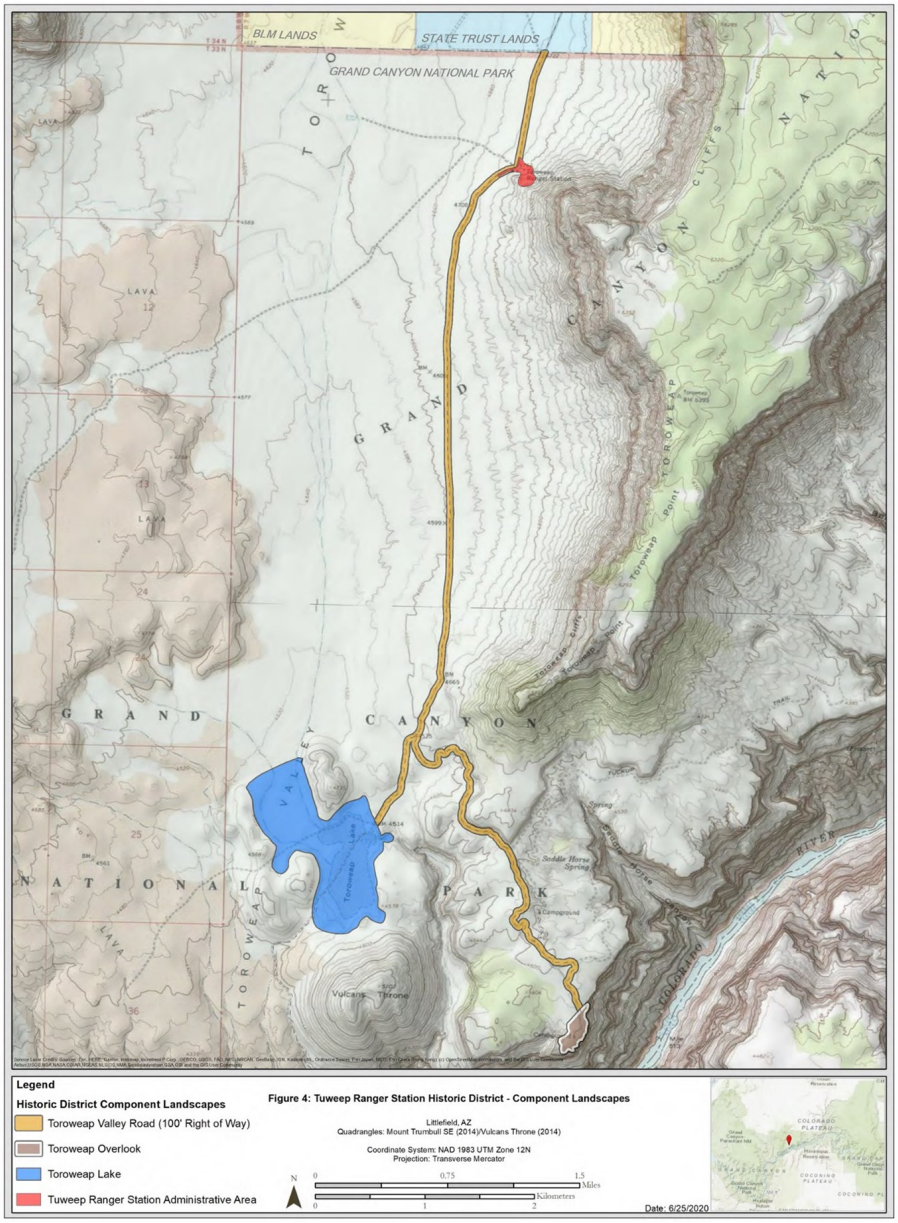
Historic Site

Ethnographic Landscape

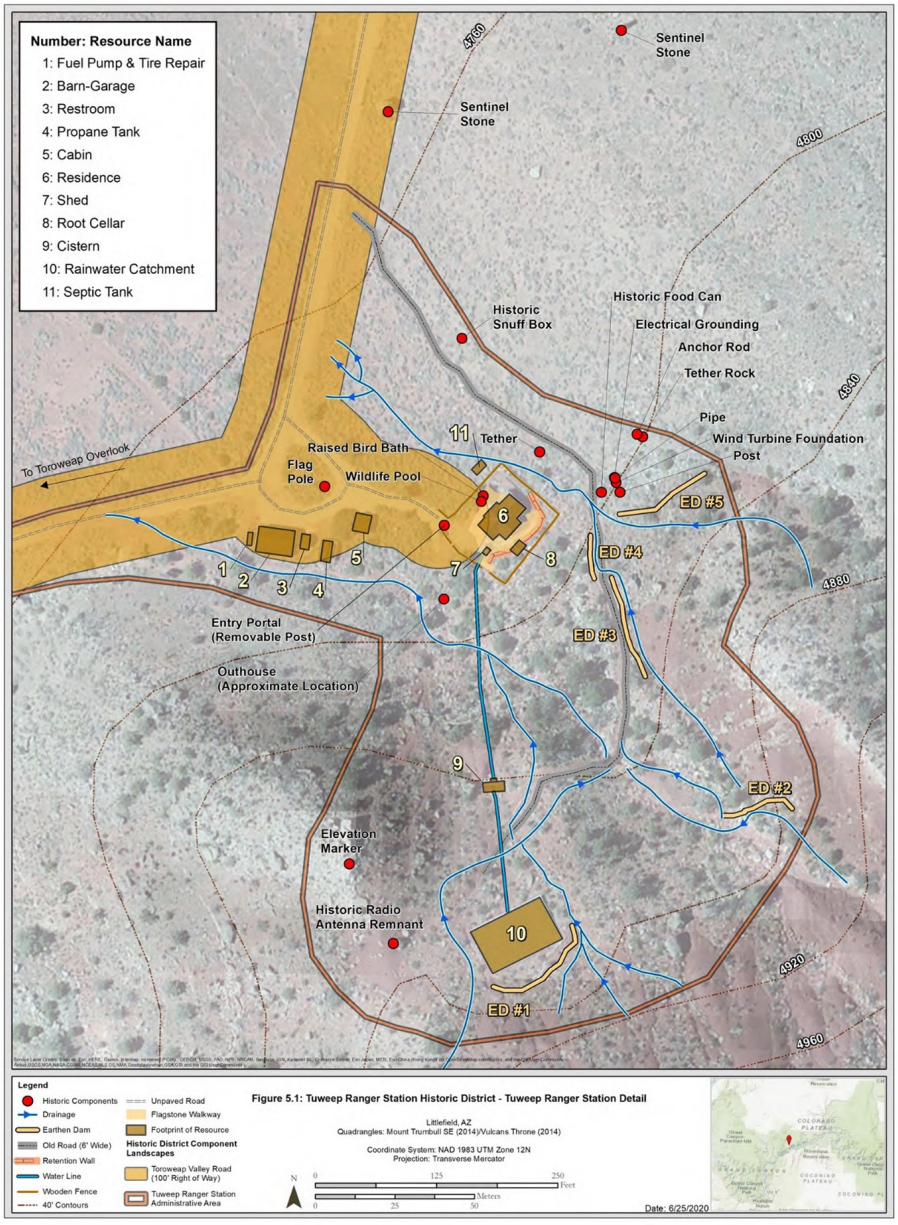
Other Names:

Other Name:	Tuweep Ranger Station	**Other Name Type:**	Both Current And Historic
Other Name:	Toroweap Overlook	**Other Name Type:**	Both Current And Historic
Other Name:	Toroweap Lake	**Other Name Type:**	Historic
Other Name:	Toroweap Valley	**Other Name Type:**	Both Current And Historic

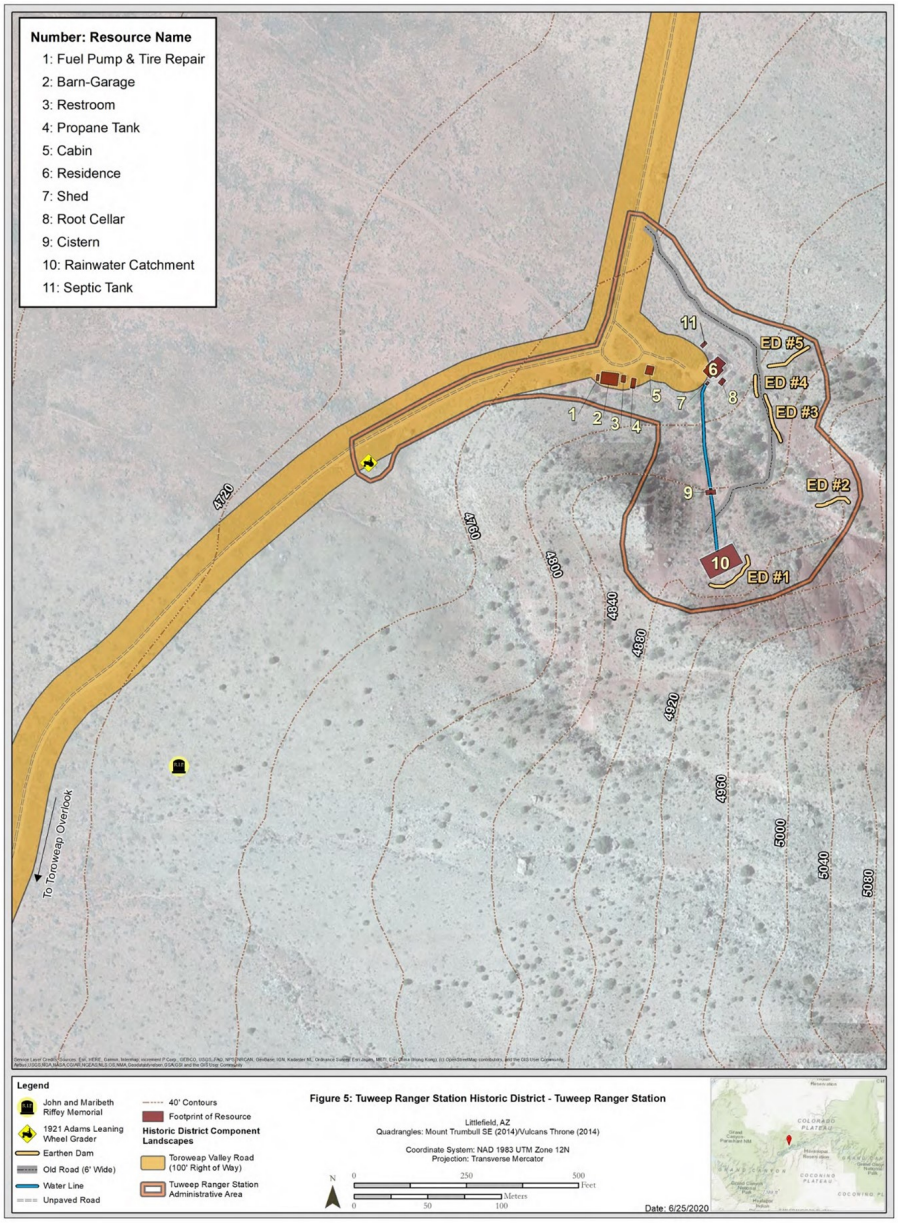
Site Plan



Tuweep Ranger Station Historic District/Inventory Unit and Character Areas.

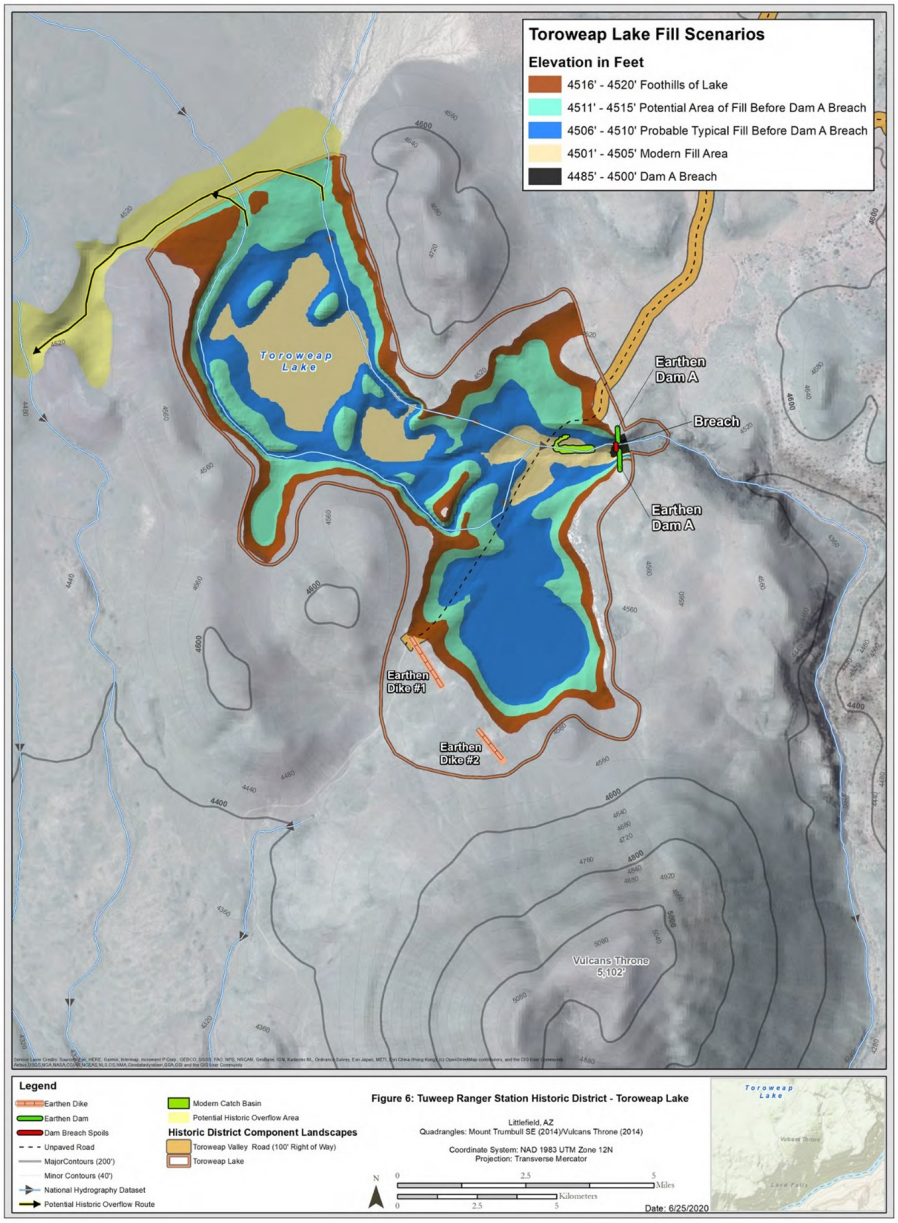


Tuweep Ranger Station Historic District - Detail Map of Tuweep Ranger Station Detail



Tuweep Ranger Station Historic District Resources- Detail Plan of Tuweep Ranger Station

Tuweep Ranger Station Historic District - Detail Map of Toroweap Overlook



Tuweep Ranger Station Historic District - Detail Map of Toroweap Lake

Concurrence Information

Concurrence Status:

Park Superintendent Concurrence: Yes

Park Superintendent Date of Concurrence: 07/19/2024

Completion Status Explanatory Narrative:

The Toroweap Ranger Station's Administrative Area was determined eligible for the National Register of Historic Places (NRHP) in 2015 as a historic district, by consensus between Grand Canyon National Park and the Arizona State Historic Preservation Officer. The 1935 complex continues in use, with a residence that originally incorporated an office, a means of catching and storing rainwater, and facilities for stock, vehicles, and storage, so that one person or family could subsist and work far from market amenities for long durations.

The CLI-CLR consulting team of architectural historian James Steely, landscape architect Angela Dye, and GIS cartographer Jeremy Huey worked closely with NPS Grand Canyon Cultural Resource Program Manager Ellen Brennan and Jennifer Dierker, and Tuweep Area Ranger Todd Seliga throughout the project. The project was made possible through the Cooperative Ecosystem Studies Unit contract between the National Park Service and the Organization of American Historians, for which Steely serves as a principal investigator. The kickoff meeting and initial Grand Canyon Museum Collection research visit took place in August 2018; the primary field visit was accomplished in April-May 2019; and the park-office review of first-draft CLI-CLR and mapping, plus additional research, took place in October 2019. The team completed the CLI-CLR documents in the summer of 2020.

NPS guidelines for conducting and reporting a CLI (Page et al. 2009) and producing a CLR (Page et al. 1998) are combined into this single CLI-CLR report, with the organization of each outlined in separate prescribed tables of contents (see other documents). Shared sections and efforts between the CLI and CLR, such as the Description of Study Boundaries and the Bibliography, are each presented once and cross-referenced to the other to reduce redundancy and were placed into the appropriate CRIS fields in 2024 by Carly Piccarello, Cultural Landscapes Inventory Coordinator.

CLI data is gathered from primary sources provided by the GRCA Museum Collection, and secondary sources found in park libraries, archives, and at NPS regional offices and centers, as well as through on-site reconnaissance. The baseline information describes the historic development of the landscape, placing it in the context of the landscape's overall significance.

The CLI provides illustrative character area site plans (see GIS-based maps attached) that indicate major and minor features within the cultural landscape inventory unit and generate spatial data for Geographic Information Systems (GIS). The CLI also records preservation efforts that prevent further deterioration of the built resources and component landscapes, and provides data for the Facility Management Software System.

Concurrence Graphic Information:

Attachment File Path

SHPO-2024-0064 (174894)

Rec: 05-13-24

United States Department of the Interior

NATIONAL PARK SERVICE
GRAND CANYON NATIONAL PARK
P.O. BOX 129
GRAND CANYON, ARIZONA 86023-0129

IN REPLY REFER TO:

l.A.2. (GRCA 8213)

April 29, 2024

Ms. Kathryn Leonard
State Historic Preservation Officer
1100 W. Washington Street
Phoenix, Arizona 85007-2935

Re: Determination of eligibility for the Tuweep Ranger Station Complex Historic District, Grand Canyon National Park

Dear Ms. Leonard:

The National Park Service (Park Service) is requesting concurrence from the Arizona State Historic Preservation Office on a determination of eligibility (DOE) for the Tuweep Ranger Station Complex Historic District. The Park Service has determined that the Historic District is significant at the local level under Criteria A, B, and C. The period of significance for the district begins in 1933 when the original drift fence was installed designating the Grand Canyon National Monument boundary for the area and concludes in 1977 with construction of the administrative area's fire cache.

We have updated the document based on comments made by Mr. Collins to correct some clerical errors found in the draft, changed the level of significance from state to local, and added additional information in support of the property being significant under Criterion B, for Ranger John Riffey's role in the development and conservation of the Tuweep Ranger Station Complex Historic District as we know it today.

The DOE for the Tuweep Ranger Station Complex Historic District is included here for your final review and concurrence. If you have any questions concerning this determination of eligibility, please contact Ellen Brennan, Cultural Resource Program Manager at 928) 638-7742, ellen_brennan@nps.gov.

Sincerely,

EDWARD KEABLE Digitally signed by EDWARD KEABLE Date: 2024.04.30 12:39:57 -07'00'

Edward T. Keable
Superintendent

Enclosure: Tuweep Ranger Station Historic District DOE
bcc: Ellen Brennan

CONCUR
Property is *eligible* for the
National Register of Historic Places
William S. Collins 05/14/2024
William S. Collins
State Historic Preservation Office

SHPO Concurrence - Signed 5/14/2024

National Park Service
U.S. Department of the Interior

Grand Canyon National Park
Science and Resource Management

PO Box 129
Grand Canyon, AZ 86023

MEMORANDUM

To: Deputy Regional Director Cultural Resources
12795 W. Alameda Pkwy.
Lakewood, CO 80228

From: Superintendent, Grand Canyon National Park
P.O. Box 129
Grand Canyon, AZ 86023

Subject: Tuweep Ranger Station Complex Cultural Landscape Inventory (CLI)

I hereby concur with the content and the assessment of the Tuweep Ranger Station Complex cultural landscape for Grand Canyon National Park.

The CLI has identified the Tuweep Ranger Station Complex component landscape as a Vernacular Landscape and Ethnographic/Traditional Historic Site. The CLI recommends that the National Register listing of the Tuweep Ranger Station Complex should be as a Historic District.

1. The CLI rates the condition as "Good" (pg. 55) and the Management Category is listed as "Must be Preserved and Maintained" (pg. 38).
2. The period of significance for the Tuweep Ranger Station Complex is 1933-1952 (pg. 32) and the Statement of Significance is located on pg. 41.
3. The contributing features are listed in the "Analysis and Evaluation" section (pg. 51-54 and Appendix 3, pg. 26).

Edward T. Keable
Superintendent, Grand Canyon National Park

April 30, 2024
Date

EXPERIENCE YOUR AMERICA™
The National Park Service cares for special places saved by the American people so that all may experience our heritage.

Superintendent's Concurrence Letter - Signed

Geographic Information

State and County:

State	County
Arizona	Mohave County

Size (Acres): 380

Land Tract Number(s)

Boundary Description:

The park and historic district/inventory unit's north boundary is approximately 0.5 mile north of the Administrative Area, adjacent to Grand Canyon-Parashant National Monument to the north and farther west. The host Toroweap Valley is bordered on the west by the forested Unikaret Mountains, including Mounts Trumbull, Logan, and Emma, on the east by the bare red Toroweap Cliffs of the Kanab Plateau, and on the south by the Grand Canyon Inner Gorge North Rim at Toroweap Overlook.

The Tuweep Ranger Station Historic District/cultural landscape inventory unit is in the central-north area of Grand Canyon National Park, in Mohave County, Arizona. The district/unit includes character areas of the Toroweap Valley Road that travels south through the valley to the canyon's North Rim, the Tuweep Ranger Station Adm. Area and immediate environs, Toroweap Lake and environs, and the Toroweap Overlook at the Inner Gorge Rim.

The park and historic district/inventory unit's north boundary is approximately 0.5 mile north of the Administrative Area, adjacent to Grand Canyon-Parashant National Monument to the north and farther west. The landscape host of the district/unit is within a generally a north-south open valley, up to 3 miles wide, sloping south from 4,700 feet elevation at the park's north boundary to approximately 4,500 feet at Toroweap Lake and the North Rim. The valley is bordered on the west by the forested Unikaret Mountains, including Mounts Trumbull, Logan, and Emma, reaching 7,000-to-8,000-foot elevations, and to the east by the bare red Toroweap Cliffs of the Kanab Plateau, rising more than 1,600 feet above the valley floor to 6,300 feet in elevation.

Views from throughout the district are expansive and panoramic, and the landscape is largely natural, intact, and unmarred from any human imprint, except for the small compound of buildings at the Ranger Station, and the light-colored linear Toroweap Valley Road surface on the valley floor. The larger landscape setting dwarfs the compound, with its buildings made of natural materials and native stone that generally blend well with the landscape. The historic Water Catchment system above the Administrative Area with its long linear panels can easily be seen from the park's north boundary (see page 22), on the slope above the buildings. This system with an underground cistern serves as the Ranger Station's primary source of water.

