National Park Service
U.S. Department of the Interior

Death Valley National Park
California/Nevada

FINDING OF NO SIGNIFICANT IMPACT

HUNTER MOUNTAIN PINYON PINE ECOSYSTEM FIRE TREATMENT AND STUDY DEATH VALLEY NATIONAL PARK, CALIFORNIA and NEVADA
September 2013

The National Park Service (Service or NPS) will implement a prescribed fire and associated ecosystem study for 50 acres of pinyon pine forest with scattered sagebrush at the intersection of the Hunter Mountain Road and the Hunter Cabin Road in the Cottonwood Mountains of Death Valley National Park (Park). Several hundred acres near the cabin were outlined for prescribed fire within the 2009 Fire Management Plan 5-year fuels treatment plan, both to protect a historic structure and to address the health of native plant communities. The 50-acre fire and associated ecosystem study, tiered from the 2009 Fire Management Plan, will enable the Park to proceed in an informed way toward its goal of using prescribed fire to return fire to ecosystems through management practices.

PURPOSE AND NEED FOR FEDERAL ACTION

The primary purpose of the proposed action is to restore fire as a natural process in the pinyon pine forest of Hunter Mountain and to gather important fire effects information that would better enable park managers to promote healthy ecosystems within Death Valley National Park. Supplementary purposes of the proposed action include reducing the ability of exotic plants to invade natural or previously treated areas, increasing forest health by creating a mosaic of native vegetation age classes, promoting conditions that would allow for recruitment of native grasses and forbs, and diminishing the potential of a catastrophic fire in the immediate vicinity of important cultural resources.

SELECTED ALTERNATIVE

Based on the environmental impact analysis documented in the *Hunter Mountain Pinyon Pine Ecosystem Fire Treatment and Study Environmental Assessment* (EA), and with consideration for public scoping comments as well as public comments received following release of the EA, the National Park Service has selected Alternative B: 50-Acre Prescribed Fire and Ecosystem Study for implementation, as described in the EA.

The target window for ignition of the prescribed fire will be between June 1 and October 15 to allow for proper fuel moisture and subsequent combustion of fuels. This time frame will also

enable resource managers to address the prime season for reducing non-native fine fuel cover and seed production, by timing the potential burn for a window when *Bromus tectorum* has produced seed heads, but has not yet set seed. Ignition of the prescribed fire will not be conducted on a no-burn day as determined by Inyo County Department of Air Quality Management or without National or Regional approval during Preparedness Levels 4 and 5 restrictions on new prescribed fires. Prescribed burning is not allowed on Sundays, the last Saturday in April, or legal holidays, except for multi-day burns that cannot be reasonably treated on other days.

Fuel moisture will be tested prior to ignition, with the prescribed limits of 8-12% fuel moisture for the 100-hour measurement, 7-11% for the 10-hour measurement, and 6-10% for the 1-hour measurement. Any measurement outside of these limits will not allow the prescribed fire to proceed. The prescribed fire will not be ignited if wind speed, or forecast wind speed, is greater than 8 mph.

Onsite line preparation will include the use of hand tools to create a scratch line (an area of exposed bare mineral soil to prevent fire spread on the ground) two feet wide extending from the Hunter Mountain Road to the Hunter Cabin access road. Preparation work will also include limbing of trees adjacent to the unit perimeter to reduce chance of torching and installation of a fire hose layout (1.5 inch trunk with lateral hose every 200 feet or less) along the scratch line to support holding operations. The operation will also place a portable water tank for refilling fire engines assigned to the fire in a previously disturbed area on Hunter Mountain Road within 0.5 miles of the fire perimeter.

A water tender will be placed in a previously disturbed, non-habitat footprint at the junction of California Highway 190 and the Saline Valley Road. This resource will be used by smaller fire engines to refill water resources assigned to the fire. The southern portion of Saline Valley Road and the Hunter Mountain Road will serve as the operational access roads to the proposed prescribed fire site.

Park protection staff and park interpretive staff will accomplish road and area closures by posting website announcements, hard copy bulletins, and a press release about the proposed action at least a week in advance of the ignition. Notifications will be provided at the Interagency Visitor Center in Lone Pine, California, and in the park at the Panamint Springs Resort, the Furnace Creek Visitor Center, the Furnace Creek Ranch and Inn, and the Stovepipe Wells Resort. Park protection staff will post road signs prior to the proposed ignition notifying visitors of the scheduled prescribed fire and associated closure of the Hunter Mountain area for the duration of operations. Signs will be placed:

- at the intersection of Highway 190 and the Saline Valley Road;
- at the intersection of the Saline Valley Road and the Hunter Mountain Road;
- along the Hidden Valley Road; and

- at the intersection of the Saline Valley Road and the Big Pine Road.

The area targeted for closure to park visitors will be between the intersection of the Hunter Mountain Road and the Saline Valley Road in the south, and at the northern extreme, the Hunter Mountain Road 1.8 miles north of the intersection with the Hunter Cabin road. Park protection staff will sweep the area within and adjacent to the area targeted for closure in advance of operations and provide direct outreach to any park visitors. This direct outreach will include notification about the proposed action and associated closure, the duration of the proposed action, and alternative places in the park to recreate. Park protection staff will confirm a successful closure with the burn boss assigned to the proposed project before any ignition activities.

Ignition of the project area will require 1 day. An additional two to three days will be required for complete combustion of heavy fuels and targeted suppression, as well as thorough inspection activities on the remainder of the fire to insure the prescribed fire is contained within the designated perimeter and extinguished.

