**Glen Canyon National Recreation Area**
**Arizona, Utah**

**National Park Service**
**U.S. Department of the Interior**

# Environmental Assessment
# Development of Bullfrog and Hite Low Water Launch Ramps (PEPC 114054)

March 2026

In accordance with the Final Interim Department of the Interior National Environmental Policy Act (NEPA) Handbook, Sections 1.5(e)(4), 1.5(f)(6), and 2.4(e), 2.5(e)), the Responsible Official certifies that page number and timeline requirements have been met, the effort is substantially complete, the agency has thoroughly considered the factors mandated by NEPA, and that, in the agency's judgment, the analysis is adequate to inform and reasonably explain the agency's decision regarding the proposed Federal Action.

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# LIST OF ACRONYMS

| | |
|---|---|
| APE | Area of Potential Effect |
| asl | above sea level |
| BA | Biological Assessment |
| BMP | Best Management Practices |
| C | candidate for listing |
| CBA | Choosing by Advantages |
| CFR | *Code of Federal Regulations* |
| CH | critical habitat |
| CWA | Clean Water Act |
| dB | decibel(s) |
| DEQ | Department of Environmental Quality |
| DO | Director's Order |
| DOI | Department of the Interior |
| E | federally listed endangered |
| E. coli | *Escherichia coli* |
| EA | Environmental Assessment |
| ED/EDR | ephemeral drainage |
| ELE | outside of elevational range of species |
| EO | Executive Order |
| EPA | U.S. Environmental Protection Agency |
| ESA | Endangered Species Act |
| FEMA | Federal Emergency Management Agency |
| fps | feet per second |
| Glen Canyon NRA/GLCA | Glen Canyon National Recreation Area |
| HAB | no habitat present in the action area |
| IDR | intermittent watercourse |
| IPaC | Information for Planning and Consultation |
| Lmax | maximum sound level |
| LP | Lake Powell |
| NAAQS | National Ambient Air Quality Standards |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act |
| NPDES | National Pollutant Discharge Elimination System |
| NPS | National Park Service |
| NRHP | National Register of Historic Places |
| ODR | outside known distribution range of species |

| | |
|---|---|
| OHWM | ordinary high water mark |
| OW | open water |
| PAC | Protected Activity Centers |
| PBF | Physical and Biological Features |
| PE | federally proposed endangered |
| PLPCO | Utah Public Lands Policy Coordinating Office |
| $PM_{10}$ | particulate matters with diameters less than or equal to 10 micrometers in aerodynamic diameter |
| $PM_{2.5}$ | particulate matters with diameters less than or equal to 2.5 micrometers in aerodynamic diameter |
| PSD | Prevention of Significant Deterioration |
| PT | federally proposed threatened |
| Reclamation | U.S. Bureau of Reclamation |
| RV | recreational vehicle |
| SHPO | State Historic Preservation Officer |
| SOF | Statement of Findings |
| T | federally listed threatened |
| TNW | Traditional Navigable Waters |
| U.S.C. | United States Code |
| UDNR | Utah Department of Natural Resources |
| UGS | Utah Geologic Survey |
| USACE | U.S. Army Corps of Engineers |
| USFWS | U.S. Fish and Wildlife Service |
| WL | wetland |
| WOTUS | waters of the United States |
| WSOF | Wetland Statement of Finding |

# 1. PURPOSE AND NEED

The National Park Service (NPS) prepared this Environmental Assessment (EA) for development of Bullfrog and Hite Low Water Launch Ramps at the Glen Canyon National Recreation Area (Glen Canyon NRA; GLCA). The EA analyzes the impacts of a no-action alternative and one action alternative in accordance with the:

- National Environmental Policy Act (NEPA) (*United States Code* Title 42, Section 4321 et sq [42 U.S.C. 4321 et sq])
- Department of the Interior's (DOI) Interim Final NEPA Regulations (*Code of Federal Regulations* Title 43, Part 46 [43 CFR 43])
- DOI's Implementing Procedures at 516 Department Manual 1

NPS is proposing to construct new launch ramps in the Bullfrog and Hite Districts of the Glen Canyon NRA to provide access to north Lake Powell during low water conditions. The new ramp in Bullfrog would be constructed southeast of the existing Bullfrog Marina in Kane County, and the new Hite ramp would be constructed downstream of the State Route (SR) 95 bridge in San Juan County, Utah (Figure 1).

## 1.1. Background

Lake Powell was formed when the Glen Canyon Dam was completed in 1963, making it the nation's second-largest reservoir after Lake Mead (U.S. Bureau of Reclamation [Reclamation] 2025). Glen Canyon NRA, which includes the waters of Lake Powell, was established by Congress in 1972, *"…to provide for public outdoor recreation use and enjoyment of Lake Powell and lands adjacent thereto in the States of Arizona and Utah and to preserve scenic, scientific, and historic features contributing to public enjoyment of the area…"* (Public Law 92-593, October 27, 1972, 86 Stat. 1311; 16 United States Code [U.S.C.] 460dd). Since its creation, the lake has been used for a wide variety of boating activities, ranging from small paddle craft to large houseboats.

While water levels in Lake Powell are seasonally variable, the levels have shown a general trend of declining (NPS 2025a). The full pool water elevation for Lake Powell is 3,700 feet above sea level (asl) (Reclamation 2024).[1] As of February 2026, the water level is at 3,539 feet asl (NPS 2026). Persistent drought conditions have led to unprecedented low lake levels, often rendering most launch ramps in Lake Powell inoperable because the ramps no longer reach the water. The variable low-water conditions have the potential to affect the approximately four million annual users of Glen Canyon NRA, many of whom are unable to launch their personal vessels (NPS 2022a).

[1] Pool refers to the elevation of the surface of a body of water such as a lake or reservoir.

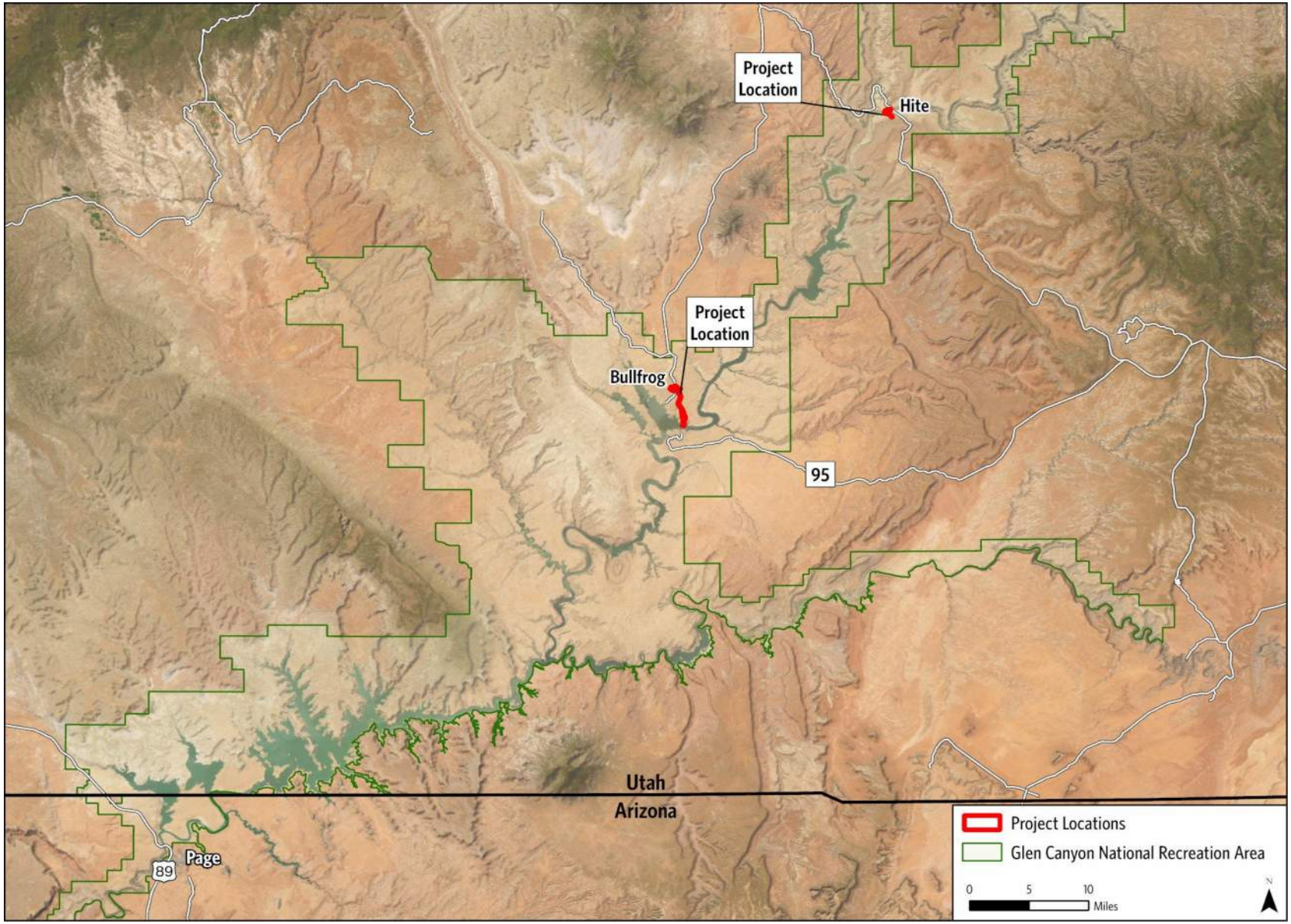


**Figure 1. Project Overview**

Glen Canyon NRA is evaluating options for boat launch ramps that can handle fluctuating water levels at Bullfrog and in the Hite. For Bullfrog, this means considering the full pool elevation of 3,700 feet asl and a low water level of 3,450 feet asl. For Hite, the new ramp is expected to be operational between a low lake level of 3,535 feet asl, the elevation of the original Colorado River channel bed at this location, up to a lake level of 3,650 feet asl. Above this level, the existing Hite ramp would be functional. The following two sections will provide the background of Bullfrog, then Hite.

### 1.1.1. Bullfrog

Bullfrog is the primary uplake base of NPS operations and provides a marina that operates year-round, campground with associated amenities, and two ramps based on lake levels—the Bullfrog North Launch Ramp and the Bullfrog Main Launch Ramp with a spur. The availability of each ramp depends on lake levels. Bullfrog Main Launch Ramp is closed to houseboats and small motorized vessels (25-feet long or shorter) while non-motorized vessels may "launch at own risk." The Bullfrog Main Launch Ramp's spur, which operates as a separate ramp, is closed to houseboats but is "launch at own risk" for small, motorized vessels and non-motorized vessels up to 25 feet. As of February 2025, the Bullfrog North Launch Ramp is open to all vessel types. The Bullfrog North Launch Ramp is currently the only ramp in the north (uplake) section of Lake Powell that provides relatively consistent access at low water levels. However, with anticipated ongoing drought conditions it is anticipated that water levels will eventually render even the Bullfrog North Launch Ramp obsolete at low-water times of the year.

### 1.1.2. Hite

The Hite District includes a launch ramp, small marina, restrooms, food, fuel, and campground. However, the unpredictability of access to the water at Hite has posed challenges to the long-term viability of concession operations at this location and resulted in the closure of all Hite facilities in 2021. Decreasing lake levels are creating changes in river hydrology, including an increase in sedimentation into the Colorado River from the Dirty Devil River. This is leading to changes to the riverbed elevation. The pavement on the existing Hite ramp ends approximately 1,600 feet short of the active river channel and sits approximately 20 feet higher than the current average water surface. Traversing the loose sediment has resulted in trucks and trailers getting stuck. For this reason, the Hite facilities are often closed to public use. When water levels are higher, the ramp is "launch at your own risk."

An unmaintained access road on the north riverbank leads to an informal takeout location known as North Wash, downstream of the Dirty Devil River confluence. The site, however, is not an ideal location to access the river due to unstable sediment conditions, fluctuating water levels, and high-velocity river currents. Glen Canyon NRA has undertaken multiple efforts to provide reliable access at this location, but maintenance activities have only temporarily been effective due to the river eroding the bank away. As a result, the Park does not actively maintain the North Wash area, and Glen Canyon NRA has notified river rafting operators that Bullfrog is a more reliable option for takeout than Hite/North Wash.

## 1.2. Purpose and Need

The purpose of constructing the proposed Bullfrog and Hite Low Water Launch Ramps (the project) is to provide continuous and predictable lake access at elevations down to 3,450 feet asl at Bullfrog and 3,535 feet asl at Hite. This would provide water access for watercraft users/visitors in the uplake part of Lake Powell while protecting natural and cultural resources.

The project is needed to address specific operational and visitor experience requirements:

- Meet legislative mandates: Ensure Glen Canyon NRA can continue to fulfill its legislative mandate to provide for outdoor recreation and use of Lake Powell and the Colorado River for the foreseeable future.
- Provide reliable access: Offer reliable recreational and operational access to and from north Lake Powell and the Colorado River during low-water conditions.
- Improve visitor experience: Enhance visitor experience by restoring boat launch and retrieval access for vessels of all sizes consistent with recreational demand on Lake Powell and the Colorado River.
- Protect natural and cultural resources by providing designated ingress and egress to/from the water during low-water conditions.

# 2. ALTERNATIVES

Glen Canyon NRA evaluated several strategies for addressing low-water levels at uplake locations in north Lake Powell. The alternatives described in this section represent the outcome of two Value Analysis studies and preliminary engineering design prepared for Bullfrog and Hite (NPS 2022a; NPS 2023a). Two alternatives—the no action alternative and the proposed action alternative—are being carried forward for detailed analysis for each location. Alternatives for each location that Glen Canyon NRA considered but dismissed from detailed analysis are described in Appendix A.

## 2.1. Alternative A – No Action Alternative

Alternative A provides a baseline to evaluate the changes and impacts presented in the action alternative. For Bullfrog, the no action alternative represents continued operation and maintenance of the existing boat launch ramps, which are functional only when lake water levels allow. For Hite, the no action alternative reflects a continuation of inoperable or unavailable facilities that have historically relied on access to the water at this location; Lake Powell has been variably inaccessible for over a decade. While Glen Canyon NRA advises raft operators to use Bullfrog, the use of the takeout location at North Wash on the north bank at Hite would likely continue because it is necessary for rafting operations to be able to offer shorter rafting trips.

The availability and operability of the existing ramps would continue to be contingent on water level fluctuations. Glen Canyon NRA would continue to monitor water levels and provide updates on its website about which launch ramps are available, inoperable, or "launch at own risk" for houseboats and smaller motorized and non-motorized vessels. "Launch at own risk" is triggered by low water levels; experienced users may use the ramp, but it is not advised. Unavailability, size restrictions, or "launch at own risk" circumstances would prevent reliable access to north Lake Powell and limit use of some recreational vessels. Without regularly available designated lake access points, some Glen Canyon NRA recreational users have attempted and may continue to attempt to access the water at undesignated locations, which could pose potential risks to visitor safety or damage sensitive Park resources.

Although the no action alternative would not meet the project's purpose and need, potentially affecting the Park's ability to effectively meet the direction of its enabling legislation to *"provide for public outdoor recreation use of Lake Powell" and "preserve the scenic, scientific, and historic features contributing to public enjoyment of the area"* (Public Law 92-593), it is retained for detailed analysis to provide a basis of impact comparisons.

## 2.2. Alternative B – New Ramps (Proposed Action)

Under Alternative B, which is the proposed action, new launch ramps would be constructed at Bullfrog and Hite to accommodate fluctuating water levels, as described as follows. Existing ramps would remain in use when water levels permit.

### 2.2.1. Bullfrog

The new ramp at Bullfrog would provide access to Lake Powell closer to the Colorado River's main channel near the Stanton Creek Primitive Camping Area, southeast of the existing Main Launch Ramp in Bullfrog Bay (Figure 2). The proposed action would include widening and extending an existing access road, constructing a parking lot and fixed boat launch ramp, and relocating utilities. Staging and stockpiling would occur in the proposed parking area and other disturbed areas within the project footprint. All staging and stockpiling would occur outside of environmentally sensitive areas such as wetlands or other sensitive sites. Temporary fencing would be installed before construction to prevent impacts from construction activities. During construction, best management practices (BMPs) would be used along the road and ramp to minimize erosion and sedimentation. All areas not needed for the continued operation of the launch ramp and access road would be reclaimed and returned to their pre-existing contours after construction is complete. Surplus rock material would be used in site construction and graded to promote proper drainage. Sediments from the lake would not be used in construction.

The construction at Bullfrog would take approximately 24 months. Construction would be continuous once it started and would take place during daylight hours. The Utah Department of Environmental Quality (DEQ) issues air permits to ensure compliance with air quality standards and regulations. Permits are required for commercial and industrial stationary sources unless exempt under Utah DEQ *R307-401 Permit: New and Modified Sources* for small sources or certain source categories. Equipment to be used by the project construction is mostly mobile sources that are not subject to Utah DEQ air permitting requirements. If stationary sources are proposed for the construction, proper air permits will be obtained following the Utah DEQ R307-401 unless such equipment is determined to be exempt. The project will comply with *R307-205 Emission Standards: Fugitive Emissions and Fugitive Dust* and implement BMPs to minimize any dust emissions during construction. For any stationary sources to be used during construction, the contractor shall obtain required permits or register any exempted equipment before the installation and operation of such sources at the sites.

#### 2.2.1.1. Access Road

Stanton Creek Road, an existing primitive access road, would be upgraded and extended to connect SR 276 to the new parking area and boat launch ramp. The existing gravel road varies in width from 25 to 30 feet. The new alignment would follow the first 2 miles of the existing Stanton Creek Road alignment south of SR 276, then the access road would take a new route for 1 mile to reach the north Lake Powell shoreline, for a total of a 3-mile-long access road. The new road would consist of one approximately 12-foot-wide travel lane and 3-foot-wide shoulder in each direction, with some curve widening, as needed, to accommodate vehicles pulling large boat trailers. The road would be designed to accommodate a truck hauling a 125-foot-long boat.

