

# FINDING OF NO SIGNIFICANT IMPACT DEVILS HOLE SITE PLAN

Death Valley National Park

March 2010

## INTRODUCTION

This Finding of No Significant Impact (FONSI) has been prepared for the Devils Hole Site Plan at Death Valley National Park, in accordance with the National Environmental Policy Act (NEPA). This document describes the selected alternative and provides an explanation of why it will have no significant effects on the human environment. As stated in the Devils Hole Site Plan Environmental Assessment (EA), the proposed action refers to (1) the improvements to site security, including fencing improvements, enclosure of the visitors platform, and the installation of video cameras at strategic locations around the site; (2) installation of a ships ladder to provide improved access to Devils Hole for research and monitoring activities; (3) improvements to visitor interpretation by the addition of a webcam onsite and other displays at the Furnace Creek Visitor Center; (4) revegetation of the disturbed areas.

Devils Hole is a 40-acre site located on lands within the Ash Meadows National Wildlife Refuge (AMNWR) but managed as a detached unit of Death Valley National Park (“the Park”). At the heart of the site lies a cavepool, the collapsed top of a stretch fault leading to a flooded cave system, which contains the single remaining population of an endangered species, the Devils Hole pupfish (*Cyprinodon diabolis*). The Park manages the ongoing recovery actions for the species in collaboration with the U.S. Fish & Wildlife Service (USFWS) and Nevada Department of Wildlife (NDOW), and attempts to secure and enhance the remaining population while building public support for protection of the habitat features on which the species relies—in particular, maintaining the groundwater table at sufficiently high depth below ground to allow for normal feeding, breeding, and spawning activities of the fish.

## PURPOSE AND NEED FOR FEDERAL ACTION

The purpose of the proposal is to redesign the man-made features of the Devils Hole site in a manner that does no permanent harm to the species or its habitat, and achieves the following goals:

- Provide the species and habitat with better protection from intrusion and vandalism.
- Improve interpretive and educational opportunities for visitors.
- Enable safe and effective scientific research and ecological monitoring.
- Restore the natural ecosystem processes upon which the pupfish rely.

The need for federal action is based primarily on the fragility and long-term decline of the Devils Hole pupfish, composed as it is of a single small population. An April 2006 population survey counted 38 individuals, the lowest on record, furthering a trend of decline from previous years. The most recent spring count in April of 2009 was 70 ( $\pm 13.5$  SE), likely representing an increase over recent spring surveys. The fragility of the population is due to a combination of several factors, many of which are inherent to the Devils Hole site. Specifically, the Devils Hole pupfish is vulnerable to changes in its

habitat as it is restricted to a single water-filled cavern. Unlike most other fishes, the Devils Hole pupfish has no ability to migrate to fulfill its life history requirements or seek optimal habitats. If the habitat of Devils Hole changes to become less suitable, the Devils Hole pupfish population is likely to decline as a consequence.

Threats to habitat suitability for the Devils Hole pupfish could include a variety of anthropogenic factors such as global warming, airborne dust from nearby roads, accidents by researchers, intentional vandalism, accidental introduction of invasive species, habitat alteration by site infrastructure, or groundwater development and resulting water level declines. It is hoped that by enabling scientific research and monitoring, the causes of the recent decline in abundance of the Devils Hole pupfish can be better understood, hopefully preventing such declines in the future.

Objectives of the proposal also include improving the visitor interpretive experience. As an ecologically unique site, and due to presence of the lone remaining population of the endangered pupfish, Devils Hole has been recognized as deserving of federal protection. As development pressures continue throughout the region, the pupfish and its habitat merit greater protection through education and interpretation of the area's ecological resources and processes. This forms the basis of need for enhancing the interpretive experience embedded in the project purpose.

#### RANGE OF ALTERNATIVES CONSIDERED

Three alternatives were fully evaluated in the EA. These included two different configurations of improvements, as well as the No Action Alternative. The No Action Alternative does not meet the objectives of the project but was analyzed as a "baseline" in accordance with NEPA requirements.

#### Selected Alternative

For implementation the Park has selected Alternative A, as described in the EA. There are no changes or modifications incorporated due to public review. Project components are as follows:

*Fenceline* - Alternative A consists of retaining the existing perimeter chainlink fence, with the addition of ~1200 linear feet of chainlink fencing in the form of a 'dogleg' that extends further from Devils Hole than the current fence, so as to allow for more natural drainage and sediment passage. Existing chainlink along the south boundary (approximately 125 ft), will be removed and stored for reuse elsewhere. To improve the aesthetics of the site, 164 linear feet of perimeter fence along the east boundary will be new Twinbar High Security fence & hardware in standard gray color with double angled tops strung with barbed wire. Twinbar type fence will also be installed on a portion of the existing east perimeter fenceline. An opening in the fence equal to one panel will allow visitor access to the trail leading to the Visitors' Platform.