Specific actions will be taken to address cultural, archaeological and historical resources protection during the proposed prescribed fire. An on-site archeologist will be present throughout the duration of fire activities to identify areas that need to be avoided with drip torch fuel or fire to protect sensitive cultural resources. The archeologist will also guide placement of hand lines to avoid impacts to cultural resources. Site preparation will include actions to protect historic cut trees within the burn area. Precautions will include removal of vegetation and duff to mineral soil in a three foot perimeter around the base of historic cut trees, and pre-treatment of the trees with water before fire reaches their proximity. Desired ignition conditions for the protection of archeological resources will be targeted and a test burn would be completed to identify fire behavior potential. Fire behavior will be maintained at an appropriate level to insure desired fuel consumption and proper protection of cultural resources present within the burn perimeter.

The William Lyle Hunter Cabin is located within 0.5 miles of the burn perimeter. The unit perimeter does not put fire immediately adjacent to this cabin. An engine will be placed at Hunter Cabin to protect the structure. A second historic structure, also located within 0.5 miles of the burn perimeter, would be protected by running a hose lay to it.

An air quality permit will be obtained from Great Basin Unified Air Pollution Control District. Spot weather forecasts will be requested prior to each burn day and each consecutive day of the burn. Actual on site weather information will be reported back to the weather forecaster to help improve forecasts.

The minimum holding force for the proposed prescribed fire will be three engines, each staffed with three people. One of the squad members will serve as the holding boss. A fire lookout will

be posted during all ignition operations. If spot-fires or slop-overs occur, ignition operations will be ceased and suppression actions would be undertaken using all assembled resources as necessary. The burn boss will supervise suppression actions.

An archeological monitor and a tribal monitor for the Timbisha Shoshone Tribe will be present for operations to inform all actions for the protection of cultural resources.

An ecosystem study is an additional component of the selected alternative, with plots established before prescribed fire implementation, and a cattle exclusion fence installed post-fire to understand the fire effects both with and without the influence of grazing. The fence and all monitoring plots will be a temporary installation to last 20 years; at the conclusion of that time, the fence and any other installations associated with the ecosystem study will be removed from the area to restore wilderness character.

Forest research plot sampling design will be established following the National Park Service's Fire Monitoring Handbook (USDI 2003). Three burn plots within the burn unit will be established along with three control plots outside the burn unit to accurately assess fire effects within the pinyon pine (*Pinus monophylla*) forest vegetation community. Plots will be established prior to fire ignition and read within one year prior, immediately post burn, and at 1, 2, 5, 10, and 20 year intervals to record ecosystem recovery over time. This information will be used to understand fire effects on ecosystem dynamics on the affected site and used to assess the potential for any subsequent prescribed fire actions in the pinyon pine forest. Research plots will be identified by GPS, with no physical markers installed in the ground.

OTHER ALTERNATIVES CONSIDERED

One other alternative was considered in the EA in addition to the selected alternative.

Alternative A, the No Action Alternative, would entail the continuation of existing conditions for the Hunter Mountain pinyon pine ecosystem. The prescribed fire outlined and recommended in the park's Fire Management Plan would not be undertaken. Under this alternative, the National Park Service would respond to future needs and conditions associated with the Hunter Mountain area without major actions or changes in the present course of management. The current conditions of the ecosystem would prevail. Community structure would continue to be defined by the past land use and history, including grazing, invasive species spread, and fire suppression. In addition to the primary pinyon pine forest type, a large amount of grasses are found underneath the drip line of the pinyon pine trees in the Hunter Mountain locality. These grasses are predominately composed of cheat grass (*Bromus tectorum*), a non-native, invasive species. Native bunch grasses are also present. The park would continue to monitor the ecosystem on an ad hoc basis to determine if cheat grass is spreading, but there would be no identified management action to address the spread of the invasive grass species. The park does not currently pull cheat grass because of the infeasibility of hand removal on such a broad scale, nor

does the park have a management policy of using herbicide for this species. The mechanical fuel removal accomplished in 2010 under a categorical exclusion would continue to define the extent of defensible space around the William Lyle Hunter Cabin, until such time as regrowth occurred to replace the mechanically removed fuels. The forest structure would continue to be largely composed of late seral stage growth, and the potential would remain for uncontrollable wildfire in the proximity of the Hunter Cabin and the Hunter Meadow. If uncontrollable wildfire did occur, it could potentially lead to large-scale and broad ecosystem changes, including permanent replacement of forest with non-native grass species.

RATIONALE FOR SELECTED ALTERNATIVE

The pinyon pine forest on Hunter Mountain is almost exclusively a late seral stage forest structure, characterized by old growth trees and minimal recruitment of young trees. Restoring fire into this forest type could begin to establish an early seral stage forest structure and fire regime that supports a diverse assortment of native plants and animals and regeneration of forest ecosystem processes. Non-native, invasive cheat grass (*Bromus tectorum*) is present in the ecosystem alongside native bunch grasses and forbs, and proactive management (i.e., timing a prescribed fire immediately before cheat grass sets seed) has the potential to allow for increased recruitment of native grasses and forbs. Wilderness resources have been diminished by the impacts of grazing activities and long-term fire suppression, and federal action is required to restore the natural and untrammeled qualities of wilderness character. In addition, the William Lyle Hunter Cabin is the oldest documented structure in the park. Recent, already accomplished mechanical fuels treatment in proximity of the Hunter Cabin, in combination with the selected alternative, will add to the amount of defensible space around the historic structure.

Implementation of this alternative as the selected action will restore fire as a natural process in the pinyon pine forest, provide important fire effects information from fire effects study plots within the burn perimeter, reduce the ability of exotic plants to invade natural or previously treated areas, increase forest health by creating a mosaic of native vegetation age classes, promote conditions that will allow for recruitment of native grasses and forbs, diminish the potential of a catastrophic fire, protect historic cultural resources, and help restore the natural quality of wilderness character.