Extension of the road would require grading, vegetation removal, and drainage improvements. Stormwater flowing beneath the roadway would be directed through reinforced concrete pipes or box culverts maintaining existing flow patterns. The pipes and box culverts would be designed to handle different volumes of water, depending on the specific needs of the area. The road may be

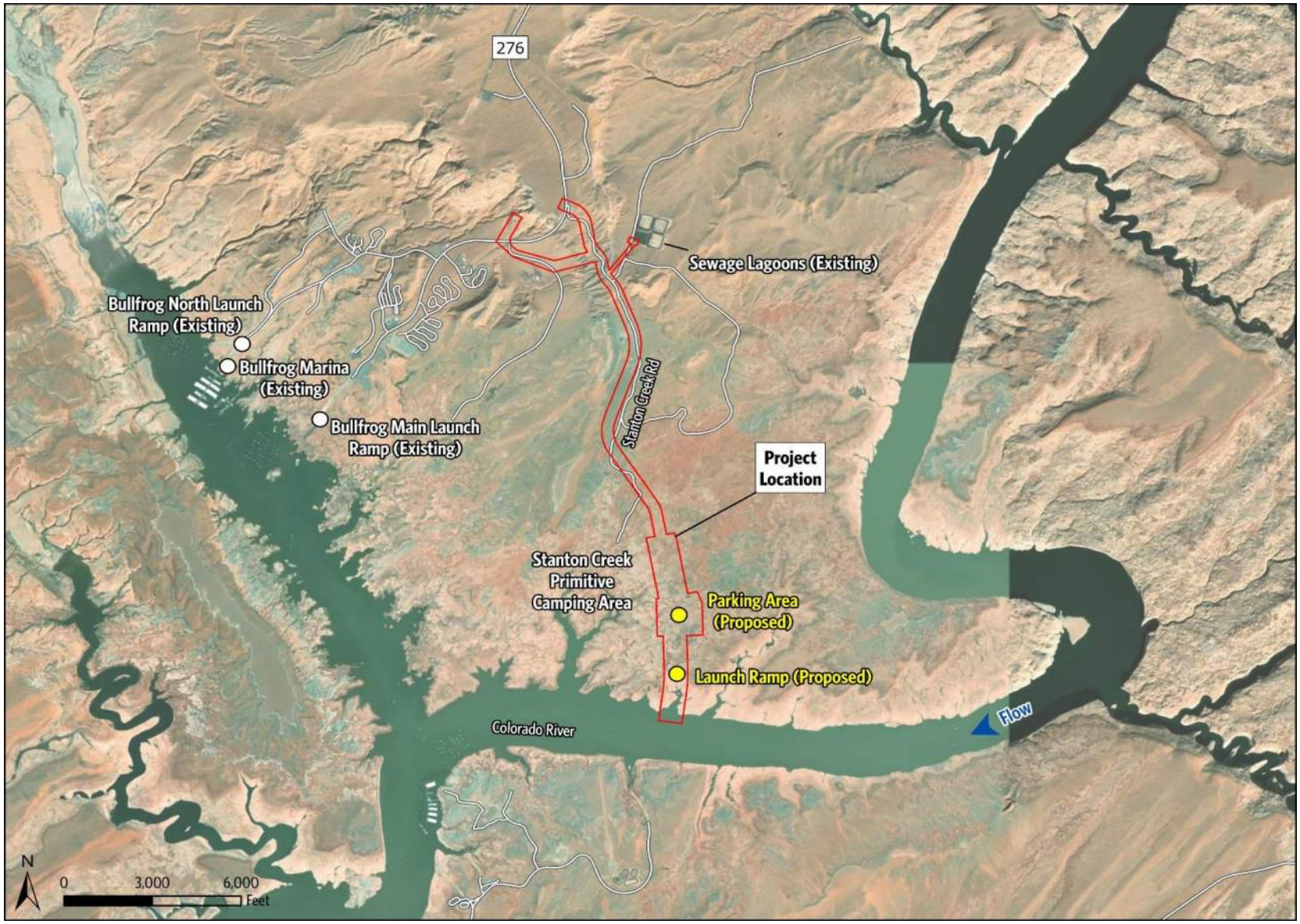


**Figure 2. Bullfrog: Alternative B**

paved, depending on availability of funding at the time of construction. Blasting to remove rock may be required along portions of the road to achieve the desired alignment and grade.

#### 2.2.1.2. Parking Area

The new parking area would cover between 8 and 16 acres depending on available funding and would include parking spots sized to accommodate trucks and boat trailers. Design of the parking area would include a two-lane circulatory ingress/egress and truck turnaround that would accommodate trucks hauling 125-foot-long house boats. Constructing the parking area would involve clearing vegetation, leveling the ground, and grading the gravel blasted or cut during construction within the parking area. The parking area would be situated above the lake's ordinary high-water mark.

#### 2.2.1.3. Launch Ramp

Access to the launch ramp would begin immediately south of the parking area. The proposed ramp would be approximately 150-feet wide, about 0.5-mile long, and constructed on a 10.5 percent grade. Ramp construction would require blasting or excavation of cut areas, followed by installation of precast concrete planks and cast-in-place concrete sections to create the ramp surface. The extent of in-water work, which may include blasting, would depend on water levels at the time of construction. Additional ramp construction activities would include installing temporary rail systems to support the precast concrete panels, dredging, erosion control, dewatering, and placing a turbidity curtain around the construction area to provide sediment retention and to exclude fish and other aquatic species from the work area. Approximately 160,000 cubic yards of rock would be blasted to facilitate adequate ramp grade to the water. Rock and gravel would be used in the construction of the access road and parking areas to the maximum extent possible.

#### 2.2.1.4. Utilities

Utility work for the new launch ramp would include relocating existing utility lines and installing new potable water, wastewater, electrical, and communications infrastructure. All proposed sanitary sewer, telecommunications, and electrical lines would follow the new roadway alignment, with approximately 14,910 feet of sewer line installed within a 5-foot-wide trench and approximately 17,750 feet each of telecom and electric lines installed within 2-foot-wide trenches, except where horizontal directional drilling is used. Consequently, there will be no permanent surface disturbance. The potable water line would partially diverge from the roadway, with 3,925 feet constructed along an alternate alignment in a trench measuring approximately 5 feet wide at the top and 2 feet wide at the bottom, disturbing roughly 19,625 square feet. The remaining 15,460 feet of water line would follow the new road within a 5-foot-wide trench. In addition, two 12-foot-diameter lift stations, each equipped with two pumps, would be constructed to support sanitary sewer pump-out. One lift station would be at the top of the launch ramp, and the second would be approximately midway along the access road. Each station would have an area of disturbance of approximately 2,700 square feet.

There is some potential for rock fall hazards where rock is cut for the ramp. During final design, measures to minimize these risks would be assessed and incorporated into the design.

#### 2.2.1.5. Tamarisk Removal

Construction of the new Bullfrog launch ramp would also involve removing tamarisk mechanically, followed by planting native willow species at mitigation sites approximately 60 miles southwest of the Bullfrog project area on NPS-managed lands within Glen Canyon NRA. Tamarisk removal would be completed using chainsaws and hand tools, with debris distributed within both sites. All cut stumps would be treated with an approved herbicide to kill the plants. Willow stem cuttings from Glen Canyon NRA would be propagated in a greenhouse until ready for planting. Appendix C provides a full list of mitigation measures.

### 2.2.2. Hite

The new ramp would be upstream of the Dirty Devil River, the existing Hite ramp, and the North Wash takeout near the SR 95 bridge on the south side of the river (Figure 3). The proposed action would include improving the existing dirt road, constructing upper and lower parking areas, and constructing a primitive fixed launch/retrieval ramp as described as follows. No utilities or other amenities are included at this location.

Staging and stockpiling would take place within the parking areas and other previously disturbed areas inside the project footprint, avoiding environmentally sensitive areas. Temporary fencing would be installed before construction. Areas not required for ongoing operation of the launch ramp and access road would be reclaimed and returned to their pre-construction contours following completion of construction. During construction, BMPs would be used along the road and ramp to minimize erosion and sedimentation. Surplus rock and gravel material would be incorporated in site construction to the extent possible and graded to promote proper drainage. Construction at Hite is expected to take approximately 21 months to complete. Construction will be continuous once started and will take place during daylight hours. Air quality requirements described for Bullfrog would also be applicable to Hite.

#### 2.2.2.1. Access Road

The proposed access road would improve and extend an existing primitive road from its intersection with the Hite Marina Road for approximately 0.5 mile. Beyond the existing road, a new road would be constructed for 0.8 mile to reach the river. The road would be approximately 18 feet wide, and although primarily designed for one-way traffic, the width would allow two vehicles to pass at the same time. The two parking areas included along the road can be used to accommodate the passage of wider truck and trailer combinations.

Extension of the road would include grading, vegetation removal, and drainage improvements. Stormwater flowing beneath the roadway would be directed through reinforced concrete pipes or box culverts, maintaining existing flow patterns. The pipes and box culverts would be designed to handle different volumes of water depending on the specific needs of the area. No paving is included for the Hite access road, which will be composed of rock and gravel from construction.

**Figure 3. Hite Project Vicinity**

Blasting to remove rock may be required along portions of the road to achieve the desired alignment and grade.

#### 2.2.2.2. Parking Areas

Two parking areas are proposed at the new Hite ramp: an upper parking area of approximately 5.25 acres and a lower parking area of approximately 0.7 acre. Both would accommodate boat trailers and trucks/passenger vehicles. Construction of the parking areas would involve clearing vegetation and leveling the ground/adding fill to achieve the desired contour and grade. The gravel parking areas would be constructed from the surplus rock and gravel generated onsite through blasting and cutting for the ramp construction to the maximum extent practical. Parking areas would be outside of the ordinary high water mark.

#### 2.2.2.3. Launch Ramp

The new 1,025-foot-long launch ramp would be approximately 35 feet wide and constructed on a 16 percent grade. Ramp construction would require blasting or excavation of cut areas, followed by installation of precast planks for in-water work, cast-in-place concrete sections for out of water work and cast-in-place concrete planks in the water to create the ramp surface. In-water work may include grading, blasting, dredging, installing a turbidity curtain, creating a cofferdam, placing gravel, dewatering, and installing concrete planks. The parking areas and launch ramp may also be used for materials processing during construction, including crushing rock for road fill and surfacing aggregate. The proposed project is estimated to require removal of approximately 250,000 cubic yards of rock via blasting to facilitate adequate ramp grade to the water. Sediment would be disposed of at a location identified during final design and not used in construction. The new launch ramp would include broadcasted weather warnings and instructional signage at for ramp users.

There is some potential for rock fall hazards where rock is cut for the ramp. During final design, measures to minimize these risks would be assessed and incorporated into the design.

#### 2.2.2.4. Utilities

There would be no utility work at Hite.

#### 2.2.2.5. Tamarisk Removal

Construction of the new Hite launch ramp would also involve mechanical tamarisk removal followed by planting native willow species adjacent to the Hite project area on NPS-managed lands within Glen Canyon NRA. Methods would be the same as described for Bullfrog. Appendix C provides a full list of mitigation measures.

## 2.3. Impact Topics Retained for Detailed Analysis

Impact topics represent resources that could be affected, either beneficially or adversely, by implementing either of the alternatives. The following topics are carried forward for detailed analysis:

- Biological Resources
- Cultural Resources
- Water Resources (Floodplains, Wetlands, and Water Quality)
- Visitor Use and Experience
- Socioeconomics

Environmental resources that are not present or would not be affected by either of the proposed projects are not evaluated in this EA but are presented in Appendix B with the rationale for elimination from detailed analysis.

# 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

## 3.1. Introduction

This chapter describes the affected environment and analyzes potential environmental consequences on natural, biological, physical, cultural and social environments from implementation of Alternative A and Alternative B in the Bullfrog and Hite project areas. The affected environment describes the existing conditions in and around each project area and serves as a baseline for understanding how and to what extent resources could be impacted by each alternative. The environmental consequences section describes the potential impacts of implementing each alternative on relevant resource topics. For this analysis, the project area refers to the construction footprint, whereas the action area encompasses a broader geographic extent comprised of the project area plus surrounding areas that may experience reasonably foreseeable effects. The extent of the action area is defined by resource topic.

## 3.2. Biological Resources

This section addresses vegetation, invasive and sensitive species. Other biological resources, like common wildlife and sensitive species that do not occur or would not be affected by the project are addressed in Appendix B, *Impact Topics Dismissed from Detailed Analysis.*

### 3.2.1. Affected Environment

This section describes the affected environment.

#### 3.2.1.1. Vegetation and Invasive Species

The vegetative cover at Bullfrog and Hite is very sparse, consisting of various grasses, weeds, and some scattered shrubs. In some areas along the side of the lake, tamarisk grow. Tamarisk is an invasive species that is damaging to the natural ecosystem. Tamarisk can grow root systems up to 50 feet wide and 100 feet deep. The long tap roots can enter aquifers and use up to 200 gallons of water a day (National Aeronautics and Space Administration 2006). Its use of water lowers the water table, and in combination with its thick growth, out competes and crowds out native vegetation.

**Photo 1. Typical vegetation at project areas**

**Bullfrog:** At Bullfrog, dominant plant species include the following varieties: fragrant sumac (*Rhus aromatica*), Mormon tea (*Ephedra viridis*), four-wing saltbush (*Artiplex canescens*), Spanish-bayonet (*Yucca harrimaniae*), milkvetch (*Astragalus* spp.), and sand dropseed (*Sporobolus cryptandrus*) (NPS 2023b). Portions of the project area near the water are dominated by five-stamen tamarisk (*Tamarix chinensis*) and multiple small riparian/wetland plant communities fed by springs, seeps, and lake inundation (NPS 2023b).

**Hite:** Dominant species in the Hite project area include blackbrush (Coleogyne ramosissima*), Mormon tea (*Ephedra sp.), and shadscale saltbush (*Atriplex confertifolia*). Other species

included fragrant sumac (*Rhus aromatica*), singleleaf ash (*Franxinus anomala*), Stansbury cliffrose (*Purshia stansburiana*), soaptree yucca (*Yucca elata*), plains prickly pear (*Opuntia polyacantha*), Mojave hedgehog cactus (*Echinocereus mojavensis*), and desert trumpet (*Eriogonum inflatum*). No riparian woodland or emergent wetland vegetation is present in or adjacent to the project area (NPS 2025b). Invasive species noted at Hite included Russian thistle (*Salsola tragus*) and saltlover (*Halogeton glomeratus*).

#### 3.2.1.2. Sensitive Species

The Endangered Species Act of 1973 (16 U.S.C. 153 et seq.), as amended (ESA) in Section 7(a)(1) directs federal agencies to conserve and assist in the recovery of listed species and to use their authorities to further the purposes of the Act by carrying out programs for the conservation of endangered and threatened species so that listing is no longer necessary (50 CFR §402). Furthermore, the ESA in Section 7(a)(2) also directs federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) when their activities "may affect" a listed species or designated critical habitat.

Separate biological assessments were prepared for the Bullfrog and Hite action areas to analyze the potential effects of the proposed new launch ramps on federally listed threatened, endangered, proposed, and candidate species, and critical habitats (NPS 2023b; NPS 2025b). Federally listed and proposed species, candidates for ESA-listing, and designated/proposed critical habitat were obtained from the USFWS Information for Planning and Consultation (IPaC) system for each project area (Bullfrog Project Code 2023-0029457 on December 30, 2022, updated July 10, 2025; Hite Project Code 2024-0150228 on September 26, 2024). Table 1 summarizes the species lists that were reviewed by a qualified biologist.

**Table 1. ESA Species with the Potential to Occur in the Action Areas**

| Species Common and Scientific Name | Status[a] | Potential to Occur | CH in the Action Area | Rationale for Exclusion[b] | Habitat Description and Range |
|---|---|---|---|---|---|
| ***Invertebrates*** | | | | | |
| Monarch Butterfly *Danaus plexippus* | PT | **Bullfrog: YES**<br>**Hite: YES** | **Bullfrog:** No<br>**Hite**: No | **Bullfrog**: HAB<br>**Hite**: N/A | Prairies, meadows, grasslands, and along roadsides across North America. The species is primarily associated with milkweed (primarily Asclepias spp.) for breeding, laying eggs, and larval development (NPS n.d.a).<br>**Bullfrog**: There are minimal milkweed and other flowering plants/nectar sources to support monarch butterflies in the Bullfrog action area.<br>**Hite**: Milkweed has been documented historically in the Hite action area (Xerces Society n.d.); therefore, suitable habitat is present. |
| ***Birds*** | | | | | |
| Mexican spotted owl *Strix occidentalis lucida* | T; CH | **Bullfrog**: No<br>**Hite**: **YES** | **Bullfrog: YES**<br>**Hite: YES** | **Bullfrog**: HAB<br>**Hite**: N/A | Forested mountains and canyonlands throughout southwestern U.S. Isolated forested mountain systems, forested canyons, steep rocky canyon lands. Old-growth or mature forests that possess uneven aged stands, high canopy closure, multi-storied levels, high tree density; canyons with riparian or conifer communities; 4,100-9,000 feet elevation (USFWS 2012).<br>**Bullfrog**: Although the action area overlaps designated critical habitat, there is no suitable nesting or roosting habitat. There are no Protected Activity Centers within Glen Canyon NRA; no active nests or individuals were identified during surveys conducted in the area (NPS 2017a).<br>**Hite**: Action area overlaps suitable habitat and designated critical habitat. |

| Species Common and Scientific Name | Status[a] | Potential to Occur | CH in the Action Area | Rationale for Exclusion[b] | Habitat Description and Range |
|---|---|---|---|---|---|
| ***Fishes*** | | | | | |
| Razorback sucker *Xyrauchen texanus* | E | **Bullfrog: YES**<br><br>**Hite:** No | **Bullfrog**: No<br><br>**Hite: YES** | **Bullfrog**: N/A<br><br>**Hite**: ODR | Endemic to the Colorado River Basin, the species generally inhabits medium to large rivers and their impoundments and is usually associated with sand, mud, and rock substrate in areas where temperatures are moderate to warm. Favors slow-moving water, backwaters, eddies, and uses flooded lowlands and lower portions of tributary systems for resting and feeding during the breeding season. Found in both lotic (freshwater) and lentic (body of standing water) habitats, is most common in low-velocity habitats such as backwaters, floodplains, flatwater river reaches, and reservoirs. Prefers cobble or rocky substrate for spawning (USFWS 2018b).<br><br>**Bullfrog**: This species is known to occur within Lake Powell and within the action area.<br><br>**Hite**: The species is known to occur within Lake Powell, but its distribution does not overlap the project area (NPS 2017b; UDWR 2024). Therefore, the proposed project would have no effect on the species. The action area does not contain elements that would contribute to the Physical and Biological Features (PBF) for critical habitat. Therefore, the proposed project would have no effect on designated critical habitat. Critical habitat is not analyzed further. |

Source: USFWS December 30, 2022, and September 26, 2004. http://ecos.fws.gov/ipac

[a] Status Codes: E=federally listed endangered; T=federally listed threatened; PE=federally proposed endangered; PT=federally proposed threatened; C=federal candidate for listing; and CH=designated critical habitat

[b] Exclusion Rationale Codes: ODR=outside known distributional range of the species; HAB= no habitat present in action area; and ELE= outside of elevational range of species

The following species are discussed in the order that they occur in Table 1. There is one proposed threatened species—monarch butterfly (*Danaus plexippus*)—and one federally listed endangered species—Mexican spotted owl (*Strix occidentalis lucida*)—with the potential to occur in the Hite action area (Table 1). One federally listed endangered species—razorback sucker (*Xyrauchen texanus*)—has the potential to occur in the Bullfrog action area. The action area for Bullfrog is the project area plus a 2.3-mile buffer, as determined in consultation with USFWS. Similarly, the action area for Hite is defined as the project area where ground-disturbing activities would occur plus a 1-mile buffer.