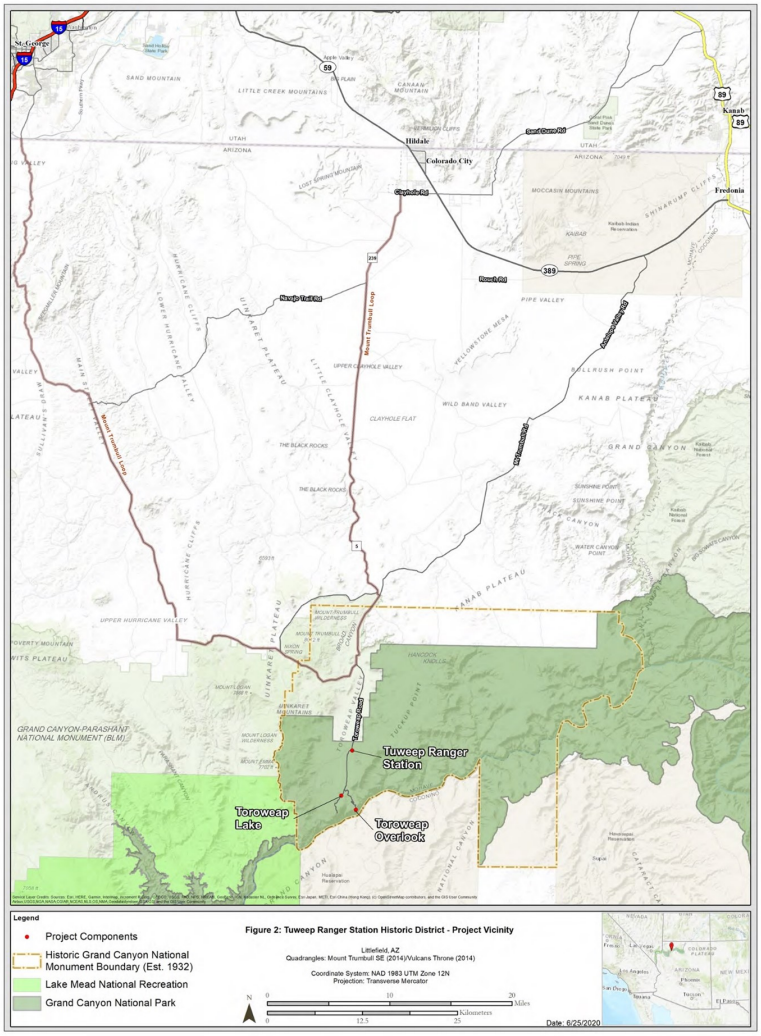
At the end of the Toroweap Road at the Inner Gorge North Rim, the valley drops 3,000 feet into the Grand Canyon to the Colorado River. The Toroweap Overlook is a unique site within the overall park from which one can see straight down to the river, as well as up- (northeast) and downstream (southwest) for several miles. Despite the area's limited visitation (maximum 30 vehicles and 85 people at one time with the majority of visitors accessing the area at the same time daily: Seliga 2020), these views are famously photographed, and feature prominently in early and recent media materials representing the park. The district includes two "ethnographic resources" recognized by the Southern Paiute people (Hedquist and Ferguson 2010:11,16,20–21,82): the valley itself to Toroweap Overlook and the southeast, and the Toroweap Lake playa at the southwest end of the valley dramatically bordered by Vulcan's Throne, a prominent mound at 5,100 feet elevation of volcanic cinders on the edge of the canyon's Inner Gorge Rim.

The Toroweap Valley is the broader geographic and visual landscape host for the Tuweep Ranger Station Historic District and CLI inventory unit, bounded by the Toroweap Cliffs on the east, the Unikaret Mountains on the west, the park boundary to the north, and the North Rim of the Grand Canyon at the Overlook to the south. The district/inventory unit is defined by an approximately 500-foot-wide corridor that largely follows the alignment of Toroweap Road, beginning at the park's north boundary and continuing south for approximately 6.5 miles to the Rim. The district boundary expands around the Administrative Area and its outbuildings and facilities. The corridor continues along the roadway alignment south from the Adm. Area to Toroweap Lake road spur connecting to the historic "lake." The boundary takes in the ephemeral lake bottom, historic rubble Dam and Dikes in its immediate environs, in the shadow of Vulcan's Throne, a prominent landmark for its contrasting and conical form on the Inner Gorge Rim. The district/unit continues south along the Toroweap Road corridor to the Rim environs, which include a largely unimproved day-use area at the Rim served by a recent composting toilet.

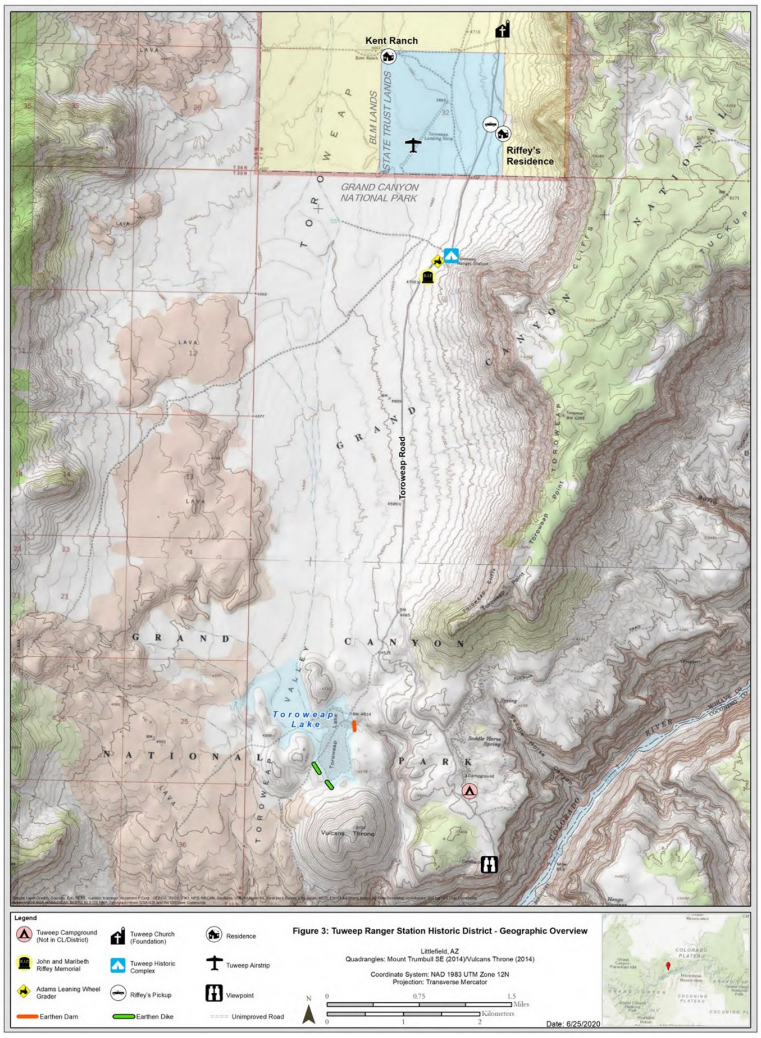
Boundary Coordinates

Source	Type of Point	Latitude	Longitude	Narrative
	Point	36.23066	113.07729	Toroweap Lake Dam and Dikes
	Point	36.21703	113.05641	Toroweap Overlook Road Spur North Beginning
	Point	36.2147333	-113.0568833	Toroweap Overlook Road Spur South End
	Point	36.29594	113.06211	Toroweap Valley Road North Beginning
	Point	36.23198	113.05641	Toroweap Valley Road South End

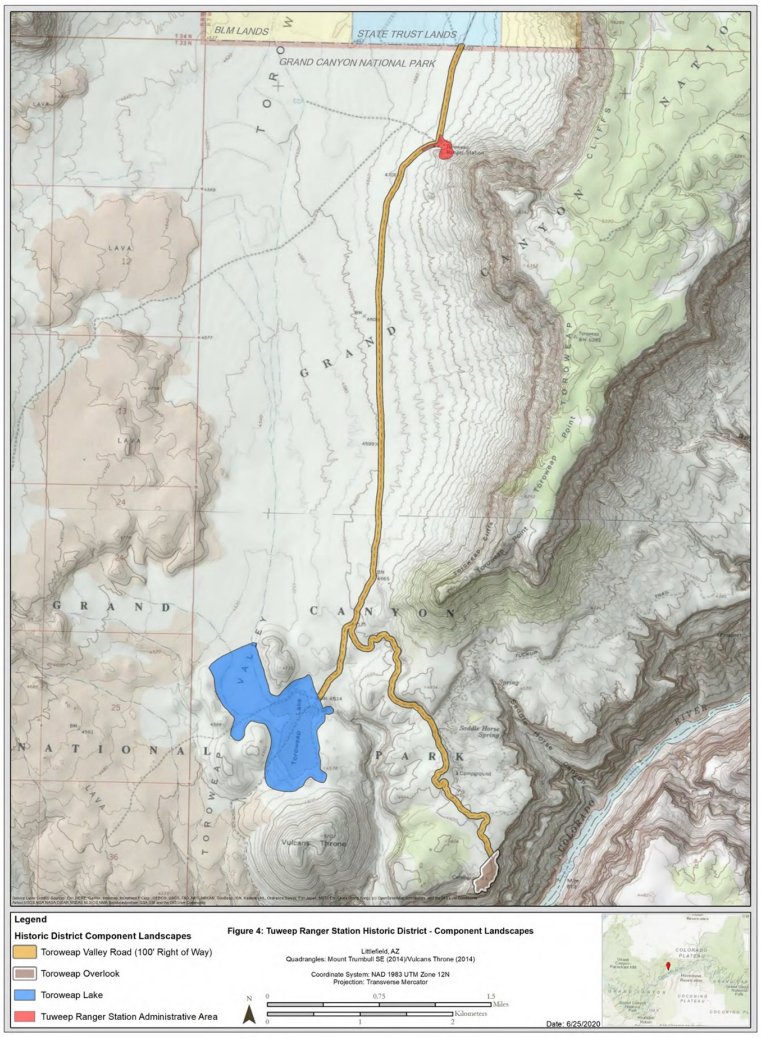
Location Map:



Tuweep Ranger Station Historic District - Project Vicinity



Tuweep Ranger Historic District - Geographic Overview



Tuweep Ranger Station Historic District - Character Areas

Tuweep Ranger Historic District - Project Location

Regional Landscape Contexts:

Type of Context: Physiographic

Description:

The Toroweap Valley of Grand Canyon National Park is the one of the most remote areas of the park. Located on the Arizona Strip in northwestern Arizona in Mohave County, the area is more than 60 miles south from Arizona State Route (SR) 389, the closest paved highway. All routes travel through U.S. Bureau of Land Management (BLM) and private lands, and across part of the Grand Canyon-Parashant National Monument before reaching the national park boundary. The valley has few facilities—the Ranger Station Administrative Area, primitive campground, primitive trails near the canyon Inner Gorge Rim, and no domestic water for visitors. The Toroweap Overlook is the primary draw for visitors, with uniquely dramatic views of the canyon. Well-known to photographers worldwide, and from pictures and postcards for a public that rarely visits the place, this Overlook is the only place in the park to see the river from the Rim—straight down 3,000 feet to the Colorado River, and for miles upstream and downstream.

The sprawling Arizona Strip section of Arizona is severed geographically from the rest of the state by the Colorado River and its Grand Canyon. More easily reached from southern Utah, the closest towns are Colorado City, Arizona (more than 50 miles) and Fredonia, Arizona (more than 60 miles) both near the state line, followed by the larger town of St. George, Utah (approximately 90 miles).

The Toroweap Valley is part of the larger Colorado Plateau, separating the lesser Unikaret and Kanab Plateaus. Since 1975 part of Grand Canyon National Park, Toroweap Valley and other lands became parts of Grand Canyon National Monument in 1932 in a proclamation by President Herbert C. Hoover. In 2000, President William J. Clinton proclaimed Grand Canyon-Parashant National Monument from BLM and U.S. Forest Service (USFS) lands to the north and west of Toroweap Valley, surrounding Mount Trumbull and the Mount Logan Wilderness area. The current national monument abuts the northwestern boundaries of Grand Canyon National Park. BLM and private lands abut the park and monument boundaries farther north and east.

The landscape is generally open grassland and sagebrush on all routes traveling south from SR389. While Toroweap Valley is a side canyon of the larger Grand Canyon, the valley is broad and flat due to its geologic past. Enclosure typical of a canyon, from mountains to the west and cliffs to the east, is only evident on the southerly approach to the park's north boundary. Because of the valley's volcanic heritage, its geology has resisted deep erosion, so it is absent a deeper tributary flowing into the Colorado River like most of the river's other side canyons in the region. In the Toroweap Valley, rolling hills, knolls, and small escarpments are the only noticeable features to be seen while traveling south on the various routes to the Rim.

Management Information

General Management Information

Management Category: Must be Preserved and Maintained

Management Category Date: 12/22/1932

Management Category Explanatory Narrative:

The cultural landscape inventory unit/NRHP historic district is significant at the statewide level, singular in the context of national parks in Arizona.

Management Agreements, Legal Interest, and Access:

1930: “Arizona and Nevada, Land Withdrawal for Classification and Possible Inclusion in a National Monument.” Executive Order 5339, 25 April 1930. President Herbert Hoover’s withdrawal from the federal estate of eventual Grand Canyon National Monument land in a much larger area of 2.7 million acres west of Grand Canyon National Park in anticipation of water, power, and recreation developments along the Colorado River (Hoover 1974:569, Anderson 2000:38).

1932: “Grand Canyon National Monument, Ariz., establishment.” Presidential Proclamation No. 2022, 22 December 1932, 47 Stat. 2547. President Herbert Hoover’s proclamation establishing Grand Canyon National Monument of 273,145 acres (NPS 2020:105–106).

1940: “Grand Canyon National Monument, Ariz., lands exclusion.” Presidential Proclamation No. 2393, 4 April 1940, 54 Stat. 2692. President Franklin Roosevelt’s proclamation adjusting the boundaries of Grand Canyon National Monument, excluding 71,854 acres (NPS 2020:106–107).

1975: “Enlargement of Boundaries; Statement of Purpose,” 16 U.S. Code § 228a. Pub. L. 93–620, § 2, Jan. 3, 1975, 88 Stat. 2089. Includes incorporation of former Grand Canyon National Monument into Grand Canyon National Park.

Management Agreements:

Legal Interests:

Type of Interest: Fee Simple

Narrative: Type of Access: Day-use area. See NPS 2019.
Explanatory Narrative:
Open sunrise to 30 minutes past sunset

Type of Interest: Fee Simple Reservation

Narrative: Camping requires reservation permit. All groups traveling together are limited to a maximum of 11 people and 4 vehicles.

Located in managed wilderness?: No

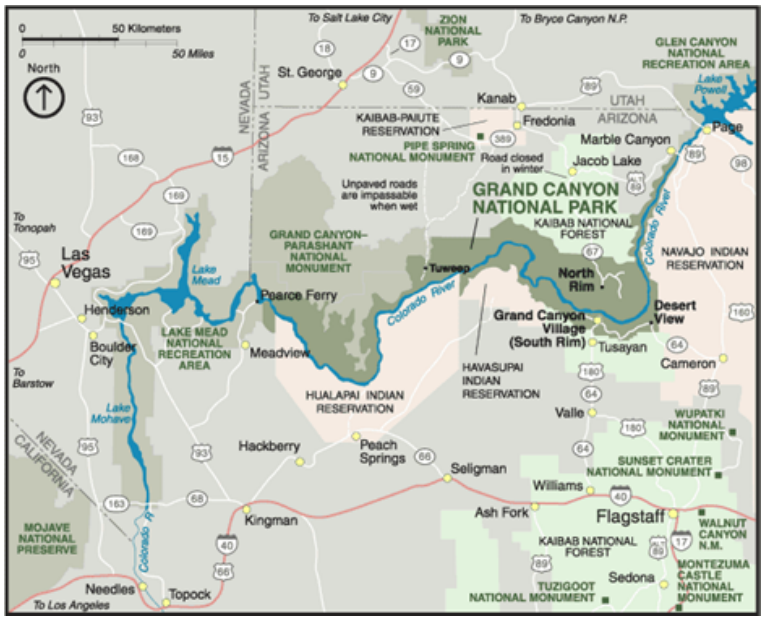
Adjacent Lands Information

Do Adjacent Lands Contribute? Yes

Adjacent Lands Narrative:

Toroweap Valley, Kanab Plateau, Uinkaret Mountains, Grand Canyon Inner Gorge, Grand Canyon-Parashant National Monument.

Adjacent Lands Graphic:



Grand Canyon National Park, dark shaded area across the center, with surrounding and nearby federal and tribal Adjacent Lands in the early 21st century. The park's Tuweep Area (next page) is near the center of this map above the central "Colorado River" label. NPS 2010.

National Register Information

National Register of Historic Places

Documentation Status: Entered Documented

Documentation Narrative Description:

The Toroweap Ranger Station's Administrative Area was determined eligible for the National Register of Historic Places (NRHP) in 2015 as a historic district, by consensus between Grand Canyon National Park and the Arizona State Historic Preservation Officer. The 1935 complex continues in use, with a residence that originally incorporated an office, a means of catching and storing rainwater, and facilities for stock, vehicles, and storage, so that one person or family could subsist and work far from market amenities for long durations.

The CLI-CLR consulting team of architectural historian James Steely, landscape architect Angela Dye, and GIS cartographer Jeremy Huey worked closely with NPS Grand Canyon Cultural Resource Program Manager Ellen Brennan and Jennifer Dierker, and Tuweep Area Ranger Todd Seliga throughout the project. The project was made possible through the Cooperative Ecosystem Studies Unit contract between the National Park Service and the Organization of American Historians, for which Steely serves as a principal investigator. The kickoff meeting and initial Grand Canyon Museum Collection research visit took place in August 2018; the primary field visit was accomplished in April-May 2019; and the park-office review of first-draft CLI-CLR and mapping, plus additional research, took place in October 2019. The team completed the CLI-CLR documents in the summer of 2020.

The Cultural Landscape Inventory records the Administrative Area complex with its many layers of buildings, structures, and landscape features, along with Toroweap Valley Road, Toroweap Lake, and Toroweap Overlook as component landscapes within the Tuweep Area landscape inventory unit, following NPS CLI procedures. This associated Cultural Landscape Report establishes the significance and integrity of these resources to update the NRHP determination, following NPS CLR procedures and linking with the park's various historic resource records and inventories.

Eligibility: Eligible -- SHPO Consensus Determination

Concurrence Eligibility Date: 05/14/2024

Concurrence Narrative:

The Park Service has determined that the Historic District is significant at the local level under Criteria A, B, and C. The period of significance for the district begins in 1933 when the original drift fence was installed designating the Grand Canyon National Monument boundary for the area and concludes in 1977 with construction of the administrative area's fire cache.

We have updated the document based on comments made by Mr. Collins to correct some clerical errors found in the draft, changed the level of significance from state to local, and added additional information in support of the property being significant under Criterion B, for Ranger John Riffey's role in the development and conservation of the Tuweep Ranger Station Complex Historic District as we know it today.

Significance Level: Local

Contributing: Individual

Classification: District

Statement of Significance for National Register of Historic Places:

The Tuweep Ranger Station Historic District gathers a closely related, contiguous, and contributing group

of 3 sites, 8 structures, and 3 buildings within a 380-acre boundary that is hosted by the much larger and largely undeveloped Toroweap Valley north of the Colorado River on the Arizona Strip. The only noncontributing resources in the district are 2 recent public Toilet buildings, 1 Volunteer Cabin, and 1 propane tank near the Barn-Garage. The most prominent of the district/unit's resources (features) are the Toroweap Valley Road that directs all vehicular traffic in and out of the valley and district; the 1935 Residence-Office, Barn-Garage, and Water Catchment system built to support the single resident ranger, his horses, and his motor vehicles; Toroweap Lake of a main Dam and 2 Dikes built in 1935 in an unsuccessful attempt to capture sufficient water for restoration of native pronghorn to the valley; and Toroweap Overlook that historically drove recognition, designation, and visitor interest in the enterprise with its 3,000-foot drop to the Colorado River below and views of Grand Canyon for miles upstream/northeast and downstream/southwest. As a historic and cultural landscape, the historic district/inventory unit encompasses four component landscapes: Toroweap Valley Road (96.5 acres), Tuweep Ranger Station Administrative Area (10 acres), Toroweap Lake (260.5 acres), and Toroweap Overlook (13 acres)—each composed of individual resources. Many other small-scale features—such as evidence of water/wastewater piping, plus scattered evidence of early communications gear and experimental energy generation at the Administrative Area—contribute to the significance and integrity of the historic district and landscape inventory unit. All the historic district's 14 contributing resources support a cultural landscape that retains very strong levels of National Register integrity through aspects of location, association, setting, feeling, design, materials, and workmanship.

The Tuweep Ranger Station Historic District is an intact and historically significant group of resources from the earliest and most extensive National Park Service improvements for patrolling and conserving (the second) Grand Canyon National Monument during the period 1933 through 1952. These resources are strongly associated with Ranger John H. Riffey, who managed the landscape for 38 years and became a celebrity in his job through publicity in such publications as National Geographic and Sports Illustrated. The Administrative Area compound's intact 1935 Residence-Office and Barn-Garage were designed by professional architects at the NPS Branch of Plans and Design in San Francisco, and its Water Catchment system was designed by professional engineers at the adjacent NPS Branch of Engineering. The historic district meets National Register (NRHP) Criterion A in the Areas of Conservation, Exploration/Settlement, and Politics/Government. The district also meets NRHP Criterion B in the Area of Conservation for association with Ranger Riffey. The district further meets NRHP Criterion C in the Areas of Architecture and Engineering.

STATEMENT OF SIGNIFICANCE

The Tuweep Ranger Station Historic District is an intact and historically significant group of resources from the earliest and most extensive National Park Service improvements for patrolling and conserving Grand Canyon National Monument during the Period 1933 through 1952. These resources are strongly associated with Ranger John H. Riffey, who managed the landscape during the last half of the Period of Significance (and for 28 additional years) and became a celebrity in his job through publicity in such publications as National Geographic and Sports Illustrated. The Ranger Station compound's intact 1935 Residence-Office and Barn-Garage were designed by professional architects at the NPS Branch of Plans and Design in San Francisco, and its Water Catchment system was designed by professional engineers at the adjacent NPS Branch of Engineering. See CHARACTER AREAS below.

CHARACTER AREAS AND SIGNIFICANT FEATURES

The historic district meets National Register (NRHP) Criterion A in the Areas of Conservation, Exploration/Settlement, and Politics/Government. The district also meets NRHP Criterion B in the Area of Conservation for association with Ranger Riffey. The district further meets NRHP Criterion C in the Areas of Architecture and Engineering.

The most prominent of the district/unit's resources (features) are the Toroweap Valley Road that directs all vehicular traffic in and out of the valley and district; the 1935 Residence-Office, Barn-Garage, and Water Catchment system built to support the single resident ranger, his horses, and his motor vehicles; Toroweap Lake of a main Dam and two Dikes built in 1935 in an unsuccessful attempt to capture sufficient water for restoration of native pronghorn to the valley; and Toroweap Overlook that historically drove recognition, designation, and visitor interest in the enterprise with its 3,000-foot drop to the Colorado River

and views of Grand Canyon for miles upstream/northeast and downstream/southwest. Many other small-scale features—such as evidence of water/wastewater piping, and scattered evidence of early communications gear and experimental energy generation at the Administrative Area—contribute to the significance and integrity of the historic district and landscape inventory unit.

INTEGRITY

All the historic district's 14 contributing resources support a cultural landscape that retains very strong levels of National Register integrity through aspects of location, association, setting, feeling, design, materials, and workmanship.