This Twinbar fence will also include one 6' wide gate (two 3' panels) on the east perimeter north of the visitors tunnel, for staff access to the southeast corner of the fenced area. The entire fence would be 8' high. Demolition includes removal of that portion of chainlink fencing to be replaced by Twinbar fencing (with possible storage for reuse). Then the existing fencing and gate under the existing Visitors' Platform will be removed and disposed of (or reused). Fence installation will be done by

installing posts every 8 feet using a large posthole drill along the perimeter, installing the 10.6-foot galvanized aluminum posts into non-shrink poured concrete. The posts will be dug two feet deep.

To further enhance drainage, a floodgate would be constructed along the natural drainage pathway in the 'dogleg' fenced area.

*Visitors Platform, Access Trail & Interpretation* - The existing viewing platform will be retained. The trail to the Visitors' Viewing Platform and the platform itself will be enclosed in a tunnel over the existing trail from the east perimeter fence line. Two uncovered viewing openings will be cut out of the new Twinbar High Security fence, placed so that one is for easy adult viewing, the other for easy child viewing. The tunnel will be covered by a rounded hoop of chainlink fabric. No additional paving will be added to the existing trail, but other trail upgrades such as steps or waterbars would be implemented as necessary for safety and to control trail erosion.

The interpretive theme is based on combining enhanced off-site interpretation, through the use of a full-motion video cam located in the crevasse of the site that transmits over the Internet, with a joint Death Valley/Ash Meadows web site dedicated to Devils Hole interpretation. This website will be featured in an interpretive display at the Ash Meadows Visitors Center and Death Valley National Park's Furnace Creek Visitor Center. The display would likely also include a video of a tribal elder talking about the importance of Devils Hole/Ash Meadows. The underwater video represents a major improvement of the Park's ability to interpret the ecosystem.

*Access Ladder* - The existing ad hoc ladder is replaced by a steep incline stairway commonly referred to as a ships ladder. The existing support would be replaced with 4" structural steel square tubing. Like the existing support, the new support spans both walls so that the top of the staircase does not impede the natural drainage. New anchors may have to be drilled for this support, if the existing support's anchors are found to be inadequate.

Handrails would be required on both sides of the ladder to safely ascend and descend. The ships ladder would be fabricated offsite. Due to the ladder's size and weight, along with the difficult access to the Hole, a crane would be required for the installation.

*Monitoring Platform & Equipment* - This project component consists of a sectional portable monitoring platform that can be stored away from the water surface within the Devils Hole crevasse and assembled as needed. The platform consists of individual 5-ft aluminum sections, each weighing approximately 40 lbs. The platform is also constructed with a built-in measurement system to allow researchers to easily georeference their sampling locations.

The entire stilling well and frame structure would be removed and the Park would rely on pressure transducers and a new staff gauge (the existing staff gauge is connected to the stilling well) to measure water level.

*Security System* - One of the existing cameras on the communications tower would be replaced with a full-motion video camera and the second would be replaced with a video camera with infrared (IR) capability. To enhance remote monitoring capabilities, a video recorder and transmitter interface with compositing software will be installed to enable multiple camera image displays on a single

monitoring screen. In addition, two video cameras that can transmit full-motion video images over the internet for site interpretation and resource monitoring would be installed within the crevasse, one along the cliff and one on the cavern ceiling. A remote monitoring system, along with improved intrusion detection via intrusion sensors located at multiple access points, will also be installed. A fifth camera on the visitor platform or up the hillside would be installed. Lastly, a waterproof camera would be suspended from a cable and hung in the water at a fixed depth. A cable would bring the video signal back to an electronics enclosure mounted remotely but fairly close by.

*Communications Infrastructure* - At least 640kbps of upstream bandwidth is required (but would optimize at 1MB or higher) for transmitting data and images to the Ranger Station and other interpretive sites. This would involve installing a small satellite or microwave dish. If the dish cannot be installed on the communication tower, it would be mounted on a 3' by 3' concrete pad. Over 100' of fiber optic cables from the video controller to the satellite or microwave dish would be buried underground.

*Power supply* - Solar power will be used for all onsite power requirements (575 watts of power are required for the cameras and monitors, plus excess power to recharge the batteries). This requires approximately 300 square feet of photovoltaic cells. The bracketed array (15' x 20') will be mounted on the ground at a location west of the Hole, chosen to balance the desire to minimize visibility and maximize power efficiency, with the large storage batteries stored underneath (and thus shaded by) the solar array.

*Site revegetation* - Much of the project area has been previously disturbed and remains sparsely vegetated. All revegetation work will be conducted under the direction of Park botanists; this consists of replicating the mix of plant species in the restoration area.

### Alternative B

*Fenceline* - For Alternative B the fence would consist of 176 lf of Twinbar High Security fencing with double angled tops (outriggers) and hardware, and one 6' gate on the east perimeter and 2350 lf of chainlink fence to enclose the natural drainage. Since there will be no access to the Visitors' Platform except with a ranger guided tour, the gate would be permanently locked and accessible only to Park personnel. Construction of the fenceline would be similar to that of Alternative A.