*Monarch Butterfly*

The monarch butterfly was proposed as threatened under the ESA on December 12, 2024 (USFWS 2024b). This species is associated with several habitats, including grassland, wetland, tundra, coastal and mountainous areas, as well as urban and rural environments. Year-round, blooming nectar resources are required for foraging. During the breeding season, reproduction is dependent on the presence of milkweed, the sole food source for larvae. The action area is more than 500 miles east of the range where monarch butterflies spend the winter (USFWS 2020b). No overwintering habitat occurs in Utah.

**Bullfrog**: Milkweed has not been identified within the Bullfrog action area; therefore, no suitable breeding habitat is present (Xerces Society n.d.).

**Hite**: Vegetation in the Hite project area is very sparse and widely distributed. Milkweed has been previously identified within the Hite action area (Xerces Society n.d.); therefore, suitable breeding habitat is present. Other flowering plants in the Hite action area also provide foraging habitat for the monarch butterfly. While a formal survey was not conducted, no milkweed was observed within the project area during fieldwork.

*Mexican Spotted Owl*

The Mexican spotted owl (*Strix occidentalis lucida*) was listed as a threatened species under the ESA on March 16, 1993 (USFWS 1993), and designated critical habitat for the Mexican spotted owl was published in 2004 (USFWS 2004). The final critical habitat rule identified the Physical and Biological Features (PBFs)—essential physical and biological features crucial for species conservation, formerly called Primary Constituent Elements—of critical habitat for forested habitats, canyon habitats, and prey species. The PBFs for forested habitats include a range of tree species, a shade canopy, and large dead trees. The PBFs related to canyon habitat include:

- Presence of water (often providing cooler and often higher humidity than the surrounding areas).
- Clumps or stringers of mixed conifer, pine-oak, pinon-juniper, and/or riparian vegetation.
- Canyon walls containing crevices, ledges, or caves.
- High percent of ground litter and woody debris.

Threats to the Mexican spotted owl include wildfire and associated response/treatments; roads, energy facilities, and water facilities development; insects and disease; grazing; competition with

barred owls; and more frequent and extreme weather events (USFWS 2012). Range-wide, this species is found in forested mountains and canyonlands in southern Utah, Colorado, Arizona, New Mexico, and western Texas south into several states in Mexico.

The Mexican spotted owl recovery plan designates Protected Activity Centers (PACs) with a minimum size of 600 acres to conserve core use areas of territorial owls. The plan indicates that areas of this size would protect the nest site, several roost sites, and highly used foraging areas.

**Bullfrog**: The Bullfrog action area is within Critical Habitat Unit CP-13. Glen Canyon NRA conducted Mexican spotted owl monitoring in 2017, including areas within the Bullfrog action area near Stanton Creek. NPS determined that the area contained no suitable habitat for the Mexican spotted owl due to a lack of trees, prey habitat, steep/north facing cliffs, and nesting or roosting sites. There are no PACs within the project vicinity (NPS 2017a).

**Hite**: The Hite action area is within Critical Habitat Unit CP-14. Suitable habitat is present approximately 0.4 mile from the Hite project area. The Hite project area does not contain the PBFs related to forest structure or maintenance of adequate prey species (NPS 2025b). For the PBFs related to canyon habitat, water is present and there is a high percentage of ground litter; however, no mixed conifer, pine-oak, pinyon-juniper, or riparian vegetation is present, nor are there canyon walls containing crevices, ledges, or caves that could be affected within the Hite project area (NPS 2025b). The nearest PAC is more than 5 miles from the Hite project area (pers. comm., R. Reisor, USFWS Deputy State Supervisor, October 2024).

*Razorback Sucker*

The razorback sucker was listed as endangered under the ESA on October 23, 1991 (USFWS 1991). The species is endemic to the Colorado River Basin of the southwestern U.S. Currently, small groups of razorback sucker are found in the Green River, upper Colorado River, and San Juan River arm of Lake Powell subbasins; lower Colorado River between Lake Havasu and Davis Dam; reservoirs of Lake Mead and Mohave; in small tributaries of the Gila River subbasin; and in local areas under intensive management (USFWS 2002).

Habitats required by adults include deep runs, eddies, backwaters, and flooded off-channel environments in spring; runs and pools often in shallow water associated with submerged sandbars in summer; and low-velocity runs, pools, and eddies in winter. Spring migrations associated with spawning occur in local and long-distance movement patterns. The species favors flooded lowlands and lower portions of tributary streams for resting and feeding during the breeding season. Razorback suckers spawn primarily in near-shore environments. Spawning in rivers typically occurs over bars of cobble, gravel, and sand substrates during spring runoff at water temperatures greater than 57 degrees Fahrenheit. Spawning also occurs in reservoirs over rocky shoals and shorelines. Young require nursery environments with quiet, warm, shallow water such as tributary mouths, backwaters, or inundated floodplain habitats in rivers, and covers or shorelines in reservoirs (USFWS 2002). Relatively substantial numbers (500-2,000 adults) have been found residing in Lake Powell (Francis et al. 2015; Albrecht et al. 2017).

**Bullfrog**: This species is known to occur in Lake Powell and within the Bullfrog action area. However, the project area does not contain suitable habitat and is outside of designated critical habitat for the species (NPS 2017a).

**Hite**: The Hite action area is within designated critical habitat for the species. However, the species distribution does not overlap the Hite action area. While suitable habitat is present, the project area does not contain elements that would contribute to PBFs for critical habitat.

### 3.2.2. Impacts of Alternative A – No Action

Under Alternative A, new launch ramps would not be constructed, and there would be no construction-related impact on vegetation, invasive species, or federally listed threatened, endangered, proposed, and candidate species or critical habitats. If recreationalists use unofficial points to access the water, these activities could result in disturbance of vegetation and, depending on the location, could affect biologically sensitive areas.

### 3.2.3. Impacts of Alternative B (Proposed Action)

Within the Bullfrog and Hite project areas, there would be temporary and permanent disturbance from project construction. At both locations, the ground would be disturbed by earthmoving associated with new and improved roadways, parking areas, and ramps. Heavy equipment and machinery, blasting and ripping of material, cofferdams and turbidity curtains, and dewatering would potentially be associated with construction of the new launch ramps, access roads, and parking areas.

#### 3.2.3.1. Vegetation

**Bullfrog**: Vegetation would be removed from roughly 328 total acres as a result of this project. This estimate is conservative as some rocky areas do not support vegetation and some areas are already clear of vegetation. Approximately 65 acres of permanent impacts would be required for the project's road, parking area, launch ramp, cut and fill slopes, and pump stations. Temporary impacts would amount to 263 acres and be associated with construction equipment movement, relocated utility trenches where they deviate from the road, and pump stations. Vegetation is anticipated to regrow in non-rocky temporarily impacted areas.

The equipment used during construction and trucks/boats launching from the ramp would have a long-term potential to introduce invasive species seed/vegetation. To minimize the introduction and spread of weeds, the following mitigation measures would be implemented during construction (Appendix C). Disturbed areas would be reclaimed, and noxious weeds would be managed during construction to reduce existing and prevent new weed infestations. In addition, construction equipment brought in from outside the Park would be pressure-washed to minimize the potential of importing noxious weed seeds. Finally, all fill material imported for the project would be sourced from local commercial suppliers and would be certified weed-free.

**Hite**: At Hite, there would be approximately 107 acres of disturbance. Like Bullfrog, this is a conservative estimate. Of those acres, approximately 35 acres would be permanently affected and

approximately 72 acres would be temporarily impacted. Permanent impacts are associated with the project's road, parking area, and launch ramp, and the hillslope cuts and fill slopes. Temporary impacts would result from the movement of equipment during construction. The potential impacts to vegetation and invasive species would be the same as described for Bullfrog, and the same mitigation measures would be implemented.

#### 3.2.3.2. Sensitive Species

The following provides an assessment of impacts for species or habitat with the potential to occur, as identified in Table 1.

*Monarch Butterfly – Hite Only*

The proposed project construction and operation would permanently affect 35 acres, which is only a small portion of the suitable habitat available within the larger Hite action area. Vegetation is generally sparse and widely dispersed. While flowering nectar plants occur in the Hite project area, no milkweed was observed. Construction activities or disturbance by recreation area users could damage or destroy individual plants.

The monarch butterfly is currently proposed as threatened. However, should the monarch butterfly be listed as "threatened" during the life of the Hite project, the proposed project could result in incidental death of individual monarch butterflies. Because a very limited amount of suitable breeding habitat and no overwintering habitat is present in the Hite action area, it is likely that very few, if any, monarch butterflies would be affected (NPS 2025b). Accordingly, the proposed Hite project is not likely adversely affect the species' continued existence.

*Mexican Spotted Owl – Hite Only*

No suitable habitat is present within the Hite project area. Therefore, project activities would not result in a loss of suitable habitat. However, suitable habitat is present in the action area approximately 0.4 mile from the Hite project area. Noise and vibrations from project activities would occur near suitable habitat for Mexican spotted owls. Construction would halt if a Mexican spotted owl enters the project area.

Mexican spotted owl responses to noise vary according to noise level and type (USFWS 2001a, 2001b), but this species is less affected by nearby, non-threatening human activity than most other raptor species (Delaney et al. 1999). Delaney et al. determined that during nesting season, spotted owls did not flush when aerial-generated noise was less than 92 decibels (dB) or ground-based noise was less than 46 dB. No flushes occurred when the noise source was more than 344 feet away. Spotted owls returned to normal behavior within 10 to 15 minutes after noise events, and reproduction was not affected. They also suggested that activities closer to the owls might elicit a greater reaction due to visibility, regardless of noise level (Delaney et al. 1999).

Based on a study conducted by Delaney et al. (1999), noise produced by blasting and rock hammering, which would result in very loud, percussive noises, is predicted to be more startling to Mexican spotted owls compared to other project activities that use heavy equipment, such as clearing, grubbing, and grading. A chart of noise levels for various construction activities is

included in Appendix D. Because these project activities are expected to occur year-round, best efforts would be made to minimize the extremely loud activities (e.g., blasting, jackhammering) to the extent possible during the Mexican spotted owl breeding season (i.e., March 1 through August 31). Further, the potential habitat is more than 344 feet from construction activities so it is not as likely that owls would flush from the noise, based on Delaney et al.'s findings.

Localized noise from Hite project activities could affect normal behavior patterns of Mexican spotted owls if present nearby, such as causing them to avoid habitat near the project area. Therefore, habitat within the Hite action area would no longer be suitable while construction activities occur. Mexican spotted owls would be expected to use similar habitat within side canyons along the Colorado River farther away from the project area until noise levels return to pre-project levels after completion of the project. If nesting has already been initiated and eggs or young are present in nearby habitat when construction activity begins, adults may flush from the nest and avoid returning to care for them, which could result in death or injury to the eggs or young. Once away from the noise source, the adults would likely settle within 10 to 15 minutes of the time they were startled, based on Delaney et al. findings.

The proposed project would introduce recreational access to a portion of the Hite District that has not previously supported consistent or concentrated use. Until 2024, recreation occurred at the Hite facilities to the west. Since then, some activity still occurs, such as visitors passing by on boats or those launching at their own risk across the river. The new launch ramp is expected to increase the frequency and proximity of human activity near suitable habitat for Mexican spotted owl. In addition, hikers may explore areas near the parking and boat launch where suitable habitat for the Mexican spotted owl exists. If nesting owls are present, hikers may disturb them, potentially resulting in adults flushing from the nest and causing an active nest to fail. The effects of high levels (more than 50 per day) of short-duration recreational hikers near nests may be detrimental to breeding Mexican spotted owls due to decreased prey handling, amount of time spent on daytime maintenance behavior, and increased vocalization (Swarthout and Steidl 2003). Given that the majority of use at this ramp is anticipated to be associated with rafting operations, most users would likely stay close to the boat ramp and fewer visitors would potentially approach the suitable habitat.

Although suitable Mexican spotted owl habitat occurs within the Hite action area, current survey data do not confirm occupancy (NPS 2025b). Moreover, the project is not likely to impact essential behavioral patterns to the point where it harms (kills or injures) or affects Mexican spotted owls' breeding, feeding, or sheltering at measurable, detectable levels (USFWS 2025). As described, the proposed Hite project may adversely affect individual Mexican spotted owls if present, particularly during construction. However, the project is not anticipated to adversely affect Mexican spotted owl populations. USFWS agreed with this opinion on August 28, 2025 (USFWS 2025). Mitigation measures are provided in Appendix C. The USFWS Biological Opinion is provided in Appendix E.

*Mexican Spotted Owl Critical Habitat*

**Bullfrog**: NPS determined the Bullfrog area lacked any necessary PBFs (NPS 2017a). The project would have no impact on Mexican spotted owl critical habitat.

**Hite**: Because the Hite project area does not contain the PBFs for forest structure or maintenance of adequate species and lacks all but one of the PBFs for canyon habitat, effects on critical habitat are not likely to occur at a scale that would affect the species or the integrity of designated critical habitat (USFWS 2025). However, the project noise would potentially adversely affect the habitat that is present.

*Razorback Sucker – Bullfrog Only*

While the razorback sucker is known to inhabit and migrate through Lake Powell, it is unlikely to occur in the Bullfrog action area because it does not support adequate spawning, resting, or feeding habitat favored by the species (NPS 2023b). While there is a chance a fish could be adversely affected during construction, measures like the turbidity curtain to exclude fish would reduce this potential. The operation of the launch ramps, which is already occurring at the other ramps when operable, is not anticipated to result in an increased potential for fish to be affected because operations are relocating rather than increasing. Overall, it is unlikely that construction or operation of the ramp will adversely affect the razorback sucker given the habitat is lacking. USFWS concurred with this determination on April 20, 2023 (USFWS 2023).

### 3.2.4. Trends and Planned Actions

Past and current actions and trends in the project areas have resulted in localized habitat disturbance and broader ecological changes that have affected biological resources. From damming the river, to developing amenities and communities along the lake, to water, land and aerially-based tourism, human impacts within Glen Canyon RNA and in the surrounding areas have placed pressures on habitat, vegetation, and species. These impacts are exacerbated by changes in the climate, more severe weather patterns and drier conditions. Ongoing maintenance activities and future infrastructure upgrades are expected to continue these trends. In addition, increased recreational and economic use of non-federal lands within the Glen Canyon NRA region, facilitated by improved travel access, is likely to place additional pressure on surrounding habitats.

Past development and use of the Hite area, present use of the area by rafting operations, and potential future use of unauthorized water access if ramps are busy or unavailable has the potential to disturb flowering plants which could reduce available resources for the monarch butterfly.

Past, present, and future actions and trends affecting Mexican spotted owl habitat within Glen Canyon NRA are largely tied to ongoing human activity in the area. The landscape has experienced long-term disturbance from motor vehicle use, air traffic, and recreational boating, all of which continue to influence habitat conditions. Within the Hite project area, the most consistent stressor is vehicle traffic along UT Highway 95, which bisects the action area and generates regular noise and human presence. Traffic volume, vehicle type, and travel speeds contribute to elevated noise levels that can disrupt sensitive wildlife. Occasional aircraft use of the nearby Hite

airstrip may also contribute intermittent noise. Shifts in temperature and weather patterns represent an additional long-term stressor that may affect habitat conditions over time (USFWS 2025).

Changes in water levels, flow patterns, and quality may reduce habitat availability and affect changes in nutrient flow, which could negatively impact fish populations and riparian vegetation. Shifts in sediment transport and deposition are also anticipated, potentially altering the structure of aquatic habitats. Additional concerns include the spread of invasive and noxious plant species, which may degrade habitat quality, and the growing frequency of extreme weather events and temperature fluctuations, both of which could further stress biological systems. Rising water temperatures are likely to favor several predatory non-native fish species, increasing pressure on native fish communities. On the positive side, ongoing restoration efforts aimed at improving conditions for native fish and controlling non-native species may help support population recovery and enhance ecosystem resilience for the razorback sucker.