The historic district/inventory unit retains all aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. Though some operating resources have required repair and replacement materials over time, those repairs and replacements have generally used in-kind materials based on extensive research (Anderson et al. 2007) and following the Secretary of the Interior's Standards for the Treatment of Historic Properties. The majority of features in the district/unit are preserved and in use for their original purposes.

Location: The Tuweep Ranger Station retains integrity of location in that all its contributing resources and features occupy their original positions from the period of significance, 1933-1952, through the present.

Design: The design characteristics of the district are intact and retain this integrity aspect. As a district of integral resources from the period of significance, the Tuweep Ranger Station also retains its "spatial relationships between major features."

Materials: The manmade physical components of the Tuweep Ranger Station "retain the key exterior materials dating from the period of...historic significance" and "reveal the preferences of those who created the property and indicate the availability of particular types of materials and technologies." Materials of stone, wood, concrete, and metal are in place and remarkably intact to the period of significance.

Workmanship: Through preservation of the materials present during the period of significance, workmanship at the Tuweep Ranger Station retains "evidence of the crafts" in resourceful construction of its buildings and structures as parts of a 1930s public works project, and illustrates "the aesthetic principles of [the] historic period." In addition, workmanship here reveals "individual, local, [and] regional... applications of both technological practices and aesthetic principles" during the period of significance, particularly in construction of the Residence-Office and Barn-Garage but also in the Dam and Dikes at Toroweap Lake.

Setting: The varying Arizona Strip-Toroweap Valley-Grand Canyon physical environments hosting the Tuweep Ranger Station are very much intact, particularly through their "relationships between…buildings and other features [and] open space" within the district, and "between the property and its surroundings" outside the district.

Association: The Tuweep Ranger Station's physical setting is "sufficiently intact to convey" its period of significance for "an observer," particularly anyone familiar with the landscape between 1933 and 1952 such as Ranger John Riffey, vital to signficance under Criterion B. Retained visible association with the New Deal's Public Works Administration and Civilian Conservation Corps is critical to the district/unit's eligibility under Criterion A. In addition to setting, integrity of association draws strength from other exhibited aspects of integrity, particularly design, materials, and workmanship for significance under Criterion C.

Feeling: The physical natural and cultural features of the Tuweep Ranger Station, "taken together, convey the property's historic character." The linear district retains original design, materials, workmanship, and setting that relate the strong feeling of remote recreation in Grand Canyon National Monument/Park, vistas of the natural canyon itself from Toroweap Overlook, and evidence of limited park-management development in extremely remote rural Arizona during the mid 20th century.

National Register Significance Criteria:

A - Associated with events significant to broad patterns of our history

B - Associated with lives of persons significant in our past

C - Embodies distinctive construction, work of master, or high artistic values

National Register Criteria Consideration:

National Register Periods of Significance (with Historic Context Themes):

Time Period: CE 1933 - CE 1977

Area of Significance:

Area of Significance Category: Architecture

Area of Significance Subcategory:

Explanatory Narrative:

Area of Significance Category: Conservation

Area of Significance Subcategory:

Explanatory Narrative:

Area of Significance Category: Engineering

Area of Significance Subcategory:

Explanatory Narrative:

Area of Significance Category: Landscape Architecture

Area of Significance Subcategory:

Explanatory Narrative:

Area of Significance Category: Politics/Government

Area of Significance Subcategory:

Explanatory Narrative:

NRIS Information:

State Register Documentation:

National Historic Landmarks:

National Historic Landmark? No

Theme:

Contributing:

NHL ID:

NHL URL:

Date: 05/14/2024

Statement of Significance for National Historic Landmark:

N/A

World Heritage Site:

World Heritage Site? No

Category:

WHS ID:

WHS URL:

Date: 05/14/2024

Is Resource within a designated National Natural Landscape: No

Chronology and Physical History

Chronology:

Year	Event	Major Event Narrative
CE 600 - 1150	Inhabited	Evidence of occupation by prehistoric peoples & Ancestral Puebloan culture as documented at archeological sites, notably Cove Canyon northeast of Toroweap Overlook, examined in 1975 by Dr. Richard Thompson, Southern Utah State College.
CE 1150	Abandoned	Ancestral Puebloan culture abandoned the site
CE 1770 - 1779	Explored	Dominquez-Escalante Expedition. While these Spanish explorers passed by the general area to the north, no evidence has indicated any encounter with Toroweap Valley.
CE 1850 - 1870	Settled	Mormon settlers arrived from Missouri to settle Utah
CE 1850 - 1870	Ranched/Grazed	Mormon settlers arrived from Missouri to settle Utah, bringing ranching and cattle to the area. Hamblin, Jacob, scouted the area.
CE 1869 - 1890	Explored	Powell, John Wesley, along with Dutton, Clarence, explored the Colorado River and environs. 'Witches' Pocket' archeological site at the north reach of the Toroweap Valley noted in Powell's journal.
CE 1870	Established	Young, Brigham, started Canaan Cattle Company.
CE 1870	Ranched/Grazed	Cattle began grazing Toroweap Valley.
CE 1875	Developed	Mount Trumbull sawmill established by Mormon settlers, members of St. George, Utah, Temple.
CE 1879	Explored	Dutton, Captain Clarence, of USGS explored the area.
CE 1882	Memorialized	Dutton produced USGS Tertiary History of the Grand Canyon District with lithographs
CE 1914	Homesteaded	Homesteaders first arrived in valley. Schmutz, Mark, arrives with sons Marcel, John, and Ray.
CE 1921	Prospected	Inglestead, Brady, registered Little Chicken Mine.
CE 1927 - 1931	Homesteaded	Kent Family established Kent Ranch as homestead. Kent, Walter (Bud) & Vaughn (Mattie), daughters Mabel, Helen, Ruth (Cunningham), sons Amos & Hugh.
CE 1929 - 1931	Built	Kents built first small "Toroweap Lake" Dam.
CE 1929	Established	Tuweep Post Office opened 9 June 1929, initially at upper Kent Ranch. Mattie Kent was postmistress.
CE 1929	Explored	Scoyen, E.T., NPS Zion NP Superintendent visited Toroweap Valley. His report to NPS directorate recommended adding valley to Grand Canyon.
CE 1930	Established	Hoover, Herbert, as President withdraws 4,212 sq. miles of land for Bureau of Reclamation dams, and recreation.

Year	Event	Major Event Narrative
CE 1932	Explored	Toll, Roger (Yellowstone), Tillotson, Miner (GCNP), NPS superintendents and others visit Toroweap Valley. They recommend to NPS directorate and Hoover to include in Grand Canyon National Monument.
CE 1932	Established	22 December 1932 Grand Canyon National Monument proclamation of 426 sq. miles by President Hoover.
CE 1933	Built	Kent, Bud, starts Cross-Valley Drift Fence in 1933.
CE 1933 - 1940	Maintained	Kent was first but informal custodian of Tuweep National Monument, building fences.
CE 1933 - 1940	Homesteaded	Cunningham, Bill & Edna.
CE 1933 - 1940	Homesteaded	Sullivan, Bob, married Kent, Mabel. Daughters Frances & Ruth.
CE 1933 - 1940	Homesteaded	Craig, Al & Mary, Al's mother Almeda, daughters Jean (Luttrell) & Margaret (Empey). Jean wrote two books about the region, The Last Homesteader on the Arizona Strip (2018) and John H. Riffey, The Last Old Time Ranger (2007). Son Chuck became an NPS Ranger.
CE 1933 - 1940	Homesteaded	Bundy, Pat.
CE 1930 - 1940	Prospected	Covington, Henry, sheep rancher and miner, took over Little Chicken Mine below Toroweap Overlook.
CE 1930 - 1944	Homesteaded	Marshal, Bob, wife Floy.
CE 1935	Built	Ranger Station Residence-Office and Barn-Garage with PWA funds contracted to Olds Brothers of Winslow, AZ.
CE 1935	Built	Boundary Fence started around National Monument.
CE 1935	Built	Water Catchment System of metal panels built on the slope above the Administrative Area and a 9,600-gallon concrete cistern installed to provide a water source at the Station.
CE 1936	Damaged	Administrative Area vandalized. Kent, Bud, repaired.
CE 1936	Damaged	Toroweap Lake Dam breached, multiple times thereafter.
CE 1938 - 1941	Maintained	Runoff from slope above accumulates debris up against the Residence and Barn. Kent makes drainage improvements. Ongoing issue.
CE 1940	Established	Roosevelt, Franklin, as President reduced monument by 71,855 acres to 201,290 acres (300 square miles). North boundary now at Cross-Valley Drift Fence.
CE 1940	Abandoned	Toroweap Lake Dam rebuilt several times through 1940.
CE 1940	Inhabited	Bowen, William L., first ranger and wife Gertrude occupy Ranger Station.
CE 1940	Developed	Civilian Conservation Corps installs Septic Tank and other improvements at the Administrative Area.
CE 1941	Built	First radio antenna installed at Ranger Station. Regular radio communication with South Rim; messages relayed to Tuweep by NPS dispatcher. Regular Ranger communication by radio every morning to South Rim.

Year	Event	Major Event Narrative
CE 1942	Inhabited	Riffey, John H., second ranger, and wife Laura occupy Ranger Station.
CE 1942	Explored	Bryant, Dr. Harold C., former GCNP superintendent and wife visit Toroweap Valley.
CE 1942	Expanded	Visitation increases. Overall GCNP 132,584 (1942) (drops during WWII but increases to 736,159 in 1952).
CE 1943	Built	Concrete birdbath built in Residence front yard.
CE 1943 - 1946	Inhabited	Laws, Ed, temporary ranger occupies Ranger Station while Riffey serves in WWII.
CE 1946	Inhabited	Riffey, John, and Laura return (Riffey longest serving ranger at Tuweep after 38 years).
CE 1946	Built	Stone Root Cellar for food storage into hill behind Residence.
CE 1946 - 1947	Developed	Laws, Ed, improves Saddle Horse Spring, water piped northeast of the Overlook. Project started by Laws, finished by Riffey, including 1,000-gallon tank with water trough for patrol horse.
CE 1947 - 1950	Built	Riffey, Laura, records observations of birdbath at Residence front yard (“Tuweep Bird Observations 1947-50” at GRCA Museum Collection).
CE 1947 - 1950	Developed	Tuckup Trail improved from Overlook area to Tuckup Canyon.
CE 1947 - 1950	Graded	Toroweap Valley Road realigned immediately south of monument entrance to pass directly by Administrative Area for better visitor control.
CE 1947 - 1950	Rehabilitated	Toroweap Road improved 6 miles to Rim using road drag invention by Riffey. Cattleguards gradually replace fence gates north of monument.
CE 1950	Built	Erosion spreader structures on valley’s west side 1 mile west of Administrative Area.
CE 1947 - 1950	Built	Communications improvements: better radio antenna, new generator.
CE 1950 - 1959	Expanded	Tourist-rafting on the Colorado River through the Canyon begins to grow. Toroweap Valley sees more visitation, rescues, deaths; commercial use of Tuweep airstrip and Lava Falls Trail.
CE 1952	Rehabilitated	Major repairs for Administrative Area upgrades including electrical and butane-gas infrastructure, and probably the Residence porch screening.
CE 1954	Graded	Pre-WWII dirt airstrip improved just outside monument boundary near Kent Ranch, eventually named “Tuweep International Airport” and featured in 1978 article in National Geographic. Riffey purchased first “Pogo,” single-engine high-wing patrol airplane.
CE 1962	Memorialized	Riffey, Laura, dies; buried in Denver, Colorado.
CE 1965	Inhabited	Mitchell, Dr. Meribeth, marries Ranger Riffey and they live together at Ranger Station in summers.
CE 1965	Moved	Toroweap Overlook cleared of camping infrastructure; main campground moved north on a road spur between Tuckup Trail and Saddle Horse Loop Trail (see 2000).

Year	Event	Major Event Narrative
CE 1975	Established	Monument becomes part of Grand Canyon NP.
CE 1977	Built	Current Volunteer Cabin constructed as Fire Cache.
CE 1980	Memorialized	Riffey, John, dies; buried near Administrative Area.
CE 1982	Built	Two propane tanks installed near Barn-Garage (1 remains in 2020), and wood-rail fencing added around Residence.
CE 1988	Built	New pit toilet and wood outhouse built (replaced 2002).
CE 1990	Rehabilitated	Adm. Area windows and Residence interior work.
CE 1993	Memorialized	Mitchell, Dr. Meribeth, Riffey's second wife, buried next to him near Tuweep Residence.
CE 1995 - 1996	Rehabilitated	Adm. Area project upgrades included lead abatement at Residence and Barn, cleaning Septic Tank, installation of swamp coolers (removed 2008), first solar array and batteries, chlorinator (later removed) and pumphouse.
CE 2000	Memorialized	Clinton, President William, visits via Marine One helicopter on 11 January at Tuweep Airstrip (Sidders 2005).
CE 2000	Established	Clinton proclaims Grand Canyon-Parashant National Monument on 11 January upon the Tuweep Residence kitchen table brought to the Airstrip (Sidders 2005, Seliga 2020), for areas north and west of Toroweap Valley including Mounts Trumbull and Logan Wilderness Areas, BLM and USBR lands.
CE 2000	Removed	All camping at Toroweap Overlook prohibited.
CE 2002	Built	New concrete-panel vault toilet installed immediately east of the Barn-Garage.
CE 2008	Rehabilitated	Project removed the two 1995 swamp coolers from the Residence attic, changed the Residence roof from shingles to corrugated sheet metal, and (possibly) removed the interior chimney flue.
CE 2014	Rehabilitated	Project for Rainwater Catchment structure replaced corrugated metal panels with in-kind steel finished with slate-gray Kynar coating, repaired juniper framing, replaced the collecting gutter, and improved surrounding ground drainage.
CE 2016	Rehabilitated	Project for Barn roof installed in-kind replacement blue-label cedar shingles.
CE 2017	Restored	Project addressed historic windows at Residence and Barn.
CE 2018	Removed	Project removed two noncontributing propane tanks from Barn area along with their surrounding fence. One 1,000-gallon tank remained for heating.
CE 2019	Removed	Project replaced solar array of 1995–1996 with 8 panels installed on its 1990s steel post, switched to lithium batteries, and removed all 3 noncontributing generators at Administrative Area.

Physical History:

GEOLOGY AND GEOGRAPHY

In 1946, Grand Canyon National Park prepared a 2-page fact sheet (NPS 1946:1) for the 201,291-acre Grand Canyon National Monument under the adjacent park's management. "The major portion of the monument," the guide explained of boundaries at that time, "lies north of the Colorado River between Kanab Creek on the east and the Pine Mountain and Boulder Dam National Recreation Area on the west, embracing approximately 40 miles of the Grand Canyon."

"The geological history and origin of the area is similar to that of Grand Canyon National Park, but adds to it a more recent chapter of volcanic activity. After the principal topographic features of the area had been developed and the side canyons [including Toroweap Canyon along the Toroweap Fault] cut to almost their present level…great quantities of intensely hot molten lava poured forth from the 60 or more volcanic craters of the region, down the [Toroweap Canyon's west] slopes, thereby changing the original topography and building a mountain range—the Pine Mountains [today known as the Uinkaret Mountains including Mounts Trumbull, Logan, and Emma]—approximately 30 miles long…. There is evidence that at one time the outpouring of molten lava flowed down [Toroweap Canyon and over] the north wall of Grand Canyon and dammed the old Toroweap Canyon and the Colorado River in the Grand Canyon.

Remnants of this dam and lava slides may be seen on the Grand Canyon walls below the volcanic cone of Vulcan's Throne [and from Toroweap Overlook]. This lava…choked the Colorado River channel and formed a dam, behind which a lake was formed….

In the case of Toroweap Valley…the amount of water coming down through the prehistoric Toroweap Canyon had never been large and it was totally inadequate to cut through the lava dam at its mouth [at Grand Canyon's Inner Gorge]. On the other hand, the waste material from the bordering cliffs and the material carried down by flood waters at the upper end [of the valley] have been slowly but steadily filling up the old [Toroweap] canyon, until today we recognize it as Toroweap Valley. "

The geologists in 1946 understood the basic story, but underestimated the amount of lava that filled the Toroweap Canyon and overestimated the thin sediment layer that eventually formed the grassy chaparral floor of Toroweap Valley. The valley is otherwise part of the Esplanade Platform of the Grand Canyon, a solid bench exposed by erosion of Hermit Shale and strata above it, flanking the Inner Gorge for miles upstream and downstream (NPS c.2015). While the Toroweap Valley seems on approach from the north as independent of the Grand Canyon itself, it is actually an 18-mile-long side canyon of Grand Canyon. The broad flat valley straddles a geologic fault like other Colorado River side canyons but this is one of the longest without a deep eroded tributary flowing into the river.

EARLY LAND USE

High Desert Pioneers

The surface geography of the Toroweap vicinity probably supported some prehistoric hunter-gatherer peoples, and deeper side canyons with springs and rock shelters, such as Tuckup Canyon about 11 direct miles northeast of Toroweap Overlook, also attracted nomadic visitors. More recent Paiute occupants of the area typically lived around reliable water sources, such as faraway Pipe Spring, some 40 direct miles north-northeast. However, the Southern Paiute consider the Toroweap Valley a "ceremonial landscape…associated with a number of trails, springs, and ritual areas used during a [recurrent] pilgrimage to the Toroweap Overlook" and continuing to Prospect Canyon south of the Colorado River, according to anthropologists Saul Hedquist and T.J. Ferguson (2010:11,16,20–21,82). Further, the playa of Toroweap Lake (see below), Paiute toponym Turup Pikavo, is an "ethnographic resource" to the Southern Paiute tribe (Hedquist and Ferguson 2010:17,196).

The landscape attracted explorers since at least 1870 when geologist John Wesley Powell moved through the region with a Paiute guide and named many of its geographic features—such as Vulcan's Throne—in preparation for his second river exploration down the Colorado (also see USGS 1882). Thereafter a few hearty homesteaders, most from the Mormon outposts of southern Utah, ran cattle in Toroweap Valley as part of what became known geographically and culturally as the Arizona Strip, the broad east-west landscape between the Utah state line and the Colorado River (Arizona State University 2019). An inscription including "1891" marks a vertical-face stone below the present Toroweap Lake Dam, along with the possible brand of the Canaan Cooperative Stock (or Cattle) Company (Anderson et al. 2007:8, McKoy 2000:36,42).
Hearty turn-of-the-century mineral prospectors, scrambling throughout Grand Canyon's exposed strata, found occasional evidence of valuable minerals below Toroweap Overlook. By 1921 Brady Inglestead and Henry Covington claimed a copper and silver exposure they called Little Chicken Mine —later named Ram and Shepherds Folly—below and northeast of the Overlook (Billingsley, et al. 1997:40).

As early as 1914 members of the Schmutz family filed grazing claims in Toroweap Valley (Luttrell 2007:39). The first permanent residents of Toroweap Valley, members of the Kent family led by Walter "Bud" Kent, arrived in 1927 and survived year-round by capturing and storing infrequent precipitation in this high-desert climate. Other early 20th century pioneers—named Bundy, Covington, Craig, Cunningham, and Schmutz—built modest homesteads north of the valley. But they all ran their free-range cattle and sheep into Toroweap Valley, stopped short of the drop-off into Grand Canyon's Inner Gorge only by the exposed and very rough Esplanade Sandstone rim (NPS 2019). From observations in the 1930s, the valley had been severely overgrazed in only a decade, testament to the delicate nature of its thin topsoil and dry weather (Langley 1933).

Grand Canyon National Park

The Grand Canyon of the Colorado served as a meeting point of indigenous and European cultures, and a test of shared appreciation for its scale and beauty after 1540 when Hopi guides led Spanish explorers under Francisco Vásquez de Coronado to its South Rim. Some 340 years later, the Atchison, Topeka & Santa Fe Railroad brought its metropolitan corridor through Flagstaff and Williams, Arizona, within 65 miles south of the canyon's South Rim, and the tourism era dawned over the "nation's premier chasm" (Anderson 2000:10). By 1892, painter Thomas Moran and other artists produced stunning color images of the Grand Canyon of the Colorado for the railroad's marketing efforts. Similar to the influence of Moran's 1870s images of Yellowstone, their graphic drama helped inspire protective federal designation for this canyon as part of a 20-million-acre forest reserve (Morehouse 1996:34–35).

The railroad completed a 65-mile tourist-carrying branch in 1901 from Williams directly to the South Rim, transporting President Theodore Roosevelt there in 1903. Roosevelt in 1908 proclaimed Grand Canyon an 800,000-acre national monument managed by the U.S. Forest Service. With creation of

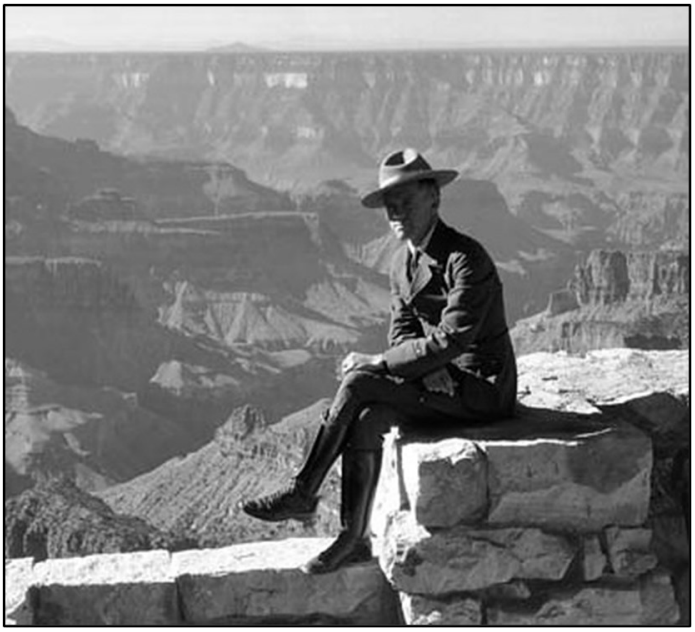
the National Park Service in 1916, various organizations and politicians lobbied to have (the first) Grand Canyon National Monument "promoted" to national park status, and achieved that goal in February 1919 (Anderson 2000:8,10). Grand Canyon National Park initially covered 645,000 acres across the South and North Rims of the canyon, and 56 miles of the Colorado River through the canyon, from the Little Colorado River on the east to Kanab Canyon on the west (Morehouse 1996:44).

Miner R. Tillotson

Miner Raymond Tillotson (1886–1955) became Grand Canyon National Park's resident engineer in 1920 shortly after the NPS assumed management of the former national monument from the Forest Service. Born in Indiana and graduated from Purdue University with a civil engineering degree in 1908, Tillotson first worked for the U.S. Forest Service, then in construction for Standard Oil Company before joining the NPS in 1920 (Arizona Archives Online 2007). As the park engineer, he consulted on many tourist and infrastructure projects of the concessionaire partners Fred Harvey Company and Santa Fe Railway, including Phantom Ranch development starting in 1922. Working under as many as six Grand Canyon superintendents, most who stayed only one or two years, Tillotson became Grand Canyon National Park superintendent in 1927. Early in his tenure as superintendent, Tillotson oversaw completion of the park's 1928 Kaibab Trail Suspension Bridge designed by NPS engineer Ward P. Webber, the 1929 Park Operations Building, extensive development in 1932 of North Rim facilities by concessionaire Utah Parks Company, corresponding expansion of water facilities on the South Rim by the Santa Fe Railway, and that concessionaire's 1932 Desert View Watchtower and development at the park's east entrance (Anderson 2000:19,23,27,90).