Environmentally Preferred Alternative

As documented in the EA, Alternative B: 50-Acre Prescribed Fire and Ecosystem Study, is the "environmentally preferable alternative." This alternative takes proactive steps to preserve, protect, and understand the park's natural and cultural resources, including the preservation and enhancement of wilderness character. Therefore, Alternative B: 50-Acre Prescribed Fire and Ecosystem Study, is the Environmentally Preferred Alternative. This environmentally preferable alternative is the alternative that will promote the national environmental policy expressed in NEPA [Sec. 101(b)], and specifically:

- **fulfills the responsibilities of each generation as trustee of the environment for succeeding generations.** Implementation of Alternative B will ensure that the NPS has fulfilled this responsibility as trustee for the Park's resources. The prescribed fire will protect cultural resources, restore natural ecosystem processes, and improve wilderness character, ensuring that future generations can enjoy the natural, cultural, and wilderness resources within Death Valley National Park.

- **ensures for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.** Implementation of Alternative B will result in a safe, low-intensity controlled burn that protects historic resources and encourages natural plant succession in the Hunter Mountain area.

- **attains the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.** Implementation of Alternative B will allow and encourage long-term enjoyment of the diverse natural and cultural resources in the Hunter Mountain area without degradation, risk of health or safety, or other undesirable consequences.

- **preserves important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.** Implementation of Alternative B takes specific steps to preserve historic structures associated with cattle ranching and homesteading, as well as cultural resources associated with the Timbisha Shoshone use of the area for traditional practices.

- **achieves a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.** Implementation of Alternative B will best achieve the balance between use of the land for recreation, grazing, and traditional cultural practices including traditional ecosystem management through the use of fire.

- **enhances the quality of renewable resources and approaches the maximum attainable recycling of depletable resources.** Implementation of Alternative B will enhance the natural and cultural resources of Death Valley National Park, including wilderness character, and ensure that these remain renewable resources.

ALTERNATIVES CONSIDERED BUT DISMISSED

The National Park Service considered two additional alternatives during internal scoping for this project, but dismissed these alternatives because of potential impacts and because they did not meet the purpose and need. These alternatives, which were considered but dismissed, include:

Implementation of a 700-acre prescribed fire in proximity to the William Lyle Hunter Cabin, as outlined in Death Valley National Park's Fire Management Plan. This proposal was considered and mapped, but ultimately dismissed because of the degree of uncertainty associated with implementation of a prescribed fire of this scale in a remote location. The NPS considered the potential impacts to public safety and cultural and natural resources unacceptable without the experience of having implemented prescribed fire as a management tool in the Hunter Mountain locality, as well as not having implemented a fire effects study to inform managers about the ecology of the Hunter Mountain pinyon pine ecosystem.

Implementation of a 50-acre prescribed fire without an associated ecosystem study. The NPS considered use of prescribed fire as a management tool in the Hunter Mountain pinyon pine ecosystem without the management measure of connecting the controlled burn with a fire effects study. This alternative did not meet the project's purpose and need to manage the forest ecosystem for long-term health in light of the fact that there is very little information available concerning effectiveness and ecological responses of prescribed fire treatments in pinyon pine ecosystems such as Hunter Mountain. Therefore, this alternative was dismissed from consideration.

MITIGATION MEASURES

Table 1 itemizes the required mitigation for the implementation of the Hunter Mountain Pinyon Pine Ecosystem Fire Treatment and Study. Measures are presented by category.

Table 1. Mitigation Measures to be Implemented

Resource Topic	Mitigation Measure	Responsibility
General Measures	The NPS project manager would ensure that the project remains confined within the parameters established in the compliance document and that mitigation measures would be properly implemented, and would work in coordination with the burn boss to clearly communicate these measures and guidelines for achieving them.	Park Resource Management Chief
	Fuel moisture will be tested prior to ignition, with the prescribed limits of 8-12% fuel moisture for the 100-hour measurement, 7-11% for the 10-hour measurement, and 6-10% for the 1-hour measurement. Any measurement outside of these limits would halt the implementation of prescribed fire. The prescribed fire would not be ignited if	NPS Burn Boss

Resource Topic	Mitigation Measure	Responsibility
General Measures	wind speed, or forecast wind speed, is greater than 8 mph.	
	Spot weather forecasts will be requested prior to each burn day and each consecutive day of the burn. Actual on site weather information will be reported back to the weather forecaster to help improve forecasts.	NPS Burn Boss
	Ignition of a prescribed fire will not be conducted on a no-burn day as determined by Inyo County Department of Air Quality Management or without appropriate level National or Regional approval during Preparedness Levels 4 and 5 restricting new prescribed fires.	NPS Burn Boss
	Vehicle engine idling restrictions will be enforced to reduce emissions.	Park Resource Management Chief
	Staging for vehicles and equipment will be sited in previously disturbed areas.	Park Resource Management Chief
	The minimum holding force for the proposed prescribed fire will be three engines, each staffed with three people. One of the squad members could serve as the holding boss. A fire lookout will be posted during all ignition operations. If spot-fires occur, ignition operations will be ceased and suppression actions would be undertaken using all assembled resources as necessary.	NPS Burn Boss
Soils	Available woody material (mostly limbs cut from trees adjacent to the unit perimeter) will be placed on the steeper slopes, trampled areas, and in areas that focus overland flow in order to limit erosion after the fire. The materials will be arranged with their lengths perpendicular to the slope to help dissipate the energy of runoff and trap sediment.	Park Hydrologist

