

# THE NAVAJO NATION

JONATHAN NEZ | PRESIDENT   MYRON LIZER | VICE PRESIDENT



September 1, 2022

Carly Jerla  
US Bureau of Reclamation  
1777 Exposition Dr, suite 113  
421 UCB  
Boulder, CO 80301-2628

RE:    Comments on 87 FR 37884: Proposed Development of Post-2026 Colorado River  
Operational Strategies

Dear Ms. Jerla:

I am grateful for the opportunity to provide comments on the *Development of Post-2026 Colorado River Reservoir Operational Strategies for Lake Powell and Lake Mead Under Historically Low Reservoir Conditions*. This correspondence contains information on natural and cultural resources at Lake Powell that are based on a lengthy career (10+ years) working on and around the reservoir, as well as for the Navajo Nation as an Anthropologist for the Heritage and Historic Preservation Department (HHPD).

The low water at Lake Powell is a direct result of drought conditions also faced by the Navajo Nation. These circumstances reflect an environmental imbalance that threatens the physical and spiritual wellbeing of Navajo People. Our effort to inform your agency of the effects of drought on the Navajo Nation requires us to impart impacts to both material and traditional cultural lifeways. HHPD has identified three “categories” affected by the drought and low-water conditions at Lake Powell that I believe should be evaluated in the Post-2026 NEPA planning effort including:

**Water Access.** The original Navajo Nation boundary extended to the centerline of the San Juan and Colorado River until 1958 when a land exchange between the US Department of the Interior (DOI) and the Navajo Nation established the current boundary at the 3720 topographic line. The implicit understanding of the arrangement was that the Navajo Nation would have proximate access to the waters of Lake Powell for uses that had historically been available (livestock, agriculture, etc.) or would be newly available with the creation of a reservoir (marinas, tourism, etc.).

- Water levels also have a significant impact on the economic opportunities provided to the Navajo Nation. This includes Antelope Point Marina, but also must consider other yet to be realized business opportunities as development and capacities increase on the Navajo Nation. Antelope Point Marina has been severely impacted by the low water, both in infrastructure and in visitation.
- Livestock and Horses are of great traditional significance to many Navajo people and the low water conditions at Lake Powell have drastically changed the proximity of available water causing great stresses to livestock and horses.
- Low water may also present new opportunities for uses at certain locations such as Paiute Farms. According to the residents of Oljato Chapter, this location, as the name suggests, sustained agricultural uses including orchards and small gardens. At low water, Paiute farms is an arid wasteland full of invasive plants (mostly dead) and mudflats left over from the receded waters of Lake Powell. If, as expected, waters will remain low, new “fruitful” uses of the area should be considered. This is exceptionally important as the region is largely a food desert and many traditional agricultural practices are being lost.

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If water levels are to remain low, access and use by the Navajo Nation must be seriously considered in operating the Dam. This comment is a preliminary statement on an issue that requires much more information, study, and discussion with the Navajo Nation.

**Ecological.** In the first 50 years of Lake Powell's existence, its ecological effects were not yet clear and therefore have not been adequately evaluated. Beyond the alteration of the environment by impoundment, drastically changing lake levels cause exponential complication to an already stressed ecosystem.

- Long term management of a low water system will expose a much greater area of previously submerged lands to what was considered to be a limited shoreline impact area near the 3700ft elevation. Therefore, the footprint of shoreline related impacts such as the spread of invasive vegetation are expanded exponentially on a nearly regional scale.
- This same dynamic also applies to aquatic invasives like quagga mussels that attach at depths determined by temperature and sunlight exposure. These mussels are spread much deeper in the lake because of low water, are left (in some cases over 100ft high) on canyon walls, and carpet beaches and canyon bottoms with quagga mussel shells.
- The redistribution of sediments is also an important factor in other processes described here. Sediments have deflated upper terraces leaving areas that previously had soils to hold vegetation and archeological deposits eroded and redistributing the sediments at the mouths of canyons. This exposes some archeological sites and buries others. This process also creates the formation of large mudflats. These newly exposed sediment deposits are yet another factor that expand the ecological impact zone of Lake Powell to allow invasive vegetation to spread and create large desolate mudflats (See Paiute Farms, Escalante, & Hite areas ).
- The establishment of vegetation, in some cases large tamarisk trees may eventually become re-inundated creating large areas of the lake with dangerous submerged trees- much like the relatively limited areas where dead cottonwood trees are reemerging from the lake in the backs of canyons.
- Plants collected for traditional purposes are also significantly impacted by the expanded impact zones caused by low water. Plants that grow near the water are now much further away from the Navajo Nation and are separated by greater lengths by invasive-choked lands. Traditional practitioners use many plants from the region in healing ceremonies and treatments that may now be unavailable in the area. Drought and low water may also reduce the abilities of Navajos to collect plants for food and other subsistence purposes as their ancestors have for many generations.
- Traditional Cultural Properties (TCP) such as the confluence of the San Juan River and the Colorado River and Rainbow Bridge have already been significantly impacted by the impoundment of the Colorado River. The integrity of these TCPs are dependent upon healthy ecosystems- plants, animals, water, and so forth. Clearly there have been significant impacts to these properties already, but the expansion of impacts threatens their integrity further. Because these are complex and comprehensive landscape features, it is difficult to quantify the impact, but the accumulation of impacts on the scale described in this document.