Tillotson was at the park's helm in 1927 when Arizona Governor George Dern, cultivating knowledge of and support from the incredibly remote Arizona Strip, visited Toroweap Valley. Dern emerged with recommendation that this valley's "scenic wonders," highlighted by the incredible Toroweap Rim's viewpoints into Grand Canyon, "be preserved for recreational use" (quoted in Anderson 2000:37). Tillotson was also in charge in 1930 when President Herbert C. Hoover withdrew 2.7 million acres of public land west of the park in anticipation of water, power, and recreation developments along the Colorado River (Anderson 2000:38, NPS 2020).

Inscriptions on volcanic rocks below Toroweap Lake, including "1891." James Steely 2019.



Grand Canyon National Park Supt. Miner R. Tillotson at the North Rim. George Grant NPS 1930. GRCA Museum Collection.

GRAND CANYON NATIONAL MONUMENT

Damming the Colorado River

During intensive evaluation in the 1920s of the entire Colorado River, including its course through Grand Canyon National Park and past the Toroweap rim, the U.S. Bureau of Reclamation (USBR) identified several dam sites along the river. The largest dam would be built at Black Canyon (named Boulder Dam, and intermittently Hoover Dam) about 165 river miles downstream, west-southwest, of the Toroweap rim. The USBR proposed eventual construction of two more dams along that stretch of the Colorado River, one at Bridge Canyon about 60 river miles southwest of the Toroweap rim, and another at Grand Wash Cliffs—the official west mouth of Grand Canyon—near Pearce Ferry about 40 river miles farther downstream (Simonds 2015).

The USBR not only planned enormous concrete dams in extremely remote places along the Colorado River, its engineers beginning in the 1920s plotted a diversion project to carry water hundreds of miles from the river south of Boulder Dam into central Arizona. Reclamation needed the Bridge Canyon dam and another at Marble Canyon east of Grand Canyon National Park to store Colorado River water, plus a diversion tunnel under the North Rim between Marble Canyon and a power plant near the mouth of Kanab Creek, for massive and consistent pressure to create electricity. That energy would, in turn, power faraway pumping stations to move diverted water as far as Phoenix and perhaps Tucson (Zuniga 2000).

NPS Interests

By the late 1920s the decade-old National Park Service felt threatened and grew alarmed at the multiple schemes of the USBR to involve national parks in western water projects. At the same time, NPS naturalists pushed for expansion of several national parks to encompass large game preserves that would "add range for regional mule deer, mountain sheep, antelope, and buffalo," described Grand Canyon historian Michael Anderson (2000:37). The combination of USBR threats, ironically coupled with their extensive collected geographical information, and the motivation to expand Grand Canyon National Park, led to NPS explorations of its own.

In May 1932, as Grand Canyon's backcountries became seasonally accessible, Superintendent Tillotson led a party into the west-canyon lands withdrawn by Hoover in 1930, "to assess recreational opportunities and suggest disposition," explained Anderson (2000:38). Roger W. Toll, superintendent of Yellowstone National Park and the official NPS envoy to evaluate new park areas, produced the party's recommendations.

'Toll's report revealed the group's antipathy for the larger area [for park expansion], based on the region's lack of "national interest" and their assessment that the lower canyon's scenery was of the "same type" existing in Grand Canyon National Park. …they suggested that 392 square miles [250,880 acres] consisting of the Toroweap Valley and a segment south of the river from the existing park boundary to the Hualapai Reservation would be worth preserving (Anderson 2000:38).'

In consultation with NPS Director Horace M. Albright, who explained the agency's complex relationship with USBR and potential water projects in certain national park areas, the group concluded that "national monument" status would be appropriate for their target (see Albright 1933). Tillotson immediately mapped his suggested monument boundaries to include the Toroweap Valley north of the Colorado River and Havasu Rapids in the canyon to the east. But he excluded patented claims and grazing lands north of the Toroweap Valley because of their perceived lackluster landforms and to avoid complications with ranchers, hunters, and politicians (Anderson 2000:37–38).

Hoover Proclamation

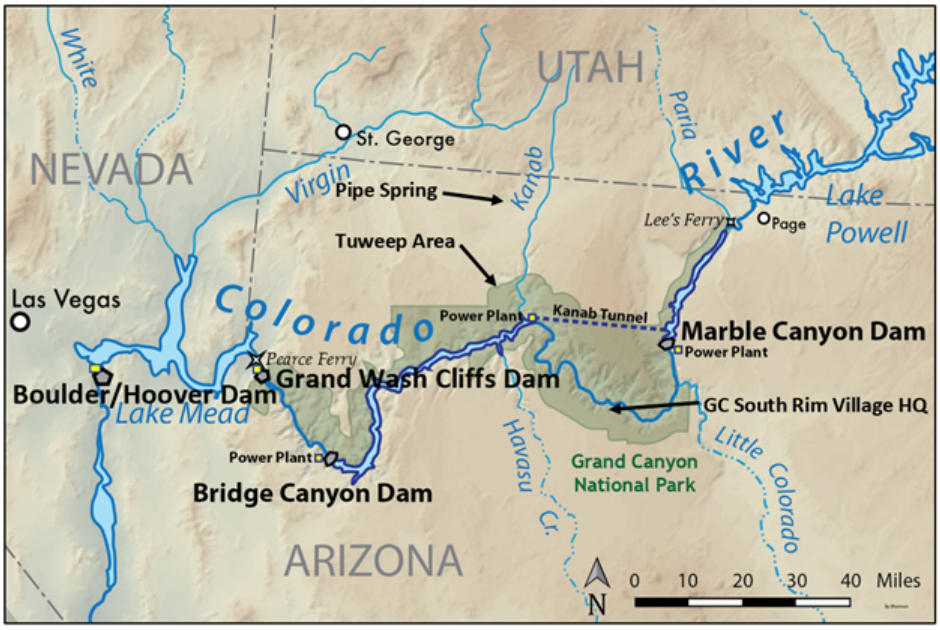
When President Hoover signed his proclamation in December 1932, Grand Canyon National Monument covered 273,145 acres, only 10 percent of the lands withdrawn in 1930 but placing more of the Grand Canyon itself under some protection. The new monument boundary still extended far enough north of Toroweap Valley to include the east side of Mount Trumbull. Not satisfied with the compromises, Tillotson continued to recommend an even smaller boundary, primarily to release expansive grazing lands on Kanab Plateau and tribal claims south of Havasu Rapids (Anderson 2000:38). Tillotson apparently endorsed the idea of developing antelope (also correctly presented as pronghorn) habitat in Toroweap Valley, and he entertained plans through the late 1930s for major roads to access the Toroweap rim with a concessionaire lodging operation nearby (see Langley 1933).

Monument Management and Budgets

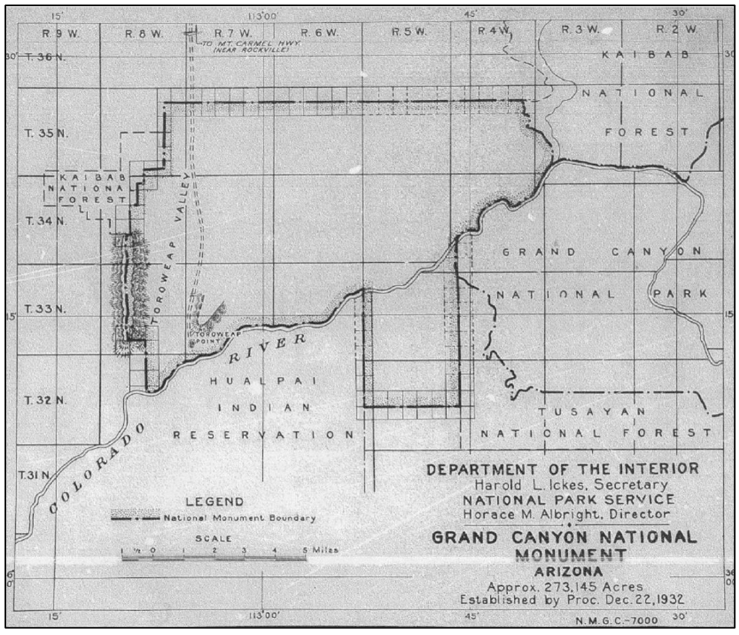
In a region where more than 20 other national monuments fell under single management and budget of the Southwestern National Monuments Office and its Superintendent Frank Pinkley, the new Grand Canyon National Monument instead became the responsibility of its adjacent park. Unfortunately, when Tillotson received instructions from NPS Assistant Director Arthur Demaray (1932) to manage the new monument, no dedicated funds came with the assignment. “Grand Canyon National Park [emphasis added] funds,” Demaray explained, “are not available for expenditure outside the limits of that park.”

"I believe, however, it would be possible to use Grand Canyon Park personnel[,] but where they do work for Grand Canyon National Monument, the work would have to be charged to the [Southwestern National Monuments Office] allotment for the Grand Canyon National Monument."

Tillotson and Pinkley quickly worked out a process for assigning some general Southwestern Monuments’ funds to Grand Canyon National Monument, providing a paltry $300 in the coming fiscal year (Demaray 1933), and similar token amounts in subsequent years. Tillotson applied these meager funds to travel expenses for his own site visits and those of planning specialists and rangers to Toroweap Valley and other corners of the monument. And since he could not cover the salaries of any park staff assigned to the monument, he apparently received permission to pay Tuweep resident Bud Kent for fencing work and nominal monitoring of the north reaches of the monument (see Langley 1933).



The U.S. Bureau of Reclamation in the 1920s proposed several Colorado River dams and diversion projects for water storage and power generation that would have directly altered the Colorado River west and east of Toroweap Overlook.



Early 1930s map of Grand Canyon National Monument with Toroweap Valley noted at the far left/west, and additional lands south of the Colorado River at center. GRCA Museum Collection.

FIRST TOROWEAP IMPROVEMENTS

NPS Branch of Engineering, and Branch of Plans and Designs

During the formative years of the National Park Service after its creation in 1916, Director Stephen Mather in 1918 established a “field engineering division” headed by a landscape engineer and a chief engineer directing a staff of designers. The NPS landscape engineers planned “the location and development of permanent camps” and “buildings of all kinds.” The civil engineers “concentrated exclusively on surveying, contracting, and building park roads and trails” (Carr 1998:88). In 1926, following formal agreement with the U.S. Bureau of Public Roads to plan and contract park roads, Mather reorganized the NPS engineers into the separate Engineering Division and Landscape Division.

In 1933 with the beginning of the New Deal and NPS-funding from the Public Works Administration, these divisions became, respectively, the Branch of Engineering and the Branch of Plans and Design. Licensed engineers staffed the former, responsible for structures and infrastructure such as bridges and water/wastewater systems. Architects and landscape architects staffed the Branch of Design and Plans, “producing building plans, specifications, and estimates” along with comprehensive landscape designs to rationalize and organize NPS services (McClelland 1998:187,330).

Public Works Administration

With the election of Franklin D. Roosevelt (FDR) as U.S. President in 1932 and departure of Herbert Hoover upon FDR’s inauguration in March 1933, a series of new relief programs called the New Deal immediately expanded the federal government’s outreach. Hoover’s steadfast insistence on a balanced budget gave way to deficit spending to address the Great Depression, but with FDR the National Park Service retained strong support from the White House despite the economic and cultural crisis. At the Interior Department, Harold L. Ickes took over from staunch NPS supporter Ray L. Wilbur as secretary, and Ickes quickly proved highly favorable to NPS if not even more supportive than Wilbur or any previous Interior executives (Lear 1985:199).

The New Deal needed legislation to define its programs and assign funding to initiate and sustain them. Congress passed the National Industrial Recovery Act in June 1933, including new labor and consumer legislation, and creating the Federal Emergency Administration of Public Works with initial funding of $3.3 billion. The agency title proved incompatible with the New Deal’s many other “alphabet” programs, so it soon shortened to Public Works Administration and the abbreviation PWA. FDR appointed Ickes as administrator of the PWA—while Ickes also served as Secretary of the Interior—to define and guide its multiple initiatives. In that larger role, Ickes sought not only to address the immediate crisis of industrial contraction and unemployment, he also brought a longer view to modernize the national infrastructure, including transportation, power generation and distribution, and public health through water/wastewater treatment, hospitals, and schools (Leighninger 2007:35–42).

The National Park Service fit perfectly into FDR and Ickes’ plans to provide employment and expand public services across the nation. Within weeks after his inauguration, FDR established the Civilian Conservation Corps (CCC, see Ranger Operations below) to recruit unemployed young men and older war veterans for assignment to remote camps and conservation work in federal forests, parks, and other landscapes. The NPS played a major role in utilizing the CCC in national parks and monuments for the duration of the New Deal. By August 1933 the PWA assigned $19,204,450 to the NPS, based on compilations that summer by NPS Chief Engineer Frank Alvah Kittredge of park-area needs throughout the states and territories (Unrau and Williss 1983:Chapters 3-A and -D).

Kittredge assigned the majority of the initial PWA budget for national parks and monuments, $17,059,450, to roads and trails, and earmarked the balance of $2,145,000 for buildings and structures. The lopsided division of funding indicated that the Hoover and previous administrations along with concessionaires had been generous in the construction of NPS buildings, but the pressing needs of 1933 centered on roads. Road funding also exercised the existing partnership with the U.S. Bureau of Public Roads, which designed and contracted major NPS thoroughfares, and thus employed even more workers outside of park employees. The desired improvements compiled by Kittredge beyond roads in 1933 included generally small buildings plus water/wastewater systems,

telephone lines, fences, and other defined needs (Unrau and Williss 1983:Chapter 3-D, Davis 2016:97).

PWA at Grand Canyon National Monument

The extensive 1933 PWA list of projects to be funded for the NPS included the first planned improvements—besides fencing—at Grand Canyon National Monument. The funding also provided the monument's first allotted budget of any kind beyond what Pinkley's Southwestern National Monuments operation had passed to Grand Canyon National Park, applied primarily to fencing and travel costs for periodic ranger visits. This monument now could spend $900 for a reservoir and $4,500 for administrative facilities, all centered on the Toroweap Valley (Anderson et al. 2007:6, Carrel 1935). Oddly, road construction did not precede these other improvements, probably because the Bureau of Public Roads at the time had great plans for highway-class Toroweap Valley access.

Locations of these PWA improvements followed recommendations from monument scouting in early autumn 1933 by NPS Branch of Engineering designer Ward Webber and the park's Chief Ranger James Brooks. Harry Langley (1933:1–4), Grand Canyon National Park's Assistant Architect, confirmed their reports that November during his own Toroweap Valley visit.

Toroweap Lake

By November 1933, engineer Webber produced plans for the "Proposed Storage Reservoir at Toroweap Lake" (next page). Webber proposed to expand a natural playa and a small "present dam"—at what he already called "dry" Toroweap Lake—near the south end of the valley about 1.3 miles from the Toroweap Rim. The engineer drafted "Proposed Dam B" at the basin's southwest corner to increase its capacity, and he specified a "Proposed Spillway" just north of the expanded "Dam A" to protect these future structures (GRCA Museum Collection).

Langley (1933:3) observed during his Toroweap visit "a natural basin of about 250 acres…at the south end of the valley," and photographed a small "dirt dam" on the east side of the basin and north of the Vulcan's Throne cinder cone. The dam plugged a natural basalt chasm along the Toroweap Fault, circling from the basin to the east and south around Vulcan's Throne and draining into the Colorado River just west of Toroweap Overlook. The little dam surely had been built by local Kent family ranchers and possibly their free-range neighbors, prior to the national monument proclamation in 1932, to catch runoff from the entire valley for their livestock. Langley's photograph caption in his report explained that "breaks in the dam have allowed the lake to go dry, but it is probable that water could be impounded permanently for pronghorn by constructing a more substantial dam" (Langley 1933:Figure 7). Geologists from John Wesley Powell in the late 19th century to the Bureau of Reclamation in the early 20th century had inspected Toroweap Valley across more than 60 years, but no one yet understood the nature of its volcanic and porous base.

Grand Canyon Superintendent Tillotson, now with modest PWA capital funds for the monument but still without a ranger salary for the area, again commissioned Toroweap Valley rancher Bud Kent to work for the NPS on monument improvements. In February 1934 Kent began rebuilding the "present dam" on Toroweap Lake with a horse-drawn scraper (Anderson et al. 2007:6). The result, reported Langley (1933:3–4), would be a much larger 400-acre reservoir for "watering stock," and for "build [ing] up an antelope herd in the south end of the valley." Langley added that "it is possible that water can be pumped from this Lake and filtered for domestic use," augmenting his other recommendations for development and use of future "Tourist Facilities" that might include "the Dude Ranch type of accommodation."

Tillotson and Kent's $900 could not complete the larger reservoir, at least to hold a larger amount of water. Judging that a better-funded engineering solution would prevail, the Branch of Engineering found another $3,000 in PWA funds a year later to bring in a larger construction force and complete the new Dam and two Dikes. The latter change improved Webber's original design for a single Dam B. The desired reservoir, now evaluated to cover only 154 acres, would hold a respectable 900 acre-feet of water. Park records credit "day laborers led by the park's chief ranger" with completing the work (Anderson et al. 2007:6–7).

"Day labor" was an understated term in 1935 for what Toroweap Lake required in scraping and lowering the lake basin, then constructing the Dam and Dikes with the borrowed fill, and armoring these berms with basalt rocks. Since Toroweap Valley normally offered no water and the basin lay some 70 very rough road miles from the nearest town with food supplies, Chief Ranger James Brooks must have spent much of the PWA's additional $3,000 for Toroweap Lake on establishing and supplying a tent camp at the work site. His PWA-funded workers, thus confined to the valley for extended periods, in perhaps only two months rebuilt Dam A at 490 feet long, 11 feet high, and 10 feet wide at its flat top, along with armoring of basalt stones on the impoundment side. The crew also plugged two natural swales at the southwest corner of the basin below Vulcan's Throne with one Dike 550 feet long and seven feet high and another 370 feet long and six feet high, with similar top width and basalt armoring. When completed in July 1935, the dammed basin awaited summer rainstorms to test its new design and strength (Anderson et al. 2007:6).

Kent family members monitored the improved lake's performance and reported to park management in August 1936 that a monsoon rain almost filled the basin for the first time. But the reservoir then abruptly drained through what Bud Kent described in a letter to Brooks as a "gopher hole" that in turn undermined the Dam's center. Park staff, probably with Kent family help, quickly repaired the Dam, then another storm in September 1936 filled the lake, only to breach the Dam again. Additional repairs held until September 1939 when, Kent observed, during a storm the lake rose within a foot of the Dam's crest but, instead of relieving across Webber's well-placed spillway (if it had been constructed), mounting water pressure again undermined and collapsed the center of the Dam (Anderson et al. 2007:7).

Meanwhile, Tillotson transferred from the park in 1938, and thereafter the pronghorn introduction plan as well as major road and visitor development for Toroweap Valley fell from favor through lack of funding and evolving NPS naturalists' recommendations. Frank Kittredge, the veteran NPS chief engineer who had developed the park system's initial PWA program including funding for Toroweap Valley improvements, served as Grand Canyon superintendent from late 1940 through mid-1941. Kittredge inspected the remote national monument a year after its boundary reduction of 1940 (Danz 1991, Kittredge 1941a:1–2).

Discouraging Park Engineer C.M. Carrel from repairing the Toroweap Lake Dam once again, Kittredge at last understood the "more difficult problem…from sinks on the south side" of the lake below Vulcan's Throne. The entire valley's underlying geology, not deep sediment but ancient lava flows that cooled and shrank into honeycombed basalt (NPS c.2015), ensured that the reservoir would never fully hold water and the Dam's base could never be sealed. "Apparently when the water got of sufficient depth," the engineer realized from the past episodes, "it broke through the bottom and into the cinders and away." Three "vertical sinks," one about 5 feet in diameter as he described, could be "filled and tamped," but "others may break through since this entire area is underlaid with cinders and lava" (Kittredge 1941a:1).

Kittredge dismissed the always overly ambitious reservoir with a standalone question to Carrel: "Furthermore, what is the usefulness of this proposed large lake?" Content that a small pond in the basin—remnant of the playa and "the borrow pit from which the earth was taken for the dam construction"—held enough seasonal water for existing wildlife and the dwindling livestock of the valley, Kittredge and most of his successors moved on to other matters (Kittredge 1941:1).

Administrative Area

A single and central ranger station for the 273,145-acre Grand Canyon National Monument had probably been planned by the NPS since its December 1932 proclamation by President Hoover. Although a political sea-change had occurred in Washington shortly thereafter, the proposed "administrative area" received $4,500 of funding in August 1933 under President Roosevelt's New Deal and PWA. Since Grand Canyon Superintendent Tillotson objected from the monument's inception to its size, and he proposed cutting back the north boundary by several miles and some 70,000 grazing-land acres, he likely insisted that the ranger station be placed inside a future reduction of the boundary. Such a location could also act as an entry station near the northern edge

of that revised boundary.

Tillotson effectively predicted the adjusted north boundary by paying Bud Kent from monument funds in the summer of 1933 to construct the east-west livestock Drift Fence along the survey line between Townships 33 and 34. The Drift Fence forced choices for the monument's ranger station to focus somewhere south of that line and away from several private inholdings (Langley 1933:4). Yet, placing the ranger station's administration in this part of Toroweap Valley would also relieve some of its inevitable social isolation through proximity to Bud Kent's homestead, 1 mile north of the new Drift Fence.

Significantly for future identification, the few scattered valley settlers shared an official post office, established in 1929 and named "Tuweep" after their pronunciation of the Paiute name Toroweap (Luttrell 2007:40). Thereafter, the geography generally retained the Toroweap spelling and extra syllable, while settlements—including the ranger station—went by Tuweep, with some lingering interchangeability and confusion.

"Before my arrival," wrote Grand Canyon Assistant Architect Langley after his November 1933 visit to Toroweap Valley, "Messrs. [NPS engineer Ward P.] Webber and [Chief Ranger James P.] Brooks had picked out a location for the [ranger station] facilities on the east side of the canyon."

"This location is in a cove which offers protection from the strong winds which blow frequently up and down the valley, is located about five miles from [Grand Canyon's Toroweap] point, offers uninterrupted view of the valley to the north so approaching cars can be seen for a considerable distance[,] and so after studying other possibilities I approved the location (Langley 1933:3). "

The location also placed the administrative development about 0.5 mile south of the survey-line Drift Fence, and fewer than 2 direct miles from Bud Kent's "Tuweep" homestead. Additionally, this east-valley cove offered plentiful loose limestone and sandstone boulders from which to shape PWA-funded buildings and walls at the ranger station. Unfortunately, and in another misunderstanding of the valley geography and geology that led to the Toroweap Lake failure, the attractive and strategic cove sat at the bottom of an eroded gash in the talus slope below the Kanab Plateau's escarpment high above, the dynamic source of all those loose boulders.