While Glen Canyon NRA advises raft operators to use Bullfrog, the use of the unmaintained takeout location at North Wash on the north bank at Hite would likely continue. Ongoing use-at-own-risk of North Wash takeout would continue to disturb the bank of the river, destabilizing it and making it more vulnerable to erosion, thereby increasing localized sediment load and turbidity. Due to the steep conditions and unstable terrain, recreational users often employ winches to pull watercraft out of the river. These activities disturb the edge of the river channel and could further contribute to sediment transport and deposition, affecting fish habitat both in the immediate area and downstream.

Under Alternative A, the existing sources of disturbance would continue without change. Because there would be no impact on the monarch butterfly, Mexican spotted owl, or razorback sucker, there would be no contribution to the past, current, or future trends affecting these species.

Under Alternative B, impacts to the sparse vegetation would temporarily contribute to the larger loss of habitat that supports the monarch butterfly until vegetation reestablishes in areas that are not permanently part of the project. However, while it could affect individual monarch butterflies, the contribution to the loss of habitat is not likely to influence the longevity of the species as a whole.

Increased noise during construction and operation and increased human activity near suitable habitat associated with Alternative B may have an adverse localized effect on individual Mexican spotted owls near Hite which would contribute to the larger impacts to Mexican spotted owl habitat. However, the effects of the project, particularly with the implementation of mitigation to stop work if a Mexican spotted owl is present and to avoid the loudest forms of construction during nesting season, would reduce impacts and the overall contribution to the past present and anticipated future trends. The project is not anticipated to result in any Mexican spotted owl mortalities (NPS 2025b; USFWS 2025).

Alternative B at Bullfrog is not anticipated to diminish razorback sucker habitat or the species as a whole. The habitat in the project area is marginal, and the project would use a turbidity curtain during in-water work which would minimize sediment dispersion and would exclude razorback sucker from the Bullfrog project area.

### 3.2.5. Conclusion

Alternative A would continue current management of the existing ramps based on lake water levels. No construction-related disturbances to ESA-listed species would occur.

Two biological opinions were completed, one for Bullfrog and another for Hite. The Bullfrog BA assessed Mexican spotted owl critical habitat and the razorback sucker. The Mexican spotted owl critical habitat would not be affected because the habitat in the project area lacks trees, prey habitat, steep/north facing cliffs, and nesting or roosting sites. The razorback sucker population is derived from stocked populations, and the species are present in Lake Powell in substantial numbers. At Hite, the BA completed in a Biological Opinion which determined the project may affect and is likely to adversely affect the Mexican spotted owl and critical habitat. Our NEPA analysis is consistent with these findings as described below.

Under Alternative B, construction of the new launch ramp and associated features at Hite would affect **monarch butterfly** due to the loss of potential habitat and increased human activity but not adversely affect the species as a whole. The construction of the new launch ramp at Bullfrog is not expected to impact the monarch butterfly because no suitable habitat has been identified within the Bullfrog action area.

**Mexican spotted owls** are not anticipated to occur at Bullfrog. At Hite, construction could disrupt individual owls due to increased noise. Noise levels could result in flushing of an owl if present, but it is unlikely given the distance between the suitable habitat and the construction and the attenuation/decrease of noise over the 0.4-mile distance. During ramp operations, increased human activity could result in human activity occurring closer to suitable habitat. This could have adverse effects on adults resulting in flushing and changes in their hunting and maintenance activities and the leaving of young if adults flush from the nest. However, given the use anticipated at Hite would be primarily rafting operations, it is likely most recreationalists will stay close to the boat ramp.

The Bullfrog project would not have reasonably foreseeable environmental effects on Mexican spotted owl critical habitat because this area does not support the physical or biological features essential to the conservation of the species (PBFs). Construction of the new Hite launch ramp is not expected to compromise Mexican spotted owl critical habitat integrity, as the project area includes only a single PBF and it is 0.4 mile from the proposed construction activity.

It is unlikely that **razorback sucker** would occur at Bullfrog because the site lacks the characteristics the fish prefer. If a fish were to occur, the use of a turbidity curtain to keep the razorback sucker out of the construction area would minimize the potential for impact. Razorback suckers are not anticipated at Hite.

## 3.3. Cultural Resources

The NPS protects and manages cultural resources including archaeological resources, cultural landscapes, ethnographic resources, historic and prehistoric structures, and museum collections in accordance with *NPS Management Policies 2006* and related laws and regulations. Section 106 of

the National Historic Preservation Act (NHPA) mandates that federal agencies assess how their projects affect historic properties, consulting with the State Historic Preservation Officer (SHPO) and other stakeholders (like Tribes and the public) consistent with 36 CFR Part 800 regulations to consider and identify the impacts, find ways to avoid or minimize harm, and resolve any adverse effects before proceeding.

Historic properties include prehistoric and historic districts, sites, buildings, structures, or objects included in or eligible for inclusion in the National Register of Historic Places (NRHP). To qualify for the NRHP, a property must retain sufficient integrity of location, design, setting, materials, workmanship, feeling, and association to convey its historic identity and must meet at least one of the National Register criteria for evaluation.

The National Register criteria are as follows:

- Criterion A: Be associated with events that have made a meaningful contribution to the broad patterns of history.
- Criterion B: Be associated with the lives of persons important in the past.
- Criterion C: Embody the distinctive characteristics of a type, period, or method of construction; or represent the work of a master; or possess high artistic values; or represent a significant and distinguishable entity whose components may lack individual distinction.
- Criterion D: Have yielded, or may be likely to yield, information important in prehistory or history.

Properties can be of local, state, or national importance. In general, properties less than 50 years of age, unless of exceptional importance, are not eligible for inclusion in the NRHP.

### 3.3.1. Affected Environment

The Area of Potential Effects (APE) is defined as the geographic area where an undertaking may alter the character or use of historic properties. Separate Class III pedestrian surveys were conducted for each APE (NPS 2022b; NPS 2025c). Areas composed of previously inundated slickrock, slopes more than 60 degrees, deep lake sediment deposits, and areas still inundated by Lake Powell were excluded from systematic survey. Areas along steep cliff faces and slickrock canyons were inspected for alcoves with binoculars to identify areas that might contain cultural material or indigenous rock art. All cultural resources were fully documented, assessed for current condition, and evaluated for their NRHP eligibility. Previously recorded sites were assessed for condition and re-recorded, as necessary. The APE and summary of cultural resources for each project are described as follows.

#### 3.3.1.1. Bullfrog

The APE includes approximately 330 acres and comprises the maximum extent of ground disturbance required for construction as well as a buffer around these areas. It includes the proposed access road, parking lot, launch ramp, utility relocations, and staging and stockpiling areas. For most of the proposed road, the APE is approximately 400 feet wide (200 feet on either

side of the proposed road centerline). As the road approaches the parking area, the APE widens to 1,500 feet, and measures 800 feet wide at the launch ramp (400 feet on either side of center).

Ten cultural resources were identified in the Bullfrog APE during the Class III survey, only one of which has been determined eligible for the NRHP (archaeological site 42KA7601). While not within the APE, seven NRHP-eligible sites are adjacent to it (42KA3375, 42KA4294, 42KA8613, 42KA9495, 42KA9496, 42KA9500, and 42KA9501).

#### 3.3.1.2. Hite

The APE includes an irregularly shaped 107.3-acre area extending between Hite Marina Road and the Colorado River. It includes the proposed access road, new launch ramp, upper and lower parking areas, and staging and stockpiling areas.

Eleven cultural resources were identified in the Hite APE during the Class III survey, two of which are eligible for the NRHP. The survey crew revisited archaeological site GLCA02443/42SA24695, a flaked stone scatter and lithic procurement area. As previously recorded, the site boundary within the APE included steep and inaccessible hill slopes where site occupation could not have occurred. Following communication with NPS/Glen Canyon NRA, the site boundary within the APE was revised to exclude these slopes. The current recording concurs with the previous determination that GLCA02443/42SA24695 is eligible under Criterion D. Archaeological site GLCA03063/42SA35785 is a newly recorded, flaked stone scatter that was previously incorporated into the GLCA02443/42SA24695 site boundary. Based on its location, it is interpreted to represent a separate and discrete Indigenous use episode that is not the result of down slope erosion from GLCA02443/42SA24695. GLCA03063/42SA35785 is recommended eligible under Criterion D.

Table 2 summarizes the cultural resources documented within each project's APE.

**Table 2. Cultural Resources Sites Documented in the Project APEs**

| Site Number | Description | NRHP Eligibility |
|---|---|---|
| ***BULLFROG*** | | |
| 42KA7601 | Prehistoric lithic scatter | **Determined eligible (D)** |
| 42KA7602 | Prehistoric lithic scatter | Determined ineligible |
| 42KA9498 | Prehistoric lithic scatter | Determined ineligible |
| 42KA9499 | Prehistoric lithic scatter | Determined ineligible |
| 42KA9502 | Prehistoric lithic scatter | Determined ineligible |
| 42KA9510 | Prehistoric lithic scatter | Determined ineligible |
| 42KA9511 | Prehistoric lithic scatter | Determined ineligible |
| 42KA9512 | Prehistoric lithic scatter | Determined ineligible |

| Site Number | Description | NRHP Eligibility |
|---|---|---|
| 42KA9521 | Prehistoric lithic scatter | Determined ineligible |
| 42KA9522 | Prehistoric lithic scatter | Determined ineligible |
| ***HITE*** | | |
| GLCA01487/42SA03954 | Artifact scatter/lithic procurement area | Determined ineligible |
| GLCA02440/42SA24692 | Flaked stone scatter | Determined ineligible |
| GLCA02441/42SA24693 | Artifact scatter/lithic procurement area | Determined ineligible |
| GLCA02443/42SA24695 | Flaked stone scatter/lithic procurement area | **Determined eligible (D)** |
| GLCA03051/42SA35779 | Flaked stone scatter/lithic procurement area | Recommended ineligible |
| GLCA03052/42SA35780 | Historic artifact scatter | Recommended ineligible |
| GLCA03053/42SA35781 | Flaked stone scatter/lithic procurement area | Determined ineligible |
| GLCA03054/42SA35782 | Flaked stone scatter | Determined ineligible |
| GLCA03055/42SA35783 | Flaked stone scatter/lithic procurement area | Determined ineligible |
| GLCA03056/42SA35784 | Flaked stone scatter/lithic procurement area | Determined ineligible |
| GLCA03063/42SA35785 | Flaked stone scatter/lithic procurement area | **Determined eligible (D)** |

### 3.3.2. Impacts of Alternative A – No Action

Under Alternative A, new launch ramps would not be constructed. The availability and operability of existing ramps would continue to vary based on fluctuating lake and river water levels. Without consistent, designated access points to the lake and river, recreational users may unintentionally harm cultural resources, particularly in "launch at own risk" scenarios. Many areas where recreational users may "launch at own risk" have not been surveyed for archaeological resources at low lake levels and may contain archaeological resources along shoreline access areas. Off-road vehicle traffic crossing shoreline access areas to launch in these locations could damage archaeological sites by crushing surface artifacts or disturbing subsurface deposits, resulting in diminished site integrity. Because the extent and locations of resources in these unsurveyed areas are not fully known, there is a risk of inadvertent damage to both documented and undiscovered cultural resources. These impacts would be long term because they could occur whenever water levels drop and recreational users "launch at own risk." Consequently, they may lead to permanent loss of information and site integrity.

### 3.3.3. Impacts of Alternative B (Proposed Action)

This section summarizes the impacts of Alternative B.

#### 3.3.3.1. Bullfrog

As currently designed, Alternative B would avoid direct impacts on NRHP-eligible cultural resources within the Bullfrog APE (site 42KA7601), as well as seven NRHP-eligible sites adjacent to proposed work areas (sites 42KA3375, 42KA4294, 42KA8613, 42KA9495, 42KA9496, 42KA9500, and 42KA9501). Ground disturbance related to construction activities and access could cause inadvertent disturbance to these sites due to their proximity to proposed work areas. To reduce this risk, temporary fencing would be installed before construction to restrict access and clearly delineate avoidance areas. An archaeologist who meets the Secretary of the Interior's standards would monitor ground-disturbing activities in areas containing known sites or previously undisturbed sediments. These measures are described in the monitoring and discovery plan that was prepared for the Bullfrog project.

Based on the results of the Class III survey and with implementation of the protection and monitoring measures described above, Alternative B would not adversely affect cultural resources at Bullfrog. The SHPO concurred with this finding as well as with the eligibility recommendations on March 16, 2023 (refer to Chapter 4: Consultation and Coordination).

#### 3.3.3.2. Hite

As currently designed, Alternative B would avoid direct impacts on NRHP-eligible sites within and adjacent to the Hite APE. The proximity of these sites to the proposed work areas could result in inadvertent site disturbance during construction activities and access. The potential for inadvertent impacts would be minimized through implementation of mitigation measures outlined in an Archaeological Monitoring and Inadvertent Discovery Plan for the Hite project.

Although site GLCA02443/42SA24695 is beyond the project's construction limits, its western site boundary would be fenced before construction to ensure cultural resources are avoided, and Glen Canyon NRA archaeologists would periodically inspect the fencing throughout construction. Site GLCA03063/42SA35785 is completely within the Hite APE, so the site boundary and a 15-foot buffer would be fenced during construction to ensure cultural resources are avoided, and Glen Canyon NRA archaeologists would monitor construction when it is occurring within 50 feet of the site.

Based on the results of the Class III survey and with implementation of the proposed mitigation measures, Alternative B would not adversely affect cultural resources at Hite. The SHPO concurred with this impact assessment on October 14, 2025 (refer to Chapter 4: Consultation and Coordination).

### 3.3.4. Trends and Planned Actions

Past, present, and reasonably foreseeable future actions and trends related to cultural resources in Glen Canyon NRA include 1) erosion, which can expose or damage artifacts and features, 2) water level fluctuations, which subject cultural resources to cycles of exposure and submersion, affecting their integrity, and 3) visitor impacts, which can lead to inadvertent damage or unauthorized artifact collection.

Under Alternative A, no new launch ramps would be constructed, and access to Lake Powell and the Colorado River would depend on fluctuating water levels. As a result, visitors may increasingly use informal or "launch at own risk" areas, which can lead to unintentional damage to cultural resources due to off-road vehicle use, trampling, or unauthorized artifact collection. Without additional protective measures or managed access, the No Action Alternative would contribute to the reasonably foreseeable trend of adverse and ongoing impacts to cultural resources, potentially leading to a loss of site integrity over time.

Under Alternative B, several NRHP-eligible archaeological sites are within and immediately adjacent to the Bullfrog and Hite APEs. As currently designed, the Bullfrog and Hite projects would avoid direct impacts on all NRHP-eligible resources and implement measures to avoid and minimize potential adverse impacts from construction activities. In addition, the projects would formalize water access and reduce the potential for resource impacts in areas previously subject to informal or unmanaged use. These improvements are expected to reduce resource degradation and inadvertent damage to cultural resources resulting in a beneficial impact. Alternative B is not expected to contribute to adverse impacts on cultural resources when considered in the context of previous, ongoing, or future actions.

### 3.3.5. Conclusion

Alternative A would continue current management of existing ramp access based in accordance with lake water levels. In the absence of designated launch areas, recreational users could inadvertently damage cultural resources, potentially causing long-term adverse impacts. Implementing Alternative A does not meet the purpose and need of the project.

With mitigation measures in place during construction (Appendix C), Alternative B would have no impact on cultural resources at either Bullfrog or Hite and would provide a beneficial impact by providing formalized access to the water. Implementation of Alternative B would not have adverse impacts and is consistent with Section 1.4.7.1 of NPS Management Policies 2006.

## 3.4. Water Resources (Floodplains, Wetlands, and Water Quality)

Executive Order (EO) 11988, "Floodplain Management," requires NPS and other federal agencies to evaluate the likely impacts of actions in floodplains. The objective of EO 11988 is to avoid, to the extent possible, the long-term and short-term adverse impacts associated with occupancy, modification, or destruction of floodplains and to avoid indirect support of development and new construction in such areas wherever there is a practicable alternative. NPS administers floodplain policy through Director's Order #77-2: Floodplain Management and Procedural Manual 77-2 Floodplain Management (NPS 2002).

EO 11990, "Protection of Wetlands," directs all federal agencies to avoid to the maximum extent possible the long- and short-term adverse impacts associated with the occupancy, destruction, or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. In the absence of such alternatives, parks must modify actions to preserve and enhance wetland values and minimize degradation. To comply with EO 11990, NPS has developed a set of policies and procedures found in Director's Order

(DO) #77-1 Wetland Protection and Procedural Manual #77-1: Wetland Protection (NPS 2016). DO #77-1 defines wetlands to include wetlands regulated by the U.S. Army Corps of Engineers (USACE) but also includes drainages, including ephemeral drainages.

Sections 401 and 404 of the Clean Water Act (CWA) prohibit the discharge of dredged or fill material into "waters of the United States" (WOTUS), including wetlands, without a permit from the USACE. The definition of WOTUS includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR § 328.3(c)(1)). Under Section 10 of the Rivers and Harbors Act of 1899, USACE has the authority to regulate the navigable capacity of any of the WOTUS. Under the Rivers and Harbors Act, it is not *"lawful to excavate or fill, or in any manner alter or modify the course, location, condition, or capacity of…any navigable water of the United States…"* (33 U.S.C. § 403).

On May 25, 2023, the Supreme Court of the U.S. issued a decision in the *Sackett v. Environmental Protection Agency* case that revised the definition of WOTUS. For a wetland to be considered a WOTUS, it must, with limited exceptions, have a continuous surface connection to a relatively permanent body of water connected to Traditionally Navigable Waters (TNW) or jurisdictional interstate waters.

### 3.4.1. Affected Environment

This section summarizes the affected environment.

#### 3.4.1.1. Floodplains

*Bullfrog*

The Bullfrog project area is identified as a Special Flood Hazard Area (Zone A) on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Panel 4900830009B (effective July 1, 1986). The Bullfrog ramp is on the Lake Powell portion of the Colorado River, and water levels are fully controlled by the dam. The project, therefore, can reasonably be expected to avoid adverse impacts to floodplain function and is not expected to increase flood risk. For these reasons, NPS has determined the project is exempt from compliance with Director's Order #77-2 and a Floodplain Statement of Findings (SOF) is not necessary. Floodplains in the Bullfrog project area will not be discussed further in this EA.