*Visitors Platform, Access Trail, and Interpretation* - In Alternative B the existing Visitors' Platform will remain. The existing fencing and gate underneath this platform would be removed. The existing trail to this platform would be retained and a wooden handrail installed on both sides of the trail. Site disturbance would be minimal.

The interpretive approach in Alternative B limits unsupervised access to the Viewing Platform, but improves interpretive displays outside the fenced area for casual visitors that provides additional information about the pupfish, the ecosystem and the importance and need for protection. The supervised tours provide the opportunity to deliver a more complete message about these issues. In addition, an offsite interpretive exhibit at the Ash Meadows Visitors Center and Death Valley's Furnace Creek Visitor Center would be enhanced by providing refreshed still images of the pool

from a camera inside the crevasse. The display would likely also include a video of a tribal elder talking about the importance of Devils Hole/Ash Meadows.

*Access Ladder* - Alternative B leaves the existing access ladder as is but increases safety and accessibility by adding a permanent handrail down the side of the cliff. At the bottom of the ladder, the handrail continues down the remaining 40' to the water's edge.

*Monitoring Platform & Equipment* - The monitoring platform in Alternative B is a permanent structure bolted to the east wall in a hinged manner which could be lowered by use of a hand-operated pulley system when required. The platform would be permanently stored in a raised position and bolted to the eastern cliff above the pool, and would be installed by setting up temporary scaffolding over the cliff face. Installation would require drilling into the cliff face; vibration tests would be performed in the rock before drilling.

The stilling well and associated frame would be removed and installed in the back of the cave. Installation in the new location would require drilling several new holes for anchor bolts to affix the stilling well frame. The existing staff gauge along with the stilling well would be moved to the back of the cave. There would also be a second staff gauge installed along the east wall at a location easily accessible from the south shore (as in the selected alternative). Given that the monitoring platform cannot be fully installed without first removing a portion of the stilling well frame (i.e., they occupy the same space), a temporary working surface will need to be suspended above the water surface during removal of the existing infrastructure and installation of the new platform.

*Security System* - For Alternative B, one of the existing cameras on the communications tower would be refurbished to full functionality and the second would be replaced with a camera with infrared (IR) capability. Both of these cameras would be steerable and have video recording capability, although only one would be configured to transmit video; the other would transmit still motion images to the Ranger Station, controlled by the video software. The camera locations on the communications tower would remain approximately the same as today. A remote monitoring system, along with improved intrusion detection via intrusion sensors located at multiple access points, would be installed, with additional zones to cover the wider fenceline area. Video monitors would be located at the Ranger Station to display still motion images. A third camera would be installed on the northeast face of the cliff wall to monitor and view the Hole itself. A fourth camera would be installed on the ceiling of the cavern to look outward. The cameras could be camouflaged from view of the visitors to some extent. Given that this alternative has the fenceline extending almost up to the watershed edge, an additional security camera, installed atop the visitors platform but capable of steering towards the upper hillside, would be needed to expand area coverage.

*Communications Infrastructure* - Alternative B would use existing cell phone transmission infrastructure for communicating the limited data generated: alarm signals, still images, and voice communications.

*Power Supply* - Alternative B would require approximately 480 watts of power for the cameras and monitors. This would in turn require roughly 200 square feet of photovoltaic cells, along with a battery charging system and power conditioning. The array would be bracketed and mounted onto the

ground at the same location as the existing array, with the large storage batteries stored underneath (and thus shaded by) the solar array.

*Site revegetation* - Restoration in Alternative B would consist of accelerating the re-establishment of the natural mix of plant species.

#### ALTERNATIVES CONSIDERED BUT DISMISSED

During the scoping phase and in drafting the EA, the Park considered the following options and concepts, but dismissed them from further consideration as alternatives for the reasons given.

1) *Bridge over the north side of Hole* - Since one of the objectives is to improve the interpretative and educational opportunities for visitors, one option considered was constructing a bridge over the north side of the hole. This would orient visitors looking south over the hole and beyond, thereby giving them a broader view of the entire setting than a platform looking north. A separate interpretive area would be constructed adjacent to the bridge. Because of physical site limitations, this bridge would have to extend directly over the Hole itself. This was deemed infeasible because: (i) Such construction would be prohibitively expensive in relation to its benefits for the recovery of the pupfish; (ii) While providing a broader view of the setting and thereby providing additional educational opportunities for understanding the role of the site in the broader ecosystem, the actual views of the Hole itself would be limited except for directly underfoot, which is felt to be limiting for many visitors even if a glass floor were used for the bridge span; and (iii) It was felt that any alternative that allowed visitors unsupervised access inside the fencing should allow direct views of the Hole itself. Otherwise, there would be little benefit to allowing such access.