Resource Topic	Mitigation Measure	Responsibility
Soils	The fence around the burn area will be repaired to exclude cattle. Trampling of a burned area by cattle increases the vulnerability of the soil to erosion and delays the return of soil-stabilizing vegetation.	Park Resource Management Chief
Air Quality	Applicable California air quality permits will be acquired prior to project implementation. State regulations would be followed.	Park Resource Management Chief
	Duration of prescribed fire ignition activity will be limited to part of one operational period (maximum of 24 hours) for the 50 acre treatment. Post fire mop-up and monitoring of the fire will extinguish any smoke within the fire perimeter.	NPS Burn Boss
	A smoke modeling program would be employed ("Simple Approach Smoke Estimation Model [SASEM]") to calculate consumption of fuel, emission of particles, and dispersion of pollutants produced by burning of forest and range vegetation, in order to maximize safe fuel consumption while limiting emissions.	Park Resource Management Chief
Vegetation	All vehicles, equipment, clothing and boots will be thoroughly cleaned of all soil, seeds and vegetative material before entering Death Valley National Park and the proposed burn area to prevent the introduction of non-native plants into the project area.	Park Botanist
	The prescribed fire will be timed to reduce the cover of non-native grasses including red brome and cheat grass. Depending on seasonal precipitation, the fire will occur after June 1 and while grasses still retain seeds on vegetation above ground.	Park Resource Management Chief
	The burned area will be fenced to exclude cattle, reducing the prevalence and spread of non-native	Park Resource Management Chief

Resource Topic	Mitigation Measure	Responsibility
	annual grasses.	
Wildlife	All vehicles associated with the operation would obey posted speed limits and drive 25 mph or less on dirt roads. Operational staff would receive a briefing on the potential for wildlife presence on roadways. Drivers and passengers would watch for wildlife on roadways and take appropriate actions to avoid hitting wildlife while maintaining human safety.	Park Wildlife Biologist and Park Resource Management Chief
Special Status Species	Meadow area will be surveyed again for presence of any special status species bird nests, nestlings, or juveniles prior to operation. If discovered, firelines will be established around these sites.	Park Wildlife Biologist
	All vehicles associated with the operation will obey posted speed limits and drive 25 mph or less on dirt roads. Operational staff will receive a briefing on the areas where Mohave ground squirrel could potentially be present. Drivers and passengers will watch for wildlife on roadways and take appropriate actions to avoid hitting wildlife while maintaining human safety.	Park Wildlife Biologist and Park Resource Management Chief
Wilderness	The study fence and any portions of the Hunter Mountain grazing allotment fence utilized to exclude large animals from the study plot will be removed at the end of the 20-year study period or earlier if the study ends or is abandoned in less than 20 years. The removal of the Hunter Mountain grazing allotment fence is dependent on the retirement of the allotment. The minimum tool necessary for accomplishing fence removal will be determined prior to removal.	Park Wilderness Coordinator
Archeological Resources	If concealed or previously unrecorded archeological resources are encountered during project activities, all necessary steps will be taken to protect them and	Park Resource Management Chief

Resource Topic	Mitigation Measure	Responsibility
Archeological Resources	to notify the Park Archeologist immediately.	
	Archeologist or archeological technician will be present throughout the duration of fire activities to identify areas where the use of drip torch fuel or fire needs to be avoided to protect sensitive cultural resources.	Park Archeologist
	Effects to site 11-092-02 will be avoided through the use of flagging: the site boundary would be flagged and vehicle and foot traffic will be excluded from the site.	Park Archeologist
	The proposed project will not involve the use of heavy equipment. Hand tools will be used to scratch lines around the perimeter of the fire. An archeologist or archeological technician will guide line construction to minimize or avoid impacts to CA-INY-1875/H. Fire engines and other vehicles will remain on existing roads.	Park Archeologist and Park Resource Management Chief
	Ethnohistoric/historic axe-cut trees within CA-INY-1875/H will be protected by a combination of clearing duff and brush away from beneath them and by applying water as needed.	NPS Burn Boss and Park Archeologist
	The park will use the proposed fire treatment as an opportunity to conduct research on the effects of prescribed fire on obsidian hydration. Artifacts from CA-INY-1875/H have been collected and submitted for hydration analysis and sourcing. The artifacts will be placed back into the project area prior to the burn and retested afterwards to determine the extent to which hydration bands were affected.	Park Archeologist
Cultural Landscapes	As features within the Hunter Mountain Ranch Historic Rural Landscape, CA-INY-5044/H (the Hunter Cabin) and CA-INY-5045/H will be protected. Mechanical fuels treatments have	NPS Burn Boss and Park Archeologist

Resource Topic	Mitigation Measure	Responsibility
Cultural Landscapes	reduced the amount of undergrowth and brush around Hunter Cabin to limit the potential for fire to spread and an engine would be placed at the cabin. A hose lay will be placed between the fire perimeter and CA-INY-5045/H (the tin shack) to prevent fire from spreading to the site.	
Historic Structures	Mechanical fuels treatments have reduced the amount of undergrowth and brush around Hunter Cabin (CA-INY-5044/H) to limit the potential for fire to spread and an engine will be placed at the cabin. A hose lay would be placed between the fire perimeter and CA-INY-5045/H (the tin shack) to prevent fire from spreading to the site.	NPS Burn Boss and Park Archeologist
Ethnographic Resources	Culturally modified (axe-cut) pinyon trees will be protected by a combination of clearing duff and brush away from beneath them and by applying water as needed.	NPS Burn Boss and Park Archeologist
Health and Safety	A public safety and outreach plan would be implemented in advance of the proposed fire, to include area closure to the public during prescribed fire activities.	Park Chief Ranger

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

No major adverse or beneficial impacts were identified that would require analysis in an environmental impact statement.

Soils

The selected alternative will result in short and long-term minor impacts to soils, including both beneficial and adverse impacts. Soils would be temporarily more vulnerable to erosion following

the burn, but the erosional susceptibility would remain low. In the longer term the proposed burn may reduce erosional susceptibility by decreasing the likelihood of a high intensity fire which may result in the formation of a low-permeability soil crust.

