

National Park Service
U.S. Department of the Interior

Glen Canyon National Recreation Area
Arizona



FINDING OF NO SIGNIFICANT IMPACT
HIDDEN SLOUGH PILOT PROJECT

BACKGROUND

In compliance with the National Environmental Policy Act, the National Park Service (NPS) prepared an Environmental Assessment (EA) to examine the environmental impacts associated with the design and implementation of revegetation activities at the Hidden Slough site, which is the pilot site for the Colorado River Riparian Revegetation Plan (CRRRP). This project is designed to provide park management with information needed to complete impact analysis on the remaining revegetation activities identified in the CRRRP. Revegetation of the Hidden Slough site would replace non-native species (primarily tamarisk) with native vegetation in order to rehabilitate and enhance the native biodiversity and ecological functionality associated with indigenous riparian and upland habitat.

SELECTION OF THE PREFERRED ALTERNATIVE

Two alternatives were evaluated in the EA: Alternative A (No Action) and Alternative B (Revegetation of Hidden Slough). Alternative B is the NPS preferred alternative because it best meets the purpose and need for the project as well as the project objectives to: 1) remove non-native, invasive tamarisk and revegetate the site with a variety of native species, 2) enhance essential riparian habitat for avifauna and wildlife, 3) provide a stock of native seed for downstream dispersal, 4) enhance recreational opportunities, and 5) refine the understanding of methods, effectiveness, and costs associated with revegetation activities at a remote site.

The preferred alternative will implement the design plans for replacement of tamarisk with native vegetation at the Hidden Slough site (mile -6.5R). Tree and shrub willows and Fremont cottonwood will be the focus of revegetation planting at this site, since these species are known for their ability to support high biodiversity, including residential and migratory birds, and terrestrial animals.

Implementation of the preferred alternative will include the following nine steps:

1. **Conducting a preliminary analysis to assess soil and water conditions.** Soils will be collected to determine soil type, electrical conductivity (salinity), and surface-to-water table depth will be determined.
2. **Preparing a detailed site plan.** A plan will be developed and approved by the NPS prior to project implementation.
3. **Preparing propagules for planting.** Approximately 1,200 poles, plugs, or rooted cuttings of native plants will be prepared. If possible, planting stocks will be collected from the immediate site, the Lees Ferry area, or the river corridor within Glen Canyon NRA.

4. **Site clearing, using chain saws and hand axes.** Tamarisk plants will be flush cut at the soil line and roots will be left in place to provide soil stability. Cut portions of tamarisk will be further cut using chain saws or axes. The smaller diameter pieces will be placed into debris piles and later burned, while larger pieces will be transported to the opposite cliff facing the project and sunk.
5. **Tillage.** Riparian soils often require tillage to permit water movement and promote plant growth. Holes will be bored into the soil using a gasoline powered hand auger.
6. **Installing an appropriate irrigation system.** For upland areas, where use of the water table is impractical, a gasoline-powered generator will be used to pump water (drawn from the Colorado River) to a holding tank. A battery-powered system with automatic timing will be installed to release water from the tank to the irrigation system.
7. **Planting native species.** Native plants will be planted according to the site planning design. Species to be used at this site are likely to include Goodding's willow, sandbar willow, four-wing saltbush, arrowweed, net-leaf hackberry, and other species. Limited amounts of Fremont cottonwood will also be planted at this site.
8. **Irrigating and weeding to maintain the site.** During the first two growing seasons and where appropriate, plantings on the upper terraces will receive irrigation. The area will be weeded to remove new non-native plants.
9. **Monitoring.** Plant growth, plant survival, and overall vegetation cover will be monitored.

In upland areas, revegetation methods may include broadcasting native seeds (such as four-wing saltbush) on wet soils or planting drought-tolerant species. A native seed mix will be developed for this purpose by the contractor. As native plants grow and regenerate the threat of non-native invasive species will likely decrease. Non-native tamarisk recruitment on upper terraces is unlikely as the lack of availability of water and the non-irrigated soils on the upper terraces are too dry to permit tamarisk recruitment. As native vegetation matures, it provides habitat and structural diversity; as a result, insect, avian, and other wildlife populations are likely to increase in diversity and number.