2) *Extending grid power and landline telecommunications* - Currently all activities at the site requiring power are served by a small solar array—3 solar panels, generating 37 watts, and a charge controller—located a few yards from the visitors platform. Data communications within and from the site are over cellular phone infrastructure. The proposed security and interpretive improvements will require additional power and data bandwidth.

One powering option considered by the Park team was to extend grid power from a terminus about 1.5 miles away, within AMNWR. Power would be extended by conventional utility lines to the site. This would require extending above-ground utility poles and lines from the terminus to the site. While this is technically possible, it was considered to be unnecessarily disruptive and costly, as well as requiring levels of interagency negotiation that could cause delays in the implementation, especially given the natural suitability of solar power for the Devils Hole site.

Similarly, telecommunications bandwidth for security and interpretive functions, using video, two-way voice, and internet, could be delivered by extending landlines from the AMNWR terminus. However, the Park team felt that similar considerations of cost, environmental disruption, and interagency delays make this option infeasible for this project, especially given the relative simplicity of a private satellite ISP system located at the site.

3) *Joining the monitoring platform directly to the ladder* - One of the options considered in designing secure and convenient access for researchers was improving convenience by constructing

a single structure that included a ladder with an attached fold-out monitoring platform at its bottom. The Park team felt that because of the required length of the platform to run from its landing point to just beyond the shallow shelf in the pool, an attached platform could not be sufficiently stabilized on the ground and over the pool, necessary to enhance overall safety.

4) *Live video monitors at interpretive station* - The Park considered use of live video monitors in the proposed interpretive treatment, on which would be displayed full-motion video streams from video cameras scanning the crevasse and the cavepool. This entails locating video monitors at the interpretive station located at the Visitors Platform, which would receive video feeds through wired connections to the cameras. Given summer heat temperatures that routinely reach 1000 F in the daytime, the need for environmental conditioning and likelihood of frequent interruptions of service make this option problematic. In addition, these monitors would be subject to theft or vandalism, creating additional security concerns at the site.

5) *Reconfiguration of road and parking access to the site* - The Park considered reconfiguring the access for staff and researchers from the main road to the site. An historic access road connecting School Springs within AMNWR to Devils Hole (visible on topographical maps) was considered. In this way, the existing access road connecting the main road to Devils Hole could be reclaimed in favor of a less substantial foot path for visitors. The parking area could also largely be reclaimed in favor of a new parking area to the west. However, this alternate route does not get researchers closer to Devils Hole, nor is it more convenient. It would require that researchers and staff travel an additional distance to access Devils Hole. Further, to resurrect this access road some repairs would be needed, causing additional surface disturbance. The Park dismissed this alternative following discussions with AMNWR staff; the Refuge staff expressed concerns that the increased vehicular traffic and/or any road improvements would impact an endangered plant that lives along the route.

6) *Building a new visitors platform at a new location* - The Park considered two possible locations for a new visitors platform, both of which were intended to enhance the interpretive experience overall, while preserving the ecological balance of the pupfish habitat:

6a) Elevated location along the ridgeline south of (further back from) the current platform, along an expanded fenceline. This would be consistent with moving the fenceline back to enhanced drainage while keeping the platform behind the fenceline. Using results of a topographical survey and staff onsite evaluations, it was determined that even the best possible view of the Hole above the ground surface would create an unacceptable visual intrusion into the landscape setting.

6b) A location at the eastern cliff-edge directly overlooking the Hole that would be available for supervised tours only. The Park felt there was little reason to build a new viewing platform at this location when a better view was available from the existing platform. Given this view, and the cost and the potential for construction disturbance that could directly harm the pupfish, this option was considered infeasible and dismissed from further consideration.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is the course of action which will best promote the national environmental policy expressed in NEPA (Section 101(b)). This environmental policy is stated in six goal statements, which include:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
3. Attain the widest range of beneficial uses of the environment without degradation, risk to health and 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 which supports diversity and variety of individual choice;
5. Achieve a balance between population and resource use which 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 (NEPA, 42 USC 4321-4347).

As described in the EA, the Park selected its Environmentally Preferred Alternative by comparing the natural and human impacts for each project component:

*Fenceline*—Alternative A expands the existing fenceline to include more but not all of the watershed that drains into Devils Hole, with a floodgate installed within the fence to allow natural sediment flows to reach Devils Hole. This “dogleg” fenceline would install less linear fencing, and thus require substantially less fencing material and construction disturbance than Alternative B, which extends the fenceline to encompass the entire drainage area. The dogleg fenceline of Alternative A provides improved natural drainage to Devils Hole, but natural flows are still artificially constrained by the fence. Furthermore, releases through the floodgate concentrate flows along a relatively narrow channel, increasing the flow rate and the probability of soil erosion. Alternative B would create more disturbance during installation, but these impacts would be short-term, compared to the long-term benefits from restoring fully natural drainage. Therefore, the fenceline in Alternative B is environmentally preferred.