Water Resources

The selected alternative will result in a temporary increased potential for elevated sediment loads in runoff from the burn area. However, because of the gentle slopes and well drained soils, the potential for overland flow from the area will remain low. There is a potential for wind-blown ash to enter nearby drainages where it may become part of the sediment load during ephemeral runoff events. This is not expected to negatively impact water quality, and the nutrient content of the ash may provide an ecologically beneficial effect. Impacts to water resources will be negligible to minor, short-term adverse and long-term beneficial.

Air Quality

The prescribed fire will only be ignited under specific conditions. These conditions are chosen to minimize any adverse long-term impacts to air quality. Air quality will return to good or excellent several days after the burn is extinguished. Air quality impacts will be minor and short-term in duration.

Vegetation

The selected alternative will present short-term minor to moderate adverse impacts to vegetation in the burned area. Recovery will be rapid and meadow habitat is expected to recover within one year, potentially with a measurable increase in the amount of meadow relative to current conditions. The post-fire vegetation study will contribute important data toward future vegetation management activities in the Hunter Mountain area. Long term impacts to vegetation will be minor and beneficial.

Wildlife

There will be local, short-term, minor adverse impacts to wildlife species and habitats from the direct effects of fire in 50 acres. The long-term impact from the anticipated creation of diverse forest and meadow mosaic habitats will be minor and beneficial.

Special Status Species

Impacts on the Hunter Mountain copper butterfly would be local, short-term, and negligible. Long-term impacts would be negligible to minor and beneficial. Mohave ground squirrel will experience short-term, negligible, direct adverse impacts from vehicle traffic, which will be mitigated by crew education and strict speed limits during the prescribed fire operations. Impacts on the Inyo towhee will be local, short and long-term, negligible, direct and indirect and beneficial. The determination of effect for the Inyo towhee under this alternative is *no effect*.

Wilderness

The prescribed fire has been determined the minimum tool necessary for the administration of the wilderness area, in order to protect and restore the natural quality of wilderness character. The study plot fence will have a long-term, minor adverse impact to the area's undeveloped quality. Use of chain saws will have a short-term adverse impact to the undeveloped quality. The temporary closure to the public will have a short-term adverse impact on opportunities for unconfined recreation. The unique quality of wilderness character associated with the cultural resources in the Hunter Mountain area will see a beneficial impact from the decreased potential of a catastrophic fire. Impact levels to all qualities of wilderness character are expected to be minor in intensity.

Archeological Resources

There will be negligible long-term impacts to CA-INY-1875/H from line construction and implementation of the burn. The potential for impacts from uncontrolled, high intensity wildfire will be reduced, lending beneficial impacts to the protection of archeological resources in the Hunter Mountain area.

Cultural Landscapes

There will be no impacts to cultural landscapes from the selected alternative. There will be a decreased likelihood of uncontrolled wildfire which could lead to a loss of contributing features such as historic structures.

Historic Structures

The Hunter Cabin (CA-INY-5044/H) and tin shack (CA-INY-5045/H) are located outside of the area of potential effects for the prescribed burn. Past mechanical fuels reduction projects have created a defensible space around the Hunter Cabin and it will be further protected by an engine during the proposed burn. A hose lay will be placed between the fire perimeter and CA-INY-5045/H. There will be no impacts to historic structures from the selected alternative.

Ethnographic Resources

The selected alternative will be consistent with past Timbisha land management practices: areas on Hunter Mountain were historically burned to encourage the growth of tobacco plants. Clearing of invasive species and removal of undergrowth will contribute to the health of pinyon pines on the site. There will be negligible to minor beneficial impacts to ethnographic resources. There would also be a decreased likelihood of uncontrolled wildfire which could result in the loss of mature pinyon trees and a replacement of pinyon by invasive grasses.

Visitor Use and Experience

The selected alternative will have short-term, localized, minor to moderate adverse impacts to visitor use and experience. During the week of operations, anyone seeking to access the Hunter Mountain area will be directly and adversely impacted by its closure. The impacts will be mitigated by outreach to visitors and by providing alternatives to recreate elsewhere in the park.

Degree of effect on public health or safety.
There will be negligible to minor public health and safety impacts from the selected alternative. Impacts from smoke could cause health concerns, and the park will mitigate these impacts through outreach. The selected alternative's plan to enforce a closure of the area during burn operations will reduce the fire's public health and safety impacts to negligible to minor levels.

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.
Prime farmlands, wetlands, wild and scenic rivers, and ecologically critical areas will not be affected. The selected alternative will have negligible adverse and negligible to minor beneficial impacts on historic and cultural resources. No critical habitat for any endangered species will be affected. Wilderness character will be enhanced by the selected action.

Degree to which effects on the quality of the human environment are likely to be highly controversial.
There was a small amount of public input during the public scoping process and during the EA public comment period. Issues raised during public scoping that were within the scope of the plan were addressed, and the comments made during the EA public comment period were supportive of the selected action. Effects on the quality of the human environment from the selected action are unlikely to be highly controversial.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks.
There were no highly uncertain, unique or unknown risks identified during either preparation of the EA or the public review period. Safety protocols built into the selected action will prevent the spread of fire beyond the prescribed area.

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 neither establishes a National Park Service precedent for future actions with significant effects nor represents a decision in principle about a future consideration. The selected alternative is consistent with the park's 2009 Fire Management Plan and 5-year fuels plan.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.
Cumulative impacts were determined by combining the impacts of the selected alternative with other past, present, and reasonably foreseeable future actions. Several plans or actions were

identified that would have negligible or minor contributions to cumulative impacts of the selected alternative. No plans or projects were identified that, when considered with the impacts of the selected alternative, would have greater than minor impacts.