"Limestone is the most logical material," Langley (1933:3) continued, "for building construction as it is available in large quantities." The plentiful Kaibab limestone that had tumbled from the escarpment's topmost strata was joined by Coconino sandstone from a lower strata, both tinted red with their high iron contents. Further, using these local materials not only could save costs, but would follow the park service's well-established rustic architectural styling, provide thermal mass for residential walls in this region of extreme temperature swings, and meet the PWA's requirements for hiring skilled labor, such as masons, to shape the boulders into building blocks. Langley recommended that the cove development encompass the station building to house the ranger and his office, "quarters for visiting officials," a "Barn-Garage," warehouse, and "Electric Light Plant Building."

NPS architects, landscape architects, and engineers developed the monument's Administrative Area drawings and specifications through the summer of 1934 at the NPS Branch of Plans and Design in San Francisco. Coordination with the adjacent Branch of Engineering resulted in the addition to the station of the Water Catchment structure and distribution system, explained Grand Canyon Park Engineer C.M. Carrel (1935:1).

"As no water was available [in Toroweap Valley] it was decided to construct a galvanized iron covered catchment area at the head of a steep draw for the collection of rain water, pipe it down the draw to a reinforced concrete reservoir for storage, and distribute thru service lines to the facilities in the area to be developed for headquarters purposes."

Although without a national monument ranger's salary in his regular annual appropriation, Superintendent Tillotson moved forward in September 1934 with soliciting proposals from private contractors for the PWA-budgeted ranger station work. He divided the project into separate bids for labor and for materials except sand and gravel for mixing plaster and concrete, with the latter raw

materials contracted separately. The total of bids received in October exceeded $11,400, so the NPS director shifted unallocated PWA funds from other projects to more than double the original ranger station budget.

In December a labor contract went to Olds Bros. Lumber Company of Winslow, Arizona. For structural and finish materials a contract went to Cedar Lumber Company of Cedar City, Utah. For sand, a contract went to Charles Cram of Kanab, Utah, for 62 cubic yards; for gravel, Bud Kent furnished 24 cubic yards. All these contracts, awarded in December, totaled $11,475, covered by the increased PWA allotment (Carrel 1935:1–2).

Construction began on the administrative area in May 1935 following a wet spring that had caused "impassible condition of the roads," according to Carrel (1935:2). Construction on Toroweap Lake began at the same time under the same access problems, and presumably the ranger station contractors established a workers' tent camp at the site similar to the one under Chief Ranger Brooks farther south at the dam site. NPS engineer H.F. Leslie of Frank Kittredge's office supervised the station construction "uninterrupted," Carrel complimented, for the next three months. An otherwise thorough completion report by Carrel provided these details and more, but did not list the number of workers, the logistics of housing and feeding, or any suggestion of combining imported supplies to the two camps such as water, food, and fuel.

Contract workers built the Ranger Residence and Office building, designed by the NPS Branch of Plans and Design, as a 1-story cross-gabled cottage, 28x41 feet in overall plan, with solid walls of sandstone and limestone boulders gathered from the immediate area. The building followed the NPS design practice of the time for rustic styling (now known as NPS Rustic) using local materials shaped with hand tools and assembled with strong horizontal lines to blend with the host landscape. Here the contract stone mason cut most boulders into square or broad rectangular faces without strong emphasis on horizontal coursing or attention to horizontal bedding planes. But heavy sandstone lintels and window sills, and lapped wood siding in the four gables, provided ample reflection of the "horizontal key" guideline of the rustic style (McClelland 1998:395,399). Office and living room windows afforded northerly views to observe approaching traffic on the Toroweap Valley road.

The combination Barn and Garage, 20x26 feet in plan, used the same available boulders for its massive three rustic walls, but with even greater suggestion of piled rocks rather than horizontal strata. Because the fourth wall opened north into three bays, the surrounding stone walls were splayed for wider bases and greater structural strength. Stone sills and wood lintels, lapped siding in the gables, and the saltbox roof successfully anchored the building to the site's moderate slope. Planned and built at a time when rangers still relied on horses, the east bay served as a stable with a tightly boarded rear room for feed and tack.

The ingenious Water Catchment structures, designed by the NPS Branch of Engineering and built by the contractor during the same summer months of 1935, functioned properly and effectively from the beginning (and still serve the station well). The three-tiered surface of corrugated metal sheets, 50x78 feet in plan for 3,900 square feet of rain catchment, gathered water into a single pipe that flowed downhill to the partly buried cistern, 12x20 feet at ground level. Sediment-free water then moved through buried pipes 250 feet to the house and another 200 feet to the barn. The system needed a few refinements (see Ranger Operations) and periodic maintenance, but it supplied ample domestic and livestock water to the Administrative Area, as planned.

The contractor finished the PWA-funded Administrative Area work in late August 1935 and Superintendent Tillotson formally accepted the facilities in late September, probably during a personal inspection (Carrel 1935:2). Since no ranger could yet be hired to live in the facility, it became the transient lodging for periodic inspection by park rangers, monitored as frequently as possible by neighbor Bud Kent from his homestead about 2 miles away.

Toroweap Valley Road

In the summer of 1933 when Chief Engineer Kittredge compiled his long list of NPS projects that could be funded by the PWA, park service officials explored major visitor development plans for

Grand Canyon National Monument, just a few months after its proclamation. The Bureau of Reclamation also planned two more hydroelectric dams in Grand Canyon west and downstream of Toroweap Overlook, to join Hoover Dam under construction on the Colorado River about 165 river miles to the west-southwest. Collaboration developed between both the NPS and USBR with the Bureau of Public Roads to research and survey probable highway routes into the Toroweap Valley and to access the anticipated Colorado River dam sites (Ward 1937). The USBR proposed one dam at Bridge Canyon, some 60 miles downstream from Toroweap Overlook, and another at Pierce Ferry, 40 miles farther downstream (Simonds 2015).

The expectation, then, of first-class highway access into Toroweap Valley might explain why NPS requested no PWA allocation in 1933 or later for roadwork in Grand Canyon National Monument. When park architect Harry Langley visited the area in November 1933, he complained of the "so-called road…one of the worst roads I have ever traveled" of 65 miles that led there from Pipe Spring, and noted that the last 2 miles to Toroweap Overlook were "broken up by sandstone boulders and ridges" (Langley 1933:1).

And yet, Langley recorded (1933:2) that "in a discussion with the Superintendent [Tillotson] on general development," of the monument, when the topic of roads came up, "he indicated a desire to retain the cattle country atmosphere which is now existing."

"Therefore, it might be desirable to build a road of lower standard than usual, roll the grades, put in concrete dips, keep the width down to about eighteen or twenty feet and have gates at the fences instead of cattle guards….
The road down the valley should be on the east side and fairly close to the base of the cliffs because the talus slope is more or less uniform, whereas on the west [volcanic slopes] side it is broken up by small ravines coming in from the side (Langley 1933:2)."

The Civilian Conservation Corps meanwhile improved the approach to Toroweap Valley from a point between Fredonia and Pipe Spring, the latter place used by the CCC as its main area camp because of the water source there. The CCC camp worked under supervision of the U.S. Grazing Service, a sister bureau to NPS within the Interior Department, and its graded and better-drained roadworks improved access for area ranchers to their grazing lands and various water catchments and corrals also built by the CCC (Audretsch 2013:170–173). This CCC camp, frequently working inside the northern expanse of Grand Canyon National Monument since ranchers held grazing leases there, also assisted the NPS from time to time (see Ranger Operations) at the Tuweep Ranger Station. Subsequent descriptions of road conditions during development of Toroweap Lake and the Ranger Station Administrative Area components indicated that the brief but heavy construction traffic in 1935 established Toroweap Valley Road generally on its current alignment (Carrel 1935:1), at least south of the Administrative Area. During preparation for his 1941 inspection of the adjusted-boundary national monument—with the Drift Fence now the northern boundary and entry near the Administrative Area—Superintendent Kittredge (1941a:2) pushed for further road improvements and better design. He told park Engineer Carrel that "we should stake out an approximate [new] location of the road from the north boundary to the north rim."

"We would like to get away from long tangents and use instead long easy curves connected with tangents with considerable lengths. We should be able to provide a much more direct route to the rim over the last two miles by making a little heavier construction."

Most of these road improvements, including breaking up tangents and installing concrete dips, never took place; blasting a smoother rim approach waited until 1947 (see Ranger Operations below). South of the Drift Fence along the Townships 33 and 34 survey line, the NPS made some later adjustments, but aside from light gravel surfacing and seasonal grading, the Toroweap Valley Road today retains its "cattle country atmosphere" as Tillotson and Langley (1933:2) desired.

Toroweap Overlook

The unquestionably dramatic destination for Toroweap Valley Road and centerpiece of Grand Canyon National Monument, Toroweap Overlook, stood out as the area's "main attraction," in park architect Langley's (1933:4) reconnaissance report. Despite occasional confusion between Toroweap "Point," the terminal Kanab Plateau promontory about 1.5 miles north of the Inner Rim, and

"Overlook," the Toroweap Valley's Esplanade dropoff into the Colorado River's Inner Gorge, everyone with the NPS agreed that the overlook deserved public access and ranger protection.

"Toroweap Point [sic] is spectacular in that there is a 3,000 foot vertical drop to the Colorado River, provides excellent views up and down the Grand Canyon and is only about 10,000 feet distant from the south wall of the Canyon….
The views from this point are entirely different from anything within the boundaries of Grand Canyon National Park (Langley 1933:1,2)."

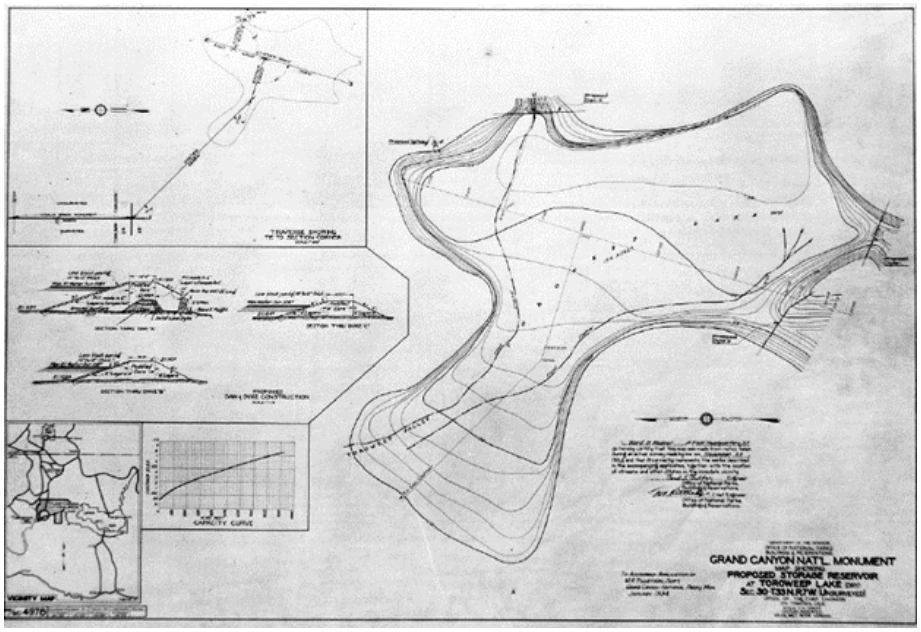
The Toroweap Valley Road approach to the overlook traverses the geological overlap between typical Grand Canyon strata on the east and volcanic lava flows and cinders on the west. As a result, the ground surface is not as smooth as the Canyon's sediment-covered Esplanade Platform that covers much of Toroweap Valley. The final two miles of the road to the overlook are thus extremely rough as it crosses through cinder mounds along exposed Esplanade Sandstone. Because the sandstone is harder and has not eroded as quickly as higher strata seen along the valley's east escarpment that ends at Toroweap Point—all part of the phenomenon of being inside Grand Canyon even in Toroweap Valley—the sandstone survives as a hard platform directly above the Inner Gorge and the Colorado River (NPS c.2015).

Development of Toroweap Overlook seemed to be a priority for NPS planners in the 1930s, yet the absence of a road construction budget to compliment funds allocated for Toroweap Lake and Tuweep Ranger Station Administrative Area prevented such improvements. Tillotson talked of a "Dude Ranch type of accommodation" around the lake and near the overlook in discussions with architect Langley (1933:4). They probably envisioned a facility along the lines of the national park and Fred Harvey concessionaire's successful Phantom Ranch operating since 1922 on the Colorado River below the South Rim development. Similar to road-development expectations, however, Tillotson might also have waited for the Bureau of Public Roads to build an access highway into Toroweap Valley that would have terminated near the overlook.

When Superintendent Kittredge (1941:1) ruminated over developing the Overlook as a "camp site," the lake, highway, and dude ranch ideas had been abandoned. Impressed with the rainwater gathering success of the Administrative Area's catchment, Kittredge noted the Overlook platform's "rock surface sufficient to afford water shed for collection of drinking water for picnickers or campers":

"This area can be circled from the road area and will not be conspicuous from [either] area and yet will be within walking distance from the scenic objective -- that is, the rim."

Toroweap Valley entered by a rutted dirt two-track lane, facing south. From a 1937 (Ward) U.S. Bureau of Public Roads report on proposed highways in the monument. GRCA Museum Collection.



"Proposed Storage Reservoir at Toroweap Lake (Dry)" by NPS Engineer Ward Webber 1933. North at left, Vulcan's Throne off the page at right/south. GRCA Museum Collection.

Toroweap Lake in a late 1930s summer during one of its few and short-duration capacity fills, probably photographed by nearby rancher and NPS caretaker Bud Kent. Left view is facing south from the Dam toward Vulcan's Throne (left); right view is facing northwest from the Dam. GRCA Museum Collection, reproduced in Anderson et al. 2007:7.

Figure 39: Residence-Office in summer 1935, facing west. Stones were roughly shaped and backed by poured concrete (woodwork here is the inner form) for extreme stability. GRCA Museum Collection.

Ranger Station Barn-Garage in late summer 1935, facing southeast. Local stones were roughly shaped and stacked with corner buttresses and the three walls canted (sloped) for stability. This photograph of the almost-complete building won a place of honor in a national survey volume of Public Works Administration accomplishments.

Ranger Station Water Catchment structure's wood platform in summer 1935, facing east. Compare to 2019 photograph on CLI page 16. GRCA Museum Collection.

Ranger Station Residence-Office nearing completion in summer 1935, facing north. Compare to 2019 cover photograph, position of Road and Sentinel Stones. GRCA Museum Collection.

"McKee Point" on the South Rim by park assistant architect Harry Langley in 1933, facing south from below Toroweap Point across the Grand Canyon Inner Gorge. GRCA Museum Collection.

RANGER OPERATIONS

When Superintendent Tillotson departed Grand Canyon in late 1938 to direct the new NPS Region I office in Richmond, Virginia, he wrote a long letter to his Grand Canyon successor A.V. Lloyd full of suggestions for future operations at Grand Canyon National Monument. He advocated a "return to the public domain" of more than 55 per cent of the monument and removal of Toroweap Valley's

remaining private cattle to more suitable grazing allotments north of the monument. For the empty Tuweep Ranger Station, Tillotson described “nothing short of a crime that we do not have a ranger assigned to the area” (Tillotson 1938).

Frank M. Pinkley, longtime superintendent (1923–1940) of the NPS Southwestern National Monuments Office based in Coolidge, Arizona, died on the job in February 1940. The NPS already pursued incorporation of Pinkley’s monument group into the new NPS Region III office at Santa Fe, and his passing opened the door for further reorganization (Rothman 1989:184, Mangum 1995). Perhaps consequently, in March 1940 Grand Canyon’s Assistant Chief Ranger Art Brown tested a portable radio at the Tuweep Administrative Area for contact with headquarters at South Rim Village, reporting that he repaired water lines, shoveled diversion dams, and observed monument conditions (Brown 1940). The anticipated Grand Canyon National Monument boundary adjustment came through Presidential proclamation in early April 1940, returning 71,854 acres north of the Drift Fence near the Administrative Area to the Interior Department’s Grazing Service, thus ensuring continuation of private grazing leases there (Anderson 2000:38). The monument subsequently covered 201,291 acres.

In the next fiscal year beginning in July 1940, with an annual budget reflecting the healthy national economy emerging from the Great Depression, Grand Canyon National Monument received $2,120 for its first full-time ranger to occupy the 5-year-old Tuweep Ranger Station. That summer, the joint park/monument management planned other station improvements—horse corral fencing, a septic tank, and a gasoline tank—and stockpiled associated equipment for those projects at the South Rim warehouse (Kittredge 1940a, Lloyd 1940). In August 1940, NPS engineer Frank Kittredge became superintendent of Grand Canyon National Park, and within his substantial workload he paid close attention to the challenging national monument, pursuing its planned improvements and filling its newly funded ranger position (Anderson 2000:90).

Ranger William L. Bowen

William Laurence Bowen (1913–1999) and his wife Gertrude arrived at Tuweep Ranger Station in October 1940 to occupy the Residence, patrol the national monument, and befriend their far-flung Arizona Strip neighbors holding 17 grazing permits within the monument.

Bill Bowen, born in Kansas and receiving a degree from Colorado A&M College in forestry and grazing, had been a ranger at Montezuma Castle National Monument in Arizona, chosen for Tuweep because of his willingness to perform an extremely remote assignment and work independently (Ancestry.com 2020, Luttrell 2007:45,51). Kittredge, pleased that Gertrude Bowen would be an invaluable asset in the assignment, added in a note to the new ranger:

"We are happy also to know that Mrs. Bowen has been interested in and specialized in Wildlife, Ornithology and to some extent Botany. She will be able to help you and the Service immensely if she would be so kind as to prepare authoritive [sic] data on these subjects. We would like, of course, to make your articles [reports] and hers a matter of record, both here and in Washington (Kittredge 1940b)."

The Bowens set up housekeeping, established much-needed permanent NPS presence in Toroweap Valley, and began counting monument visitors. They recorded 19 brave souls passing the Administrative Area in May and June 1941, apparently the only visitors that summer, on their way to Toroweap Overlook (Anderson 2000:38, Luttrell 2007:51).

Civilian Conservation Corps

The Bowen couple soon witnessed construction of their new Septic Tank, associated wastewater piping, and other small projects beginning in mid-November at Tuweep Administrative Area. Through detailed negotiations between Kittridge, the U.S Grazing Service supervisor at the Pipe Spring CCC camp, and the camp’s U.S. Army commander and his superiors, these CCC construction tasks received approval as an unusual cooperation between separate Interior bureaus. The Pipe Spring encampment, some 200 young men of CCC Company 1814 working for the Grazing Service’s far-

reaching project G-173 to improve Arizona Strip grazing conditions, dispatched six enrollees as a "side" or "spur" camp to the Ranger Station. One of the team served as their cook, and the others were allotted a generous "500 man days" to complete the trenching, form-building, concrete pouring, and plumbing, with $52.37 in materials from the South Rim warehouse. The CCC boys finished their work, including interior painting in the residence and ground excavation of a vault near the barn for a 1,000-gallon gasoline tank, and turned over the wastewater system to the Bowens on Christmas day 1940 (Lloyd 1941).

Encouraged by the successful CCC work at the Tuweep Ranger Station, Kittridge requested another side camp in April 1941 from Co. 1814 at Pipe Spring, primarily to assist an NPS "geological study party" assigned to the canyon below Toroweap Overlook. "The boys should have no fear of going into the canyon," he qualified for Bowen to chose the team, as they would "carry food and equipment to the geological party" (Kittredge 1941b). The CCC boys camped in tents at the Administrative Area for about a month in April-May 1941.

Kittredge in addition asked the Grazing Service if radio traffic for the Pipe Spring-based CCC operations could be incorporated into the Ranger Station's broadcasts, revealing the reporting routine established by the Bowens:

"It occurs to Ranger Bowen and myself that work would be facilitated if there could be radio communication between the Grand Canyon National Monument and the Grazing Camp at Pipe Springs [sic] and also between Ranger Bowen and the spur [side] camp at Mount Trumbull."

"As it is now, we talk from Grand Canyon Headquarters on the South Rim with Mr. Bowen at eight o'clock in the morning and your foreman at the spur camp at Mount Trumbull listens in on the conversation and thus is guided to some extent in his operations (Kittredge 1941c)."

Other Tuweep Ranger Station Improvements

Kittredge further pursued radio improvements along with other inter-agency ventures. He asked in late April 1941 for permission from Kaibab National Forest headquarters in Williams, Arizona, to cut "two aerial poles approximately thirty feet long" for the Administrative Area's "radio communication facilities." He further requested another "pole for use as a flagpole," all to be obtained by Bowen from U.S. Forest Service land on Mount Trumbull, about 12 road miles northwest of Tuweep Ranger Station (Kittredge 1940d).

The Grazing Service operated another CCC side camp on Mount Trumbull—referenced by Kittredge in the shared radio overture, and probably there with permission of the Forest Service—cutting and preparing posts for grazing allotment fencing. With miles of additional fencing proposed at Grand Canyon National Monument, Kittredge (1941e) wrote the acting regional grazer at Phoenix during his April 1941 flurry of monument communications, hoping to obtain fenceposts from the Mount Trumbull CCC camp. "…we shall need approximately one thousand posts," Kittredge listed without specific offer of compensation, "and the necessary stays, approximately two thousand." When Kittredge learned that the grazing camp's cost would be 91 cents per post, he opted for buying steel posts at 30 cents each (Kittredge 1941f).

Part of the new monument fencing would create a corral for Ranger Bowen, to pasture his proposed two horses and two pack mules for patrols that might last for days away from the station. Divulging that critical monument fencing was part of his assignment, Bowen wanted "one mule broke to harness" for "skidding posts, wood, etc." (Bowen 1941). He apparently received only one horse, provided by the nearby ranch of Bud Kent. The Ranger Station corral was to enclose an area of several acres west of the Barn into the valley, using the hill above/south of the Barn for its east enclosure. Kittredge also desired the fencing of two 20-acre "patches" for "demonstration tracts" along the monument's north Drift Fence, to experiment with re-establishing native grasses in the overgrazed and "devastated" valley (Kittredge 1941f).

Frank Kittredge departed from Grand Canyon in July 1941 to be superintendent of Yosemite National Park (he moved from there to be again NPS chief engineer and retired in 1951). Dr. Harold C.

Bryant, a noted NPS naturalist and one of the acting Grand Canyon superintendents between Tillotson and Kittredge, became the new Grand Canyon superintendent (where he remained through 1954) (Olsen 1985, Anderson 2000:90). The U.S. entry into World War II in late 1941 disrupted the optimistic plans and brainstormed long-term improvements of Kittredge and Bryant for Grand Canyon National Monument. Then in 1942, following the loss of their newborn child, the Bowens sought reassignment from Tuweep Ranger Station to the park's South Rim. They remained at Tuweep long enough to acclimate their replacements in August, and to familiarize the new ranger and his wife with their neighbors and the 17 grazing leases to patrol by pickup truck near roads and by horse far off any rutted lanes (Luttrell 2007:44–51)

Ranger John H. Riffey

John Hauert Riffey (1911–1980) and his wife Laura occupied the Tuweep Ranger Station in August 1942 to continue ranger work there and safeguard Grand Canyon National Monument as tourism dropped dramatically during World War II (Luttrell 2007:24,). No separate visitation figures are available for the time at the monument, but Grand Canyon National Park set a record high of 436,566 in 1941 that plummeted to 132,584 in 1942, then to 72,100 in 1943, the lowest since 1921 (Anderson 2000:90).