*Visitors Platform, Access & Interpretation*—Both alternatives retain the existing visitors platform and remove the fencing below. Alternative A constructs an enclosed access trail and encloses the visitors platform itself, thereby allowing more secure unsupervised use, and preventing off-trail disturbance. Alternative B eliminates unsupervised access and adds supervised interpretive tours, thereby precluding the need for enclosures around the trail and platform. The enclosure of the platform and trail in Alternative A will cause more construction disturbance than Alternative B, as well as detract from the visitor experience and cultural integrity of the site by its intrusive visual presence. Both alternatives will similarly improve the interpretation material onsite and at the Visitors Center, but supervised tours provide a further opportunity for visitor education. Therefore, the trail and interpretation of Alternative B provide a lighter footprint and greater opportunity for education; thus Alternative B is environmentally preferred for these components.

*Access Ladder*—The ships ladder in Alternative A would improve safety and convenience for researchers by a greater amount than the handrails in Alternative B. While Alternative A could create more disturbance during installation, the use of BMPs would minimize this, and the ladder will prevent researchers from disturbing the cliffside during all subsequent descents, as would still be necessary by

repeated placement and removal of the makeshift ladder if only handrails were added. Therefore, the Alternative A access solution is environmentally preferred.

*Monitoring Platform & Equipment*—Alternative A involves minimal construction disturbance for installation, and minimal disturbance during onsite assembly and use. Alternative B involves extensive drilling and disturbance into the cliffside and the subsequent risk of rock and sediment deposition, even with careful implementation of BMPs. For this reason, Alternative A is the environmentally preferred solution for a new monitoring platform. In Alternative A, the stilling well and frame are removed, whereas in B they are simply moved to a less intrusive location. Since the functional role of the stilling well will be performed by using pressure transducers to monitor the water level, removal of the equipment is environmentally preferred, since this produces fewer unnatural inputs into Devils Hole.

*Security System*—Both systems require the same amount of disturbance in construction, operations and maintenance. Therefore, neither is environmentally preferred.

*Communications Infrastructure*—Alternative A would require installation of a satellite or microwave dish for provision of broadband data and video communication, which could be mounted on the existing communications tower, and the burial of cable. This would create minor short-term disturbance but would enable superior surveillance of the site and site security in the long-term. As Alternative B relies on limited existing cellular service for security system communications, its effectiveness is limited. Due to improved protection from vandalism, Alternative A is the environmentally preferred communications solution.

*Power Supply*—Despite the small increment in power necessary proposed in Alternative A, the disturbance and impacts from installing the solar arrays in both A and B would be virtually identical. Therefore, neither is environmentally preferred.

*Site revegetation*—Both alternatives would revegetate the same area, but Alternative A would revegetate faster because it would involve planting rather than waiting for plants to reseed themselves, as in B. The faster vegetation is reestablished on the site, the less chance there is for soil erosion and exotic plant establishment in the disturbed soils. Thus, the revegetation plan in Alternative A is environmentally preferred.

Of the project components for which an environmental advantage could be assigned, Alternative A prevails in four, Alternative B in two, and there is no difference for two. Because the environmental benefits of Alternative A include long-term protection of the ecosystem from vandalism, active site revegetation, and limited near-water installation disturbances, Alternative A is the overall environmentally preferred alternative, by a slight margin.

## DECISION RATIONALE

The Park's choice of Alternative A is based on balancing the multiple objectives of the project, described above. In addition to improving the natural conditions that will sustain the survival of the pupfish and improving visitor interpretation, these include enhanced security of the site from vandalism and improvements to the safety and convenience for ongoing research and monitoring activities. The overall environmental benefits between Alternatives A and B are closely decided in favor of the former. Alternative A also best achieves the project's full stewardship objectives for the natural and human environment.

## MITIGATION AND MINIMIZATION MEASURES

Extensive mitigation and minimization measures are included as key components of the Selected Alternative and will be implemented by the NPS and its contractor. These measures are shown in Appendix A. For the Park, the responsibility for completion (and evaluation of effectiveness of) of the mitigations is the Fisheries Biologist.

## WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE QUALITY OF THE HUMAN ENVIRONMENT

Implementation of all the mitigations mentioned above is integral to successful completion of the project. The Park used the following NEPA criteria defined in 40 CFR §1508.27 to evaluate whether successfully implementing the project could have a significant impact on the environment.

*Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts that require analysis in an EIS.*

The beneficial improvements to security, access, and the visitor experience will require ground disturbance in the areas around Devils Hole. This will involve excavation to remove fencing, demolition of the existing fencing and gate under the visitors platform, digging fencepost holes, installing fencing, carrying materials to and from the site on trucks and cranes, bolting security cameras into the crevasse, and drilling into the cliff descent above Devils Hole to install the ships ladder. These activities create the potential for increased erosion and deposition of sediment and waste materials directly into Devils Hole.

*Degree of effect on Public health or Safety.*

The only impacts on health and safety will be positive effects on the safety of scientific research and monitoring staff, whose access to the Hole will be stabilized and secured by the addition of the permanent ships ladder along the descent. In addition, removal of the existing still well and frame, and subsequent reliance on pressure transducers for water level monitoring, will improve the convenience and safety of ongoing monitoring operations for researchers.