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.

The selected alternative will not adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places, nor will it cause loss or destruction of significant scientific, cultural, or historic resources.

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

Endangered or threatened wildlife and plant species are not present within the planning area. The selected alternative directly addresses the protection of rare species that are not listed as threatened or endangered. The selected alternative represents a long-term benefit for the Hunter Mountain copper butterfly and its habitat.

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

The selected alternative will not violate any federal, state or local environmental protection laws. The Park will obtain any necessary permits needed by state or local agencies in association with implementation of the selected alternative.

PUBLIC INVOLVEMENT AND AGENCY CONSULTATION

Public Scoping

A press release initiating public scoping and describing the proposed action was issued on March 12, 2012, and public comments were solicited via the park's mailing list and the NPS Planning, Environment and Public Comment website during a public scoping period that ended April 13, 2012. Two comments were received. One comment helped identify cultural resources in the area and asked that the project ensure the protection of these resources. The other comment was received from the California Department of Fish and Game (CDFG). This comment requested that the EA include a complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis on identifying special status species and locally unique species or communities. To this end the CDFG recommended that the park consult the California Natural Diversity Data Base for areas with project activities. In addition, the CDFG recommended that the EA include a clearly defined purpose and need, a reasonable range of alternatives, and thorough mitigation to offset any impacts to plant or animal species. Finally,

the CDFG requested that the park make its approved Fire Management Plan available for reference. The park has since published the Fire Management Plan on its website.

All comments were used in developing the alternatives, refining the purpose and need, and accomplishing the environmental analysis presented in the EA.

Agency Consultation

Agency consultation for this project included consultation with the State Historic Preservation Office, the Timbisha Shoshone Tribe, and the U.S. Fish and Wildlife Service. The park superintendent met with the Timbisha Shoshone Tribal Chairman, Vice-Chairman, and Tribal Administrator on January 13, 2012 to discuss the prescribed fire and ecosystem study. At that time, the Tribe did not express any concerns, but expressed an interest in wanting to visit the site of the proposed prescribed fire. The park followed up with a formal scoping letter to the Timbisha Shoshone Tribe and an invitation to members of the Tribal Council to tour the site with the Chief of Resources Management; the invitation was accepted. The Timbisha Shoshone Tribe has sent the park a letter stating that the Timbisha traditionally used fire to manage ecosystems, and that the Tribe is satisfied with the work plan for the prescribed fire and the management practice of returning fire to ecosystems. The letter also requested that the park continue to keep the Tribe informed, so that a tribal monitor could be on site during the prescribed fire.

An agency scoping letter was sent to the State Historic Preservation Officer (SHPO) on February 14, 2012. The SHPO's office had no comments at the time. The EA was shared with the SHPO on June 7, 2013, along with the NPS determination that there would be no adverse effect to archeological sites or cultural resources within the area of potential effect, nor would there be unacceptable impacts to cultural resources. By email communication dated September 16, 2013, Mark Beason, State Historian II, Review and Compliance California Office of Historic Preservation, acknowledged the undertaking and offered no objections to implementing the project as proposed.

An agency scoping letter was sent to the U.S. Fish and Wildlife Service (USFWS) on February 14, 2012. The USFWS response stated that there are no federally listed, proposed, or candidate species, nor their critical habitats, known to exist in the project area. The NPS determined and documented in the EA that the selected alternative will have *no effect* on any threatened, endangered, or candidate species, completing informal consultation. The Park Superintendent sent a letter notifying the USFWS of this determination, including a copy of the Hunter Mountain Pinyon Pine Ecosystem Fire Treatment and Study Environmental Assessment on June 5, 2013.

Public Review of EA

The EA was released for a 33-day public review period on June 5, 2013. The document was made available on the Park's Public Planning website, and information about its availability was

sent as a press release to over a hundred news outlets and individual reporters. Notice of the plan's availability was sent to all interested individuals and organizations on the Park's maintained database for this project. Hard copies of the plan were distributed to seven local libraries to enhance public availability. Ten additional hard copies were sent to stakeholders and individuals who requested the EA.

The NPS received 4 pieces of correspondence during the public review period for the Hunter Mountain Pinyon Pine Ecosystem Fire Treatment and Study EA. One commenter felt that the burn was needed because much of Hunter Mountain is covered in even-aged, closed canopy pinyon stands, and that a prescribed fire would decrease the risk of a large, unplanned wildfire. Another commenter also expressed support for Alternative B as described. A third commenter liked the idea of removing underbrush as a means of protecting the Hunter Cabin from wildfire. This commenter urged Death Valley National Park not to perform the burn with its own crews because of lack of experience, but rather to hire a private firm to accomplish the scope of work. The National Park Service has identified the Lake Mead Fuels Crew as a network resource within its Pacific West Region with extensive experience in accomplishing prescribed fire operations, and this resource will likely be utilized to implement the selected alternative. A fourth commenter stated support for the concept behind the project and the project's goals but recommended that the burn be conducted during late fall or winter following a significant precipitation event to reduce the chance of the fire escaping. This timing was considered in the context of the project's purpose and need, as well as practicality. One identified need of the project is to determine if fire is an effective tool for managing invasive cheat grass on Hunter Mountain, and a late fall or winter fire would not be an effective timeframe for reducing the cheat grass seedbank. Additionally, a late fall or winter precipitation event frequently makes the road to Hunter Mountain impassible or treacherous. Conducting a prescribed fire operation at this time in this high elevation location would likely be unsafe or unfeasible for the Lake Mead Fuels Crew.

The NPS has taken all public and agency comments in due consideration while preparing this Finding of No Significant Impact, and these comments are now part of the administrative record for this project.