*Hite*

Within the Hite project area, there is no FEMA-regulated floodplain for the Colorado River. A Floodplain and Wetlands SOF report was prepared to characterize floodplain conditions in the project area and to identify potential impacts on the floodplain from the proposed Hite project (NPS 2025d; Appendix F). In accordance with EO 11988 and its implementing guidance, NPS evaluated the natural and beneficial values of floodplains, including riparian/aquatic habitat,

groundwater recharge, erosion and sediment control, flood attenuation, water quality, nutrient cycling, and geomorphic considerations.

The floodplain elevation in the Hite project area is largely controlled by the elevation of Lake Powell, rather than by riverine flooding. The future Lake Powell water level and consistent characterization of floodplain elevations cannot be reliably predicted due to the uncertainty in future climate conditions, water use, and policy. In the past, when the lake extended to the project area, the floodplain likely extended into flatter overbanks. Because the lake has lowered and the river continues to retreat toward its pre-dam elevation, the floodplain is more contained within the riverbank limits, as it was historically (NPS 2025d).

Figure 4 shows the inundation extents for the 100-year flood plus 2 feet for the existing condition for low (in blue) and high (in purple) lake levels in Lake Powell. When Lake Powell is at full pool (last occurring in 1999), water levels would be 40 feet higher than low lake level conditions.

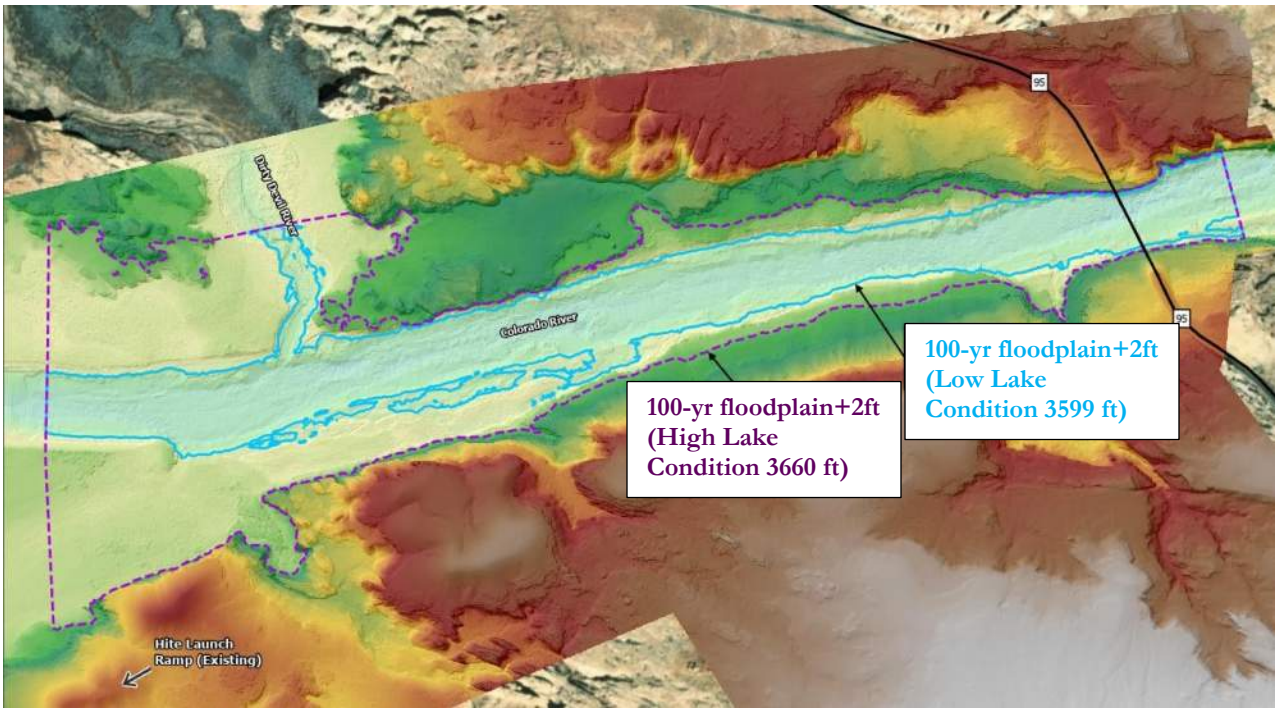


**Figure 4. Hite Existing Floodplain (100-year flood plus 2 feet) Extents for Low and High Lake Levels**

### 3.4.1.2. Wetlands

The Bullfrog and Hite project areas are within the West Colorado River Basin, an area covering 15,000 square miles (Utah Department of Natural Resources [UDNR] 2000). Several of the basin's drainages flow into the Colorado River system, including the Dirty Devil, Escalante, and Paria rivers (UDNR 2000). Both areas are characterized by ephemeral washes that respond to precipitation and can experience substantial fluctuations in flow depending on storm events and seasonal rainfall.

Separate aquatic resources delineations and Wetlands Statement of Findings (WSOF) were prepared for each project (NPS 2022c; NPS 2023c [Appendix G]; NPS 2024; NPS 2025d

[Appendix F]). Wetland functions are ecosystem properties that occur independent of subjective human values and result from the biological, geological, hydrological, biogeochemical, and physical processes operating within a wetland (USACE 1999). Existing wetlands in the project areas were evaluated using the wetland functions and values described in NPS Procedural Manual #77-1: Wetland Protection (NPS 2016) and USACE (1999).

Descriptions of wetland functions and values in this EA rely on the analyses and determinations documented in the approved WSOF prepared for each project. In those documents, terms such as "low" or "moderate" are used to differentiate how specific functions are expressed in the evaluated wetland features. These terms reflect relative conditions identified in the WSOFs and are included in this section for consistency with those determinations; they are not intended as agency-wide rating categories.

*Bullfrog*

The Bullfrog project area is in the Bullfrog Creek watershed (U.S. Geological Survey [USGS] 2025). The Bullfrog delineation identified 17 ephemeral drainages (ED-01 through ED-17), 1 deepwater lacustrine wetland (Lake Powell) (WL-01), and 7 waterbodies with wetland indicators (WL-01 through WL-07) (NPS 2022c; NPS 2023c). Features delineated within and adjacent to the Bullfrog project area include 4.98 acres of ephemeral drainages, 9.72 acres of NPS wetlands, and 0.524 acre of wetlands potentially subject to USACE jurisdiction.

As defined by National Wetlands Inventory, the outer boundary of Lake Powell qualifies as a wetland from the low water line to a depth of 2.5 meters (8.2 feet) (Federal Geographic Data Committee 2013). Beyond 2.5 meters below low water, the remainder of Lake Powell qualifies as a deepwater lacustrine limnetic system, meaning it is a deep, open water part of the lake away from the shoreline. In accordance with the USACE definition of WOTUS, Lake Powell is a TNW, and the USACE ordinary high water mark (OHWM) is designated at 3,572 feet asl.

Table 3 presents the wetland functional assessment of 17 ephemeral drainages and 4 waterbodies. Three of the wetlands (WL-02, WL-03, and WL-07) delineated during the field evaluation fall outside of the proposed Bullfrog construction limits and therefore are not assessed (NPS 2023c).

**Table 3. Summary of the Bullfrog Wetland Functional Assessment for Each Type of Wetland**

| Functional Value Parameter | ED-01; ED-07; ED-08 | ED-02 to ED-06; ED-08 to ED-17 | WL-01 | WL-04; WL-05 | WL-06 |
|---|---|---|---|---|---|
| Groundwater Recharge/Discharge | | | X | X | |
| Floodflow Alteration | X | | X | X | X |
| Fish and Shellfish Habitat | | | X | X | |
| Sediment/Toxicant/Pathogen Retention | | | X | X | X |
| Nutrient Removal/Retention/Transformation | | | X | X | X |
| Production Export | | | X | X | X |
| Sediment/Shoreline Stabilization | | | | X | |
| Wildlife Habitat | | | X | X | X |
| Recreation | | | X | | |
| Educational/Scientific Value | | | | | |

| Functional Value Parameter | ED-01; ED-07; ED-08 | ED-02 to ED-06; ED-08 to ED-17 | WL-01 | WL-04; WL-05 | WL-06 |
|---|---|---|---|---|---|
| Uniqueness/Heritage | | | | | |
| Visual Quality/Aesthetics | | | X | X | |
| Endangered Species Habitat | | | X | X | |

Source: NPS 2023c.

ED = ephemeral drainage; WL = waterbody with wetland indicator

Based on the functions and values attributed to each of the delineated wetlands in Table 3, the Bullfrog WSOF concluded that:

- The functions and values of wetland features ED-01 through ED-17 within the Bullfrog project area are of **low quality**.
- The overall functions and values of wetland feature WL-01 within the Bullfrog project area are of **moderate quality** due to the wildlife habitat and connection to Lake Powell.
- The overall functions and values of wetland features WL-04 and WL-05 within the Bullfrog project area are of **moderate quality** due to the presence of dense, persistent vegetation, groundwater interaction, and hydric soil conditions.
- The wetland feature WL-06 within the Bullfrog project area is of **low to moderate quality** due to the dense vegetation and retention/export capabilities.

*Hite*

The Hite project area is in the Cataract Canyon-Colorado River watershed (U.S. Geological Survey [USGS] 2025). Within the Hite project area, a total of 9.29 acres of aquatic resources were delineated, which includes 2.60 acres of ephemeral drainages (EDR-1 through EDR-17), 0.07 acre of intermittent watercourse (IDR-1), 3.61 acres of Lake Powell (LP-1), and 3.08 acres of open water (deepwater habitat) associated with Lake Powell (NPS 2024). There are 6.21 acres of aquatic resources within the Hite project area that are potentially subject to regulation by the NPS under DO #77-1, which includes all aquatic resources except for open water that is 2.5 meters (8.2 feet) deep, or greater, below low water. There are 6.76 acres of aquatic resources within the Hite project area that are potentially subject to regulation by the USACE, which includes all aquatic resources except for ephemeral drainages. Table 4 presents the Hite wetland functional assessment of 17 ephemeral drainages, 1 intermittent watercourse, Lake Powell, and associated open water.

**Table 4. Summary of the Hite Wetland Functional Assessment**

| Functional Value Parameter | EDR-1 to EDR-17 | IDR-1 | LP-1 | OW-1 |
|---|---|---|---|---|
| Groundwater Recharge/Discharge | | X | X | X |
| Floodflow Alteration | X | X | X | X |
| Fish and Shellfish Habitat | | | X | X |
| Sediment/Toxicant/Pathogen Retention | | X | X | X |

| Functional Value Parameter | EDR-1 to EDR-17 | IDR-1 | LP-1 | OW-1 |
|---|---|---|---|---|
| Nutrient Removal/Retention/Transformation | | X | X | X |
| Production Export | | | X | X |
| Sediment/Shoreline Stabilization | | X | | |
| Wildlife Habitat | | X | X | X |
| Recreation | | | X | X |
| Educational/Scientific Value | | | | |
| Uniqueness/Heritage | | | | |
| Visual Quality/Aesthetics | | | X | X |
| Endangered Species Habitat | | | | |

Source: NPS 2025d.

IDR = intermittent watercourse
LP = Lake Powell
OW = open water

Based on the functions and values attributed to each of the delineated wetlands in Table 4, the Hite WSOF concluded that:

- The functions and values of ephemeral drainages EDR-1 through EDR-17 within the Hite project area are of **low quality**.
- The overall functions and values of IDR-1 within the Hite project area are of **low to moderate quality** because it provides limited floodflow alteration; lacks consistent habitat for fish or shellfish; offers minimal scientific, recreational, and aesthetic value; and does not support unique or endangered wildlife habitats,.
- The overall functions and values of LP-1 and OW-1 within the Hite project area are of **moderate quality** because each supports fish and shellfish habitat, contributes to groundwater recharge and floodflow alteration, offers recreational opportunities, and enhances the visual aesthetics of the surrounding landscape,.

#### 3.4.1.3. Water Quality

Under Section 303(d) of the CWA, the PA) requires states to prepare a list of waterbodies or waterbody segments that do not meet EPA-mandated water quality standards. As described in Section 303(d), the listing requirement applies to waters impaired by point and nonpoint sources of pollution discharge.

*Bullfrog*

Lake Powell experiences a wide range of water quality conditions due to its vast size, high summer temperatures, and fluctuating water levels. Key concerns include elevated levels of *Escherichia coli* (E. coli), which can result from various sources such as human and pet waste at popular beaches, runoff from livestock and wildlife waste during storms or snowmelt, and illegal septic tank dumping from private watercraft. In addition, warm temperatures and nutrient-rich runoff can

lead to harmful algal blooms, a rapid growth of algae in water that can produce toxins harmful to humans, animals, and the environment (NPS 2025e). However, the Bullfrog project area is not within or adjacent to any impaired waters.

*Hite*

The Hite project area lies within a segment of the Colorado River that is on the CWA 303(d) list as an impaired water (EPA 2025b). This river segment is impaired for aquatic wildlife specifically due to temperature; many fish and other aquatic species are sensitive to changes in water temperature and require a certain temperature range to survive.

### 3.4.2. Impacts of Alternative A – No Action

*Bullfrog*

Under Alternative A, no new launch ramps, access roads, parking areas, or utility infrastructure would be constructed, and no impacts on floodplains, NPS wetlands, or WOTUS would occur. Recreational access at Bullfrog would remain subject to seasonal fluctuations in water levels. The risk of water quality conditions, like algal blooms or contamination due to pet excrement, unauthorized septic dumping, etc. would remain a concern in the Bullfrog project area.

*Hite*

In the Hite District, river access would continue under a "launch at own risk" advisory. While Glen Canyon NRA advises raft operators to use Bullfrog, the use of the unmaintained takeout location at North Wash on the north bank at Hite would be expected to continue and would contribute to erosion of the riverbank and the contribution of sediment into the river affecting water clarity. In addition, low water levels combined with the introduction of contaminants from pet feces or other waste added to the water would continue to contribute to impaired water quality in the Hite project area. The risk of harmful algal blooms would remain a concern in the Hite project area. No impact to floodplains, NPS wetlands, or WOTUS would occur.

### 3.4.3. Impacts of Alternative B (Proposed Action)

This section summarizes impacts of Alternative B.

#### 3.4.3.1. Floodplains

*Hite*

The proposed Hite ramp would extend into the river channel and be inundated under low and high lake level scenarios. Hydraulic modeling of the proposed ramp indicates that for low lake level conditions, the depth of water at the bottom of the ramp for a 100-year storm event would be 70.14 feet with water speeds along the ramp ranging from 0.35 feet per second (fps) to 3.18 fps.[2] At high lake levels, the depth of water at the bottom of the proposed ramp for a 100-year storm event would be 130.14 feet with water speeds along the ramp ranging from 0.30 fps to 1.63 fps.

[2] Floodwater moving at a velocity greater than 10 feet per second is considered high-velocity flow (FEMA 2022).

Figures 5 and 6 depict modeled areas of future inundation and low lake and high lake levels, respectively.

There is minimal risk of flooding from the Colorado River at the top of the ramp, as the river level has lowered over the years and the potential flooding elevation has correspondingly lowered.

The proposed Hite launch ramp would enable boats to be loaded and unloaded in and out the river. There is a potential risk to ramp users accessing the water, if water levels change abruptly. Broadcasted weather warnings and instructional signage at the new launch ramp would minimize health and safety issues for ramp users.

There are no insurable structures in the Hite project area within the 100-year floodplain. Although the proposed launch ramp would be designed to be inundated by the river waters, there is potential for scouring and erosion if stabilizing measures are displaced. The SR 95 bridge over the Colorado River is approximately 800 feet upstream of the proposed launch ramp. No impact on this bridge due to excavation activities required to construct the ramp are expected to occur.

There may be some risk to floodplain characteristics in the immediate vicinity of the ramp due to fill associated with the ramp and a small change in floodplain elevations (Figures 5 and 6). However, the overall risk to the floodplain is very low.