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

Devils Hole is an important spiritual resource for the Timbisha and Pahrump tribes. Through repeated discussions and exchanges with the affected tribes in developing the EA, the Park made adjustments to the design of the proposed action and added minimization and mitigation measures to ensure that the site will remain accessible to the tribes, and that the physical qualities of Devils Hole that form the basis of its spiritual power—the water level and water quality—remain intact.

*Degree to which potential effects are likely to be highly controversial.*

Potential controversy exists with any action that continues the Park's exercise of its water rights in the Amargosa Valley, but specifics of the selected action do not directly relate to that controversy. Any actions that could threaten continued viability of Devils Hole as a spiritual resource for the Timbisha and Pahrump tribes would be controversial with those tribes. The Park has discussed the proposed action with both tribes at several points in the conservation planning and environmental

impact analysis process, and made modifications and planned minimization activities to address tribal concerns, such that implementing the selected actions will not be highly controversial.

*Degree to which the potential effects are highly uncertain or involve unique or unknown risks.*

Generally, the potential impacts are well-defined and analyzed in the EA. The impacts of ground disturbance are well understood, and will be mitigated or minimized through the implementation of a series of measures identified in Appendix A. Many variables beyond the Park's control can influence survival and recovery of the Devils Hole pupfish, but it is certain that controlling or avoiding the risks to the pupfish's habitat and ecosystem from an insecure site is a necessary, if not sufficient, condition for their recovery. Beyond the pupfish's recovery, there are no other unique or unknown risks from the actions to be taken.

*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 selected alternative does not establish precedent for any future actions that may have significant effects, nor does it represent decisions about future considerations. The NPS proposed these actions in accordance with the statutory mandate to protect the Park's natural resources, its General Management Plan objective to "preserve the...natural resources of these unique natural landscapes", and the Park's responsibility to implement the 1980 Recovery Plan for the endangered Devils Hole pupfish. Any future actions serving the same purposes as this one will be evaluated independently against the Park's overall objectives and constraints.

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

The EA considered the cumulative impacts of Alternative A with several past, present, and foreseeable future projects, and determined that implementation would result in minimal and not collectively significant cumulative effects.

*Degree to which 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 may be adversely affected.*

Devils Hole is believed to fit the definition of a Traditional Cultural Property, owing to its historic connection with the Timbisha Shoshone and Pahrump Paiute tribes. Additionally, both groups have identified the Ash Meadows area as a Traditional Cultural Landscape, with Devils Hole as one landmark within that larger landscape. As such, the Park has undertaken consultations with these tribes on the effects of the proposed action pursuant to Section 106 of the National Historic Preservation Act. The tribes are also allowed access to the property under The American Indian Religious Freedom Act of 1978.

*Degree to which an endangered or threatened species or its critical habitat may be adversely affected*

This federal action was proposed for the specific purpose of aiding the recovery of a federally listed species, the Devils Hole pupfish. The Biological Assessment prepared for this proposal, and accompanying the EA, indicated the Park's determinations for the Devils Hole pupfish are: (1) "May affect, not likely to adversely affect"; and (2) there would be "No Effect" on any of the other species of concern in the Ash Meadows area. The U.S. Fish & Wildlife Service concurred in this conclusion in a letter dated May 16, 2009.

*Whether the actions may violate Federal, state, or local environmental protection law.*

Implementing the selected alternative does not violate any federal, state or local environmental protection laws.

## PUBLIC INVOLVEMENT

A public scoping letter describing the Proposed Action and requesting public input on the proposal was distributed to private parties, State, Federal, and local agencies in November, 2007. Two public meetings were held which drew a total of five participants. The main issues raised by participants were: (1) the importance of communicating the pupfish “story” and its significance to the public, while (2) minimizing the actual disturbance to the habitat itself that could be caused by attracting more visitors. The Park staff gathered specific suggestions for how off-site interpretation could be enhanced towards meeting both goals simultaneously. The external scoping period ended on December 26, 2007.

The Environmental Assessment was made available to interested parties from June 12 through August 12, 2009. Copies of the EA were distributed, and it was also made available at public libraries to enhance the availability of the EA. The opportunity for public review was announced through issuance of a press release and mailing of a “dear friends” letter.

Six letters were received from interested individuals, the Sierra Club Toiyabe Chapter, Nye County Nuclear Waste Repository Project Office and the Amargosa Volunteer Fire Department. The main issues raised through comments were: (1) accuracy of information pertaining to hydrologic connectivity, current pupfish counts, and related information, and (2) concerns regarding monitoring and research activities outside the scope of this assessment.

An Errata has been prepared documenting corrections needed in the EA, and includes a summary of and responses to comments received. However, none of the comments received altered any of the determinations about potential environmental consequences.