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CONCLUSION

The National Park Service has selected Alternative B – 50-Acre Prescribed Fire and Ecosystem Study for implementation, as described in this Finding of No Significant Impact. Based on the analysis in the EA, the capability of the incorporated mitigations to reduce or avoid potential impacts, and with due consideration for the public scoping and EA review comments, the NPS has determined that the selected alternative does not constitute an action that would normally require the preparation of an environmental impact statement. The selected alternative will not have significant impacts on public health, 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, significant cumulative effects, or elements of precedence were identified. Implementation of the selected alternative will not violate any federal, state, or local environmental law. Based on the foregoing, it has been determined that an environmental impact statement is not required by this action and thus will not be prepared, and implementation of the approved Hunter Mountain Pinyon Pine Ecosystem Fire Treatment and Study will be initiated as soon as practicable.

Recommended: Kathy Billings 9/20/13

Kathy Billings
Superintendent, Death Valley National Park

Date

Approved: Patricia L. Neubacher 9/25/13

for Christine S. Lehnertz
Director, Pacific West Region

Date

Attachments:
Appendix A – Determination of No Impairment

APPENDIX A
Determination of No Impairment
Hunter Mountain Pinyon Pine Ecosystem Fire Treatment and Study
Death Valley National Park
National Park Service
September 2013

The National Park Service (NPS) has determined that implementation of the selected alternative will not constitute impairment to the resources or values of Death Valley National Park. This conclusion is based on a thorough analysis of the environmental impacts described in the Hunter Mountain Pinyon Pine Ecosystem Fire Treatment and Study Environmental Assessment, relevant scientific studies and reports, and professional judgment of the decision-maker guided by the direction in NPS Management Policies (2006). The selected alternative will not result in major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Death Valley National Park; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the Park's General Management Plan or other relevant National Park Service planning documents.

This determination of no impairment has been prepared for the selected alternative described in the Finding of No Significant Impact (FONSI), for the topics listed below. An impairment determination is not made for visitor use and experience or public health and safety because impairment findings relate back to park resources and values, and these impact areas are not generally considered to be park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values. Specific impact areas and the detailed analysis that led to the determination of no impairment are described below.

Findings on Impairment for Soils

Under the selected alternative, vegetative litter will be reduced by the prescribed burn. The soils at the site have a low susceptibility to erosion, and the reduction of this cover may increase the erosion potential. However, because of the gentle slopes and well-drained soils, the selected alternative will likely result in negligible increase in erosion. Soils will be more vulnerable to erosion following the proposed burn, but the erosional susceptibility will remain low. Soils are expected to stabilize within one year to withstand heavy rainfall events, and should return to pre-burn stability after two years. Over the longer term the reduction of fuels will decrease the likelihood of a high intensity fire, which could result in the formation of a low permeability soil crust. Lowered soil permeability would increase the potential for overland flow and soil erosion. The prescribed burn is also likely to promote soil nutrient absorption which would have a beneficial impact. Overall, the adverse impacts to soils are expected to be short-term and negligible to minor in intensity, with long-term benefits resulting from the selected alternative. This combination, duration, and intensity of impacts does not constitute impairment.

Findings on Impairment for Water Resources

The selected alternative presents the potential for temporary and minor impacts on water resources. These impacts may include elevated sediment loads in ephemeral runoff from the burn area. However, because of the gentle slopes and well drained soils, the potential for overland flow from the area will remain low, and the potential for increased sediment loads will quickly diminish as vegetation returns to the burn area. There will likely be a short-term potential for ash from the prescribed burn becoming a component of the sediment load in ephemeral runoff events. This is not expected to negatively affect water quality, and the nutrients provided by the ash may be ecologically beneficial. The potential for increased sediment loads should be negligible a year after the proposed burn, and should return to the pre-burn potential after two years. These minor and short-term impacts to water resources do not constitute impairment.

Findings on Impairment for Air Quality

Under the selected alternative, the prescribed fire will only be ignited under specific conditions. These conditions are chosen to minimize any negative long term impacts to air quality. Air quality will return to good or excellent a few days after the burn is extinguished. The selected alternative will present minor, short term impacts to air quality in the local area adjacent to the burn. The selected alternative will also present a longer term benefit to the local and regional air quality because of the reduction of fuels that will not be available for consumption if a large scale catastrophic fire occurred in the area. The short-term, minor, and localized impacts to air quality do not constitute impairment of this resource.

Findings on Impairment for Vegetation

Under the selected alternative, invasive cheat grass will be burned while seeds remain on vegetation, hampering the ability of this non-native species to invade the vegetation community. The selected alternative will present short term minor to moderate adverse impacts to native vegetation in the burned area Only a single native meadow containing California dock will be burned. Recovery will be rapid and meadow habitat is expected to recover within one year, potentially with a measurable increase in the amount of meadow relative to current conditions. The post-fire vegetation study will contribute important data toward future vegetation management activities in the Hunter Mountain area. Long term impacts to vegetation communities from the selected alternative will be minor and beneficial. The combination of short-term adverse impacts and long-term beneficial impacts does not constitute impairment of vegetation resources.

Findings on Impairment for Wildlife

There will be localized, short-term minor adverse impacts to wildlife species and habitats from the direct effects of fire in 50 acres. The long-term impact from the selected alternative,

including the anticipated creation of diverse forest and meadow mosaic habitats, is expected to be minor and beneficial to wildlife species.
Invertebrates that are able to escape (fly, pupate in ground, burrow into the ground) may survive the direct effects of fire. Those not able to escape may have local populations affected within the 50 acres.