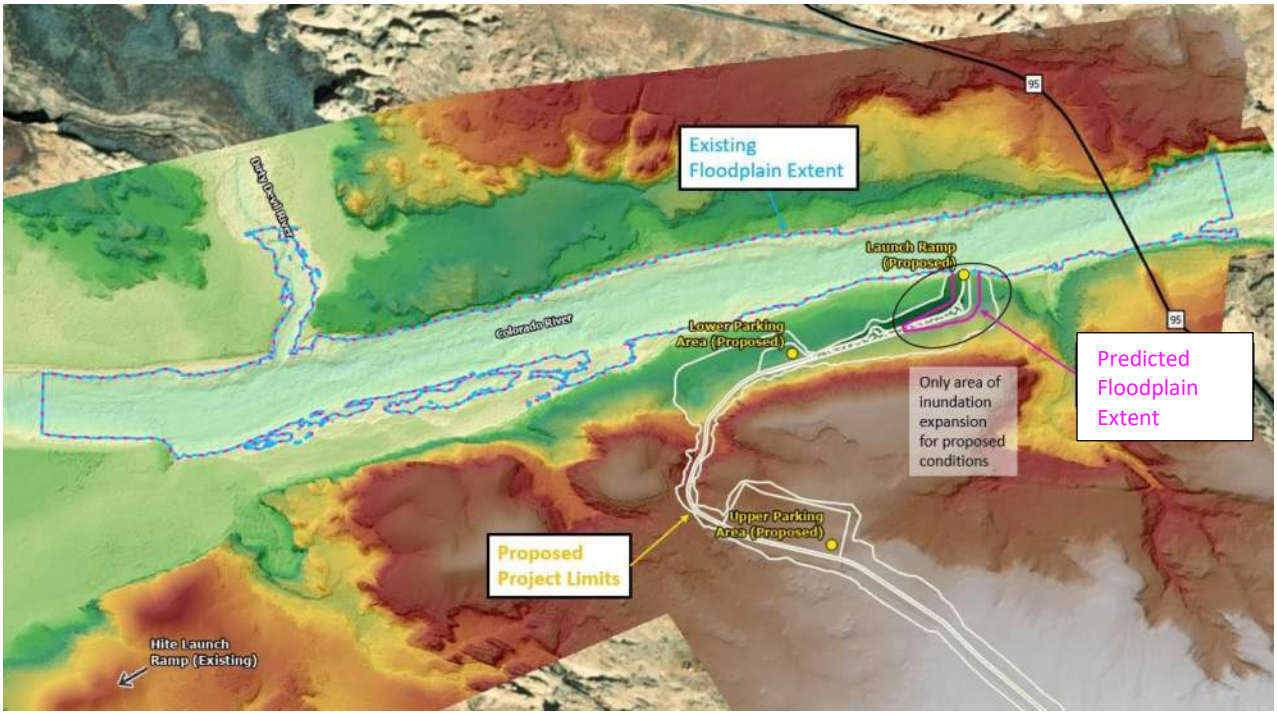


**Figure 5. Hite Existing and Proposed Floodplain (100-year plus 2 feet) Extent for Low Lake Levels**

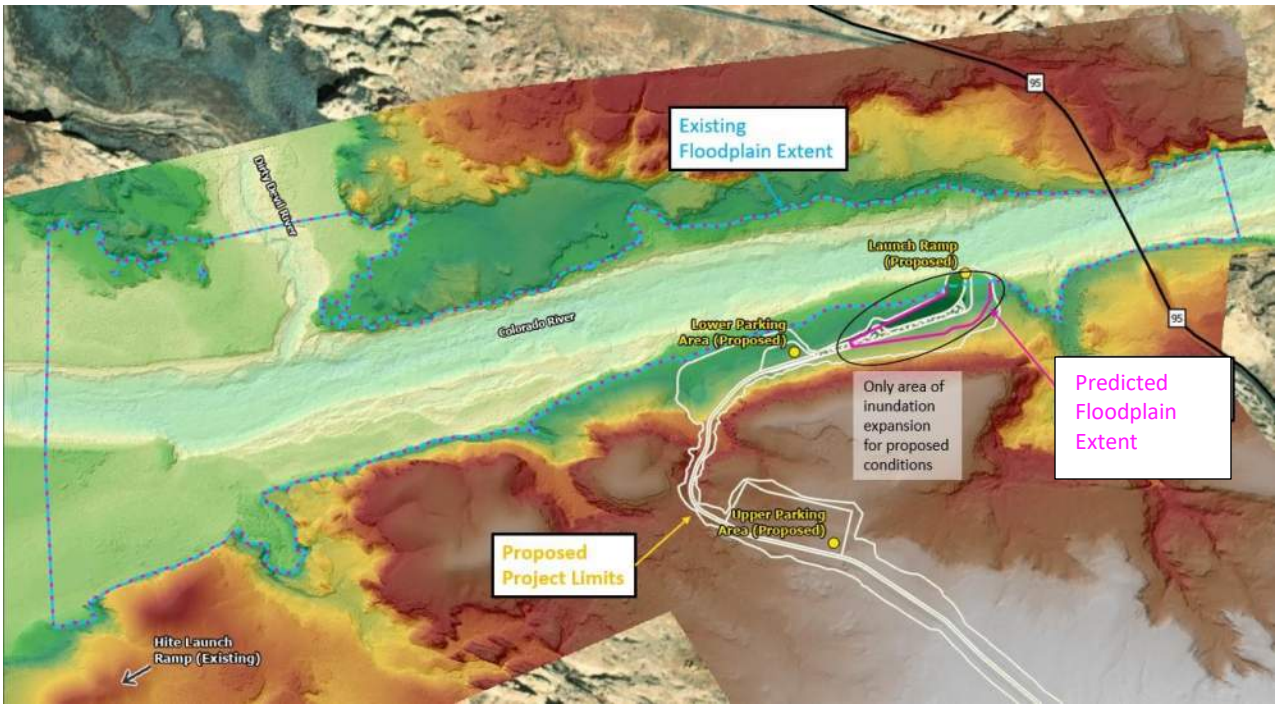


**Figure 6. Hite Existing and Proposed Floodplain (100-year plus 2 feet) Extent for High Lake Levels**

No practicable alternatives exist outside the floodplain because the purpose of the project is to provide direct and reliable river access. Flood risks to human health and safety are considered minimal, because the site is not currently designated for public use and future users would be warned by signage and closures during hazardous conditions. The new launch ramp would be designed to withstand flood forces and accommodate ongoing channel degradation over the long-term. In addition, the design would minimize floodplain encroachment and preserve natural floodplain functions to the extent practicable.

### 3.4.3.2. Wetlands

Construction of the new launch ramps and associated project components at Bullfrog and Hite would have temporary and permanent impacts on WOTUS. As the design of each project advances, the exact acreage of impacts will be further refined. Tables 5 and 6 present the estimated impacts on the wetland features identified in the Bullfrog and Hite project areas based on the respective WSOFs prepared for each project (Appendix F and Appendix G).

*Bullfrog*

Implementation of Alternative B in the Bullfrog project area is estimated impact 11.605 acres of wetlands, including 2.996 acres of ephemeral drainages (riverine wetlands) of low functional value and 8.609 acres of waterbodies (lacustrine and palustrine wetlands) of low to moderate functional value.

Erosion control BMPs would be implemented during construction to minimize runoff and sediment discharges from the project area.

Permanent wetland impacts from launch ramp construction would result from grading, blasting, dredging, gravel placement, and installation of precast concrete slabs. In addition, temporary impacts would result from the installation of a cofferdam and dewatering. These impacts would cease after construction in the water is complete and the cofferdam is removed. Potential impacts on wetland functions and values from construction activities include the loss of:

- Fish and shellfish habitat
- The wetland's capacity to retain or remove sediment, toxins, or pathogens
- The ability to remove or retain nutrients
- Production export from destruction of aquatic plants due to added fill to the wetland feature
- Loss of groundwater connection to seeps that charge the wetlands
- Dense vegetation

The visual quality/aesthetic of the wetland would be affected by development of the ramp and the increase in human use, though the recreational value would benefit from increased access to the lake.

Utility trench impacts would be temporary, and the wetlands would be restored to pre-construction conditions following construction.

Based on the Bullfrog functional assessments, the wetlands in each project area have low to moderate functional value. Complete avoidance of wetland impacts is not feasible because there are no viable alternatives to access the water that do not require launch ramp construction within wetlands.

Pursuant to NPS DO #77-1: Wetland Protection, NPS has a "no-net-loss of wetlands" policy and requires the avoidance, minimization, and compensation for adverse impacts on wetlands. Mitigation measures are identified to reduce additional impacts. For the NPS, compensation refers primarily to restoring natural wetland functions in degraded or former natural wetland habitats on NPS lands. It does not refer to creating wetlands where they did not exist previously, except as allowed under Chapter 4 of *NPS Management Policies 2006* (NPS 2006). The focus of the wetland compensation is on no-net-loss of wetland functions, not solely wetland acreage.

NPS has determined that WL-01, consisting of the OHWM of the lake down to a depth of 2.5 meters (8.2 feet), is of relatively low quality, and the area of Lake Powell that meets the NPS definition of a wetland fluctuates with changes in the lake water elevation. In accordance with Section 4.2.3 of the NPS Procedural Manual #77-1: Wetlands Protection (Procedural Manual), the wetland is an intentional feature (i.e., associated with the reservoir); therefore, project impacts on wetland WL-01 (8.103 acres) are exempt from the compensation requirements of Section 5.2.3 of the Procedural Manual (NPS 2016). No mitigation would be required for impacts to WL-01. The remaining Bullfrog project impacts on wetlands total 3.502 acres.

NPS identified two compensatory wetland mitigation sites for the Bullfrog project. The two sites are along the Colorado River, approximately 5 miles downstream of the Glen Canyon Dam in Coconino County, Arizona. The mitigation sites are approximately 60 miles southwest of the

Bullfrog project area on NPS-managed lands within Glen Canyon NRA but fall within the same watershed as the anticipated wetland impacts.

Mitigation Site 1 is an 11.31-acre riverine wetland along a depositional point bar on the west bank of the Colorado River. Mitigation Site 2 is a 6.00-acre riverine wetland along a depositional point bar on the east bank of the Colorado River, just below the Horseshoe Bend viewing area. Functionally, both mitigation sites are of low quality because they are overrun with non-native species, most notably tamarisk (*Tamarix ramosissima*), a noxious weed species.

Mitigation would be conducted at rate of 5 acres mitigation for every 1 acre of impact (1.5:1 compensation ratio). Compensatory mitigation and wetland restoration would involve mechanical tamarisk removal followed by planting native willow species across the two mitigation sites. While final acreages would be determined during final design, approximately 17.3 acres of wetlands would be restored to mitigate the Bullfrog project impacts. Proposed sites would be accessed by boat on the Colorado River. Tamarisk removal would be completed using chainsaws and hand tools, with debris distributed within both sites. All cut stumps would be treated with an approved herbicide to kill the plants. Willow stem cuttings from Glen Canyon NRA would be propagated in a greenhouse until ready for planting. Mitigation sites would be reviewed for potential sensitive resources before any disturbance. Any sensitive cultural resource identified during mitigation work would comply with the Glen Canyon NRA's Monitoring and Inadvertent Discovery Plan which provides procedures to address monitoring during construction and treatment of previously unidentified resources.

Removing tamarisk and planting native willow species would reduce water loss to non-native species and decrease soil salinity along the riverbank. These activities would promote native species establishment, provide beneficial habitat for wildlife species, and support the natural geomorphic transition and dynamic river processes crucial to the natural riparian system. Tamarisk removal would improve recreation opportunities and tourism by enhancing access and visual quality along the river. The mitigation and restoration activities would elevate the wetland features to a moderate functional quality.

The performance of the wetland mitigation sites would be monitored annually, with photo documentation to record changes over time. Monitoring would continue until 70 percent native vegetation cover is achieved relative to adjacent reference locations, anticipated within 3 to 5 growing seasons. Noxious weed cover would be limited to less than 20 percent relative to reference locations. Annual monitoring and photos would document restoration efforts and identify additional required activities, such as supplemental planting or invasive species removal. Due to the remote nature and limited accessibility of the mitigation wetlands on NPS-managed lands within the Colorado River canyon, no additional protective measures would be required to sustain the mitigation efforts.

**Table 5. Bullfrog Estimated Impacts to Ephemeral Drainages (Riverine Wetlands) and Waterbodies (Lacustrine and Palustrine Wetlands)**

| Wetland | Total Area Delineated (Acres) [a] | Impact Area (Acres)[a] | Project Impact[b] |
|---|---|---|---|
| ED-01 | 0.140 | 0.032 | Utility trenching |
| ED-02 | 0.047 | 0.025 | Road construction and utility trenching |
| ED-03 | 0.555 | 0.285 | Road construction and utility trenching |
| ED-04 | 0.026 | 0.012 | Road construction and utility trenching |
| ED-05 | 0.071 | 0.039 | Road construction and utility trenching |
| ED-06 | 0.101 | 0.071 | Road construction and utility trenching |
| ED-07 | 0.456 | 0.199 | Road construction and utility trenching |
| ED-08 | 0.201 | 0.142 | Road construction and utility trenching |
| ED-09 | 0.148 | 0.090 | Road construction and utility trenching |
| ED-10 | 0.459 | 0.298 | Road construction and utility trenching |
| ED-11 | 0.314 | 0.101 | Road construction and utility trenching |
| ED-12 | 0.564 | 0.120 | Road construction and utility trenching |
| ED-13 | 0.560 | 0.351 | Parking area |
| ED-14 | 0.209 | 0.188 | Parking area |
| ED-15 | 0.140 | 0.076 | Parking area |
| ED-16 | 0.708 | 0.708 | Launch ramp |
| ED-17 | 0.278 | 0.259 | Launch ramp |
| | **Total: 4.977** | **Total: 2.996** | |
| WL-01 (Lake Powell) | 8.955 | 8.103 | Launch ramp |
| WL-02 | 0.075 | 0 | --- |
| WL-03 | 0.039 | 0 | --- |
| WL-04 | 0.292 | 0.292 | Launch ramp |
| WL-05 | 0.118 | 0.118 | Launch ramp |
| WL-06 | 0.095 | 0.096 | Launch ramp |
| WL-07 | 0.147 | 0 | --- |
| | **Total: 9.721** | **Total: 8.609** | |

Source: NPS 2022b, 2023c.

[a]Area refers to total acreage within the OHWM for each waterbody within the project area.

[b] Dashed line indicates no construction would occur within the aquatic resource.

*Hite*

Implementation of Alternative B in the Hite project area would impact 0.195 acre of waterbodies (lacustrine wetlands) of moderate functional value and 1.21 acres of ephemeral drainages (riverine wetlands) of low functional value. Wetland, wetland function, and value impacts are the same at Hite as described for Bullfrog.

In the Hite project area, NPS has determined that LP-1, consisting of the OHWM of the lake down to a depth of 2.5 meters (8.2 feet) within the project area, and OW-1 meet the NPS definition of a wetland that fluctuates with changes in the lake water level elevation. In accordance with Section 4.2.3 of the Procedural Manual, the wetland is an intentional feature (i.e., associated with the reservoir); therefore, project impacts on both features (0.195 acre) are exempt from the compensation requirements of Section 5.2.3 of the Procedural Manual. No mitigation would be required for impacts to LP-1 and OW-1 (NPS 2016). The remaining Hite project impacts on wetlands total 1.21 acres.

**Table 6. Hite Estimated Impacts to Ephemeral Drainages (Riverine Wetlands) and Waterbodies (Lacustrine Wetlands)**

| Wetland | Total Area Delineated (Acres)[a] | Impact Area (Acres)[a] | Project Impact[b] |
|---|---|---|---|
| EDR-01 | <0.01 | 0 | --- |
| EDR-02 | 0.04 | 0 | --- |
| EDR-03 | 0.02 | <0.01 | Road construction |
| EDR-04 | 0.17 | 0.04 | Road construction |
| EDR-05 | 0.29 | 0.10 | Road construction |
| EDR-06 | 0.12 | 0.09 | Road construction |
| EDR-07 | 0.22 | 0.13 | Road construction |
| EDR-08 | 0.63 | 0.34 | Road construction |
| EDR-09 | 0.01 | 0 | --- |
| EDR-10 | 0.22 | 0.12 | Road construction |
| EDR-11 | 0.01 | <0.01 | Road construction |
| EDR-12 | 0.10 | 0.05 | Road construction |
| EDR-13 | 0.11 | 0.11 | Road construction |
| EDR-14 | 0.06 | 0 | --- |
| EDR-15 | 0.18 | 0 | --- |
| EDR-16 | 0.32 | 0.24 | Road construction |
| EDR-17 | 0.03 | 0 | --- |
| IDR-1 | 0.07 | 0 | --- |
| | **Total: 2.60** | **Total: 1.21** | |

| Wetland | Total Area Delineated (Acres)[a] | Impact Area (Acres)[a] | Project Impact[b] |
|---|---|---|---|
| LP-1 (Lake Powell) | 3.61 | 0.074 | Launch ramp |
| OW-1 | 3.08 | 0.121 | Launch ramp |
| | **Total: 6.69** | **Total: 0.195** | |

Source: NPS (2024, 2025d).

[a] Area refers to total acreage within the OHWM for each waterbody within the project area.

[b] Dashed line indicates no construction would occur within the aquatic resource.

The same mitigation approach used at Bullfrog is planned for Hite, restoring wetlands adjacent to the Hite ramp location by mechanically removing tamarisk, followed by planting native willow species. Mitigation would also occur at approximately a 5:1 ratio. The approximately 6.05-acre mitigation site is along Lake Powell adjacent to the proposed new launch ramp on NPS-managed lands within Glen Canyon NRA. Final acreages would be determined during final design.

#### 3.4.3.3. Water Quality

*Bullfrog*

Construction of the proposed project could temporarily affect water quality as a result of accidental spills of gasoline and lubricants, soil erosion following vegetation removal, and fugitive dust generated by cutting, blasting, and ripping activities that may enter Lake Powell. The construction practices would comply with the Section 401 requirements of the CWA. BMPs would be implemented during construction to avoid or minimize these effects. Any impacts that do occur are expected to be short-term and localized. The construction of the Bullfrog launch ramp is not anticipated to directly contribute to existing water quality impairments or violate any water quality standards.

Once operational, boat launching would relocate from existing launch ramps to the new launch ramp for the long term. The ongoing human activity at Bullfrog, would continue to present a risk of *E. coli* contamination associated with recreational use, pet waste, and improper waste disposal. In addition, watercraft entering and exiting the river could lead to accidental spills of gasoline and lubricants associated with vessel maintenance and operation. The risk of harmful algal blooms would remain a concern in the project area.

*Hite*

Construction of the Hite project would generally have the same types of impact on water quality as the construction of the Bullfrog project, including an increased risk of spills, soil erosion, and fugitive dust that could enter the water. The construction practices would comply with the Section 401 requirements of the CWA. BMPs would be implemented during construction to avoid or minimize these effects.

As with Bullfrog, the operation of the Hite ramp is expected to have long-term effects on water quality due to increased potential for spills, sedimentation, and fugitive dust. However, if the new

ramp is being used in lieu of the North Wash take out, potential for sedimentation would be less because the proposed ramp would be concrete and there would be less chance for erosion and disturbance along the bank of the river. The presence of people and pets would potentially contribute to *E. Coli* contamination and the risk of harmful algal blooms would remain a concern in the project area.

### 3.4.4. Trends and Planned Actions

Past, present, and reasonably foreseeable future actions and trends related to floodplains, wetlands, and water quality include increased frequency of extreme weather events, which can cause flash flooding, erosion, and sedimentation; increased water temperatures which can facilitate algal blooms affecting water quality and aquatic species health; changes in hydrology due to altered precipitation patterns and prolonged droughts; fluctuations in water levels, which may reduce wetland vegetation in some areas while allowing new vegetation to establish along newly exposed shorelines where moist conditions remain suitable; and increased pressure from invasive species in ephemeral drainages, floodplains, and wetlands, leading to altered ecosystem dynamics.