## AGENCY CONSULTATION

U.S. Fish & Wildlife Service: The Park sent a Biological Assessment and a consultation request to U.S. Fish and Wildlife Service (FWS) on April 16, 2009. On May 18, 2009 FWS sent a reply concurring that, if the proposed action were carried out with the minimization measures identified in the Biological Assessment, it is not likely to adversely affect the Devils Hole pupfish (this reply concluded informal consultation).

Nevada State Historic Preservation Officer: The Park sent a letter to the Nevada State Historic Preservation Officer (SHPO) on March 27, notifying them of the details of the project. There will be no effect on cultural or archaeological sites; therefore no consultation with the SHPO was completed for this project.

Tribal Consults: In addition, the Park has had meetings and correspondence with two tribes with historic relationships to the Devils Hole site, the Timbisha Shoshone and Pahrump Piute tribes,

pursuant to §106 of the National Historic Preservation Act, as amended in 1992 (16 USC 470 et seq.; NHPA). As part of the government-to-government relationship, Tribal consultations are ongoing.

IMPAIRMENT DETERMINATION

In addition to dismissing the potential for significant impacts, the Park determined that implementation of the Selected Alternative and associated mitigation measures will not constitute an impairment of Death Valley National Park's resources and values. There would be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes in the park's establishing legislation; (2) key to the natural or cultural integrity of the Park or to opportunities for enjoyment of the Park; or (3) identified as a goal in the Park's general management plan or other relevant NPS planning documents. This conclusion is based on a thorough analysis of the foreseeable environmental consequences described in the Devils Hole Site Plan EA, the accompanying Biological Assessment, the mitigation and minimization measures, agency consultations, considerations of relevant scientific studies, and the professional judgment of the decision-maker guided by the direction in NPS Management Policies 2006.

CONCLUSION

Based upon the conservation planning and environmental impact analysis completed as documented in the EA, the capability of mitigation measures to avoid, eliminate, or reduce potential impacts, and with due consideration for the minimal public comment as well as the agency coordination undertaken, the Park has determined that the Selected Alternative is not a major federal action which will have a significant effect on the quality of the human environment. Negative environmental impacts that could occur are generally negligible or minor in intensity, and temporary. There are no significant impacts on public health, public safety, threatened or endangered species, cultural resources, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or unacceptable environmental impacts were identified. Implementation of the selected actions will not result in impairment of park values. Based on the foregoing, it has been determined that an EIS is not required for this project and thus will not be prepared. Implementation of the Selected Alternative will begin as soon as practicable.

Recommended: Sarah Campbell 3/4/10  
Superintendent Date

Approved: Patricia Newbacher 3/5/10  
Regional Director, Pacific West Region Date  
*acting*



## **Appendix A**

### **Mitigation and Minimization Measures**

Measures that would be implemented to minimize or avoid adverse impacts on environmental resources as a result of the alternatives are described below.

Minimizing vibration while drilling into rock for support anchors is an important consideration, because of the proximity of sensitive fish to the cliff face. A 13.7-lb rotary hammer would produce vibrations of approximately 2 inches per second per second in a 1000-lb rock, and less than .1 inches per second per second in a 7000-lb. rock (Norton, 2006). The Park will conduct vibration testing on the rocks by drilling a single hole into the rock in which holes will be drilled and measuring and observing vibration. The largest rock sizes feasible should be used to minimize transmitted vibration to the hole. In addition, using the minimum size of drill bit adequate for the anchor hole will minimize vibration. In addition, such hammers have a large fan and attachable dust collectors to minimize the deposition of shavings and small rock materials down the cliff and into the Hole.

During project implementation, standard best management practices (BMPs) would be used during all phases of construction, rehabilitation, and system operation. Adherence to these BMPs would control or reduce potential adverse impacts from surface water runoff, sedimentation, erosion, exotic species propagation, vegetation removal, and water quality degradation. They would also limit any adverse affects from rock drilling in close proximity to the water surface. In addition to these measures, other measures would be implemented to minimize or avoid adverse impacts on environmental resources as a result of the action alternatives. These other measures are listed below. The NPS would implement these measures as part of either of the action alternatives. Adherence to the following mitigation measures, in conjunction with adherence to all applicable and appropriate local, state, and federal regulations and permits, should ensure that the proposed action has no significant impacts to the environment.