Riffey was born in Durango, Colorado, and grew up near Mancos, Colorado, working various odd jobs and for the CCC at nearby Mesa Verde National Park in 1933, where he first met NPS rangers and pondered a similar career for himself. John (early on he went by Hauert) attended Colorado A&M College in Fort Collins, Colorado, where he met and married Laura. While working periodically for the U.S. Forest Service, Riffey studied forestry and received a teaching certificate by 1941. He then found initial employment as an agriculture teacher before the summer 1942 National Park Service job offer at Tuweep Ranger Station. The couple settled into four seasons of life at Grand Canyon National Monument, then the U.S. Army drafted John in October 1943, and the Riffeys vacated the Ranger Station. John served in Army medical facilities based in Brooklyn Harbor, New York, and aboard troop and hospital ships in the Mediterranean Theater, while Laura lived near his Brooklyn base (Hunt, ed. 1980:18, Phelan 1985, U.S. Army 1943, Luttrell 2007:30,32,45,61).

Beef demand and prices rose during the war, a benefit to Arizona Strip ranchers (Collins 2000:63–64). But the ambitious Kittredge, Bowen, and Riffey fencing projects at strategic lines around the monument made patrolling Toroweap Valley easier for Riffey's interim replacement ranger, Ed Laws. The Riffeys returned to Tuweep Ranger Station in January 1946, as the NPS honored his post-war request to resume his former position (Luttrell 2007:62–63).

National Monument Improvements

In the spring of 1946, according to Riffey's neighbor and biographer Jean Luttrell (2007:63), Riffey completed a water gathering system at Saddle Horse Spring, begun during the war by interim Ranger Laws near Toroweap Overlook. The gathering, piping, and pump works brought water to a tank and trough near Toroweap Overlook for Riffey's horse patrols several miles from the Administrative Area. Riffey also brought supplemental water to his patrolling and fire-fighting operations by filling tanks on his pickup truck at Nixon Spring below Mount Trumbull (Luttrell 2007:63,133).

After another year back on the job, Ranger Riffey understood the rhythms of Grand Canyon National Monument, and how to refine its ranger's job of grazing management as well as meeting the occasional needs of summer tourists who made the long trek to Toroweap Overlook. In January 1947—during the dead of winter when Riffey had plenty of time in the station Residence to plan for springtime—he submitted to Superintendent Bryant separate construction proposals for "Heavy maintenance & reconstruction of service roads-some relocation" and creation of the "Toroweap Point Horse Trail" at the Overlook or on the Kanab Plateau. His total $33,514 proposal costs would improve all existing monument roads and trails "to various points" including Toroweap Overlook and S.B. Point, plus the Toroweap Valley Road.

"Trails and roads into these areas are extremely poor—generally impassible. No efficient fire control, suppression, or grazing administration is possible. Saving in equipment [and] money

expended [on] government lands would result from construction of the roads (Riffey 1947)."

Bryant officially recommended Riffey's transportation plan in March 1947 and presumably at least parts of the road and trail works began after July in the next fiscal year. Possibly the "some relocation" of roads included realignment of the Toroweap Valley Road and its relationship to the Tuweep Ranger Station Administrative Area, from passing several hundred feet west of the station to the present routing close to the Barn-Garage for better visitor control.

In September 1948, Riffey submitted another major proposal for "Soil and Moisture Conservation Work" for "some 2000 acres" at a considerable cost for the time of $8,333. The entire "Tuweep Valley," Riffey explained, "has been critically abused by over-grazing prior to fencing during recent years." He specified "the following measures or combinations":

1) Soil disturbance on the contour by use of rippers or other plow…

2) Seeding native grasses to permanently control soil and moisture.

3) Building a limited number of check dams.

4) Brush matting in small gullies and barren areas [later deleted].

5) Water spreading by use of a limited amount of diversions and spreaders (Riffey 1948).

Today a series of four large and long check dams with multiple contour spreaders between them, along with drastically slowed runoff and recovered grasses, highlight the lowest points of Toroweap Valley about 1 mile west of the Tuweep Administrative Area.

Riffey meanwhile worked personally to improve the Toroweap Overlook approach across the very rough—and unforgiving to light motor vehicles—Esplanade Sandstone Platform. "To make the [last 3 miles] accessible" to more than horses or heavy trucks, Luttrell (2007:63) wrote, "Riffey hauled gravel, filled ruts and worked the worst places in the road with pick and shovel." He also devised a towed road-maintainer machine from hardware and vehicle scraps to groom ruts in the valley's unimproved roads after winter and rainstorms. He received a small NPS innovation prize for the contraption, but "Eventually," Luttrell learned, "the Park Service furnished him with a grader"—the former CCC-acquired Adams Leaning Wheel Grader now parked near the Administrative Area—"and the loan of a dump truck."

From Tuweep to Successful NPS Careers

Miner R. Tillotson moved in 1939 from Grand Canyon superintendent to the new NPS Region I director's job in Richmond, Virginia, then in 1940 he became director of the Region III office in Santa Fe. Tillotson completed the successful incorporation of the Southwestern National Monuments group and office into the Santa Fe regional office, managing affairs for national monuments and national parks in Arizona, New Mexico, Texas, Oklahoma, and Arkansas. In 1952 he wrote his longtime colleague and new NPS Director Conrad Wirth a lengthy letter with recommendations for joining Grand Canyon National Monument with the adjacent national park, particularly citing his similar 1938 letter to his replacement at the park, J.V. Lloyd (Tillotson 1938 and 1952). Tillotson died on the job in Santa Fe in early 1955 (Arizona Archives Online 2019, Wirth 1980:131).

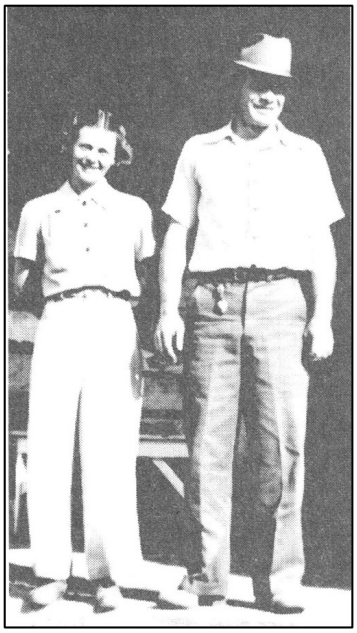
William L. Bowen continued his NPS ranger career after leaving Tuweep Ranger Station in 1942, and in 1947 became custodian of Gran Quivira National Monument (today part of Salinas Pueblo Missions National Monument) in New Mexico. From 1949 through 1951 he managed Wupatki National Monument in Arizona, then moved to the NPS Region III office to work for Tillotson as his recreation planner. During NPS Director Wirth's national Mission 66 park-area revitalization program, Bowen served in Washington, D.C., as chief of recreation surveys. There he contributed to the designation by Congress of Padre Island in Texas as one of the first NPS national seashores and in 1963 he became the first Padre Island National Seashore superintendent. In 1969 Bowen moved to San Francisco as director of the NPS Western Regional Office, and he retired there in 1971 after

directing the Western Service Center, the former WODC, just prior to its move to become the Denver Service Center (Jones 1999:Appendix B). He died in 1999 (Ancestry.com).

John H. Riffey picked up where Bill Bowen had left, maintaining good relations with his neighbors, reporting unceasingly to South Rim headquarters on conditions at the monument, and gradually improving roads and rangeland in the Toroweap Valley. In 1954 he personally acquired a small airplane, first a single-engine high-wing Aeronca ideal for observing ground conditions and activities. He paid for flying lessons and created his "Toroweap International Airport" from Bud Kent's dirt airstrip on state trust land just north of the monument boundary and about 1 mile northwest of the Administrative Area. A few years later he upgraded to a Piper Super Cub aircraft he named "Pogo" for a cartoon character syndicated in U.S. newspapers since 1948 (Luttrell 2007:75–88).

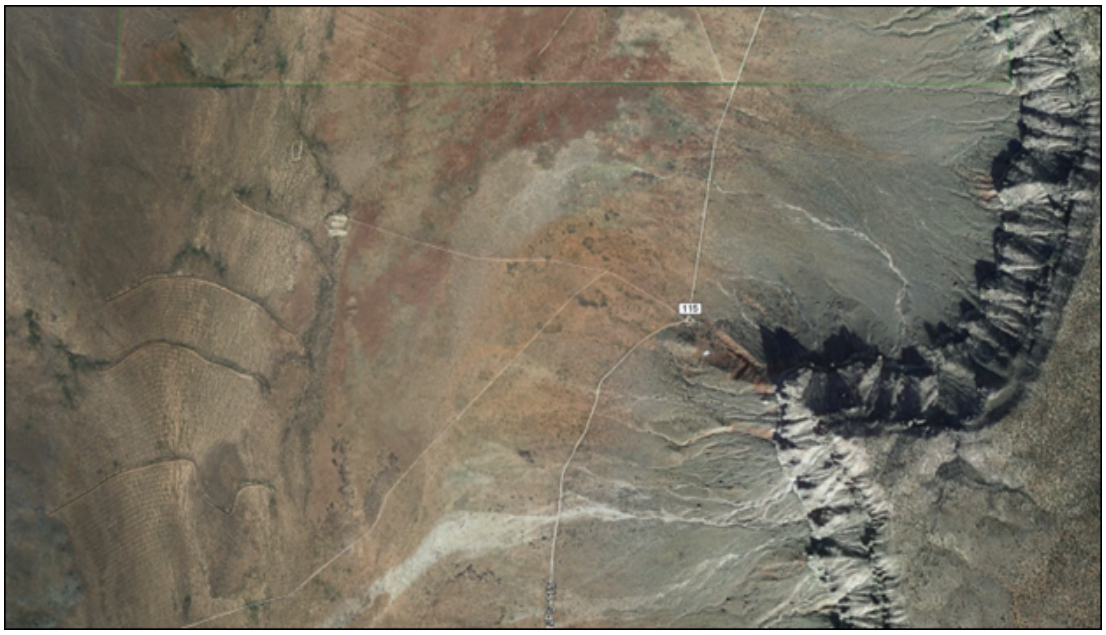
Riffey's wife Laura died of cancer in 1962. Tourism in all of Grand Canyon approached 1.5 million visitors that year and Riffey's work decidedly shifted from protecting the monument from overgrazing to accommodating its Toroweap sightseers, campers, and river runners. Riffey therefore had frequent seasonal contact with the public, and on a spring day in 1964 Dr. Meribeth Mitchell stopped at the Administrative Area to seek help with Toroweap Valley botany. Thereafter they corresponded, married in 1965, and established a routine of spending summers at Tuweep and part of winters at her home in Bellingham, Washington (Phelan 1985). Riffey worked from Tuweep Ranger Station as Grand Canyon National Monument's only ranger through 1975, when his domain since 1942 became part of the national park (Anderson 2000:67). He continued working through age 68 and into 1980 when he received his 40-year federal service pin (counting his pre-1942 Forest Service years, and 1943–1945 Army duties) that winter from GRCA Superintendent Merle Stitt. Stitt retired from the NPS immediately after Riffey's Toroweap Overlook ceremony, moved to Tucson and died that June (Hunt, ed. 1980:12,23). Riffey died the next month on the job, while hauling water in his truck from Nixon Spring (Luttrell 2007:133–134).

Tillotson and his wife Winifred, who died in 1959, are buried in the Grand Canyon Pioneer Cemetery at the park's South Rim Village. Merle E. Stitt, GRCA superintendent from 1972 to 1980, is also interred at Grand Canyon Pioneer Cemetery with his wife Larna Mae who died in 2000 (Find A Grave 2020). Meribeth M. Riffey received NPS permission to bury John Riffey near the Tuweep Administrative Area in 1980, and her grave of 1993 is beside his, below the Toroweap Cliffs escarpment. Laura Riffey had been laid to rest in 1962 in Denver, Colorado. William L. Bowen died in 1999 in Kentucky and is buried in Brandenburg near Louisville (Ancestry.com).



First Grand Canyon National Monument Ranger (1940–1942) William and Gertrude Bowen, unknown date and location. From Luttrell 2007:44.

CCC enrollees and supervisors from Grazing Service Camp G-173, Co. 1814 at Pipe Spring, Arizona, apparently on fence-post duty (load in truck bed) c. 1940. NPS 2015.



Check dams and spreaders undulating along the Toroweap Valley at left (west). Tuweep Adm. Area is near the "115" Toroweap Road label, with park boundary (green line along Drift Fence) to the north, and a different type of check dams on BLM land north of the Drift Fence. Google Earth

Grand Canyon National Park Supt. Merle Stitt presented Tuweep Ranger John Riffey with his 40-year federal service pin in January 1980 at a favorite spot, Toroweap Overlook. Both Stitt and Riffey died that summer. GRCA Museum Collection.

President William Clinton on 11 February 2000 signed his proclamation creating Grand Canyon-Parashant National Monument upon the Tuweep Ranger Station Residence's kitchen table, alongside his Marine One helicopter at the Tuweep Airstrip just north of the GRCA north boundary.

Uses

Functions and Uses:

Major Category	Category	Use/Function	Historic	Current	Primary
Recreation/Culture	Outdoor Recreation	Outdoor Recreation-Other	Yes	Yes	Yes

Public Access:

Public Access: Unrestricted

Public Access Narrative:

Outdoor recreation, photography
“An uncrowded, primitive, rustic, and remote park experience dominated by nature and solitude” (Seliga 2020)

Associated Ethnographic Group

Ethnographic Group: Native Village of Atka

Current: Yes

Historic Yes

Ethnographic Group: Bethlehem Baptist Congregation and Descendants

Current: Yes

Historic Yes

Ethnographic Study Status: Yes-Restricted Information

Ethnographic Narrative:

The U.S. Bureau of Land Management commissioned an ethnographic study of the greater Grand Canyon region in 2005: Stoffle et al., “Yanawant: Paiute and Landscapes in the Arizona Strip.” Grand Canyon National Park commissioned a park-wide ethnographic study through the University of Arizona’s School of Anthropology that incorporated Stoffle et al. (2005) into its findings in 2010: Saul Hedquist and T.J. Ferguson. “Ethnographic Resources in the Grand Canyon Region.” The Southern Paiute consider the Toroweap Valley a “ceremonial landscape…associated with a number of trails, springs, and ritual areas used during a [recurrent] pilgrimage to the Toroweap Overlook” and continuing to Prospect Canyon south of the Colorado River, according to Hedquist and Ferguson (2010:11,16,20–21,82). Further, Toroweap Lake, Paiute toponym Turup Pikavo, is an “ethnographic resource” to the Southern Paiute tribe (Hedquist and Ferguson 2010:17,196).

Analysis & Evaluation of Integrity

Analysis and Evaluation of Integrity Narrative Summary:

Summary of Character-Defining Features:
The buildings and structures, natural and small-scale features listed above contribute to a district that exhibits and preserves the lightly developed management and visitor services completed in the Toroweap Valley during the period of significance, 1933–1952. The “Ranch Road character” for the access corridor desired by NPS management, the NPS Rustic styling of the major buildings at the Administrative Area, and provision for visitor access to Toroweap Overlook with a minimum of man-made features all contribute to the character and significance of the historic district. The clever and continually effective Water Catchment system survives to display early NPS engineering solutions for a remote ranger operation that took advantage of very limited annual rainfall for essential sustenance. Even Toroweap Lake, with its labor-intensive construction of the Dam and Dikes that failed quickly because of unforeseen geological characteristics, survives to represent the broad 1930s planning program for Grand Canyon National Monument as a wildlife refuge and as a possible overnight tourist-lodge destination.

Landscape Characteristic: Natural Systems and Features

Physiography

Once at the park boundary, the mountains and cliffs begin obviously to enclose the valley. The South Rim of the larger Grand Canyon becomes the southern horizon. The bare rock of lava flows and mounds of cinder cones, including the prominent Vulcan's Throne, appear along the lower foothills of the western edge of the valley. Approaching the rim, the eastern cliff escarpment ends at Toroweap Point, about 2 miles short of the rim. The Esplanade, a bench feature at the foot of the slope, stretches out under Toroweap Point south to Toroweap Overlook, which is part of the North Rim of Grand Canyon. The river is a 3,000 foot drop for miles northeast and southwest from the established Overlook.

Geology

The Toroweap Valley is approximately 18 miles long, with its lower 6.5 miles inside the park's boundary south to the Rim. The valley—more than 3 miles wide within the park—trends south to south-southwest then abruptly southeast as it drains to the Colorado River. Once hosting a succession of playas, only ephemeral streams drain the valley today, as brief surface waters after rainstorms percolate quickly into the volcanic sub-layers of the valley. Ephemeral streams form with snowmelt and monsoon thunderstorms. An ephemeral playa does form below Vulcan's Throne in very wet seasons, referred to as Toroweap Lake, considered an ethnographic resource of the Southern Paiute people.

The valley is flanked on the east by the distinct tan-colored Toroweap Cliffs of Kaibab Limestone and Coconino Sandstone at the western edge of the Kanab Plateau, deposited during a vast windblown sand landscape that covered much of present Arizona and northern New Mexico 275 million years ago during the Permian time period of the Paleozoic Era. The outcrop rises more than 1,500 feet from the valley floor at the Administrative Area (elevation 4,762 feet). This limestone, being the harder rock layer, overlays the softer red shale of the Hermit Formation, an earlier Permian rock strata, which forms the slopes of the canyon. The cliffs continue south as the prominent landscape feature edging, enclosing the east side of the canyon to terminate at Toroweap Point (6,293 feet).

On the west side of the valley, the rounded Unikaret Mountains, including the peaks of Mount Emma (elevation 7,702 feet, southernmost), Mount Logan (7,866 feet), and Mount Trumbull (8,029 feet, northernmost), form a rolling forested mountain horizon. These mountains are capped with lava of former volcanoes that erupted before the Grand Canyon existed. More volcanic activity began again relatively recently, in geologic terms. Largely barren lava is exposed along the western foothills of the Toroweap Valley below the mountains as clear evidence of this recent activity, estimated at 863,000 to 1,000 years ago, during the Cenozoic Era and into recent times. These lava flows, once hot basaltic magma, flowed from new volcanoes in the region, traveled down the valley filling up existing side canyons like Toroweap, and plunging into the Colorado River canyon. Geologists have identified at least 13 separate lava flows into the canyon gorge, each damming the river to various depths. These dams created flooding events that formed a series of successive lakes, one of which—Prospect Dam and Lake—is estimated to have been 400 miles long, extending all the way to Moab, Utah, 640,000 years ago. Today's Lake Powell, in comparison, is 186 miles long. The most recent geologic damming from this cycle of lava flows along the Colorado River is estimated at 140,000 years ago.

The Toroweap Valley overlays the Toroweap Fault, which facilitated this volcanism. Current geology suggests tectonic plates were "stretched" apart, allowing magma to rise up through the earth's crust. As many as 60 vents have been found in and near the valley where lava and volcanic gases penetrated the surface. Glaciation of the Rocky Mountains coincided with these events, adding high levels of snowmelt and runoff to the region. This moisture contributed significantly to the erosion of the lava dams, as well as to the main Colorado River canyon and its side canyons such as Toroweap. As the flows are relatively recent in age, exposed and minimally weathered, one can see them seemingly fresh and "frozen" in place on the west side of the valley, and as they

plunge into the canyon in several places. The largest rapid in the canyon, and one of the most treacherous for boaters, is Lava Falls, river mile 179, where debris-flows, eroded lava and lava dams have created a dramatic series of rapids and outcrops, including a 50-foot remnant volcanic plug of lava within the river itself known as Vulcan's Anvil, river mile 178.5.

Cinder cones such as Vulcan's Throne (elevation 5,102 feet) and fissures (vents from lava eruptions) formed from fragments of lava thrown high in the air. The valley floor is covered in these fine cinders in places. Other cinder cones can be seen across the river from the Toroweap Overlook at Prospect Canyon in the South Rim. Since geologists estimate Vulcan's Throne to be roughly 74,000 years old, with the last local volcanic activity as recent as 1,000 years ago (Ranney et al. 2012), they consider more volcanic activity highly likely, within a geologic timeframe. The stark evidence of this recent volcanic activity is unique to this section of the Canyon. The basalt flows are recognizable from across the wide valley floor as dark linear features. The cinder cones and cindered soil are black to reddish brown, lightly vegetated with short grasses and cacti. The flows are mostly noticeable on the foothills of the western edge of Toroweap Valley, clearly marking the change in elevation.

Seismic activity on the Toroweap Fault is largely responsible for the Toroweap Cliffs escarpment and for the Toroweap Valley. This fault is considered to be "one of the most active faults in Arizona" (Jackson 1990). Earthquakes still occur in the region with frequency, usually of low magnitude (Ma), less than 4 on the Richter Scale. Hosted by the Northern Arizona Seismic Belt, activity on the many faults in the area indicates stress between the Colorado Plateau block and the Basin and Range geologic province to the west. On 21 July 1959, a 5.7 Ma earthquake occurred south of Fredonia on the Toroweap Fault. To the west along the parallel Hurricane Fault, a 5.8 Ma earthquake on 2 September 1992 triggered a damaging landslide near St. George, Utah, an indication that things are still moving.

The North Rim's Inner Gorge in this section of the park is a place of sheer cliffs as high as 3,000 feet above the bottom of the canyon. This edge landform is starkly different from the Rim farther upstream, where more benching and sloping occurs and sheer cliff faces are not as tall. The abrupt exposure here is due to the greater depth of the Hermit Shale, which eroded away from the canyon, leaving the exposed cliff escarpment.

Wildlife

In this high desert environment of desert scrub and Piñon-Juniper Woodland, wildlife might include more than 100 species of birds, and mammals such as coyote, mountain lion, and rodents, and reptiles such as snakes and lizards.

Observations have been made in the Toroweap Valley, casually and with scientific intent, over the years that the Ranger Station has existed. Early observations in the 1940s were made by Laura Riffey from her dining room window—one reason the Riffeys called it The Magic Window—where birds and animals were attracted by the small bird bath constructed in the front yard. While not an ornithologist, Laura made keen notations, written in the manuscript "Tuweep Bird Observations 1947-50" found in the Grand Canyon Museum Collection. Through the 1960s and 70s, Bellingham, Washington, ornithologist Dr. Meribeth Mitchell performed research for the BLM in the region that led her to Tuweep. After she became John Riffey's second wife, Meribeth created a 50-acre plot and invited interns to participate in observations of flora and fauna near the Administrative Area. Her findings can be found in the book Birds of the Grand Canyon Region, An Annotated Checklist. First published in 1978, she was a contributor to the first and second editions (1984). The Third Edition (1985) is still in print from the Grand Canyon Conservancy. Subsequent Tuweep ranger wives Cathy Alger and Liz Roberts also kept up the wildlife observing and recording practice in the early to late 1990s.

Annual bird surveys have been conducted by Troy Corman of Arizona Game & Fish Department for at least two decades (Seliga 2020), and bird monitoring north of Tuweep at Pipe Spring National Monument through the Northern Colorado Plateau Network, a multi-agency group.

Contributing features:
- Two Sentinel Stones are located along the Toroweap Valley Road, within PoS.

Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
Sentinel Stones	203626	Contributing					No

Landscape Characteristic Graphics:

From Toroweap Overlook facing north on the Esplanade Sandstone Platform toward Toroweap Point, left, on the Kanab Plateau; composting toilet (see p. 23) at center. Angela Dye 2019.

Toroweap Valley, facing northeast from Toroweap Lake to Toroweap Point. Angela Dye 2019.