In addition, ongoing ferry operations and associated maintenance, routine roadway and bridge maintenance, utility system maintenance, and infrastructure upgrades, including the State of Utah's proposal to construct improvements at the North Wash takeout would contribute to impacts on floodplains, wetlands, and water quality. Ground disturbance associated with these actions could mobilize sediment and increase turbidity in nearby drainages, which could affect water quality if unmanaged. However, these actions would be expected to include erosion control measures to minimize sediment transport. With these measures in place, combined effects on water quality would be short-term and limited to temporary increases in sedimentation during active ground disturbance.

Alternative A would not affect floodplains, wetlands, or water quality. In consideration of past, present, and future actions, Alternative A would not have any additive impacts on water resources.

While minimized by BMPs, Alternative B would contribute to some erosion and sedimentation related to surface disturbances and earthwork. This could result in localized water quality degradation until vegetation reestablishes in disturbed areas. When considered with past, present, and future actions and trends, Alternative B would contribute to impacts on floodplains (Hite) and water quality (Bullfrog and Hite). Because project wetland impacts would be offset with restoration activities, the Bullfrog and Hite launch ramps would not contribute to the net loss of wetlands when considered with other past, present, or foreseeable wetland impacts.

### 3.4.5. Conclusion

Under Alternative A, no new impacts on floodplains, WOTUS, or water quality would occur in either the Bullfrog or Hite project areas. Because no construction or ground disturbance would take place, existing conditions would remain unchanged.

Under Alternative B, the Bullfrog launch ramp would have a small change in floodplain elevations. The proposed Hite launch ramp would be designed to withstand flood forces,

accommodate ongoing channel degradation, minimize floodplain encroachment, and preserve natural floodplain functions to the extent practicable. NPS concludes that the Hite project would be consistent with EO 11988 and NPS floodplain management policy.

Implementation of Alternative B would result in a permanent impact on 11.605 acres of wetlands of low to moderate functional value in the Bullfrog project area, and 1.405 acres of wetlands of low functional value in the Hite project area. In addition, construction activities would have short-term impacts on wetlands due to activities within the wetland that would remove or damage vegetation or soils or due to increased turbidity. Adverse impacts would be mitigated through project-specific avoidance and minimization measures (Appendix D) and the restoration of wetlands with similar functions and values to those disturbed. Given the proposed mitigation strategy for the Bullfrog and Hite projects, NPS concludes that Alternative B is acceptable under EO 11990 for the protection of wetlands and is consistent with the policies and procedures of NPS DO #77-1: Wetland Protection, including the "no-net-loss of wetlands" policy.

Based on the current Alternative B Bullfrog project design, it is expected that a Section 404 Regional General Permit with pre-notification to the USACE and Section 401 Individual Certification would be required before construction because the anticipated impacts to WOTUS would exceed 0.5 acre of permanent impacts. To address adverse impacts to wetlands and to comply with NPS' "no-net-loss of wetlands" policy, compensatory mitigation would be conducted at a 1.5:1 ratio in accordance with NPS requirements. Additional mitigation may be required by the USACE.

Under Alternative B, the Hite project will require a Section 404 CWA and Section 10 of the Rivers and Harbors Act permit before construction. It is anticipated that the impacts for the Hite project may exceed the impact thresholds for Nationwide Permit 36 and an Individual Permit and Section 401 CWA Water Quality Certification may be required. To address adverse impacts to wetlands and to comply with NPS' "no-net-loss of wetlands" policy, compensatory mitigation would be conducted at a 5:1 ratio in accordance with NPS requirements. Additional mitigation may be required by the USACE.

Construction of the proposed projects would potentially result in short-term, localized, water quality impacts from erosion, dust, and potential fuel spills. Once operational, the new launch ramps and associated infrastructure would attract additional recreational users, potentially increasing the risk of E. coli contamination and accidental spills of gasoline and lubricants.

## 3.5. Visitor Use and Experience

This section examines visitor use and experience.

### 3.5.1. Affected Environment

Data from the NPS Integrated Resource Management Applications database shows that annual visitation to Glen Canyon NRA has steadily increased over the last 10 years, nearly doubling to 4.7 million visits in 2024 (NPS 2025f). Table 7 summarizes the total visitation to Glen Canyon NRA over the past 5 years. The low numbers in 2022 coincides with the historically low water

levels at Lake Powell and the closure of several launch ramps and marinas and the inability to access some areas in the Park (Duval et al 2023).

**Table 7. Total Glen Canyon NRA Visitation Past 5 Years**

| Year | Visitation |
|---|---|
| 2020 | 2,553,392 |
| 2021 | 3,144,318 |
| 2022 | 2,842,776 |
| 2023 | 5,206,934 |
| 2024 | 4,725,610 |

Source: NPS 2025f.

#### 3.5.1.1. Bullfrog

Bullfrog serves as the primary uplake base of operations for Park law enforcement, maintenance activities, and fee operations. The marina provides launch ramps, a fuel station, pump-out station, boat rentals, boat storage, and a repair shop. Other visitor amenities include a convenience store, food and beverage options, laundry and shower facilities, and a paved landing strip for small planes. The Bullfrog campground and recreational vehicle (RV) park is operated by a concessioner and includes 78 campsites, a restroom, dump station, and potable water station. The concessioner also operates the Defiance House Lodge and a separate RV park with 24 sites, full hook-ups, restrooms, and showers.

Bullfrog Marina is open year-round, with operating hours that vary by season. In addition, the State of Utah operates a ferry between Bullfrog and Halls Crossing, which can accommodate cars, trucks, RVs, and trailers.

NPS maintains two ramps at Bullfrog based on lake levels—the Bullfrog North Launch Ramp and the Bullfrog Main Launch Ramp with a spur. The Bullfrog Main Launch Ramp opens to all vessels when lake levels exceed 3,578 feet. Ramp availability can be checked on the NPS website (https://www.nps.gov/glca/learn/changing-lake-levels.htm). Based on water levels as of February 2026:

- Bullfrog North Launch Ramp: available to all vessel types.
- Bullfrog Main Launch Ramp: closed for houseboats and small motorized vessels. Non-motorized vessels may “launch at own risk.”
- Bullfrog Main Launch Ramp Spur (operates as a separate ramp): closed for houseboats and “launch at own risk” for small, motorized vessels and non-motorized vessels up to 25 feet.

In 2023, recreation visits at Bullfrog totaled 114,925, while overnight stays totaled 99,820. Visitor use at Bullfrog occurs year-round based on weather and water access. The busiest months for Bullfrog are typically June through September (NPS 2025f). In partnership with Glen Canyon Conservancy, NPS operates the Bullfrog Visitor Center north of the Bullfrog launch ramp on

SR 276. The visitor center is open seasonally and has exhibits related to the geological, natural, and human history of Glen Canyon NRA.

The Bullfrog Main Launch Ramp is operable at lake levels of 3,578 feet and above. A spur ramp off the side of this ramp is available for vessels less than 25 feet long. The Main Launch Ramp is large enough for multiple boats, including houseboats, to launch at the same time (NPS 2025g).

The Bullfrog North Launch Ramp serves as an auxiliary ramp when the Bullfrog Main Ramp becomes inoperable. The Bullfrog North Launch Ramp has two lanes: the left lane can accommodate large vessels, including houseboats, when the water level is at or above 3,529 feet, while the right lane is limited to small vessels and requires temporary extensions for use. This configuration allows for two boats to launch simultaneously. The distance between the launch ramps and boat trailer parking lot is 1.25 miles, a lengthy walk for visitors after parking their trailers (NPS 2025g).

The Stanton Creek Primitive Camping Area is 3 miles south of SR 276 off Stanton Creek Road. The primitive camping area is accessible by vehicle and sometimes by vessel and operates on a first-come first-served basis.

Near the Bullfrog project area, views of surrounding rock formations are visible from SR 276 and Stanton Creek Road. Due to slope, Lake Powell becomes more noticeable to motorists as they descend south on Stanton Creek Road towards the shoreline. Views from the Stanton Creek Primitive Camping Area are dominated by dramatic red rock formations, a hallmark of the Colorado Plateau. These sandstone mesas display a range of textures and shapes, from smooth, rounded surfaces to jagged cliffs. The contrast between Lake Powell's blue waters and the red rock formations contribute to the area's aesthetic value. Seasonal variations in water levels alter the area's visual characteristics, affecting the appearance of the shoreline.

When the Main Launch Ramp is inoperable, the Bullfrog North Ramp experiences congestion. NPS staff must be onsite to direct boaters on use of the ramp, manage changes in traffic flow, and mark usable areas with traffic cones.

Emergency services for the Bullfrog project area are handled through a combination of local and regional responders. Glen Canyon Regional Communications Center is the primary dispatch hub. Glen Canyon NRA rangers respond to in-water emergencies and sheriff's offices of Kane and San Juan counties provide additional dispatch and emergency support. The Bullfrog District provides emergency medical services such as Park medics, emergency medical technicians, and Wilderness First Responders (NPS 2025h).

#### 3.5.1.2. Hite

Until 2021, the Hite District included a launch ramp, small marina, restrooms, food, fuel, and campground. In the decade leading up to the suspension of services in 2021, river levels began to decline to the point that the paved launch ramp no longer consistently reached the water. Before 2021, remaining services at Hite consisted of restroom access, day-use facilities, and basic support for river users when water levels allowed. (NPS 2025i).

During 2023, recreation visits at Hite totaled 219,143, while overnight stays totaled 4,121. The busiest months for Hite are generally February through June, but visitor use occurs year-round based on weather and water access (NPS 2025f). However, in 2024, NPS issued a temporary closure of its developed area in Hite due to low-water levels. The Hite ramp is now closed for all types of vessels. The road to Hite from SR 95 is closed. The nearest services are 70 miles away in Blanding, Utah.

With the Hite launch ramp closed, boaters and rafting operators have been advised by Glen Canyon NRA to use Bullfrog, but some use the primitive North Wash informal takeout. This location is not maintained, and use of the area is not sanctioned by Glen Canyon NRA. Visitors use it at their own risk, and four-wheel drive vehicles are recommended. NPS evaluated this site for potential ramp development but found it unsuitable because repeated repair efforts on the existing take out have failed, with the site continually eroding into the river due to high-velocity currents wearing away the shoreline.

Because the road to Hite from SR 95 is closed, the river is only visible from portions of SR 95 or from the shoreline at North Wash. Views from the shoreline below the SR 95 bridge near Hite and North Wash are expansive with sandstone cliffs and mesas visible overhead. In this area, the river takes on a reddish hue, providing low visual contrast to the surrounding landscape. Sparse vegetation lines the banks of the river, intermittently visible depending on the season and fluctuating water levels.

Emergency services for the Hite District are the same as for the Bullfrog project area.

### 3.5.2. Impacts of Alternative A – No Action

Although visitation to Glen Canyon NRA has increased in recent years, future visitation patterns in the uplake region would continue to be strongly influenced by water levels and the availability of functional launch facilities. Under Alternative A, limitations at key uplake locations could constrain access and may limit growth in visitation despite broader increases in overall Park use.

#### 3.5.2.1. Bullfrog

Under Alternative A, no new launch ramps or supporting infrastructure would be constructed at Bullfrog. Visitor access to Lake Powell would continue to be limited by fluctuating water levels, which render the Bullfrog Main Launch Ramp inoperable when lake levels reach 3,578 feet. During these periods, visitors would be redirected to the Bullfrog North Launch Ramp, which is more limited in capacity and located 1.25 miles from the boat trailer parking lot. This distance, combined with increased congestion and the need for active traffic management by NPS staff, would continue to negatively affect the visitor experience. Seasonal crowding, long wait times, and reduced convenience may discourage repeat visitation.

Under Alternative A, conditions that support visitor use at Bullfrog would remain unchanged. Bullfrog would continue to serve as the hub for Glen Canyon NRA uplake operations. Existing facilities would operate as lake levels allow; however, launch ramp limitations would persist during low-water conditions, restricting access for houseboats and some motorized vessels. The closure of other ramps could lead to increased congestion at the Bullfrog North Launch Ramp and reduced visitor satisfaction. Reduced functionality at the Bullfrog launch ramps may hinder

emergency response operations by delaying water access for rescue boats and other emergency vessels, especially during peak use or low-water conditions.

Overall, Alternative A would maintain current conditions where water level fluctuations periodically limit access at Bullfrog, which would result in long-term adverse impacts on visitor use.

#### 3.5.2.2. Hite

Under Alternative A, the Hite District developed area would remain closed due to low water levels and the absence of a concession operator. The existing launch ramp would remain inoperable, and the road from SR 95 would remain closed. While Glen Canyon NRA advises raft operators to use Bullfrog as a pullout for the Cataract Canyon river experiences, the use of the unmaintained North Wash takeout would likely continue as it saves considerable time compared to the longer trip to Bullfrog. The continued closure of the existing Hite launch ramp would limit recreational opportunities in the northern portion of the Park, concentrate visitor use in other areas like Bullfrog, and reduce the Park's ability to distribute visitor impacts more evenly. These factors would likely contribute to a continued decline in use at Hite and reduced visitor satisfaction in this portion of the Park. Emergency response in the Hite area would remain limited, relying on regional support without improvements to local infrastructure or services.

Alternative A would have long-term adverse impacts on visitor use and experience, depending on water levels and time of year, due to persistent access limitations.

### 3.5.3. Impacts of Alternative B (Proposed Action)

This section summarizes the impacts of Alternative B.

#### 3.5.3.1. Bullfrog

Implementation of Alternative B at Bullfrog would have long-term beneficial impacts on visitor use and experience by providing lake access during low-water conditions. The new launch ramp, access road, and parking area would reduce congestion at existing ramps, enhance convenience for boaters, and support efficient emergency response.

Construction activities may temporarily adversely affect visitors. Access to Stanton Canyon and its primitive camping area may be affected during project construction. Temporary delays may occur along SR 276 as utilities are relocated and Stanton Creek Road is tied into SR 276. The presence of construction equipment and vehicles could detract from the visitor experience, disrupting the natural ambiance and tranquility that some visitors seek.

Once operational, the new launch ramp would introduce infrastructure into a previously undeveloped area. Users of the Stanton Creek Primitive Camping Area and Lake Powell would experience a change in views as the new launch ramp becomes part of the landscape. More ambient noise may also be experienced. For some visitors, this may reduce the natural character and scenic quality of the area, although broader views of Lake Powell and the surrounding landscape would remain the dominant visual elements.

#### 3.5.3.2. Hite

At Hite, Alternative B would provide long-term benefits to visitor use and experience by restoring formal river access for private and commercial rafters exiting Cataract Canyon. Designated river access would create more predictable conditions for staging and gear handling and offer a more organized exit to multi-day river trips. Visitors and river rafting operators would experience more reliable trip logistics and reduced uncertainty compared to relying on informal and unmaintained shoreline areas. Reestablishing a functional launch site in this remote uplake area would eliminate the public use of unmaintained launch areas, and reduce pressure at Bullfrog, leading to a more balanced distribution of visitor activity across Glen Canyon NRA.

Users of the proposed Hite launch ramp would have a different visual experience in their approach to the new location. The new access road and ramp would introduce formal but primitive infrastructure into an area that is currently undeveloped and characterized by natural terrain and minimal human-made features. As visitors travel toward the site, views would shift from a remote, rugged landscape to one that would include constructed elements (graded road, parking areas, and the launch ramp). For some visitors, this change may alter the perceived natural character of the immediate area, although the surrounding canyon and river would remain the primary visual features.

### 3.5.4. Trends and Planned Actions

Past, current, and future actions and trends that affect visitor use and experience include development of launch ramps, marinas, campgrounds, and visitor amenities at Bullfrog and Hite, as well as fluctuating lake levels that affect the operability of these facilities. Visitor access at Bullfrog is constrained by the seasonal availability of the Bullfrog Main Launch Ramp and the limited capacity and distance of the Bullfrog North Ramp. At Hite, the closure of the developed area and the loss of functional river access have reduced visitor opportunities in the uplake region. Reliance on the primitive North Wash area would continue to limit convenient takeout from the river, primarily by river rafting operations.

The limited operability of existing launch ramps during low-water conditions have increasingly constrained visitor access and contributed to localized congestion and reduced convenience, diminishing the visitor experience. Future actions, such as routine maintenance of existing official lake ramps and potential improvements at the North Wash takeout, would provide incremental benefits but are not expected to resolve the broader limitations on reliable uplake access.

Foreseeable trends include changes in visitor use patterns based on ramp availability, which could lead to overcrowding, congestion, longer wait times at the ferry (Bullfrog) or launch ramps, and a diminished visitor experience. Rising temperatures, changing precipitation patterns, and more frequent extreme weather events could influence water levels, visitor behavior, infrastructure reliability, and overall park experience. In addition, reasonably foreseeable actions also include the State of Utah’s proposed improvements at North Wash takeout, which could provide some short-term improvement for river users if constructed. Given the area’s geomorphological conditions, the long-term viability of this takeout point is uncertain.

Alternative A would maintain the current limitations on infrastructure and access, particularly if the proposed North Wash takeout improvements do not get constructed or fail due to riverbank erosion. Over time, these conditions would likely result in a measurable decline in the quality of the visitor experience. This includes increased crowding, longer wait times, reduced convenience, and diminished recreational opportunities.

When considered with past, present, and reasonably foreseeable actions, Alternative A would continue the current pattern of constrained access. These conditions would influence visitation patterns, user satisfaction, and the Park's ability to meet visitor expectations under changing environmental conditions.

Alternative B would improve visitor use and experience by constructing new launch ramps and supporting infrastructure at both Bullfrog and Hite. These new facilities would increase the reliability of lake and river access during low-water conditions, reduce congestion at existing ramps, and support a more balanced distribution of visitor use across the uplake region. The Hite ramp would provide predictable accessible access if North Wash takeout improvements are not constructed. When considered with past, present, and future actions, Alternative B would contribute long-term beneficial impacts on recreational access and improve the quality and predictability of the visitor experience and enhance the Park's ability to manage demand and adapt to changing conditions.