A number of mitigation measures have been developed to minimize the degree and/or severity of all adverse effects, and will be implemented during construction of the action alternative, as needed.

- Revegetation activities will be conducted by the NPS partner for this project, Grand Canyon Wildlands Council. As required by Section 402 of the Clean Water Act, they or their landscaping contractor will be responsible for obtaining an Arizona Pollutant Discharge Elimination System permit from the Arizona Department of Environmental Quality before the start of construction. As part of obtaining this permit, they will have to develop and receive approval from the NPS for a Stormwater Pollution Prevention Plan (SWPPP) that includes erosion control measures. This plan will help ensure that any run-off from the exposed soils of the project area will not reach the slough or the river. It also requires a management plan to insure that all possible water pollutants, including gasoline, pesticides and lubricants do not pollute the project site or adjacent water bodies.
- In cooperation with the Arizona Game and Fish Department, the USFWS has worked with the NPS to establish a set of conservation measures to protect the California condor from possible project impacts. These conservation measures would be incorporated into all project documents:

- If a condor is spotted directly on or over the revegetation site, activities will cease until the bird leaves or is driven off by an USFWS approved biologist.
 - Project workers and supervisors are instructed to avoid interaction with condors and to immediately contact the park Resources Division personnel if and when the condor(s) settle at the site.
 - The revegetation site will be cleaned up at the end of each day (e.g., trash removed, scrap materials picked up) to minimize the likelihood of condors visiting the site.
 - All dead animals found within 500 feet of the revegetation site will be immediately disposed in appropriate containment and removed from the site at the end of each working day.
 - To prevent water contamination and potential poisoning of condors, a Spill Prevention and Cleanup Plan (SPCP) will be developed and implemented for this project. It will include provisions for immediate clean-up of any hazardous substance, and will define how each hazardous substance will be treated in case of leakage or spill.
 - All project personnel will be given a copy of literature regarding condor concerns.
 - Project personnel are strictly prohibited from hazing condors.
- An archeologist that meets all the standards of the Department of the Interior will monitor the project site during tamarisk removal and planting activities. If an archeological site is inadvertently discovered, this archeologist will have the authority to stop project activities pending appropriate notification (including the Navajo Nation) and assessment of eligibility for inclusion on the National Register of Historic Places.
 - Wetlands will be protected by the use of several small foot bridges, which will be used to move people and equipment from the shore to the revegetation area. Additionally all crews will be directed to stay out of the slough area. The silt fencing used to protect the wetlands from run-off will also act as a barrier to this area.

ALTERNATIVES CONSIDERED

Alternatives considered for analysis had to be consistent with Glen Canyon NRA enabling legislation as well as the existing General Management Plan and had to satisfy the purpose and need for action as defined in the EA. These considerations, as well as input from park interdisciplinary team members and members of the public, formed the basis of the two alternatives that were developed: Alternative A, the No Action Alternative, and Alternative B, the preferred alternative. Both alternatives were carried forward for further evaluation in the EA.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is determined by applying the six criteria suggested in §101 the National Environmental Policy Act. According to these criteria, the environmentally preferred alternative should: 1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; 2) assure for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings; 3) attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences; 4) preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice; 5) achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and 6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

In the NPS, the No Action Alternative must also be considered in identifying the Environmentally Preferred Alternative. Alternative A, the No Action Alternative, represents the current management practices for Glen Canyon NRA. This alternative does not meet the above evaluation factors as it would leave the non-native, invasive tamarisk in place, which would continue to curtail the development of native vegetation at the Hidden Slough Site.

The environmentally preferred alternative is the preferred alternative, as it will strive to achieve a future condition in which characteristic native vegetation species dominate the riparian zone of the Hidden Slough Site and by collection of data during revegetation activities, provide information for decision making and impact analysis for future revegetation activities. This alternative will enhance native wildlife and vegetation, improve the visitor experience, protect cultural resources and potentially benefit threatened and endangered species.