Again, low water has exponential effects on these kinds of ecological issues because it spreads the impacted zones of Lake Powell well beyond the full pool elevations initially planned for. These impacts must be analyzed comprehensively on a region-wide scale to limit the scale of ecological degradations.

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**Archeology.** The exposure and/or loss of ancestral/archeological sites (including burials) is a significant threat with the recession of Lake Powell. When Glen Canyon was flooded, it was generally assumed that sites would be destroyed, but after many years of fluctuating lake levels it was revealed that many sites were intact to varying degrees.

In a project initiated in 2014, archeologists (including myself) undertook an effort to relocate and assess the condition of sites inundated by Lake Powell. The project attempted to monitor 120 sites, of these, 37 were still inundated, 30 were destroyed, 23 were not relocated or not evaluated (usually due to their location on cliffs). The remaining 30 sites (25%) were in good, fair, or poor condition, but did in fact contain some level of archeological integrity that warrants continued stewardship efforts by BOR and NPS. The following are excerpts from the preliminary 2019 report by Horn and Harmon:<sup>1</sup>

- *Nearly all of these 30 sites show at least some negative effect from inundation. In spite of this, only one was identified as lacking depositional integrity under ASMIS criteria. Twenty-three (77%) retain moderate, substantial, or well-preserved depositional integrity. A majority of sites (n = 26, 86%) were also evaluated as having high, medium, or modest data potential. Although preliminary, these results suggest that if an archaeological site is not destroyed during inundation, it will likely retain at least a moderate amount of data potential and integrity.*
- *As we evaluate sites, we are beginning to identify key factors that influence the preservation of inundated archaeological at Glen Canyon. Site type and site setting both have a major impact on site preservation. Sites in alcoves with no talus slope are among the most vulnerable. Lake water dissolves mud mortar from structures and wave action scours cultural deposits, sediment, and even building stones.*
- *Sites located at elevations that frequently go in and out of the lake are especially vulnerable to wave action. However, sites situated near full pool or in particularly narrow canyons that slow boaters often fare better, with less wave action affecting them. Sites with some sort of natural breakwater like a ledge or talus slope to dissipate wave energy survive the best.*
- *As lake levels continue to fluctuate, wave action and changing geomorphic processes will continue to erode sites, expose fragile deposits and artifacts, and impact masonry structures. Data recovery may be warranted at sites being impacted and threatened. Vegetation growth, especially of tamarisk, can impact structural walls as well as pose a fire hazard as lake levels drop and vegetation dies.*

The report cited above is only a small sample of what exists at Lake Powell and since this report was completed 3 years ago, it is likely that many more sites are now exposed to new potential impacts from wave action, vandalism, sediment (re)deposition, vegetation growth, wet-dry cycles, etc.

Anecdotally, I have witnessed several pots and even human remains exposed by changing lake levels and a great majority of the time these resources were reported by visitors, not through regular resource monitoring and patrols. This is troubling because this means we are only aware of resources that are encountered by the more responsible visitors to Lake Powell, when we know through vandalism observed at sites and past theft of artifacts, that many visitors do not visit with such good intentions. Essentially, we

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<sup>1</sup> Horn, A., & Harmon, B. C. (2019). *A New Low in Cultural Resource Management: Insights from Monitoring Archaeological Resources Re-exposed by Low Levels of Lake Powell in Glen Canyon National Recreation Area*. 15th Annual Biennial Conference of Science and Management on the Colorado Plateau and Southwest Region, (pp. 1-5). Flagstaff.

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do not know what is damaged or goes missing if we do not know what exists and what its conditions is. Active stewardship is essentially during this low water period.

In summary, new exposures and the expansion of impacts described above to archeological sites means that the DOI must remain committed to efforts to (re)identify, protect, and maintain cultural resources impacted by Lake Powell. These sites are important to Navajo and other indigenous ancestors and must be stewarded in a way that recognizes their vital importance as ancestral ties to the land.

**Conclusion.** Lastly and most importantly, I would also like to express the desire for the USBR and the National Park Service at Glen Canyon National Recreation Area to develop new environmental planning documents that address the issues described here in the long term. Many of the existing management plans reflect environmental conditions that are no longer viable and were not developed in close consultation with the Navajo Nation. The impacts noted here are multijurisdictional and require interagency and intertribal collaboration to address adequately.

I thank you for your acceptance of these comments and look forward to continued dialogue on these matters. Please contact me with any follow up questions or clarifications.

Sincerely,



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