For reptiles, prescribed fire is beneficial in the long term, creating a more open environment; however, it may initially lead to short-term declines. Low to moderate fire intensity that creates a patchy burn may provide refuge sites to escape the fire.

Small mammals will likely be reduced in abundance for a period of a few months to a few years in the 50-acre area of the prescribed fire, due to changes in food resources and cover. Small mammals may hide under cover or in ground where ability to survive is partly dependent on adequate ventilation; large mammals must leave the area during the burn period. In the long term, forage will likely increase for sheep and deer. Carnivores may be reduced in the area immediately following the burn, due to reduced food resources present. Conversely, with reduced cover, prey may be more visible and more easily obtained.

Adult birds will be able to flee any fire or smoke. Fire may be beneficial to raptors by reducing cover for prey species. Some bird species may increase in the project area post-fire, while others may decrease due to reduced resource availability.

The combination of short-term minor adverse impacts to wildlife and long-term beneficial impacts to wildlife from the selected action does not constitute the condition of impairment of this resource.

Findings on Impairment for Special Status Species

Hunter Mountain copper butterfly may lose a small amount of host vegetation in meadow habitat during the fire, but it is expected the vegetation will recover and the butterfly will return to the site. The area the host plant is found in is less than 1/3 acre in size and is a small portion of the entire habitat for the butterfly. In the long term, a prescribed fire is expected to increase the amount of meadow habitat available for the butterfly. The level of benefit this provides depends directly on the amount of additional habitat created.

Mohave ground squirrel will potentially be impacted by an increased amount of traffic on roads through habitat during the burn operation. The timeframe of this traffic will be limited to a few days during the operational period. Direct mortality due to traffic will be mitigated by compliance with the speed limit and education of the crew performing work.

The Inyo towhee, if present, would be directly affected and forced to leave the burn area during period of operation. Survey for nests in advance of the proposed fire will prevent these impacts. In the long term, the burn will provide patchiness of habitat that is attractive and beneficial for Inyo towhee. The determination of effect for the Inyo towhee under the selected alternative is *no effect*. For all special status species, the short-term adverse impacts, offset by planned

mitigations and avoidance, do not constitute impairment. In addition, it is expected that the selected alternative will provide long-term benefits to the Hunter Mountain copper butterfly and the Inyo towhee.

Findings on Impairment for Wilderness

Under the selected alternative, the natural quality of the wilderness will be improved—fire will be restored to the area as a natural ecosystem process, with the potential to control the spread of non-native grasses through the timed application of fire, as determined through the associated ecosystem study. The unique quality of Death Valley Wilderness associated with ranching history and prehistoric cultural resources will also see a long-term benefit from the reduction in risk of a catastrophic fire that could damage these resources, and thus the unique character of wilderness. However, the construction of a fence surrounding the study plot and the potential use of chainsaws could degrade the area's undeveloped quality. The fence will contribute long-term minor impacts, and the chainsaws, if used, would result in short-term minor impacts. The short-term closure would adversely affect visitors' opportunities for unconfined recreation for less than a week of proposed operations. A minimum requirements analysis was completed for the prescribed fire and found that prescribed fire and the associated actions, including the ecosystem study, are the minimum tools necessary for the administration of the wilderness area. The long-term benefits to the natural and unique qualities of wilderness character from the selected alternative outweigh the minor and mostly short-term impacts to the undeveloped quality of wilderness character and the opportunities for solitude and unconfined recreation, and the combination of these minor impacts do not constitute impairment.

Findings on Impairment for Archeological Resources

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of the selected alternative, with mitigation measures in place, will result in no adverse effect to archeological resources. The selected alternative will not involve the use of heavy equipment. Hand tools will be used to construct two-foot wide scratch lines around the perimeter of the fire. An archeologist or archeological technician will guide line construction to minimize or avoid impacts to CA-INY-1875/H. The culturally-modified (axe-cut) trees within CA-INY-1875/H will be protected by a combination of clearing duff and brush away from beneath them and applying water as needed. Fire engines and other vehicles will remain on existing roads. Site 11-092-02 will be flagged for avoidance and all vehicle and foot traffic will be excluded. The selected alternative will not impair archeological resources.

Findings on Impairment for Cultural Landscapes

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of the selected alternative will result in no adverse effect to cultural landscapes

or landscape features eligible for or listed in the National Register. There will be a decreased likelihood of uncontrolled wildfire which could lead to a loss of contributing features such as historic structures. The selected alternative will not impair cultural landscapes.

Findings on Impairment for Historic Structures

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of the selected alternative will result in no adverse effect to historic structures eligible for or listed in the National Register. The Hunter Cabin (CA-INY-5044/H) and tin shack (CA-INY-5045/H) are located outside of the area of potential effects for the prescribed burn. Past mechanical fuels reduction projects have created a defensible space around the Hunter Cabin and it will be further protected by an engine during the proposed burn. A hose lay will be placed between the fire perimeter and CA-INY-5045/H. The selected alternative will not impair historic structures.

Findings on Impairment for Ethnographic Resources

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of the selected alternative will result in no adverse effect to ethnographic resources. The selected action is consistent with past Timbisha land management practices. The Timbisha used fire as a management tool and areas on Hunter Mountain were burned to encourage the growth of tobacco plants. Clearing of invasive species and removal of undergrowth will contribute to the health of pinyon pines on the site. There will be a minor beneficial impact to ethnographic resources by removal of invasive species and fostering the health of the pinyon forest. The selected alternative will not impair ethnographic resources.

Conclusion

The impact analyses above demonstrate that the selected alternative will not result in major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Death Valley National Park; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the Park's General Management Plan or other relevant National Park Service planning documents. Park resources other than those discussed have been determined to have no or negligible adverse impacts from the activities to be implemented. There will be no unacceptable impacts to park resources from implementing the selected alternative.