WHY THE PREFERRED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Impacts that may be both beneficial and adverse

The preferred alternative will have both adverse and beneficial impacts to vegetation at the project site. There will be short-term, adverse, minor impacts due the removal of approximately three acres of tamarisk habitat, as well as some trampling of vegetation in the lower zone due to moving equipment off the watercraft to the project area and the hand removal of tamarisk whips. The preferred alternative will also result in a long-term, beneficial impact by replacing the minimally useful and fire-prone tamarisk habitat with native vegetation, which will contribute to an overall healthier ecosystem along the portion of the Colorado River between Glen Canyon Dam and Lees Ferry. Additionally, the project will remove a seed source for new tamarisk starts at Hidden Slough and downstream along the Colorado River.

The preferred alternative will have minor, short-term, indirect, adverse impacts to the California condor, Mexican spotted owl, Humpback chub, and Razorback sucker due to construction activities. (Conservation measures have been developed for the California condor in conjunction with the U.S. Fish and Wildlife Service and the Arizona Game and Fish Department. Erosion control measures will help mitigate impacts on the Humpback chub and Razorback sucker.) The preferred alternative will also have moderate, long-term, beneficial impacts to all threatened, endangered or species of concern due to the replacement of the block of non-native invasive tamarisk with diverse native vegetation that will promote a healthier ecosystem and may meet the resource needs of a wider array of native species, including those listed by both federal and state agencies.

The preferred alternative will have negligible, short-term, adverse impacts on the critical habitat of the Humpback chub and Razorback sucker, if and when ash makes its way into the river, as well as a negligible, short-term, adverse impact to the California condor and its potential habitat. The preferred alternative will have minor to moderate, adverse impacts on potential habitat for the Southwestern willow flycatcher. The preferred alternative will result in no impacts to potential habitat of the Mexican Spotted Owl. The preferred alternative will also result in long-term, minor or moderate, beneficial impacts as it will improve potential habitat conditions for these species.

The preferred alternative will have long-term, moderate, adverse impacts to wilderness character or experience due to the very visible removal of tamarisk and the replanting of native vegetation. This

impact, which could be seen by all flat water rafting visitors, as well as many visitors using fishing guides or private vessels, will be most visible during the tamarisk removal stage and during the early growing periods for the new plants. Most of the plants will reach maturity in about three to five years; during this time the impact will become much less noticeable. The project will also have long-term, beneficial impacts to wilderness character or experience due to the replacement of non-native tamarisk with a healthy native ecosystem.

The preferred alternative will result in a three to five year drop in plant diversity before the vegetation becomes established. After five years the preferred alternative would provide long-term benefits for birds and other wildlife.

Degree of effect on public health or safety

The health and safety of recreation area visitors and staff is of the utmost importance to the NPS. The NPS is always striving to upgrade resources and facilities to ensure they are as safe as possible for visitors and staff alike. The NPS currently provides for recreational visitation along the river upstream from Lees Ferry. Special attention is given to ramps, access trails and the loading dock to ensure that they are in good physical condition without defects that could cause slip and trip injuries to guests and staff alike. These activities would continue to occur regardless of the proposed action. Revegetation activities would include the use of a variety of tools, including chainsaws, as well as the removal of vegetative shade for visitors. Development of construction plans for the proposed project would include the development of health and safety plans for project employees. The health and safety plan would include requirements for management of equipment fuel, and herbicides to be used as part of the project, including special handling requirements. Special attention would be given to make sure that soils and water are not contaminated during the projects.