### 3.5.5. Conclusion

Alternative A would maintain the status quo at Bullfrog, leaving existing limitations in place. With no new infrastructure to improve launch capacity or adapt to fluctuating lake levels, visitors would continue to face periodic access restrictions, congestion, and reduced convenience—conditions that can diminish overall satisfaction and discourage return trips. Operational challenges, including delayed emergency response during low-water periods, would also persist. At the Hite District, with the launch ramp inoperable, the access road closed, and no concession services in place, recreational opportunities in this northern portion of the Park would remain limited. Visitor use would continue to shift toward other districts, increasing pressure elsewhere. The use at North Wash takeout would likely continue for some raft operations. Emergency response capabilities would also remain limited without improvements to local infrastructure. In sum, maintaining current conditions under Alternative A would result in ongoing, long-term adverse effects on visitor use and experience.

Alternative B would ultimately improve the visitor experience at Bullfrog by ensuring reliable lake access even during low-water periods. The new facilities would ease congestion, enhance convenience, and strengthen emergency response capabilities. Although construction activities and the introduction of new infrastructure would temporarily disrupt the area and alter the acoustic environment, these effects would be short-term or localized. The new facilities would introduce new built features in the landscape; however, views of the lake would be unobstructed.

Alternative B would restore dependable river access at Hite, offering long-term improvements for both private boaters and commercial rafters. A designated takeout would streamline staging, reduce uncertainty, and eliminate reliance on informal shoreline areas, while also easing pressure on Bullfrog by redistributing visitor use across the uplake region. Although the new access road

and ramp would introduce visible infrastructure into an otherwise undeveloped landscape, the broader canyon setting would continue to define the area's character. Overall, Alternative B would enhance reliability, organization, and visitor experience at Hite.

## 3.6. Socioeconomics

This section summarizes socioeconomic impacts.

### 3.6.1. Affected Environment

The Bullfrog and Hite locations are very remote with limited specific socioeconomic data. This section focuses on the tourism-related economy of Glen Canyon NRA as compared to the State of Utah.

NPS has been tracking and reporting visitor spending for more than 30 years, switching to an annual, system-wide visitor spending effects model in 2012. These annualized data are available online as an interactive tool (NPS 2025j). The interactive tool captures four types of regional economic effects:

- Jobs: annualized full- and part-time jobs that are supported by NPS visitor spending.
- Labor Income: employee wages, salaries, and payroll benefits, as well as the incomes of proprietors that are supported by NPS visitor spending.
- Value Added: measures the contribution of NPS visitor spending to the gross domestic product of a regional economy. Value added is equal to the difference between the amount an industry sells a product for and the production cost of the product.
- Economic Output: the total estimated value of the production of goods and services supported by NPS visitor spending. Economic output is the sum of all intermediate sales (business to business) and final demand (sales to consumers and exports).

The economies of Kane and San Juan counties are closely tied to tourism and recreational use of federal public lands (Kane County 2018; San Juan County 2022). NPS identifies these locales as gateway communities, or areas surrounding lands managed by NPS where visitors typically stay and spend money while visiting (Flyr and Koontz 2024). Trip-related spending by NPS visitors generates and supports economic activity within these local economies. Table 8 compares the estimated economic contributions to the Utah and Glen Canyon NRA gateway communities from Park visitors in 2023, the most recent dataset available.

The top three sectors affected by local and statewide spending in every category are: lodging, recreation industries, and restaurants. An estimated 96 percent of visitor spending related to trips to Glen Canyon NRA was made by non-local visitors (Flyr and Koontz 2024).

**Table 8. 2023 State and Local Economic Contributions from Visitor Spending**

| Category | Glen Canyon NRA | Utah |
|---|---|---|
| **Park Visitors** | 5.2 million | 15.7 million |
| **Visitor Spending** | $540 million | $1.9 billion |
| **Jobs** | 6,300 jobs | 26,500 jobs |
| **Labor Income** | $226 million | $985 million |
| **Value Added** | $384 million | $1.7 billion |
| **Economic Output** | $670 million | $3 billion |

Source: NPS 2025j.

### 3.6.2. Impacts of Alternative A – No Action

Under Alternative A, new launch ramps would not be constructed at Bullfrog and Hite.

#### 3.6.2.1. Bullfrog

Boaters at Bullfrog would continue to experience seasonal access restrictions based on fluctuating water levels. Without reliable water access, recreational use of Glen Canyon NRA would be expected to eventually decline gradually over time, resulting in a long-term adverse impact on Park revenue, commercial services, and concession contracts. This projected decline refers specifically to water-based recreation, which is directly affected by the availability of functional launch facilities. Because future lake levels and shoreline conditions are uncertain and may change from year to year, the extent of this decline could vary over time. Some years may experience only limited reductions in lake-based recreational use, while prolonged low-water periods could result in more pronounced decreases in visitor activity. In addition, visitation patterns may vary from year to year in response to changing water levels and access conditions. Therefore, the magnitude of any decline in visitation associated with boating and other water-based activities is uncertain. While overall Park visitation has increased in recent years, uplake use patterns would continue to be constrained under Alternative A because of limited and unpredictable water access.

This reduction in visitation would also be experienced regionally, leading to decreased visitor spending in Kane County. Seasonal and small businesses that rely on predictable visitation patterns would be negatively affected by reduced visitor spending, particularly those sectors dependent on lake-based tourism, such as rafting operators, marinas, hotels, restaurants, gas stations, and recreational equipment rental. Employment and tourism-supporting industries in Kane County could experience adverse impacts if low-water conditions persist across multiple seasons. As with Park revenue impacts, the degree of economic change is uncertain and would depend on how frequently and for how long water access remains limited, resulting in a range of potential outcomes for local employment and business activity.

#### 3.6.2.2. Hite

Under Alternative A, river access in the Hite District would continue to be “launch at own risk.” While Glen Canyon NRA advises raft operators to use Bullfrog, the informal use of the unmaintained North Wash takeout likely would continue until conditions degrade to the point that

access is no longer feasible. As the site continues to erode and become less usable, opportunities for trip lengths that traditionally end in the Hite area would diminish. This could limit the variety of itinerary options rafting outfitters are able to offer, which may reduce demand for certain trips and result in a loss of revenue for commercial rafting operators.

The impacts on Glen Canyon NRA's recreational use, revenue, and commercial services would be the same as those described for Bullfrog. In addition, reduced accessibility in the Hite area could shift some river-related visitation away from San Juan County, which may reduce spending at local businesses that rely on rafting-related travel. The regional economic impacts in San Juan County would mirror those in Kane County, with decreased visitor spending affecting seasonal businesses, tourism-dependent sectors, and employment.

### 3.6.3. Impacts of Alternative B (Proposed Action)

This section summarizes the impacts of Alternative B.

#### 3.6.3.1. Bullfrog

Implementation of Alternative B at Bullfrog is expected to result in long-term beneficial impacts on the socioeconomic conditions of Glen Canyon NRA and surrounding gateway communities in Kane County. During construction, short-term beneficial impacts would likely occur due to local contracting, material sourcing, temporary employment opportunities, and worker spending at hotels, restaurants, gas stations, and other businesses. Given the remote nature of the areas, it is anticipated that construction workers would stay in Bullfrog or gateway communities and purchase food and services during the 24-month construction period. Once operational, a new launch ramp at Bullfrog would provide reliable access to Lake Powell even during low-water conditions. This year-round access would be expected to increase visitation and result in beneficial impacts on Park revenues, commercial services, and concession services.

Increased visitation would result in higher trip-related spending in nearby communities, particularly in lodging, recreation, and dining sectors. Given that 96 percent of Glen Canyon NRA visitor spending comes from non-local visitors, even modest improvements in access and recreational opportunities could generate additional jobs, labor income, and regional economic output. The new launch ramps would enhance economic resiliency for Glen Canyon NRA and for businesses dependent on recreational tourism by providing year-round access to Lake Powell.

#### 3.6.3.2. Hite

Construction of the Hite project would generally have the same impact on the socioeconomic conditions of the Glen Canyon NRA and surrounding communities as the construction of the Bullfrog project. Construction workers would likely stay and buy food and services at nearby gateway communities for the duration of the 21-month construction period. Additionally, for the commercial rafting industry, the new Hite launch ramp would restore reliable access for river trips and reduce logistical challenges related to vehicle access, gear handling, and emergency coordination. These operational improvements would support the economic viability of commercial rafting operations by reducing trip uncertainty.

### 3.6.4. Trends and Planned Actions

Actions and trends that impact socioeconomic conditions of Glen Canyon NRA and the surrounding communities have been influenced by infrastructure development, tourism, and recreation-based economic activity. Past development at Glen Canyon NRA, including the construction of marinas, campgrounds, and visitor infrastructure at Bullfrog and Hite, has supported a recreation-based economy, contributing to local employment, concession revenues, and regional tourism. However, fluctuating lake levels have limited water access, affecting visitor opportunities due to closures of ramps and other amenities. This is particularly acute in the Hite District, where camping, Park services, ramp access and concierge services have been suspended and where those who do access the river do so at a primitive take out that is unmaintained and where use is discouraged by Glen Canyon NRA.

Reasonably foreseeable trends such as rising temperatures, changing precipitation patterns, and more frequent extreme weather events are expected to further reduce the predictability and length of time during the year when lake- and river-based recreation is feasible with current infrastructure. These environmental pressures, combined with operational constraints such as the limited ability to maintain lake and river access as water levels drop and reduced capacity to support visitor services during extended low-water periods, are likely to result in shifting visitation patterns and reducing economic activity tied to water access. These trends would impact long-term stability of tourism-dependent economies, particularly in Kane and San Juan counties, where seasonal businesses and employment are closely tied to predictable visitation patterns and access to Lake Powell and the Colorado River.

Alternative A would continue the existing opportunities and use patterns where ramps would be available when water levels allow and Hite would remain closed. In the absence of boat launch improvements, the no action alternative would contribute to ongoing trends of decreased water opportunities and operational access to the water and adverse effect on concierge services that depend on water access.

Alternative B would introduce new infrastructure at Bullfrog and Hite that would support year-round visitation, increase concession revenues, and stabilize local employment and business activity. The additional infrastructure would help alleviate or beneficially affect the current trends associated with reduced water access.

### 3.6.5. Conclusion

Under Alternative A, socioeconomic conditions at Bullfrog and Hite would continue to be shaped by fluctuating water levels and unreliable access to Lake Powell and the Colorado River. At Bullfrog, seasonal and prolonged low-water periods would limit boating access, potentially contributing to gradual declines in waterbased recreation and associated Park revenues, concession contracts, and commercial services. These reductions would extend to gateway communities in Kane County, where tourism dependent businesses—particularly those tied to lake-based recreation—would experience decreased visitor spending and potential employment losses.

At Hite, continued “launch at own risk” conditions and reliance on an eroding, unmaintained takeout would further constrain riverbased recreation. As access deteriorates, rafting itineraries that

traditionally end in the Hite area would become less feasible, reducing commercial rafting opportunities and revenue. These effects would mirror those at Bullfrog, with reduced visitation contributing to economic declines in San Juan County. Overall, Alternative A would perpetuate existing constraints on water access, reinforcing ongoing trends of reduced recreational opportunities and diminished economic stability for tourism dependent communities.

Alternative B would generate long-term beneficial socioeconomic outcomes at Bullfrog and Hite. At Bullfrog, construction activities would provide short-term economic benefits through local contracting, material purchases, and temporary employment. Once operational, the new launch ramp would ensure reliable, year-round access to Lake Powell, supporting increased visitation, higher Park revenues, strengthened concession contracts, and improved economic resilience for businesses in Kane County. Enhanced access would stimulate additional visitor spending in lodging, dining, recreation, and related sectors, contributing to regional job creation and economic output.

At Hite, construction-related benefits would parallel those at Bullfrog, where the new launch ramp would restore dependable river access for commercial and private rafting. Improved staging, gear handling, and emergency coordination would reduce logistical uncertainty and support the long-term viability of rafting operations. These improvements would help stabilize tourism-based economic activity in San Juan County by ensuring that river-related visitation and spending remain consistent.

# 4. CONSULTATION AND COORDINATION

Coordination with agencies and stakeholders took place throughout the study and design of the proposed boat launches. Contact was made through listening sessions and consultations.

## 4.1. List of Agencies and Individuals Contacted

- Traditionally associated Tribes
- Elected officials
- Partner agencies
- Recreating public

## 4.2. Civic Engagement

Civic engagement related to potential new launch ramps has been ongoing quarterly since 2021 to provide the public opportunities to learn about the projects and offer input. Engagement methods have included early listening sessions, fact sheets, a project history with photographs, press releases, and electronic newsletters. Social media posts announcing the project and opportunities for public involvement were also provided. The park continues to actively engage stakeholders and the public throughout the planning process.

The public is invited to electronically submit comments on the projects through the NPS Planning, Environment, and Public Comment (PEPC) website at https://parkplanning.nps.gov/bullfroghiteramps.com.

## 4.3. Endangered Species Act

This section summarizes impacts related to the ESA.

### 4.3.1. Bullfrog

On November 7, 2022, and December 1, 2022, USFWS, NPS Denver Service Center, and Glen Canyon NRA met to discuss potential noise impacts. It was determined that monarch butterfly, bonytail, Colorado pikeminnow, humpback chub, Mexican spotted owl, southwestern willow flycatcher, yellow-billed cuckoo, Navajo sedge, and Jones Cycladenia do not have the potential to occur in the Bullfrog project area, and NPS determined that the project would have no effect to these species.

Informal consultation was conducted with USFWS on potential project impacts on the razorback sucker. The biological assessment analyzed the project area plus a 2.3-mile buffer, which was determined through consultation with the USFWS. This decision was based on evaluations of anticipated project noise using a target maximum sound level (Lmax) of 55 dB. USFWS concurred on April 20, 2023, with NPS' determination that the proposed Bullfrog project may affect but is not likely to adversely affect the razorback sucker (*Xyrauchen texanus*).

### 4.3.2. Hite

USFWS was provided with a description of the project and the project-specific species list obtained from the USFWS IPaC decision support system on September 26, 2024 by email.

Relevant data, survey reports, and/or personal knowledge of the area were requested. USFWS (Rita Reisor, Deputy State Supervisor) responded to the emailed request for information on October 23, 2024, and indicated that Mexican spotted owl is the only ESA-listed species that would be affected by the proposed Hite project. The nearest PAC is more than 5 miles from the project area; however, suitable habitat is present with 0.4 mile. USFWS indicated a "no effect" determination is appropriate for the rest of the species included on the IPaC list.

The USFWS issued a Biological Opinion on August 28, 2025, concluding that the proposed Hite project is not likely to jeopardize the continued existence of the Mexican spotted owl or likely to result in the adverse modification of critical habitat for Mexican spotted owl (USFWS 2025; Appendix E).

## 4.4. National Historic Preservation Act and Tribal Consultation

Separate NHPA and Tribal consultations were conducted for the Bullfrog and Hite projects, as summarized as follows.

### 4.4.1. Bullfrog

Glen Canyon NRA initiated Section 106 consultation with the SHPO on March 15, 2023. The letter included a summary of historic properties within the APE, an assessment of effects, and proposed Archaeological Monitoring and Inadvertent Discovery Plan. SHPO concurred with the eligibility recommendations and determination of no adverse effect on March 16, 2023. They provided no comments on the monitoring plan.

Glen Canyon NRA initiated Section 106 consultation with traditionally associated Tribes (Navajo Nation, Hopi Tribe, Kaibab Band of Paiute Indians, San Juan Southern Paiute Tribe, Ute Mountain Ute Tribe, Paiute Indian Tribe of Utah, and Zuni Pueblo) regarding the undertaking. Letters containing project details, the preliminary APE and identification of historic properties, and a request for review and comment on identification of any properties of cultural and/or religious significance within the vicinity of the project area were sent on December 29, 2022. No responses or comments on Section 106 compliance or historic properties within the APE were received. One question was received from the Navajo Nation on the NEPA compliance pathway for the project; this response was addressed by Glen Canyon NRA be a phone conversation on December 29, 2022, and no additional information was requested. The assessment of effects and proposed Archaeological Monitoring and Inadvertent Discovery Plan were sent to all Tribes on 3/14/2023. No comments were received. No historic properties with religious and cultural significance within the APE have been identified to date, either through previous studies or current consultation with Tribes.

### 4.4.2. Hite

Glen Canyon NRA initiated Section 106 consultation with the SHPO on September 15, 2025. The letter requested SHPO review of the adequacy of the archaeological survey report, concurrence on NRHP site eligibility, fencing and monitoring recommendations, the adequacy of the Archaeological Monitoring and Inadvertent Discovery Plan, and a project finding of no

adverse effect to historic properties. SHPO provided concurrence on site eligibility recommendations and concurred on a finding of No Adverse Effect on October 14, 2025.

Glen Canyon NRA initiated Section 106 consultation on September 16, 2025 with traditionally associated Tribes (Hopi Tribe, Navajo Nation, Kaibab Band of Paiute Indians, Paiute Indian Tribe of Utah, Zuni Pueblo, San Juan Southern Paiute Tribe, and Ute Mountain Ute Tribe).Glen Canyon NRA requested Tribal review of the adequacy of the archaeological survey report, concurrence on NRHP site eligibility, fencing and monitoring recommendations, the adequacy of the Archaeological Monitoring and Inadvertent Discovery Plan, and a project finding of no adverse effect to historic properties. In addition, Glen Canyon NRA invited input on any potential historic properties with religious or cultural significance in the APE. Glen Canyon NRA received a letter of concurrence from Kaibab Band of Paiute Indians on 9/27/2025. No other comments were received.

In a letter dated December 16, 2024, the Utah Public Lands Policy Coordinating Office (PLPCO) requested Section 106 consulting party status for the proposed undertaking at Hite. Glen Canyon NRA coordinated and initiated consultation with the Utah PLPCO on September 15, 2025.

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