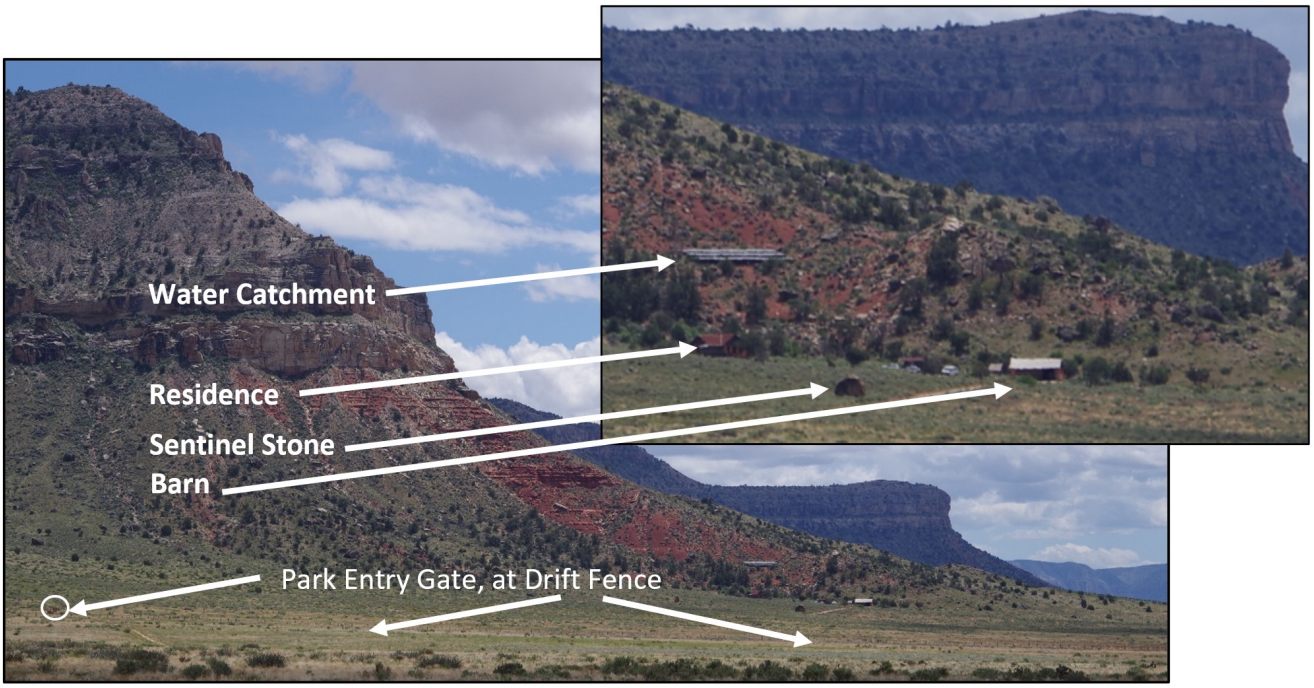
Adm. Area in the cove below the Toroweap Cliffs, facing southeast. Angela Dye 2019

Vulcan's Throne facing south-southeast from a Toroweap Lake Dike. Angela Dye 2019

Toroweap Overlook, facing southwest to Prospect Canyon at middle left. Jeremy Huey 2019.

Toroweap Lake as a dry playa, facing northwest from 1935 Dam. James Steely 2019.

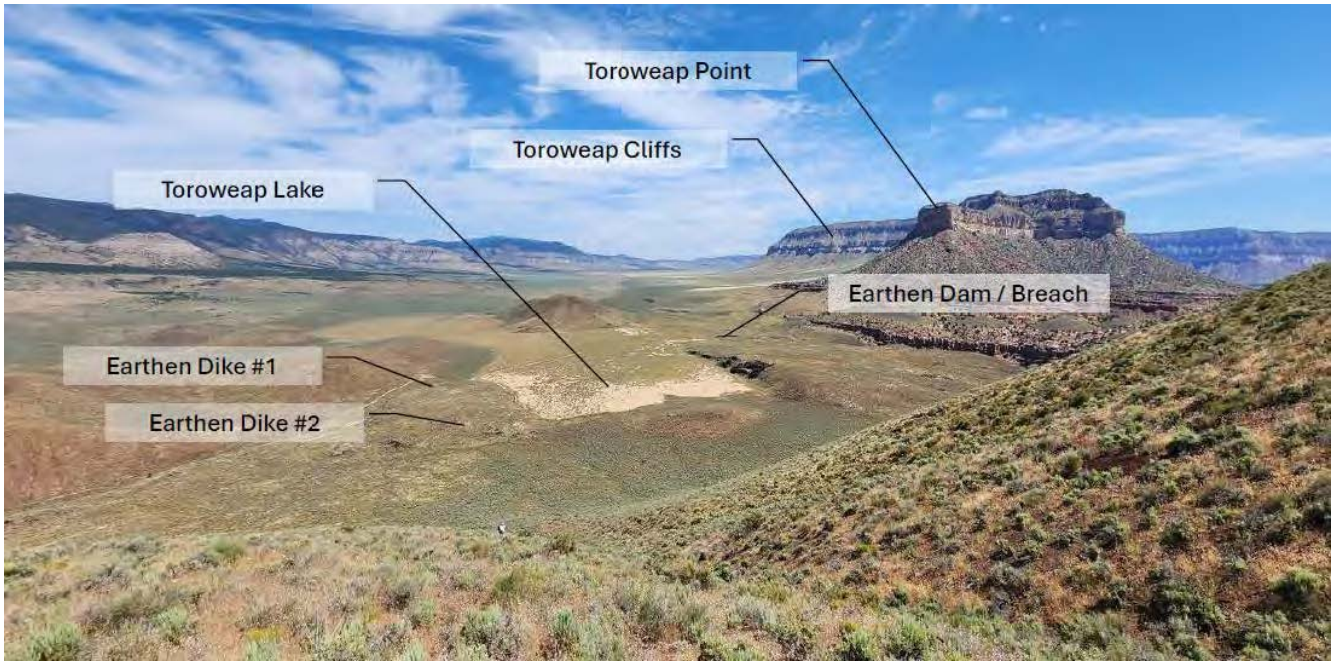
Sentinel Stones, at left and far right, facing north near Administrative Area. Angela Dye 2019.



Tuweep Administrative Area from Tuweep Airstrip, facing south. James Steely 2019.

Toroweap Lake sign, facing northwest. Cinder cone complex in right rear. Angela Dye 2019.

Toroweap Overlook, facing northeast and Inner Gorge geology. Jeremy Huey 2019.



View from Vulcans Throne

Landscape Characteristic: Vegetation

The Toroweap Valley is part of the semi-arid Colorado Plateau, a high desert environment receiving

9 to 10 inches of rainfall per year. The precipitation comes in the form of winter drizzle, rain, and snow, then sporadic summer monsoons from early July to mid-September. Temperatures can top 100 degrees Fahrenheit in the summer and drop to -5 degrees F in the winter. With little humidity, tremendous diurnal fluctuations in temperature occur. Drought conditions are not uncommon, with lightning sparking wildfires from spring through fall. Some springs and seeps are present, with the nearest and most reliable at Nixon Spring on the south side of Mount Trumbull about 15 road miles northwest of the Administrative Area. This particular spring is still an important feature of the region, having sustained Ancient Puebloans as well as local ranchers, homesteaders, and present-day visitors to the Unikaret Range and Toroweap and Hurricane Valleys. Another prominent and historic spring, Saddle Horse Spring, seeps from the contact of the Supai Group and Redwall Limestone in Saddle Horse Canyon below Toroweap Overlook and northeast of the present campground. This spring was improved and piped by Tuweep Rangers Laws and Riffey in the 1940s to fill a 1,000 gallon tank and water trough for horse patrols in that area of Grand Canyon National Monument.

While no recent wildfires have been noted in the Toroweap Valley, frequent nearby forest and wildland fires occur in drought years and seasonally dry pre-monsoon periods. Wildfires occur more commonly at higher elevations in the Kaibab National Forest to the east, and to the west on Mount Emma and in the Mount Trumbull Wilderness with thunderstorm activity. These fires are usually lightning-caused from dry thunderstorms in the hot, dry season from May until the monsoons begin in mid-July. Several fires can grow together to form a complex fire. Notably, the Hobble Complex in 2012 grew to 35,000 acres in mid-July south of St. George, Utah, in the Grand Canyon-Parashant National Monument, just north and west of the Toroweap Valley.

The Toroweap Valley is high desert scrub, largely covered with Big Sagebrush (Artemisa tridentata), Rabbitbrush (Chrysothamus nauseosus), Fourwing Saltbush (Atriplex canescens), Mormon Tea (Ephedra nevadensis), and Brittlebush (Encelia farinosa), with some grasses and forbs, and an occasional lone Piñon Pine. The foothills are Piñon-Juniper Woodland or Chaparral (Piñon Pine, Utah Juniper, Gambel Oak with Mountain Mahogany, and Utah Serviceberry shrubs). The upper elevations support Montane/Ponderosa Pine forests with Aspen.

In the early-20th century settlement of the region, the original landscape of native grasslands was heavily grazed by cattle. The result of this overgrazing is that the grasslands vanished, to be replaced with a dominance of sagebrush and non-native mustards. A profuse wildflower bloom can occur with good winter snowpack and spring moisture, including Globe Mallow (Sphaeralcea ambigua), Lupine (Lupinus spp.), Indian Paintbrush (Castilleja spp.), and Penstemon (Penstemon spp.). Cactus and succulents can also be found, such as agave (Agave spp.), prickly pear (Opuntia spp.), hedgehog (Echinocereus spp.), and yucca (Yucca spp.). These native plants are adapted to the extremes of temperature, surviving the intense heat of summer and exposure to cold and wind in winter, along with the diurnal changes.

With vegetation being predominantly low growing on the valley floor, views are open to the canyon edges in every direction. In some instances, a lone Piñon Pine might be seen sprouted within the sagebrush sea. The southern end of the valley is punctuated by the dark reddish mound of Vulcan's Throne. The western foothills are edged in dark forms of lava. A gray green hue from the sagebrush and occasional spring wildflower carpets complement the dark green forest upland, and stark but warm-colored sandstone cliffs and red shale slopes.

The U.S. Fish and Wildlife Service in Arizona lists Threatened and Endangered Species of fish, birds, plants, and mammals by county (USFWS 2016). In Mohave County, several species of fish in the Colorado River through the Grand Canyon are listed; however, no other species are listed within the Arizona Strip, specifically. Birds such as the Bald Eagle and California Condor (reintroduced at the Vermilion Cliffs in 1996) might fly over the valley but have not been noted here. American Peregrine Falcons often nest in the cliffs above (east of) the Ranger Residence (Seliga 2020).

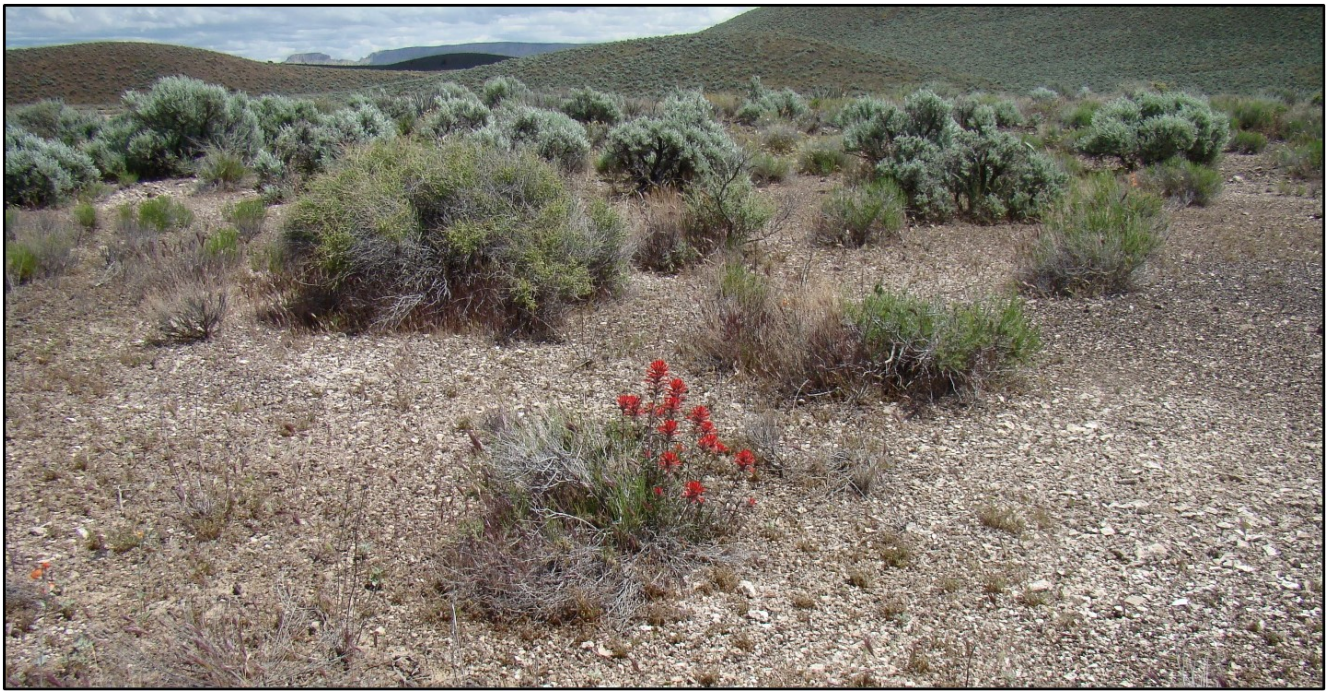
Invasive species are present due to past and present human use, on vehicle tires, livestock grazing, and construction material. Invasive plant species have been noted in the Tuweep Area from a 2003

plant survey. Horehound (Marrubium vulgare) and London Rocket Mustard (Sisymbrium irio) were found in small populations. Another species of concern, Sahara Mustard (Brassica tournefortii) found by Lees Ferry, was not found here. In 2009, the Coconino Rural Environmental Corps (CREC), in coordination with the Park's Vegetation Program Manager, removed a major infestation of horehound from the Toroweap Lake area, and invasive London Rocket from the campground. Both infestations were found to be much larger than in the 2003 survey (Allyson and Koenig 2009).

Landscape Characteristic Graphics:

Toroweap Point at left, facing northeast across yucca in Toroweap Valley. Angela Dye 2019.

Indian Paintbrush blooming in Toroweap Valley. Angela Dye, May 2019



Toroweap Valley's sagebrush sea and spring wildflowers, facing southeast. Angela Dye 2019.

Landscape Characteristic: Circulation

Access and Circulation

Access into Toroweap Valley has always been arduous. The only way to get to the area by vehicle is over dirt roads, with varying degrees of surfaces from washboards, ruts, and deep mud to deep dust, with occasional surfaces of local gravel. It is a less difficult trip today than 50 years ago, however, as the roads are generally well-maintained until one reaches the park boundary. Mud can coat vehicle tires up to several inches, making traction nearly impossible. Locals always try to travel these roads in the early winter mornings before the road thaws, before the typical monsoon afternoon thunderstorm in summer, or—again—the morning after a rainstorm to allow moisture to percolate overnight. "Get over the road before noon," they recommend. Locals have even named some of the most predictably difficult spots with terms such as Bony Hollow Wash, Clayhole, and John's Bog (Luttrell 2007).

The journey to a final destination of the Toroweap Overlook is possible via three combinations of these rugged dirt roads, at least 50 miles to the park boundary from the nearest highway, plus another 7 miles to the Overlook at the Rim. About 8 miles west of Fredonia, Arizona, the eastern and most heavily used 60-plus-mile route to the Tuweep Area from Arizona State Route (SR) 389, called the "Sunshine Route," starts at the intersection with Mohave County Road (CR) 109 (aka Antelope Valley Road) (Applegate 2015, NPS 2019). This route traverses south through the Pipe Valley to Bullrush Canyon, and on into Antelope Valley. At roughly 40 miles, CR109 merges with CR5, the Mount Trumbull Loop.

The central 56-mile "Clayhole Route" starts on CR5 (Clayhole Road) south from Colorado City and intersects with CR109 (NPS 2019). At this point, the east and central roads meet the Craig Ranch Road/Mount Trumbull Loop that comes in from the west. This intersection marks the Grand Canyon-Parashant National Monument boundary, a good stopping point to take in the vast views of Mount Trumbull to the west and the Toroweap Valley's upper canyon opening to the south. The combined road moves south to the intersection of CR115.
The western 90-mile "Main Street Route" (Applegate 2015) travels southeast from St. George, Utah, initially on BLM Road 1069, which eventually becomes CR5 (Mount Trumbull Loop) to Colorado City. On CR5 at Mount Trumbull Junction, CR115 is the spur to the NPS Tuweep Area. Just a few miles within the Grand Canyon-Parashant NM, this CR5/CR115 intersection provides the first clear glimpse of the South Rim on the southern horizon. With Mount Trumbull to the west and the Toroweap Cliffs to the east, this is also the first instance where the landscape begins to resemble a canyon. As the motorist moves south, the cliffs and mountains advance into the valley, and the horizon line is more prominent.

Historically, this CR5/CR115 intersection was an important landmark for residents of Toroweap Valley traveling north. They either traveled north to Fredonia for supplies, west to Nixon Spring for water, or on to St. George for better supplies and access to U.S. Highway 91 (today Interstate Highway 15), thence north to Cedar City, Utah, and the nearest railroad. Some early residents in the valley also traveled the road to St. George or Fredonia in order to take their children to school for the winter. Today the NPS ranger at Tuweep must travel through here to access the NPS North Rim administration, or South Rim Park Headquarters at Grand Canyon Village.

All these county roads, generally well-maintained, cross numerous private and public property boundaries. With erection of the first fences in the 1930s, traveling the roads south from Fredonia, Colorado City, and St. George required opening and closing multiple barbed wire gates. Mohave County installed cattle guards from the 1940s through the 1960s to alleviate this necessity and allow road grading. During and after summer rains and throughout the winter, all these routes can be a real challenge to navigate. So far on this journey, few if any residences or other development are currently evident. Cattle may graze and antelope may appear.

Several knolls are on the horizon, including the Hancock Knolls to the east. These are notable landscape features in an otherwise rolling grassland/sagebrush landscape. It was once suggested by the park headquarters to the ranger at Tuweep that the highest of these at 6,450 feet could be used as a daily fire lookout. However, while only 7 miles on the map from the Ranger Station, the road conditions would require a 27-mile one-way journey of 12 hours (Luttrell 2007). The western horizon is dominated by Mount Trumbull (elevation 8,029 feet), a heavily forested extinct volcano and wilderness area. The overall landscape is largely intact, with few structures other than fence

lines, cattleguards, and an occasional dirt track or side road.

See Toroweap Valley Road under Inventory Unit Boundary Description above for discussion of circulation within the district/unit.

Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
Toroweap Valley Road	203601	Contributing					No
Toroweap Lake Road Spur	203602	Contributing					No
Toroweap Overlook Road Spur	203603	Contributing					No
Tuckup Trailhead	203604	Contributing					No
Saddle Horse Loop Trailhead	203605	Contributing					No

Landscape Characteristic Graphics:

Toroweap Valley Road facing south at the north boundary of Grand Canyon National Park, marked by the cattle guard and Cross-Canyon Drift Fence dating from 1933. James Steely 2019.

Fence along Toroweap Valley Road

Toroweap Valley Road leading to Overlook

Landscape Characteristic: Views and Vistas

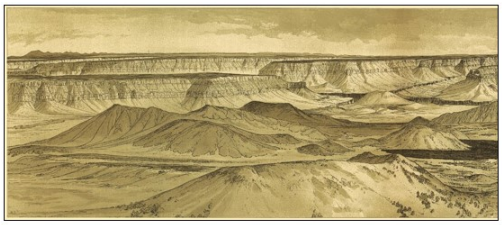
Approaching the Tuweep Area driving south on Toroweap Road and entering Grand Canyon's Toroweap Valley, with vegetation predominantly low-growing on the valley floor, views are open to Grand Canyon's edges in every direction. At the park's north boundary marked by a cattle guard flanked by the east-west Drift Fence, the motorist's view first takes in the Tuweep Ranger Station's Residence, Barn, and other outbuildings. Nearly all valley floor and horizon features of the Tuweep Ranger Station Historic District can be seen to the south from this point.

The site of the Tuweep Ranger Station's Administrative Area is out of the main views of the southern part of the valley, yet it allows for administrative surveillance and management in a natural setting. Administrative facilities in the cove of the cliff confine the human development away from the vast openness of the valley floor. Office and living room windows, and Barn doorways, afford northerly views to observe approaching traffic on the Toroweap Valley Road.

Vulcan's Throne is the dominant horizon feature at the south end of Toroweap Valley and looming 1,000 feet above the playa of Toroweap Lake. Situated on the edge of the Grand Canyon's North Rim Inner Gorge, the seemingly smooth and concentric mound of dark red volcanic cinders has two high points, the highest at 5,102 feet elevation. A similar feature can be seen on the opposite side of the river and Grand Canyon at Prospect Creek, perched on the edge of the Esplanade Platform.

The Toroweap Overlook is the primary draw for visitors, with uniquely dramatic views of the canyon. Well-known to photographers worldwide, and from pictures and postcards for a public that rarely visits the place, this Overlook is the only place in the park to see the river from the rim—straight down 3,000 feet to the Colorado River, and for miles upstream and downstream of the river and canyon. Views from the Overlook are not just down to the river below, but south across the canyon to McKee Point, southwest down the canyon toward Mollies Nipple and Parashant Wash, and northeast up the canyon to Mount Sinyella at Havasu Canyon.