Given that health and safety plans for employees would be developed before landscaping activities commence, and appropriate public notice warning of site closure would be provided, the proposed actions would result in negligible short-term adverse effects to health and safety.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas

The preferred alternative will not impact unique characteristics of the area including park lands, prime farmlands, wild and scenic rivers, or ecologically critical areas because these resources do not exist in the project area. Wetlands do occur along the slough and portions of the shoreline. The majority of impacts from the project would be confined to the stand of mature tamarisk, which is located outside the wetland zone. Negligible short-term adverse impacts may occur to a very small portion of these wetlands due to inadvertent trampling as personnel and equipment are moved from barge to the revegetation area and as tamarisk whips are removed from the wetland area. A small footbridge may be used as needed to lessen any trampling impacts or trails created by project activities will be routed around wetlands. While the revegetation sites are all located within the 100-year floodplain, revegetation projects do not require the preparation of a statement of findings as there would not be a permanent disruption of the floodplain (this assumes no loss of sediments from the project site). Further, there would be no unacceptable impacts to floodplains; the proposed actions are consistent with §1.4.7.1 of NPS *2006 Management Policies*. Because the project would only result in short-term minor adverse effects to the floodplain, there would be no unacceptable impacts. Cultural resources are addressed in a following criterion on that topic.

Degree to which effects on the quality of the human environment are likely to be highly controversial

Throughout the environmental process, the proposal to revegetate the Hidden Slough site was not highly controversial, nor are the effects expected to generate future controversy. All correspondence received was generally supportive of the project.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks

While the preferred alternative is a pilot project that will refine the understanding of methods, effectiveness, and costs associated with revegetation activities at a remote site, the environmental process has not identified any effects that may involve highly unique or unknown risks.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration

The preferred alternative is not expected to set a precedent for future actions with significant effects, nor does it represent a decision in principle about a future consideration. Techniques used at this site may be applied at other locations along the Colorado River in the future.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts

Cumulative effects were analyzed in the Environmental Assessment, and no significant cumulative impacts were identified.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

No archeological sites were identified from research at the proposed site. A cultural landscape, the Lees Ferry/Lonely Dell Ranch Historic District, is approximately 6.5 river miles west of the downstream end of the project area and would not be impacted by the proposed project. Ethnographic resources are not known to exist in the proposed project area based on consultation with Native American tribes professing interest in the project area. Informal consultation was conducted with staff from the Arizona State Historic Preservation office and park staff between September 12 and September 29, 2007. Subsequently, Glen Canyon NRA requested written concurrence with the park's determination of "No Effect" to properties eligible for listing on the National Register of Historic Places. In a letter dated October 16, 2008, the State Historic Preservation Office concurred with our determination that there are no properties on or eligible for the National Register of Historic Places.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat

There are a number of federally-listed species and critical habitats, federal candidate species, and state-listed species of concern that occur in the project area. A biological assessment was prepared and submitted to the U.S. Fish and Wildlife Service (USFWS). In a letter from the USFWS dated June 19, 2008, they concurred with our determinations that the project may affect, but is not likely to adversely affect the federally-listed species and critical habitats in the project area. Their concurrence included conservation and mitigation measures that have been included in the EA (and described previously). No response was received from the state on state-listed species in the area.

However, all federally-listed species are also Arizona species of concern and have been addressed in consultation with the USFWS. The two species that are Arizona species of concern only (Northern leopard frog and Peregrine falcon) are not found in the immediate project area and would not be impacted.

Whether the action threatens a violation of federal, state, or local environmental protection law

The action will not violate any federal, state, or local environmental protection laws.

Impairment

The National Park Service has determined that implementation of the proposal will not constitute an impairment to the resources and values at Glen Canyon National Recreation Area. This conclusion is based on a thorough analysis of the environmental impacts described in the *Environmental Assessment*, the public comments received, relevant scientific studies, and the professional judgment of the decision-maker guided by the direction in 2006 NPS *Management Policies*. Although the project has some negative negligible to minor short-term impacts, in all cases these adverse impacts are the result of actions taken to preserve and restore park resources and values. Overall, implementation of the plan would benefit park resources and values, provide opportunities for their enjoyment, and would not result in their impairment.