#### **Soil & Water Resources**

- BMPs at construction sites typically consist of erosion and sediment control measures such as silt fences, straw bales, soil moistening, and other temporary measures to be placed along portions of the site perimeter to control erosion during construction activities;
- These temporary erosion prevention measurements should be maintained in place until the site vegetation is firmly established and soil has stabilized;
- Regular inspections of the erosion and sediment control measures should be performed after any storm event;
- The amount of vegetative clearing during construction activities should be minimized in order to protect the soil cover and minimize erosion risks;
- Under all circumstances, sediment runoff from the site should be captured and prevented from entering any nearby surface or groundwater;
- Care should be taken when working on the cliffs surrounding Devils Hole; workers should avoid erosion of sediment and soils into the Hole to the maximum extent possible;

- Project components along the cliff (access ladder, monitoring platform anchors) should incorporate the natural contours of the cliff edges into their design and installation to the extent possible;
- All fuels should be stored and maintained in a designated equipment staging area to reduce the potential for soil contamination;
- To the extent possible, fence construction will be done from outside the fenceline, not inside, to minimize the flow of construction waste and sediment erosion into the Hole
- A person(s) should be designated as being responsible for equipment fueling who closely monitors the fueling operation, and have an emergency spill kit containing absorption pads, absorbent material, a shovel or rake, and other cleanup items, readily available on site in the event of an accidental spill.
- The area of disturbance should be limited. For example, heavy construction equipment would be kept on the road surface when placing slope protection or performing excavation adjacent to the roadway, to the extent possible.
- Construction areas would be identified by and fenced with construction tape, snow fencing, or some similar material prior to any construction activity. The fencing would define the construction zone and confine activity to the minimum area required for construction. All protection measures would be clearly stated in the construction specifications, and workers would be instructed to avoid construction activities beyond the construction zone, as delineated by the construction zone fencing. Construction materials would be stored in previously disturbed areas.
- Topsoil would be removed and stockpiled for reapplication to disturbed areas when construction is complete.
- Disturbed areas would be restored to natural contours to the extent possible to reduce the potential for erosion. Revegetation with native species would use genetic stocks originating in the Park or from plants previously removed from the construction area whenever possible. Revegetation efforts would be designed to reconstruct the natural spacing, abundance, and diversity of native plant species.
- Subsequent to project completion, Park staff would monitor and require removal of any invasive species observed.
- Construction vehicles could leak fluids into the soil, introduce noise pollution, and emit pollutants to the atmosphere. To minimize this possibility, equipment would be checked frequently to identify and repair any leaks, mufflers would be checked for proper operation, and only equipment that is within proper operating specifications would be used.
- Fuel and oil services for construction machinery would be provided in a designated area away from channels or drainages. This would include secondary containment for all fuel storage tanks and on-site availability of a specialized spill kit to contain fuel spills.
- Biological soil crusts would be identified, staked, and flagged by NPS personnel to delineate areas near but outside the work areas that are not to be disturbed.
- Gravel and fill for construction or maintenance would be obtained from certified noxious weed-free sources. Gravel pits and fill sources would be inspected to identify weed-free sources. There would be no quarrying of construction materials from inside the park or from AMNWR.

## **Biological Resources**

- During construction activities, NPS would monitor the Devils Hole pupfish population to ensure that activities are not adversely affecting the species.
- Any area of undeveloped land would be restored as closely as possible to its original condition through soil stabilization BMPs and revegetation with native plants.
- Approval would be obtained prior to the use of any outside fill materials – in order to ensure that any fill/seed materials are certified weed-free.
- Construction activities would be timed to minimize impacts to pupfish survival behaviors. Construction activities would not take place during spawning periods, which typically occur between February and May.
- To the extent possible, construction activities would be timed to avoid sensitive periods such as when barn owls are nesting in the cavern or western pipistrelle (*Pipistrellus hesperus*) or Townsend's big-eared bat (*Corynorhinus townsendii*) are present.
- All electrical equipment should be properly grounded
- Crews will not work in storms
- Exposed wires will be kept as far away from Devils Hole as possible

## **Air Quality**

- Implementation of reasonable measures, such as applying water to exposed surfaces or stockpiles of dirt, would occur when windy and/or dry conditions promote problematic fugitive dust emissions. Adhering to these BMPs would minimize any fugitive dust emissions.

## **Cultural Resources**

- If previously undiscovered archeological resources are uncovered during construction, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented, and an appropriate mitigation strategy developed in consultation with the Nevada State Historic Preservation Office. In the event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (25 United States Code §3001) of 1990 would be followed.

## **Park Operations**

- Any area with vegetation clearing or construction activities would be a safety closure area requiring the use of hard hats.
- Others specific to protection of site-specific features

## **Visitor Use and Experience, Visitor Safety, and Traffic and Congestion**

Measures designed to minimize visitor disruption would be developed prior to construction.

Generally accepted methods to protect public health and safety while providing for visitor use and experience include, but would not be limited to:

- Notification to travelers about site closure would be posted at both the Refuge and Park Visitors Centers
- Well-tuned construction equipment with properly operating mufflers would be used and work would be performed during low visitation periods. For example, potential blasting of rock would occur during winter months when site closure would impact fewer visitors.

- The multiple environmental benefits of the proposed action would be explained to visitors to maximize public support and understanding. For example, there could be an interpretive display at the Ash Meadows Visitor Center and Death Valley's Furnace Creek Visitor Center emphasizing the fragility and importance of the Devils Hole pupfish and its surrounding ecosystem.

Any potential for vehicle traffic congestion around the site could be mitigated by the use of a slower speed limit (and accompanying signage).