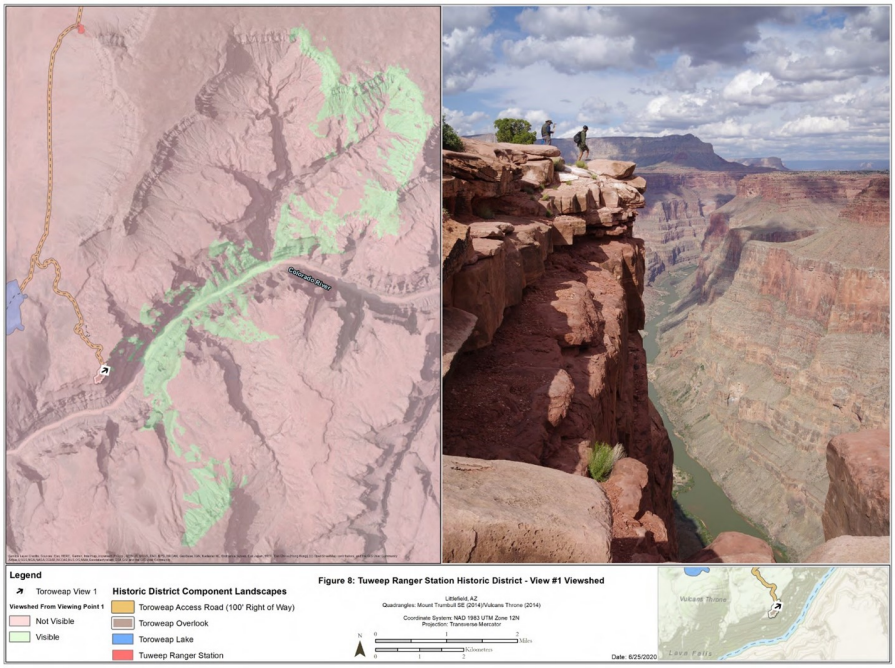
Landscape Characteristic Graphics:



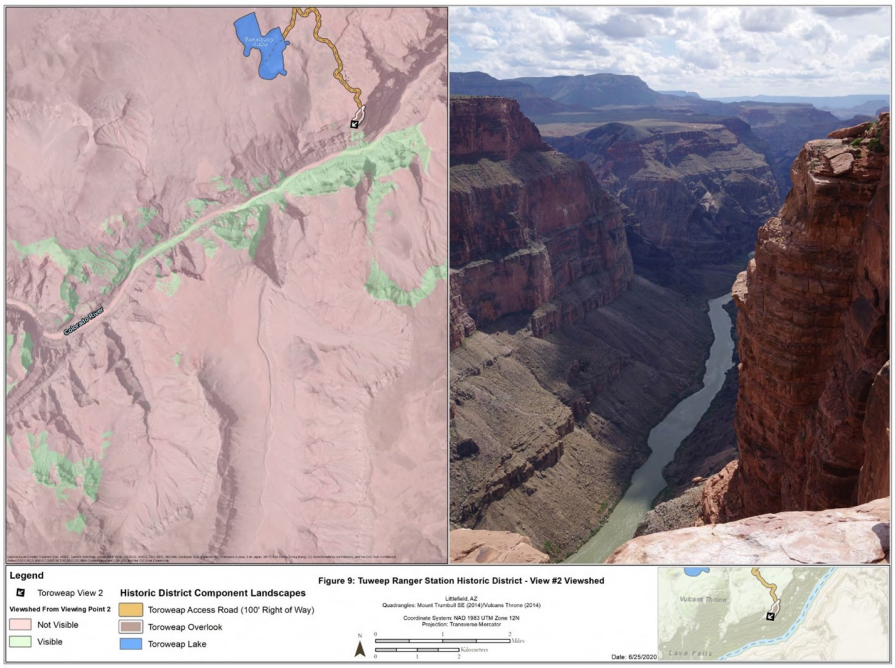
Three lithographs from USGS (1882, Library of Congress, all drawn by William H. Holmes, based on data collected by Captain Clarence E. Dutton) depicting Toroweap Valley and Overlook. At top, a view from Mount Trumbull to the southeast into the valley, with Vulcan's Throne the low mound at center-right; middle, view from Vulcan's Throne north into the valley, with Toroweap Point at right; below, from Vulcan's Throne, "The Grand Cañon at the Foot of the Toroweap – Looking East."

Toroweap Valley and Road, facing southwest from Administrative Area. James Steely 2019.

Toroweap Overlook, facing northeast, vehicle at left is in the parking area. Angela Dye 2019.



Tuweep Ranger Station Historic District- View #1 Toroweap Overlook, facing northeast, upstream on the Colorado River



Tuweep Ranger Station Historic District- View #2 Viewshed Toroweap Overlook, facing southwest to Prospect Canyon at middle left.

Landscape Characteristic: Cultural Traditions

Southern Paiute consider the Toroweap Valley a “ceremonial landscape…associated with a number of trails, springs, and ritual areas used during a [recurrent] pilgrimage to the Toroweap Overlook” and continuing to Prospect Canyon south of the Colorado River, according to anthropologists Saul Hedquist and T.J. Ferguson (2010:11,16,20–21,82). Further, Toroweap Lake (see below), Paiute toponym Turup Pikavo, is an “ethnographic resource” to the Southern Paiute tribe (Hedquist and Ferguson 2010:17,196).

Mormon settlers ran cattle in Toroweap Valley as part of what became known geographically and culturally as the Arizona Strip, the broad east-west landscape between the Utah state line and the Colorado River (Arizona State University 2019). An inscription including “1891” marks a vertical-face stone below the present Toroweap Lake Dam, along with the possible brand of the Canaan Cooperative Stock (or Cattle) Company (Anderson et al. 2007:8, McKoy 2000:36,42).

Landscape Characteristic: Buildings and Structures

Construction of Contributing Structures
The excerpted narrative text is from 2015 DOE portion of the CLI/CLR report.

The second Toroweap project completed with PWA funding, but without CCC enrollees, included a ranger residence (with office), combination barn/garage, water catchment, and cisterns. The location was chosen in late 1933 by Ward Webber, the NPS engineer from San Francisco who had recently designed Toroweap Lake, and park ranger James Brooks, and was approved by park landscape architect Harry Langley in November of that year. Langley suggested that a “ranger station, quarters for visiting officials, barn-garage, warehouse, and electric light plant building” would suffice, with a catchment and cisterns located on the slope southeast of the complex, but not all of these structures would be built, and not exactly as Langley envisioned them. He noted that the specific location was in Section 5, within unsurveyed Township 33 North, Range 7 West (see map below), which, in 1933, was fortunately south of the varied private in-holdings that would be excluded from the monument in 1940.

The NPS Branch of Engineering completed drawings for the ranger station during 1933, the property to consist of a ranger residence/office, combination barn-garage, and a water catchment with cisterns. The Public Works Administration initially allocated $4,500 in October 1933, with adjustments made in the following two years. Separate bids for labor and materials were published in September 1934, the labor awarded to Olds Brothers Lumber Company of Winslow, Arizona ($5,637.50), and materials awarded to the Cedar Lumber Company of Cedar City, Utah ($4,711.12) on December 24, 1934. Since there was no adequate sand available in the near vicinity, the park also contracted with a resident of Kanab, Utah to furnish and haul 62 cubic yards of sand at $4.25 per cubic yard. Local resident Bud Kent supplied 24 cubic yards of local gravel at $3.50 per yard, while contractors used local limestone as wall material.

Due to the season and poor quality of the monument approach road, work did not begin until May 23, 1935, when the contractor started excavation for the catchment, cisterns, and buildings. H.F. Leslie of the Chief Engineer’s Office supervised non-stop work on all station structures through project completion on August 29, 1935. Superintendent Miner Tillotson accepted the station on September 26, 1935. The overall effort was undertaken as three separate projects: FP 267 – Domestic Water Development, FP 269
– Barn & Garage, and FP 268 – Ranger Station. Construction Unit Cost Reports were located in the park’s archives for FP 269 ($2,155.58) and FP 267 ($4,527.72), but not for FP 268. Since the projects appeared to be completed without change orders and in an expeditious manner, and total appropriations at

the beginning of the three projects totaled $11,473, the ranger station alone likely cost $4,789.70, or

something close to that figure. The drawings for FP 267 are labeled N.M./G.C. 4992, 4993, and 8107. The drawings for the barn-garage are labeled N.M./G.C 3001A. These, and several drawings of the ranger residence, are found in the GRCA Museum Collection in full size.

Completion reports for the domestic water system and barn-garage written by Park Engineer C.M. Carrel were found in the archives along with progress reports for June and July 1935, but the information is more limited than most reports of the 1930s. It appears that the facility location and drawings were well thought out from the onset, such that the engineer-in-charge (Leslie) notes very few changes from the plans. Alfred C. Kuehl, associate landscape architect, wrote in June that there were no delays, that
materials were received in good condition, and that all stonework was “very satisfactory.” He also mentioned that he had relocated the barn-garage some 35 feet from plan to save some excavation. Kuehl wrote in July that work was progressing in a satisfactory manner and that he had checked all details with the contractor foreman and had no complaints. He also noted several changes from plan: that gable ends on the residence were constructed according to an “alternate plan,” not the original drawing, that the partition in the barn-garage had been eliminated due to funding shortages, and that selections for paint to be applied to the water catchment had not yet been made (the concern was that the catchment could be seen for miles approaching from the north). The completed barn-garage was described as having “native stone walls and a shingle roof; interior cement plastered and floor of volcanic cinders. A rat proof room for grain and saddles was constructed in the southeast corner.”

Scant details of materials for the residence and domestic water system were found among archival reports, but completion photos and bits of information indicate that basic materials for all structures consisted of local limestone shaped on-site, reinforced concrete and mortar prepared on-site, milled lumber, and shake shingle roofing. Maintenance documents prepared in 1953, less than 20 years after construction, indicate that the residence-office (Building 501, relabeled as Building 320 in 1952) measured 1,060 square feet with a 144 sq. ft. porch, with wallboard interior walls, fir floors, shingle roof, LPG stove, wood stove for heating, electric range, lights, and refrigerator, and no telephone. Electricity as late as 1953 was supplied by an on-site generator, which implies that the generator shed was built before that year.

A generator shed, stone “root cellar,” stone retaining wall at the rear of the residence, and a septic system were completed at the station grounds between 1935 and 1950. Since construction of the residence in 1935, visiting administrators had noted poor drainage on its east (slope) side. Reports indicate that men had to clean the grounds following small rock slides from the slope above, and in 1940, check dams were placed in the drainage south and east of the residence (the dams have long since been washed out or
buried). The park’s list of classified structures identifies the stone retaining wall as completed in 1935, but photographs of the late 1930s do not depict a wall—or anything else—on the east and south sides of the residence. A 1949 photograph (Figure 22) shows the wall in place, and a later photograph depicts the wall abutting the stone “root cellar,” which was built in 1946 at John Riffey’s request, so it is certain the wall was built during 1940-49. There is one indication in a report from 1940 that the wall may have been built in that year, and the station did host a CCC detachment (see below) that may have done the work, but this is by inference only. More likely, the wall and stone building may well have been built together in 1946. The stone building actually served as a fireproof repository for paint, oil, gasoline, and other flammable materials rather than cold storage, and neither the building, except for the roof, nor the wall appear to have been modified much since construction.

Several historic photographs of generator sheds are depicted in Figures 23-25. Figure 23 shows a small shed beside what appear to be telephone or power lines, with lines leading from the shed to the pole lines. In the early years the power lines to the residence were above ground on poles. A 1933 report by Harry Langley mentions that the nearest telephone in that year was at Pipe Springs, fifty miles to the north, but that the park had the money to run a “single grounded wire set on 15 foot pine poles attached to juniper stubs” from the station to Pipe Springs. Anderson, in Polishing the Jewel, mentions that the CCC actually built the phone line prior to 1935, and there is a single pole on the ridge saddle just south of the ranger station that fits this description. But there is no further

reference to the line, and maintenance records of the late 1940s indicate that there was no phone at the ranger station by those years. Assuming that the phone lines did exist for a while, and that the power lines were above ground, the structure in Figure 23 is probably an earlier, smaller generator shed of similar construction to but much smaller than the present shed, which first appears in photographs in 1950 (Figure 24) and looks the same in 1980 (Figure 25), and today. Julie Russell's caption to the 1980 photograph indicates that this "generator shed" from "N Rim - moved to Tuweep in the 70's" is apparently incorrect, since the building is identical to the 1950 photograph in the same physical location. She may have confused this information with the separate ranger station, which was built nearby as a tool shed at that time and later converted to a ranger office.

In November 1940 the camp commander of Company 1814 at CCC Camp G-173-A, Fredonia (or Pipe Springs), Arizona, dispatched six enrollees to establish a fly camp at the Toroweap Ranger Station to complete several projects, including painting the interior of the residence, excavation of a 1000-gallon gasoline storage tank, and installation of a residential septic tank. The septic tank project was completed in December 1940 at a cost of $152.37, including excavation, the tank, a new sewer line from the residence, and leaching trenches. According to the location drawing of the residence septic tank that was pumped in 1995, today's tank appears to be the same one installed by the CCC in 1940. Similarly, the 1000-gallon gasoline storage tank may still exist beneath the modern, above-ground tank just west of the barn-garage, and the gasoline pump may also be original. Because we could not confirm the age of the underground structures (septic tank, gasoline tank) and they are obviously not visible, they are not nominated as contributing structures, but both very likely date to 1940.

Contributing Features:
- Water Catchment System and Plumbing built in 1935 and includes catchment surfaces, cistern, and plumbing.
- Residence-Office was built 1935.
- Barn-Garage was built 1935.
- Septic tank and associated underground plumbing was built in 1935.
- Root Cellar was built in 1946 by Ranger Riffey.
- Volunteer Cabin, formerly the Fire Cache and the Ranger Office, was built in 1977 and includes the stone foundation and retaining wall.
- Adams Leaning Wheel Grader was built in 1935 and is on display near the Ranger Station.
- Toroweap Lake Dam and Dikes were built in 1935 and located in the Adm. area and throughout the area.

Non-contributing features:
- Vault Toilet was built in 2002 and is located at the Ranger Residence.
- Prefabricated Outbuilding (shed) was built in c.2000.
- Overlook Toilet/Comfort Station was built in 2002.

Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
Water Catchment System and Plumbing	203607	Contributing	58519				No
Residence-Office	203608	Contributing	58521				No
Barn-Garage	203609	Contributing	58521			34448	Yes
Septic Tank and Associated Plumbing	203610	Contributing					No
Root Cellar	203611	Contributing				34482	Yes
Toroweap Lake Dam and Dikes	203616	Contributing					No
Adams Leaning Wheel Grader	203615	Contributing					No
1977 Volunteer Cabin (former Fire Cache, the Ranger Office)	203612	Contributing	58521				No
2002 Vault Toilet	203613	Non contributing					No
Prefabricated Outbuilding	203614	Non contributing					No
Overlook Toilet	203617	Non contributing					No

Landscape Characteristic Graphics:

Adm. Area, facing northwest to Barn, Sentinel Stone, Road, Residence. James Steely 2019.

Ranger Station Water Catchment system panels, facing east. Note two figures (circle) standing at the right (south) corner. Pole at right once supported the station's radio antenna. Angela Dye 2019.

Ranger Station Residence-Office, facing east through recent fence/portal. James Steely 2019.

Ranger Station Barn-Garage, facing southwest (left) and northeast. James Steely 2019.

Toroweap Overlook, facing southwest into Grand Canyon. The recent composting toilet, mounted on ideal natural levels, is the only Overlook improvement. James Steely 2019.

Oblique View of Root Cellar

Water Catchment Cistern

Landscape Characteristic: Small Scale Features

Contributing Features:
- Drift Fence constructed from juniper posts and wire in 1933 and located at the Park Entrance to the steel cattle guard at the road.
- Old Fence Posts constructed from juniper trees in 1933 and located at the Park Entrance sign.
- Stone Retaining Walls (Structures) built C.1950 and located at Adm. Area, around Residence.
- Flagstone Patio/Walkway built c. 1945 in the Adm Area, west, south, and east of the Residence.
- Bird Bath built of concrete in c. 1950 in the Adm. Area at the west patio.
- Wildlife pool constructed of concrete in c. 1950 at the Adm. Area at west Patio.
- Wind turbine foundation built in c. 1950 at the Adm. Area, northeast of Residence.
- Radio antenna pole built in c. 1940 at the Adm. Area, south of Residence.
- Elevation Marker built c. 1950 in the Adm. Area, south of Residence.
- Wood Perimeter Fence and Portal. Structures.

Non-contributing Features:
- NPS-Rustic Entrance Sign built out of stone and wood in c. 2000 and installed at the Park Entrance.
- Metal Entrance Signs installed in c. 2020 at the Park Entrance.
- 2-Rail Wood Fence, Portal built in 1996 at the Adm. Area, around the Residence.
- Flag Pole installed in c. 2000 at the Adm. Area, post-1977.
- Signs to Toroweap Lake installed in c. 2000 at Lake area.
- Signs to Toroweap Overlook installed in c. 2000 at Lake intersection.
- Gasoline Tank. Structure.
- Propane Tank. Structures.

Landscape Features:

Feature Name	CLI Feature ID	Feature Contribution	CRIS-HS Resource ID	Associated CRIS-AR ID	FMSS Record Type	FMSS Record Number	FMSS Exact Match
Signs to Toroweap Lake at Lake area	203618	Contributing					No
Stone Retaining Walls	203619	Contributing					No
Flagstone Patio/Walkway	203620	Contributing					No
Bird Bath	203621	Contributing					No
2-Rail Wood Fence, Portal	203622	Non contributing					No
Gasoline Tank	203623	Non contributing					No
Propane Tank	203624	Non contributing					No
Radio Antenna Pole	203625	Contributing					No
Signs to Toroweap Overlook at Lake intersection	205400	Non contributing					No
Fencing (Drift Fence segment in Toroweap Valley Rd corridor at Entry)	205401	Contributing					No

Landscape Characteristic Graphics:

Grand Canyon National Park north boundary, facing south on Toroweap Valley Road. Signs at left warn of road hazards, vehicle limits, and noise restrictions. Angela Dye 2019.

Bird Bath

Stone Retaining Wall

Drift Fence

Rail Fence

Condition

Assessment Interval (Years): 7

Next Assessment Due Date: 05/04/2027

Condition Assessment and Impacts

Condition Assessment: Good

Assessment Date: 05/04/2020

Condition Assessment Explanatory Narrative:

Ranger on duty maintains regularly.

Impacts

Type of Impact: Neglect

Other Impact:

External or Internal: Both Internal and External

Impact Narrative: Impairment of Vehicular Access;
Damage to Buildings' Exteriors and Interiors;
Overgrazing by Free-Ranging Cattle;
Takeover of Invasive Plant Species;
Visitor Vandalism.

Date Identified: 05/01/2019

Type of Impact: Erosion

Other Impact:

External or Internal: External

Impact Narrative: Seasonal Administrative Area and Valley Road damage.

Date Identified: 05/01/2019

Treatment

Stabilization Measures

Treatment Documents

Treatment Type:	Preservation
Treatment Completed:	Yes
Document Type:	Cultural Landscape Report Part 1
Document Date:	2020-01-01
Title:	CLI/CLR Tuweep Ranger Station Historic District
IRMA Link:	

Narrative:

Cultural Landscape Report

Section 9. Treatment
Past NPS management of the Tuweep Area has been to sustain existing facilities and continue offering limited visitor services. Specific treatment of the historic-age buildings and structures of the Administrative Area has focused on preservation as treatment for 25 years, since the mid-1990s. Technology upgrades in the form of solar collectors and more efficient batteries, and reduced use and storage of fossil fuels have minimized or eliminated previous installations of large and intrusive gear for ranger-station survival (see pages 38–39).

The overall Toroweap Valley landscape also receives preservation treatment, with occasional programs for removal of invasive species (see CLI page 47, and Allyson and Koenig 2009), and installation and maintenance of fencing at the national park's boundaries to prevent grazing intrusions.

From pages 38-39:
CE 1952 Rehabilitated
Major repairs for Administrative Area upgrades including electrical and butane-gas infrastructure, and probably the Residence porch screening.
CE 1954 Graded Pre-WWII dirt airstrip improved just outside monument boundary near Kent Ranch, eventually named "Tuweep International Airport" and featured in 1978 article in National Geographic. Riffey purchased first "Pogo," single-engine high-wing patrol airplane.
CE 1962 Memorialized
Riffey, Laura, dies; buried in Denver, Colorado.
CE 1965 Inhabited
Mitchell, Dr. Meribeth, marries Ranger Riffey and they live together at Ranger Station in summers.
CE c. 1965 Rehabilitated/Moved
Toroweap Overlook cleared of camping infrastructure; main campground moved north on a road spur between Tuckup Trail and Saddle Horse Loop Trail (see 2000).
CE 1975 Established
Monument becomes part of Grand Canyon NP.
CE 1977 Built
Current Volunteer Cabin constructed as Fire Cache.
CE 1980 Memorialized
Riffey, John, dies; buried near Administrative Area.
CE 1982 Built
Two propane tanks installed near Barn-Garage (1 remains in 2020), and wood-rail fencing added around Residence.
CE 1988 Built
New pit toilet and wood outhouse built (replaced 2002).
CE 1990 Rehabilitated
Adm. Area windows and Residence interior work.
CE 1993 Memorialized
Mitchell, Dr. Meribeth, Riffey's second wife, buried next to him near Tuweep Residence.

CE 1995-1996 Rehabilitated
Adm. Area project upgrades included lead abatement at Residence and Barn, cleaning Septic Tank, installation of swamp coolers (removed 2008), first solar array and batteries, chlorinator (later removed) and pumphouse.
CE 2000 Memorialized
Clinton, President William, visits via Marine One helicopter on 11 January at Tuweep Airstrip (Sidders 2005, see next).
CE 2000 Established
Clinton proclaims Grand Canyon-Parashant National Monument on 11 January upon the Tuweep Residence kitchen table brought to the Airstrip (Sidders 2005, Seliga 2020), for areas north and west of Toroweap Valley including Mounts Trumbull and Logan Wilderness Areas, BLM and USBR lands.
CE 2000 Removed
All camping at Toroweap Overlook prohibited.
CE 2002 Built
New concrete-panel vault toilet installed immediately east of the Barn-Garage.
CE 2008 Rehabilitated
Project removed the two 1995 swamp coolers from the Residence attic, changed the Residence roof from shingles to corrugated sheet metal, and (possibly) removed the interior chimney flue.
CE 2014 Rehabilitated
Project for Rainwater Catchment structure replaced corrugated metal panels with in-kind steel finished with slate-gray Kynar coating, repaired juniper framing, replaced the collecting gutter, and improved surrounding ground drainage.
CE 2016 Rehabilitated
Project for Barn roof installed in-kind replacement blue-label cedar shingles.
CE 2017 Restored
Project addressed historic windows at Residence and Barn.
CE 2018 Removed
Project removed two noncontributing propane tanks from Barn area along with their surrounding fence. One 1,000-gallon tank remained for heating.
CE 2019 Replaced/Removed
Project replaced solar array of 1995–1996 with 8 panels installed on its 1990s steel post, switched to lithium batteries, and removed all 3 noncontributing generators at Administrative Area.

From page 47:
With vegetation being predominantly low growing on the valley floor, views are open to the canyon edges in every direction. In some instances, a lone Piñon Pine might be seen sprouted within the sagebrush sea. The southern end of the valley is punctuated by the dark reddish mound of Vulcan's Throne. The western foothills are edged in dark forms of lava. A gray green hue from the sagebrush and occasional spring wildflower carpets complement the dark green forest upland, and stark but warm-colored sandstone cliffs and red shale slopes.

The U.S. Fish and Wildlife Service in Arizona lists Threatened and Endangered Species of fish, birds, plants, and mammals by county (USFWS 2016). In Mohave County, several species of fish in the Colorado River through the Grand Canyon are listed; however, no other species are listed within the Arizona Strip, specifically. Birds such as the Bald Eagle and California Condor (reintroduced at the Vermilion Cliffs in 1996) might fly over the valley but have not been noted here. American Peregrine Falcons often nest in the cliffs above (east of) the Ranger Residence (Seliga 2020).
Invasive species are present due to past and present human use, on vehicle tires, livestock grazing, and construction material. Invasive plant species have been noted in the Tuweep Area from a 2003 plant survey. Horehound (Marrubium vulgare) and London Rocket Mustard (Sisymbrium irio) were found in small populations. Another species of concern, Sahara Mustard (Brassica tournefortii) found by Lees Ferry, was not found here. In 2009, the Coconino Rural Environmental Corps (CREC), in coordination with the Park's Vegetation Program Manager, removed a major infestation of horehound from the Toroweap Lake area, and invasive London Rocket from the campground. Both infestations were found to be much larger than in the 2003 survey (Allyson and Koenig 2009).

Part 3: RECORD OF TREATMENT
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Approved Treatment Costs

Cost Narrative:

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Landscape Documents:

File Name	Date	Attachment Type
CLI Tuweep Ranger Station CLI-CLR_June2020_Complete.pdf	09/20/2024	Park Report

Source