Unacceptable Impacts

The impact threshold at which impairment occurs is not always readily apparent. Therefore, the National Park Service applies a standard that offers greater assurance that impairment will not occur. The National Park Service will do this by avoiding impacts that it determines to be unacceptable. These are impacts that fall short of impairment, but are still not acceptable within a particular park's environment. Park managers must not allow uses that would cause unacceptable impacts; they must evaluate existing or proposed uses and determine whether the associated impacts on park resources and values are acceptable. The implementation of the plan would not result in unacceptable impacts to park resources and values.

Appropriate Use

Section 1.5 of *Management Policies* (2006), *Appropriate Use of the Parks*, directs that the National Park Service must ensure that park uses that are allowed would not cause impairment of, or unacceptable impacts on, park resources and values. A new form of park use may be allowed within a park only after a determination has been made in the professional judgment of the park manager that it will not result in unacceptable impacts.

Revegetation of the Hidden Slough site will replace non-native species (primarily tamarisk) with native vegetation in order to rehabilitate and enhance the native biodiversity and ecological functionality associated with indigenous riparian and upland habitat. With this in mind, the National Park Service finds that revegetating the Hidden Slough site is an acceptable activity at Glen Canyon National Recreation Area.

PUBLIC INVOLVEMENT

Tribes/Nations

Federal legislation and NPS policy require personnel within the NPS to consult with Native Americans if any federal action may affect areas of cultural importance to them. Identification of such resources was made through direct mailing of a scoping letter to the Tribes with cultural affinity to the area. On July 12, 2007, we received a letter from the Historic Preservation Department of the Navajo Nation. In their letter they found that the proposed undertaking would

not impact any Navajo traditional cultural properties. They did request that certain protective measure be put in place in the case of inadvertent discoveries. These included immediate cessation of work and that they be given telephone notification with 24 hours and a formal letter within 72 hours and that work not continue until approved (by the Navajo Nation) mitigation measures are developed. These requests have been incorporated into the Revegetation Plan. On October 14, 2008 we received another letter from the Historic Preservation Department of the Navajo Nation. In that letter they concluded that the proposed project/undertaking will not impact any Navajo traditional cultural properties or historic properties.

Tribal governments for each of the following Native American communities were provided information about the project through the Native American Liaison of Glen Canyon NRA regarding the nature of the project. Comments, questions, and concerns were sought to determine their interest, use, and impacts on those resources important to them.

- Kaibab Paiute Tribe
- Kanosh Band of Paiute Indian Tribe of Utah
- Koosharem Band of the Paiute Indian Tribe of Utah
- Navajo Nation
 - Oljato Chapter
 - Coppermine Chapter
 - Inscription House Chapter
 - Gap/Bodaway Chapter
 - Navajo Mountain Chapter
 - LeChee Chapter
 - Shonto Chapter
 - Kaibeto Chapter
- San Juan Southern Paiute Tribe
- Shivwits Band of Southern Paiute
- White Mesa Ute Band of the Ute Mountain Tribe

The *Environmental Assessment* was made available for public review and comment during a 30-day period ending October 4, 2008. To notify the public of this review period, a press release was mailed to stakeholders, affiliated Native American tribes, interested parties, and newspapers. Copies of the document were sent to certain agencies and interested parties; made available in local repositories; and posted on the internet. In addition to the Navajo Nation letter described above, four comments (three individual, one group) were received during this review period. All were generally supportive of the project. The Friends of Lake Powell asked that the NPS consider an alternative to burning the tamarisk, such as mulching or disposal into deep pools, so as eliminate the emissions of fine carbon and particulates.

CONCLUSION

As described above, the preferred alternative does not constitute an action meeting the criteria that normally require preparation of an environmental impact statement (EIS). The preferred alternative will not have a significant effect on the human environment. Environmental impacts that could occur are limited in context and intensity, with generally adverse impacts that range from localized to widespread, short- to long-term, and negligible to moderate. There are no unmitigated adverse effects on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, major cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state, or local environmental protection law.

Based on the foregoing, the National Park Service has determined that an EIS is not required for this project and thus will not be prepared.

Recommended:


Stan Austin, Superintendent


Date

Glen Canyon National Recreation Area

Approved:


Michael D. Snyder


Date

Director, Intermountain Region, National Park Service